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

Adult Level I Trauma Center Annual Report

Published October 2017
Once again, I find myself in the role of introducing the annual report for the Froedtert & the Medical College of Wisconsin adult Level I Trauma Center at Froedtert Hospital. Seventeen years ago, I returned to Milwaukee after being away 25 years. A lot had changed — and a lot more has changed during my time here. Although our Trauma Program has been a constant, it, too, has changed.

This past year has been one of exponential activity. We have had one of our busiest years, which is not what any community wants to hear. However, the physicians, nurses and other health care providers at our Trauma Center met the challenge. In 2016, we passed our American College of Surgeons verification review for the seventh consecutive time, maintaining our Level I status. Members of our community should be proud and thankful for this commitment. Many communities of similar size to Milwaukee do not have such a resource. The need for excellent trauma care for the injured in any community is just as important as other medical care, such as cardiovascular, cancer and transplant care, all of which contribute to the survival of our most critical patients.

While our staff met the challenges of increased patient flows this year, we should reflect on actions to reduce these increases. Our residents and leaders have a great need to band together to attempt to make Milwaukee safer for all. Initiatives to reduce gun violence, pedestrian injuries from being struck by moving vehicles, falls by the elderly, driving under the influence and teen motor vehicle crashes are imperative to improve the safety of all of our communities. Prevention programs are difficult to organize and maintain, and they require the support of the entire community. I encourage all citizens to get involved in helping plan and implement activities that will help reduce the rate of injury throughout our city and its suburbs. These programs are not solely the responsibility of health care providers.

Now, for the final change I will oversee, I will borrow words from Ecclesiastes 3:1 - 3:22: “To everything there is a season and a time to every purpose under the heaven. A time to weep and a time to laugh; a time to mourn and a time to dance.”

I have had my season and purpose as director of your adult Level 1 Trauma Center. I have wept, laughed, mourned and danced with all my colleagues, staff and even patients. I am proud of what has been accomplished in your community. However, it is time to change and allow a new person to direct the future of your adult Level I Trauma Center.

Marc de Moya, MD, has joined the Medical College of Wisconsin faculty as the Chief of the MCW Division of Trauma and Critical Care, and he will oversee the Trauma Program. He will be helped by David Milia, MD, the new Trauma Medical Director. I pass the baton to their able hands with no fanfare, knowing they are exceedingly capable of carrying the program on to bigger and better endeavors.

Thank you, Milwaukee and Wisconsin, for your support.

John Weigelt, MD, DVM, MMA
Milton & Lidy Lunda/Charles Aprahamian Professor of Trauma Surgery; Chief, Division of Trauma/Critical Care
The skilled trauma surgeons at the adult Level 1 Trauma Center at Froedtert & the Medical College of Wisconsin Froedtert Hospital do more than care for trauma patients. They also apply their expertise to acute care surgery, known by some as emergency general surgery.

Surgeons staffing the Froedtert & MCW acute care surgery service are available 24 hours a day to treat patients who arrive in the Froedtert & MCW Emergency Department at Froedtert Hospital with conditions that require immediate surgery, such as appendicitis, bowel obstructions and even severe, life-threatening skin infections. In the past, general surgeons handled all of these procedures. But as general surgery has grown increasingly specialized, these surgeons have become less available for emergency patients. Trauma surgeons have stepped in to fill the gap, a trend seen at hospitals across the country. Froedtert Hospital was among the first in the country to adopt this model in 2009.

“It’s a good use of expertise, time and resources,” said trauma surgeon Jeremy S. Juern, MD, FACS, director of the acute care surgery service. “It provides more opportunities to take care of patients who really need our help.”

Indeed, acute care surgeons — and the advanced practice providers who work alongside them — play an increasingly important role in the lives of patients with limited access to health care. Factors such as poverty, joblessness and changes in the health care system mean that many people in our region lack a primary care doctor. As a result, acute care surgeons do much more than operate.

For example, Dr. Juern said, a woman may come to the Emergency Department with a severe skin infection that requires surgery. While planning for the operation, the surgeon and his team might discover the patient has undiagnosed diabetes. “We would get her diabetes under control during the hospital stay, and at discharge, we would arrange a follow-up appointment for her diabetes,” he said.

The acute care surgery service is an important community resource, Dr. Juern added. “We provide excellent, timely care. When people have an acute health issue, I hope they will think, ‘Let’s go to Froedtert Hospital, because they have surgeons on duty all the time.’ We are always in-house.”
On May 16, 2016, Nelson Ortega Leon, then 30, worked third shift at a Waukesha foundry, on the line with a molding machine. There was trouble with a machine that night, and Nelson needed to remove a broken mold.

As he wrestled with the heavy mold, Nelson felt something touch his back. Looking over his left shoulder, he realized the equipment was moving. One piece of machinery shoved him forward, squeezing his body tightly against another part of the machine.

His co-workers immediately called 911. “I remember telling them, ‘I can’t breathe, I can’t breathe! Get me out of here!’” Nelson said. After freeing Nelson from the equipment and quickly assessing a host of life-threatening injuries, paramedics drove him to the adult Level 1 Trauma Center at Froedtert & the Medical College of Wisconsin Froedtert Hospital.

When Nelson arrived around 3 a.m., the trauma team was ready. To receive the adult Level 1 Trauma Center designation, a hospital must establish a comprehensive program to treat severely injured patients. This means having trauma surgeons, orthopaedic surgeons and an array of other surgical specialists standing by 24/7.

The fact that Nelson is alive today is a testament to the expertise available at the Trauma Center. He is proof of the compassionate effort the trauma team pours into getting severely injured patients back to their daily lives.

ADDRESSING GRAVE INJURIES

The team rushed Nelson into the operating room, where trauma surgeon Lucia Chou, MD, focused on his chest and abdomen, which were badly crushed in the machine. “He was fading in and out of consciousness and his blood pressure was low,” said trauma surgeon Thomas Carver, MD, FACS. “Our goal was to stop any bleeding and check the injuries in his abdomen.” Nelson’s injuries included fractures in his sternum and spine, damage to his spleen, lungs and small intestine, and a severe de-gloving injury to his back. In a de-gloving injury, the skin and tissue just below it separate from deeper tissue layers, depleting its blood supply.

In the days that followed, Nelson made multiple trips to the operating room, where he was cared for by a team that included Dr. Carver, trauma surgeons David Milia, MD, and Marshall Beckman, MD, along with anesthesiologist Junica Bajic, MD. Nelson faced a roller coaster of health challenges. His muscle injuries were so extensive that his bloodstream became overloaded with protein, causing his kidneys to fail, which meant he needed dialysis.
He developed pulmonary (lung) failure and required a ventilator to breathe. Due to a spontaneous perforation in his colon, Dr. Carver performed an ileostomy to reroute his colon outside his body. The severe lacerations on his back also required constant care. “Nelson needed very complex wound management, which we’re adept at because we see so many severely injured people here,” Dr. Carver said.

**COMPASSIONATE, MULTICULTURAL CARE**

Born in Puerto Rico, Nelson is fluent in Spanish and English. However, he was so sick, he spoke very little at first. His parents, who traveled from Puerto Rico, and his wife, Zuleyka, only speak Spanish. “To make sure Nelson’s family was well-informed about his injuries and prognosis we made it a priority to arrange translation services,” said Rosemary Wagner, RN, a case manager on the cardiovascular and surgical intensive care units. Wagner’s focus is managing patient care during hospitalization.

Wagner and her colleagues also arranged for Froedtert Hospital’s Child Life Program specialists to be on hand to help Nelson and Zuleyka’s two small boys, then ages two and three. These certified professionals work with children who have a gravely ill or injured parent or adult family member. The specialists educate, prepare and support children while the adult is in the hospital, using activities such as drawing to help kids understand what is happening and reduce their stress and anxiety.

Wagner met with Zuleyka and other family members to learn more about Nelson’s health and daily life before he was injured. Wagner and her care coordination colleagues were thinking about what Nelson would need after leaving the hospital for a rehabilitation program or home. They checked in with him daily.

They also consider a patient’s psychological needs. “We get the trauma psychologist involved as soon as patients can talk,” she said. Patients may decide to meet with Terri deRoon-Cassini, PhD, clinical psychologist, to cope with the intense feelings that come in the aftermath of injuries and treatment.

**THE LONG ROAD TO RECOVERY**

But for Nelson, discharge was a long way off. Dr. Carver recalls that it took nearly a month after Nelson’s arrival for the team of surgeons and other advanced practice providers to feel optimistic about his future. In late June, nearly six weeks after he arrived at Froedtert Hospital, Nelson was released to an acute rehabilitation facility where he remained on a ventilator for a time while receiving care. “He was just so deconditioned from everything that he wasn’t able to breathe on his own,” Dr. Carver said.

Throughout the summer and fall, Nelson made several trips from the long-term care facility to Froedtert Hospital, where he was admitted for problems including an infection related to his ileostomy. Dr. Carver cared for Nelson often in this period and marveled at his optimism and focus. “His goal was to get home for Thanksgiving,” Dr. Carver said. “We made a plan together.” Their plan succeeded, and it was his first time home in five months, Dr. Carver added.

A team of physical and occupational therapists, wound-care nurses and other specialists visited Nelson at home in Waukesha to help him continue his progress. He also returned to Froedtert Hospital to visit the wound care clinic. Dr. Carver notes that Nelson’s wife Zuleyka deserves credit for her attentive care of her husband. “She did a phenomenal job, and she’s the reason that he was able to stay home,” he said.

Nelson continues to visit Froedtert Hospital for check-ups. Wagner predicts this will continue for many years. “They will need to make sure every organ that was damaged continues to heal,” Wagner said.

He also continues physical therapy three times a week. He struggles with pain in the scar tissue on his back, and walking for long distances is exhausting. Still, his ultimate goal is to someday return to work. Given his amazing progress over the last year, Dr. Carver thinks Nelson will be able to do it.

Nelson said his family provided the motivation. “My family kept me alive. I can’t leave my kids alone in this world without a parent,” Nelson said.

He is grateful to the Froedtert & MCW trauma team. “They don’t stop until you’re okay, you’re breathing, you’re alive,” Nelson said. “They do an amazing job.”

Dr. Carver noted that the adult Level 1 Trauma Center at Froedtert Hospital was the best-equipped to get Nelson back on his feet.

“I know that there is only one place to go for care,” Nelson said. “Froedtert Hospital.”
The adult Level I Trauma Center at Froedtert & the Medical College of Wisconsin Froedtert Hospital benefits from close links with the U.S. military. Four of Froedtert Hospital’s trauma and critical care surgeons serve in the military reserves: Lewis B. Somberg, MD, MSS, FACS, is in the U.S. Army reserves; Thomas Carver, MD, formerly active duty Navy, is a member of the U.S. Navy reserves; David Milia, MD, FACS, serves in the U.S. Army reserves; and Jacob Peschman, MD, is a reservist in the U.S. Navy.

Dr. Somberg has 28 years of military service, including tours in Afghanistan, Iraq, Kuwait and Honduras. “My father was in World War II, and I always felt that it was my duty to serve our country,” he said. Dr. Somberg is now a brigade commander with 2,000 reservists under his command.

Military service and training have boosted his skills as a people manager and surgeon, Somberg said. “In a military hospital, I might have 35 patients at a time, so one patient doesn’t rattle me anymore,” he said. “In the military, you hone your skills in managing chaos to the ‘nth’ degree.”

Dr. Somberg and his military colleagues also believe their field experience sharpens the ability to make sound and speedy decisions. “Deployed surgeons have to think quickly on their feet,” said Dr. Carver, who served nine years of active duty in the U.S. Navy before entering the Navy reserves in 2012. “In the field, you may not have all the resources you need or the ability to plan your surgeries as meticulously as in the hospital setting. And, because we are occasionally needed to do procedures we might not have seen before, we are a more versatile group of surgeons.”

TRAUMA TECHNIQUES PERFECTED IN WARTIME

The field of trauma surgery has benefited from information gathered in military field hospitals in the Middle East over the past two decades, Dr. Somberg noted. A data-collection system known as the Joint Theater Trauma System (JTTS) has recorded information about every American or coalition soldier wounded in a military conflict. Researchers have analyzed this massive database for clues about ways to save lives. They found that the most common cause of death was uncontrollable extremity hemorrhage, meaning soldiers die after losing a limb. Outcomes improved when medics began carrying tourniquets and applying them as soon as possible after the injury occurred.

Analysis of the JTTS also revealed that patients with significant blood loss do best when they receive blood transfusions instead of IV fluids, Dr. Somberg said. Tourniquets and the blood transfusion method have now been adopted by U.S. trauma teams back home — including at Froedtert Hospital.
DISASTER MEDICAL ASSISTANCE TEAM: CIVILIANS ON CALL

Members of the Froedtert & MCW trauma team also serve the public through another federal entity known as a Disaster Medical Assistance Team (DMAT). DMATs operate through the National Disaster Medical System, part of the U.S. Department of Health and Human Services.

“We are considered civilian medical personnel until we are deployed. Then, we become federal employees, not unlike those serving the Army or Navy,” said trauma and critical care nurse practitioner Cheryl Grandlich, RN, MSN, APNP, a member of the Wisconsin-1 DMAT.

Each DMAT is on-call four months of the year to mobilize in case of national disasters. These can include weather-related events such as tornadoes or hurricanes or acts of terrorism on American soil. In case of emergency, DMAT teams can also be staged near large, important events such as a presidential inauguration or national political conventions.

The DMAT includes medical personnel with a range of expertise, such as physicians, nurse practitioners, physician’s assistants, paramedics, pharmacists, respiratory therapists and psychologists. Lisa Hass-Peters, RN, is acting commander of the Wisconsin-1 team. Hass-Peters, who was previously the injury prevention coordinator for the Trauma Center, is now Froedtert Hospital’s emergency preparedness coordinator.

The DMAT benefits from the knowledge of Froedtert & MCW physicians and staff who are well-versed in trauma care, but the Trauma Center also benefits from the training Grandlich and others gain in the course of their service. Grandlich participates in monthly training in disaster management and trauma and also helped plan a week-long training exercise at Volk Field Air National Guard Base in southwestern Wisconsin. During this national training event, DMAT members worked alongside U.S. Army, Air Force and Urban Search and Rescue units in a simulation to practice how they will perform if there is a massive tornado with flooding that takes out roadways. “In this event, our team was taken by Chinook helicopter into an evacuation site to take care of patients,” Grandlich said. “We set up a field hospital to triage and treat patients and fly them out to appropriate hospitals. Our team also practiced loading and off-loading patients from the Blackhawk helicopters.”

Dr. Carver sees important parallels between working on the trauma team at home and serving in the military or other federal units. “Being in the military gives you a sense of camaraderie and a true appreciation of the team approach,” he said. “You go to work every day with the understanding that you and your partners are out for the same mission: saving lives.”
Matt Maier got his first dirt bike at age four and raced in his first competition when he was five, launching a passion for motocross. By the time he was 18, Matt was racing at a professional level when he wasn’t working at his day job as a welder.

On Saturday, Feb. 1, 2014, Matt was competing in day two of the American Motorcyclist Association Arenacross Series, which involved a race course created in what is now the Panther Arena in Milwaukee. His parents, his best friend and his girlfriend were all there cheering him on, and Matt remembers that he was racing well that night.

But during a challenging part of the course known in motocross lingo as the “whoop section,” Matt missed a jump and flew forward over the bike handlebars. As his body landed, he “knew right away that something was majorly wrong,” he said. Emergency medical services transported him by ambulance to the adult Level 1 Trauma Center at Froedtert & the Medical College of Wisconsin Froedtert Hospital.

When he arrived at Froedtert Hospital, Matt met emergency medicine physician Dan Worman, MD, and trauma and critical care surgeon Lewis Somberg, MD, MSS, FACS. Diagnostic imaging revealed fractures in Matt’s sternum, T4 and T5 vertebrae with spinal cord damage that had paralyzed him from the middle of his chest to his feet. The paralysis was likely permanent.

The team scheduled Matt for surgery early the following morning with neurosurgeon Christopher Wolfla, MD, who has a special focus in spine trauma. It’s important to move quickly to stabilize a fractured spine, Dr. Wolfla explained; this allows patients to start their rehabilitation as soon as possible and to avoid the potential problems of lying motionless, including pneumonia and pressure sores.

“During the surgery, we use screws, hooks and rods to build a bridge around fractured areas to hold the spine in alignment, so it can heal properly,” Dr. Wolfla said.

Within hours of his surgery, members of the physical medicine and rehabilitation team visited Matt. The team includes physical therapists, physicians who specialize in physical medicine and rehabilitation and
mental health professionals. “We get involved as soon as possible,” said physical medicine and rehabilitation physician Merle Orr, MD, who collaborated with colleague William Waring, MD, to care for Matt. “It allows us to set fair expectations for the patient and start discussing discharge planning.” They consider what the patient needs to return home and move forward with life.

Dr. Orr calls that time in the hospital “a crash course” for paralyzed patients, who must learn a host of new skills to live life in a new body. These include bathing, dressing, using the bathroom, conducting skin checks for pressure sores and doing “transfers,” the process of moving from the bed to a wheelchair or from a wheelchair to a chair or car. The physical therapy room at Froedtert Hospital includes the shell of a car for patients to practice, and Matt remembers working hard to master the transfer and to dismantle and stow his wheelchair in the car.

In the hospital, Matt completed three hours of physical and occupational therapy six days a week, which felt exhausting to someone recovering from trauma and surgery. But as a life-long athlete, Matt also appreciated the routine and felt driven to regain his strength. He still thinks about something Dr. Waring told him during this period: Focus on what you can do, not on what you can’t do.

Matt recalled that his friendship with a fellow motocross rider who was paralyzed in a 2012 racing accident was particularly motivating. His friend went to the hospital the night of Matt’s accident to provide support and was encouraging throughout the recovery process. “My friend was a big pretty influence,” Matt said. “He told me, ‘Things are really bad right now, but they will get better.’”

On March 6, six weeks after his accident, Matt left Froedtert Hospital to move in with his parents in Hartford, Wis. He continued therapy, and by May, he had purchased a used Honda Civic and outfitted it with hand controls, so he could get back to driving and regain his independence. “The day I got my license and vehicle was probably the best day after my accident,” he said. He is currently working at a packaging equipment company.

Missing the thrill and competitive edge of motocross, Matt purchased a go-kart in fall 2015 and installed hand controls in it. Soon, he was hooked and visiting go-kart tracks around Wisconsin. He entered his first race in April of this year. “When I’m in the go-kart, you wouldn’t know I’m paralyzed,” he said. “Racing against other people and being competitive again — it’s a pretty amazing feeling.”

When he looks back on the crash and his recovery, he is glad he had the support of the adult Level 1 Trauma Center at Froedtert Hospital. “I met so many people there who were really caring and good at their jobs,” he said. “They knew what they were doing. I could see that they were confident, which made me confident.”
Patient data for 2016 provides a picture of traumatic injury in our community.

WHERE PATIENTS COME FROM

In 2016, the Trauma Center provided critical care to people in the following Wisconsin counties:

TRANSPORT METHOD FROM INJURY

Most patients arrived at the Trauma Center via advanced life support in 2016.

MECHANISM OF INJURY

In 2016, patient admissions due to falls surpassed admissions from other causes.

NUMBER OF PATIENTS ADMITTED

2016 RACE AND GENDER SUMMARY

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Number of Patients Admitted: 2,464

2016 PATIENT OUTCOMES

Living 94%
Deceased 6%

NUMBER OF PATIENTS SEEN
**2016 PATIENT DISCHARGE DESTINATIONS**

More than two-thirds of all trauma patients admitted to the hospital go directly home.

20% Skilled Nursing Facility
66% Home
6% Rehab
6% Deceased

**2016 AGE GROUPS**

Until age 70, males suffer traumatic injury significantly more often than females. In the 20-29 age group, men outnumber women by four to one. (Total number of patients admitted: 2,464)

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