



LEVEL ONE TRAUMA CENTER

2008



**ST. ELIZABETH
HEALTH CENTER**
Humility of Mary Health Partners

Dear Friends:

Trauma—a body wound or shock produced by sudden physical injury—can have minor effects or devastating implications for patients and their families.

As the area's only Level I Trauma Center, our multidisciplinary team is dedicated to assuming a leadership role in development, evaluation and continuous quality improvement of trauma care in the region.

Throughout the year, our team stands ready to deliver quality care at a moments notice. We are proud of our favorable outcomes that result from offering our patients up-to-date, technologically advanced care. We are happy to report that our mortality rates, even for those with the most severe injuries, are below the national benchmark average.

But, our commitment to the community doesn't stop there. We are active in trauma education, as well as injury prevention, throughout the region. Some of our achievements during 2008 include a successful Trauma Symposium attended by more than 200 health care providers, ongoing EMS run reviews, and Trauma Nursing Core Courses. Furthermore, we met with state legislators as advocates for trauma systems throughout the state and nation.

Annual reports by their nature focus on the facts and figures. Sometimes we lose sight of the fact that these "facts and figures" are real people. Throughout this report, we will supplement our statistics with the story of Kevin McDonald – from how he came to St. Elizabeth as a critically injured trauma patient through his rehabilitation and to his miraculous recovery.

Thank you for your interest in our program and for the opportunity to share the information in our 2008 annual report. We welcome your questions and/or comments. Please feel free to contact us at 330-480-3907.

Sincerely,

Brian S. Gruber, MD

Director of Trauma and Critical Care Services

Daneen Mace, RN, BSN, ONC

Program Director of Trauma/Orthopaedic Trauma

MISSION STATEMENT

Trauma Services' mission is to reduce trauma related death and disability and to assume a leadership role in development, evaluation, and continuous quality improvement of trauma care.

SUMMARY STATEMENT

St. Elizabeth Health Center (SEHC) is a Level I trauma center and was re-verified by the American College of Surgeons in January. SEHC is a regional tertiary care trauma center serving Ohio and Western Pennsylvania. This annual report is a summary regarding trauma patients admitted between January 1 and December 31, 2008.

Our multidisciplinary team is dedicated to the treatment of the trauma victim, the education of the community and the prevention of injury. We strive for optimal outcomes by providing efficient, quality care and are committed to our patients and their families.

The trauma program includes traumatologists (board-certified general surgeons with additional trauma and critical care training), EMS providers, specialty physicians, nurses, therapists and other ancillary health care personnel. The team works together to optimize outcomes and improve the life of the critically injured patient.

The goal of this comprehensive system is to take advantage of the limited opportunity that exists during the golden hour to increase survival. In 2008, our trauma team cared for nearly 2,000 trauma patients arriving at our doors.

Continual reassessment of the trauma program is essential for handling traumatic injuries swiftly and efficiently. Specialized training and continuing education provide up-to-date skills. Protocols and evidence based practice management guidelines ensure smooth teamwork and the highest quality care.

Each member of the community benefits from the innovative spirit that sets St. Elizabeth apart as a leader in health care – a spirit that thrives in each and every individual. We believe all patients who require the resources of the Level I center should have access to them and we have made it our mission to ensure that access.

To request a patient referral or transfer to the Trauma Center contact: 1-877-966-0662



Trauma Surgeons

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WHAT IS A LEVEL 1 TRAUMA CENTER?

Level I is the highest rating designated to a trauma center by the American College of Surgeons. It allows for the quickest response possible to treat the severely injured. The trauma team meets or exceeds rigorous staffing criteria and takes an organized and systematic approach to its work. The team is in a constant state of readiness 24 hours a day. Facilities such as a 64-slice CT scanner, surgery suite, and critical care unit stand ready for the trauma patient. SEHC also has a helipad on campus, to accommodate air ambulance traffic.

In order to be recognized as a Trauma Center in Ohio, hospitals must comply with sections 4798.01 and 3727.101 of the Ohio Revised Code. American College of Surgeons (ACS) verified Trauma Centers must submit documentation of verification. As of March 2008, there are 14 accredited Level I Adult and/or Pediatric hospitals in the State of Ohio.

In addition to acute care responsibilities, Level I trauma centers have a major responsibility of providing leadership in education, research, and system planning.

SEHC continues to develop the trauma program in clinical care, performance improvement, functional recovery, research and injury prevention. SEHC remains the only Level 1 trauma center between Cleveland, Pittsburgh and Akron.

THREE-TIER RESPONSE TO TRAUMA

The appropriate activation is crucial to the trauma patient. The emergency medicine physician is responsible for deciding which level of response is warranted based on the information provided by the pre-hospital care providers. Pre-hospital triage and transfer criteria are based on guidelines established by the American College of Surgeons and the State of Ohio.

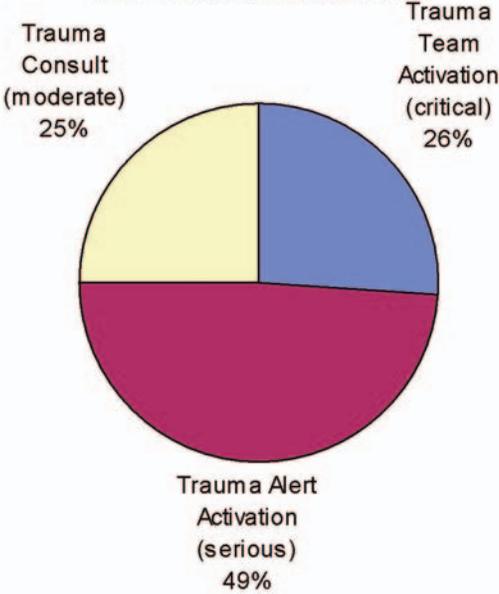
KEVIN'S STORY

Annual reports by their nature focus on the facts and figures. Sometimes we lose sight of the fact that these "facts and figures" are real people. Throughout this report, we will be telling the story of Kevin McDonald – from how he came to St. Elizabeth as a critically injured trauma patient through his rehabilitation and to his miraculous recovery.

Kevin McDonald with Dr. Dunham



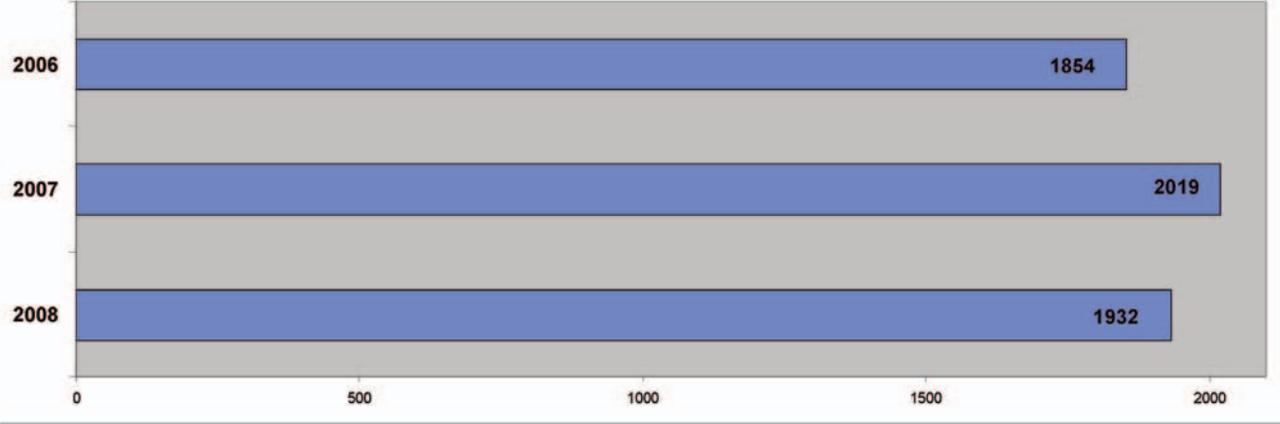
2008 Trauma Activation



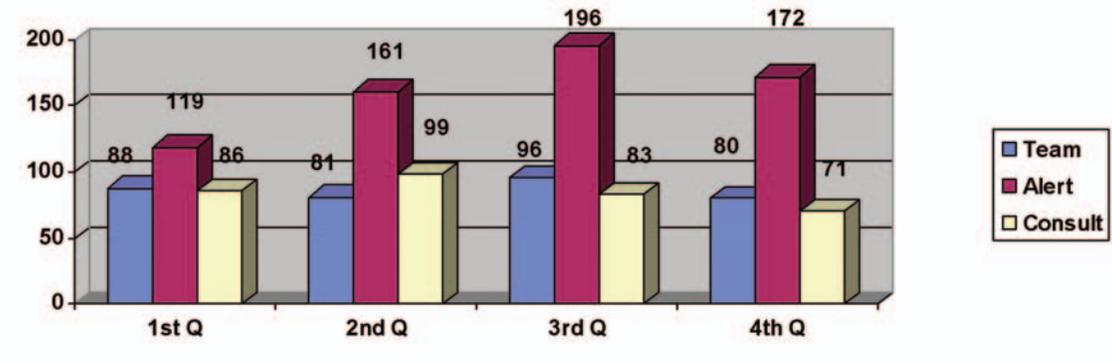
The trauma program monitors appropriate level of activation to reduce the potential of inappropriate use of resources that may affect patient outcomes.

TRAUMA VOLUME

Three-Year Comparison of Total Trauma Patients



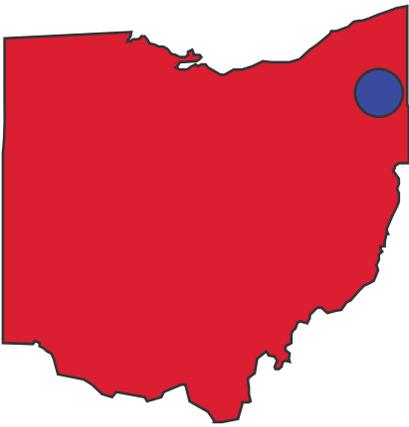
TRAUMA VOLUME BY LEVEL OF ACTIVATION AND QUARTER



Kevin's Story

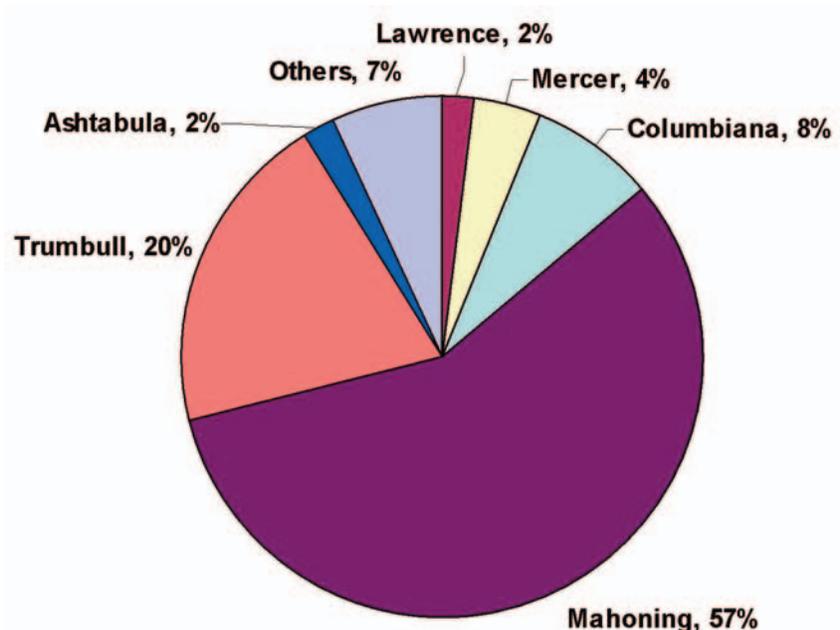
It was Christmas Eve in Youngstown. For Kevin McDonald, it was good to be home with family and friends after spending a year in Iraq, and as he walked from his friend's house to his car, he was filled with the warm glow of the holiday spirit. Soon he was to be filled with bullets – eight of them to be exact. Kevin, now 38, never knew what hit him. To this day, no one – including the police – has been able to tell him who shot him or why.

PATIENTS SERVED AT THE TRAUMA CENTER



The Mahoning Valley makes up 85% of our trauma population.

The Mahoning Valley has a population census of nearly 600,000 residents.

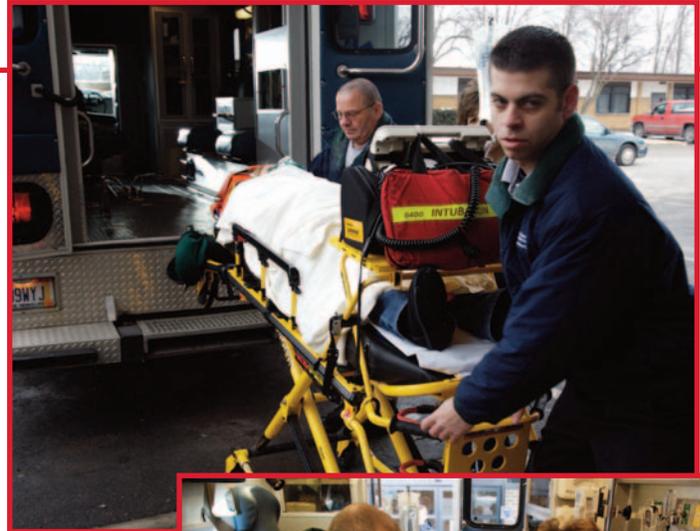
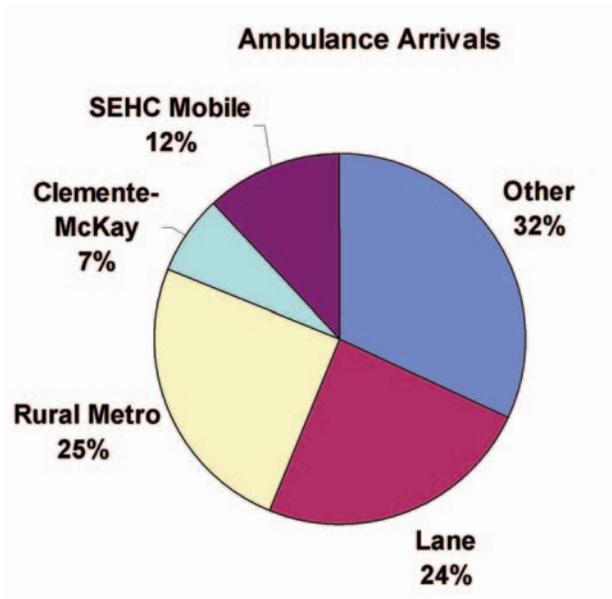


At the core of the SEHC trauma system are clinical and operational elements that provide direct patient care once an injury has occurred. These consist of hospitals and EMS providers that have a preplanned response to caring for an injured patient. They require the use of coordinated communication, accurate identification of the level of care needed by an injured patient, and rapid transport to the trauma center.

Ground transport brings 78% of the patients to the trauma center.

AMBULANCE ARRIVALS

Four companies transported 68% of the patients to the trauma center. The remaining 32% of patients were transported by 48 different companies.



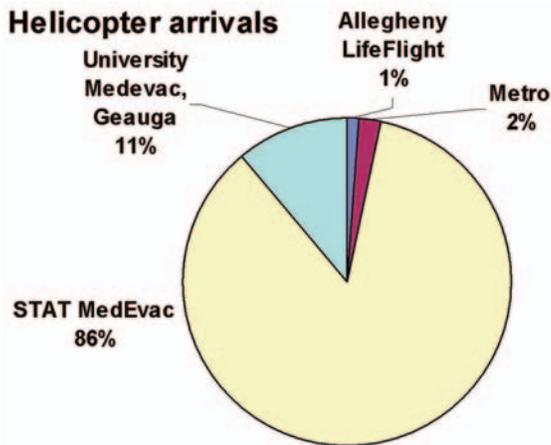
Kevin's Story

"All I remember is hearing an emergency department nurse say, 'He's a mess,'" Kevin recalls. Referring to Kevin as "a mess" was an understatement. The bullets had lodged deep in his chest, abdomen, hip and arm. His stomach was almost severed from his esophagus. Fortunately, C. Michael Dunham, MD, assistant director of trauma and critical care services, was ready and waiting when the EMS squad brought the patient to St. Elizabeth Health Center (SEHC).

AIR MEDICAL ACCESS

Air Medical Access brings 8% of the patients to the trauma center.

STAT MedEvac, which bases an aircraft at the Youngstown Eliser Airport, transports the vast majority of our patients arriving by aircraft. These aircraft are equipped with the latest in lifesaving and advanced aviation technologies.



HMHP MOBILE ICU

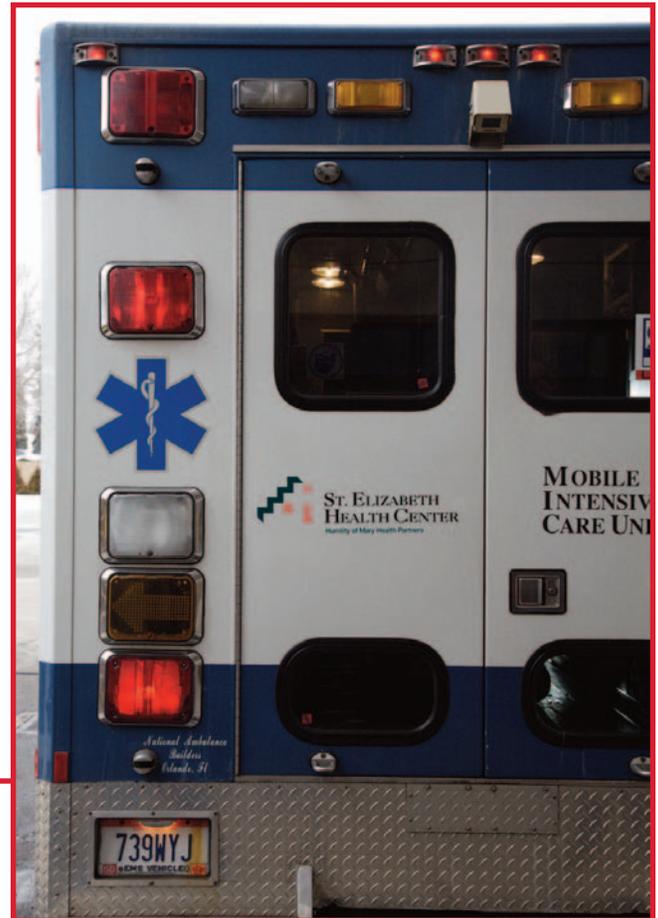
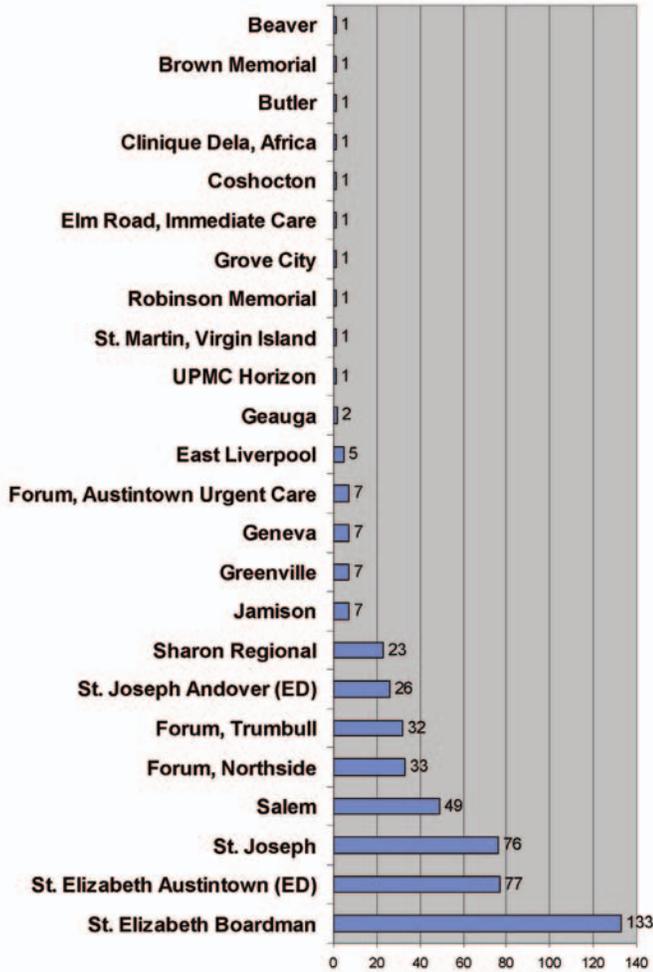
HMHP Mobile Intensive Care Unit (MoICU) is an "intensive care room on wheels." The MoICU staff consists of specially trained advanced life support personnel (paramedics and mobile intensive care nurses) dedicated to providing our community with the best healthcare possible.



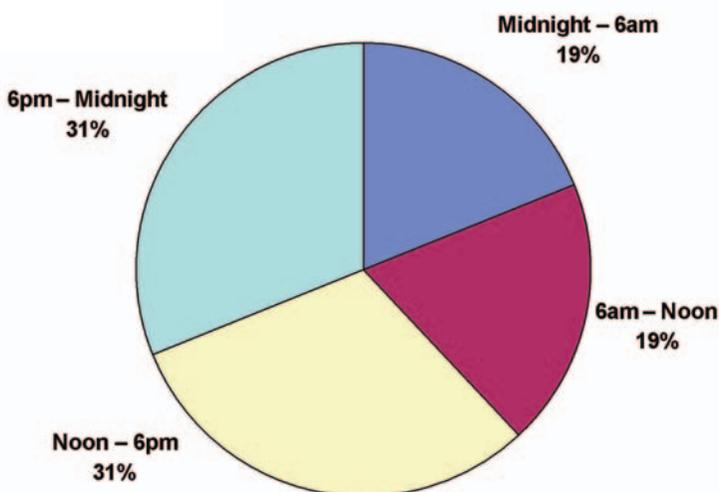
The MoICU has provided services 24 hours a day, seven days a week to our community since December of 1985. Our staff of highly skilled nurses and paramedics brings a unique blend of technology, professional expertise, human care and concern directly to the community hospital for transfer to the trauma center. The MoICU consists of four advanced life support units that are centrally stationed in Youngstown. In 2008, the MoICU transported 36% of our patients to the trauma center.

TRANSFERS FROM OTHER FACILITIES

As SEHC is a tertiary care facility, many of the trauma patients come from outside hospitals. In 2008, 494 patients were transferred to the Level 1 Trauma Center from another facility (21%).



ARRIVAL TIMES



EMERGENCY SERVICES

The emergency department is a key part of the Level I trauma center. Specially trained emergency staff ensures each patient receives the best care possible. There are approximately 70 health care professionals that staff the department. The ED physicians are board-certified in emergency care. The department holds 30 rooms with areas dedicated to trauma/critical care. The registered nurses have additional education and are certified in TNCC (Trauma Nursing Core Course) and ENPC (Emergency Nursing Pediatric Course).

Kevin's Story

“Dr. Dunham was wonderful,” says Hazel McDonald, Kevin’s mother. “I couldn’t have asked for any better care for Kevin, and I have nothing but praise for all the people at St. E’s. Initially, they did not give me much hope for him, which is understandable. So when I look at him now and see how well he’s doing, I’m in awe. It’s so amazing.”

ORTHOPAEDIC TRAUMA SERVICES

Many patients admitted after a traumatic event have some type of musculoskeletal injury. Motor vehicle and motorcycle crashes, industrial accidents, and falls from a significant height can cause major pelvic and complex extremity fractures. Orthopaedic Trauma Service is responsible for care and treatment of these injuries as well as post-traumatic sequelae such as deformities, nonunions, malunions, and osteomyelitis.



SEHC provides orthopaedic coverage around the clock to manage these orthopaedic injuries. This takes a variety of specialized surgeons, residents, and midlevel providers to assure the trauma patient get appropriate orthopaedic care. Hospital-based orthopaedic surgeon Dr. James Shaer, as well as community-based orthopaedic surgeons, are on-call 24 hours a day should a trauma patient need emergent surgical intervention. To assist the surgeons, the orthopaedic residents and orthopaedic physician assistants (PA-C) are also able to provide hands-on care when a trauma patient arrives in the trauma bay with orthopaedic injuries. Whether they are reducing a fracture or dislocation, managing an open fracture, or dealing with complex pelvis fracture, their expertise in the evaluation and management of musculoskeletal trauma injuries provides the patient with quick and efficient care.



A majority of trauma patients have severe or multiple injuries. Polytraumatized patients are those unique patients with numerous skeletal injuries. Not all orthopaedic surgeons are equally prepared to manage those with severe injuries or the polytrauma patient. The care of these types of patients has become a subspecialty within orthopaedics (orthopaedic traumatologist). Drs. John Sontich and Brendan Patterson are “super-specialists” available to care for these complex injuries.

The orthopaedic clinic provides continued care once patients are released from the hospital. Drs. Shaer, Sontich, Patterson, and James Boniface provide follow-up care with the help of a multidisciplinary team which includes physician assistants, a nurse practitioner and others.

Kevin's Story

“Kevin’s case highlights the lifesaving skills found at a Level I trauma center, such as St. E’s, and underscores the importance of having a dedicated trauma team, including trauma surgeons, on staff at all times,” said Dr. Dunham. “We are ready for virtually anything that comes through the emergency department door at any time day or night.”

SURGICAL SUITES

State of the art operating suites are designed for the patient with multiple injuries. There is a surgical suite, as well as anesthesia staff, available to the trauma patient 24 hours a day, 7 days a week, and 365 days a year. During the year, there were 718 patients went to the operating room.

SURGICAL INTENSIVE CARE UNIT

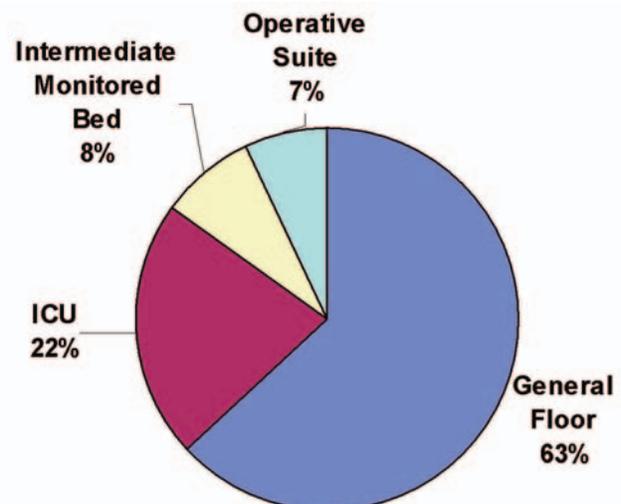
The need for critical care services has increased over the past 10 years. SEHC has a dedicated SICU staff with 24/7 surgical coverage, allowing for immediate care of the critically injured patient. The surgical intensive care unit has a total of 12 beds, two of which are dedicated to pediatric trauma patients. In 2008, more than 400 patients were admitted to the intensive care unit.

Kevin's Story

When Kevin woke up after being shot, it was February 3. “They had kept me in a medicated coma for more than a month because I was in such intense pain,” he explains. “When I came to, there were tubes everywhere, and I couldn’t walk or talk or do much of anything.”

ADMITTED TRAUMA PATIENTS DISTRIBUTION

In 2008, patients were admitted to the following areas from the emergency department.



REHABILITATION UNIT

The acute rehabilitation unit at SEHC is a 28-bed unit that provides services up to seven days a week to individuals with complex rehabilitation needs. Following their acute hospitalization, 170 trauma patients were admitted to the rehabilitation unit prior to transitioning home.

Physical Therapy helps with mobility, balance, and safe transfer skills. Treatments are scheduled twice daily, and consist of exercise to gain strength and restore muscle function, and ambulation to improve balance and gait.

Occupational Therapy helps to develop skills in self-care, homemaking, recreation, school and work.

Speech/Language Therapy assists with speech, language, memory, thinking and swallowing disorders.

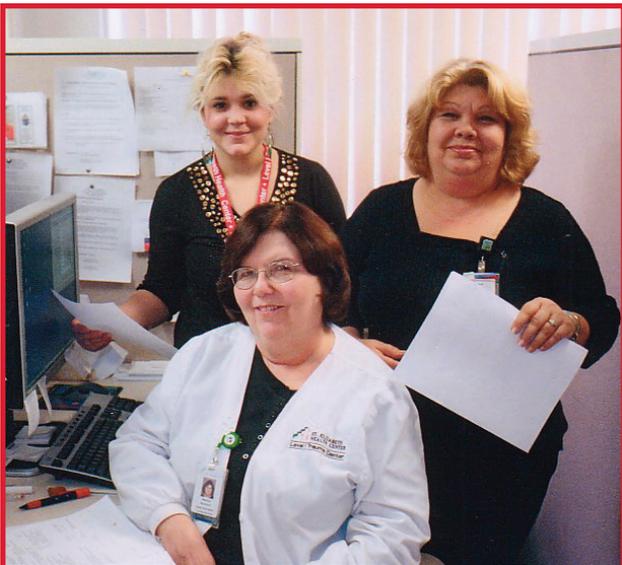
Recreational Therapy develops strength in social, emotional, and physical skills. This therapy helps with communication of thoughts, feelings and also develops self-awareness.

Kevin's Story

Before he was able to return to military work, Kevin logged in many hours of physical therapy. And before that, he left his recovery in the hands of the SEHC experts, who stabilized him in the emergency department, performed surgery, kept vigil over him in the intensive care unit, and brought back the use of his body in the rehabilitation department.

"The people at St. E's are so kind," says his mother. "I'd call at midnight sometimes and they acted as if I was no bother at all. I went to the hospital every day for three months. It felt like I worked there."

TRAUMA REGISTRY



Trauma services maintains a complex database of all information gathered during the treatment of each trauma patient. The registry contains data on demographics, mechanism, pre-hospital care, emergency department, inpatient care, performance improvement issues, and outcome information.

Information from this database enables staff to pinpoint areas that need to be improved in the medical process and facility; identify system-related, provider-related and disease-related issues that can be addressed.

Injury Severity Score (ISS)

It is an anatomical scoring system to provide an overall score for trauma patients. The injury severity score is the sum of squares of the three highest abbreviated injury scale scores for injuries to different body regions (head/neck, face, thorax, abdomen, and pelvic content, extremities, and external). ISS takes values from 1 to 75, 1 being a minor injury and 75 being a lethal injury.

Glasgow Coma Scale (GCS)

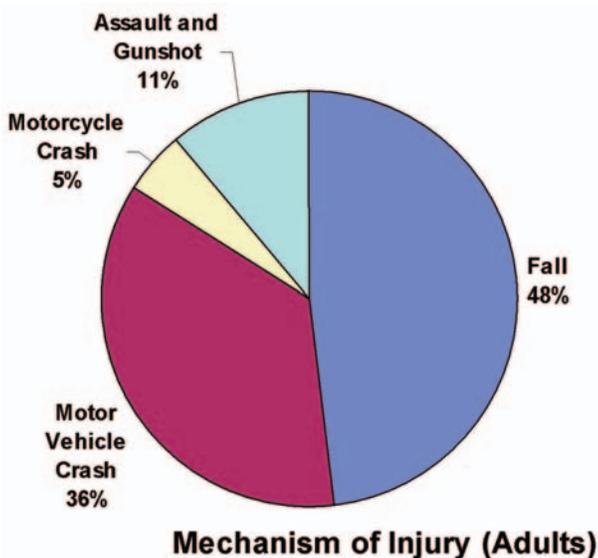
It is a standard measure used to quantify level of consciousness in head injury patients. It is composed of three parameters: best eye response, best verbal response, and best motor response. The lowest GCS total would be a 3 and the best score would be 15.

Kevin's Story

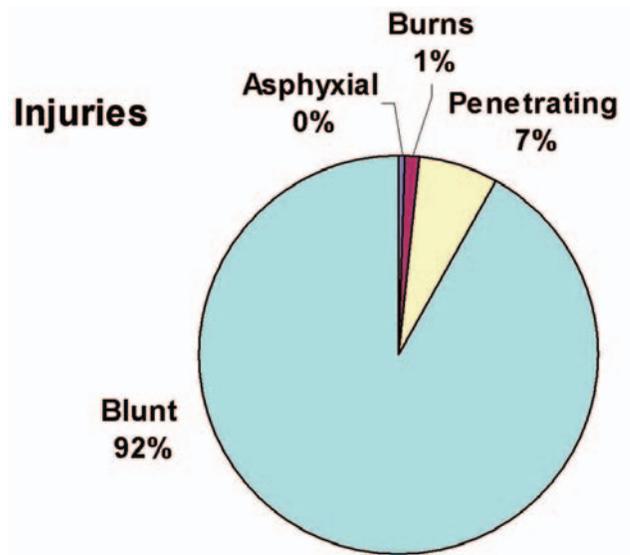
According to Dr. Dunham, Kevin's injuries were well above what is considered severe, based on the Injury Severity Score, an established medical scoring system that assesses trauma severity on a scale of 1 to 75 and is used as a predictor of mortality. "Anything above 15 is considered severe, and Kevin's score was 51," he says. "He truly is a miracle patient."

MECHANISM OF INJURY

Most common Mechanism of Injury for the adult trauma patients seen in 2008 were:



Taking all trauma patients into consideration, their injuries were:

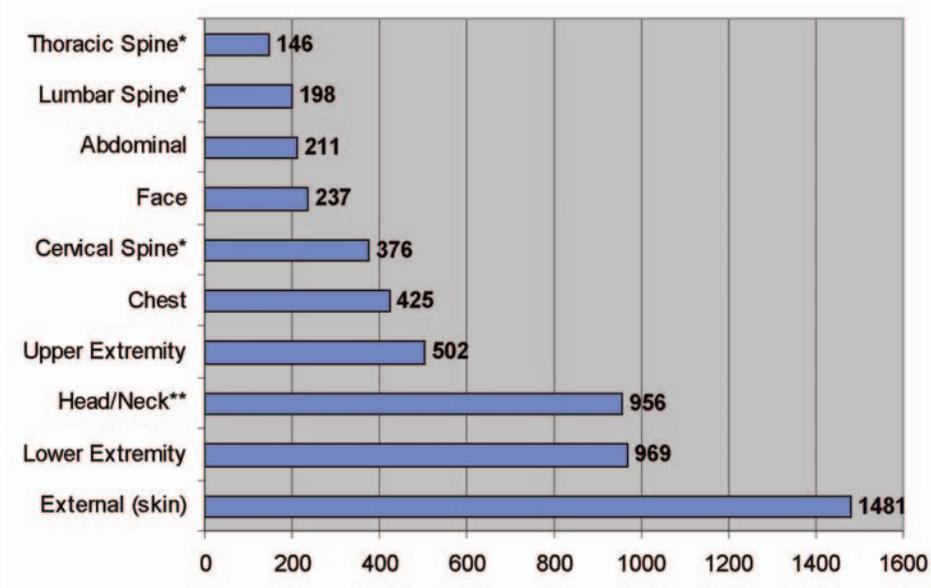


Penetrating trauma is an injury that pierces the skin (such as a bullet or knife).

Blunt trauma is caused to a body part by impact, injury or physical attack that does not penetrate the skin (such as a steering wheel impact in a car crash).

INJURIES BY BODY REGION

5501 Body Regions were evaluated.

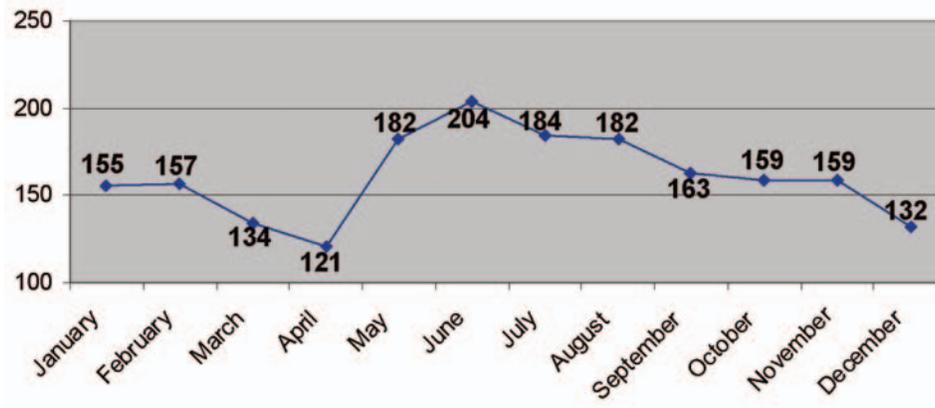


* includes sprains and strain

** includes concussion

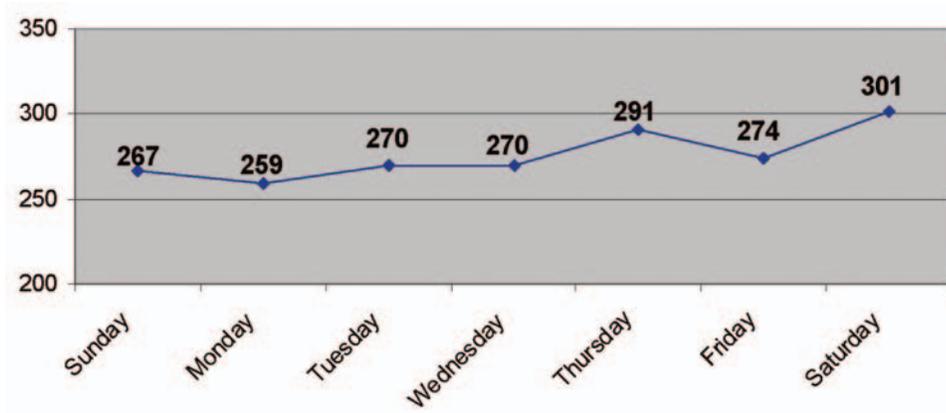
TRAUMA ADMITS BY MONTH

Trauma admissions were higher in the warmer months, with a peak in June.



TRAUMA ADMITS BY DAY OF THE WEEK

Saturdays were the busiest day of the week at the Trauma Center.

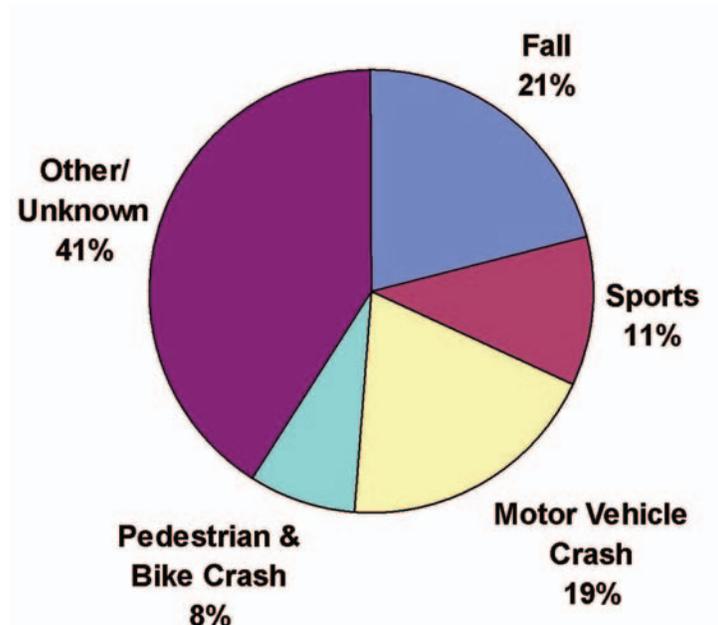


SPECIAL POPULATIONS

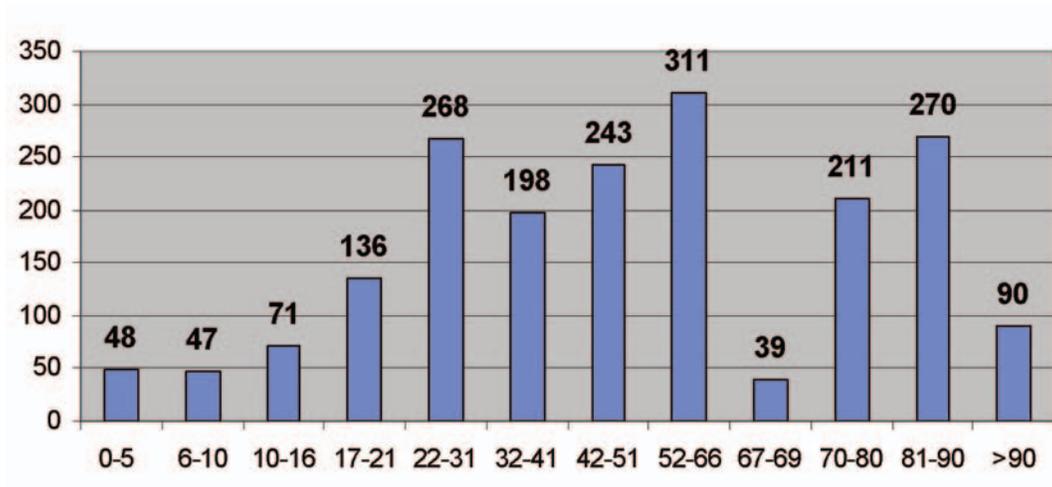
Special populations react uniquely to a traumatic event. Pediatric patients are not just “little adults.” There are important differences in the assessment of the traumatically injured child.

Pediatric Trauma (<=16 years of age)

10% of all Trauma Patients are classified as pediatric.



TRAUMA PATIENTS BY AGE GROUP

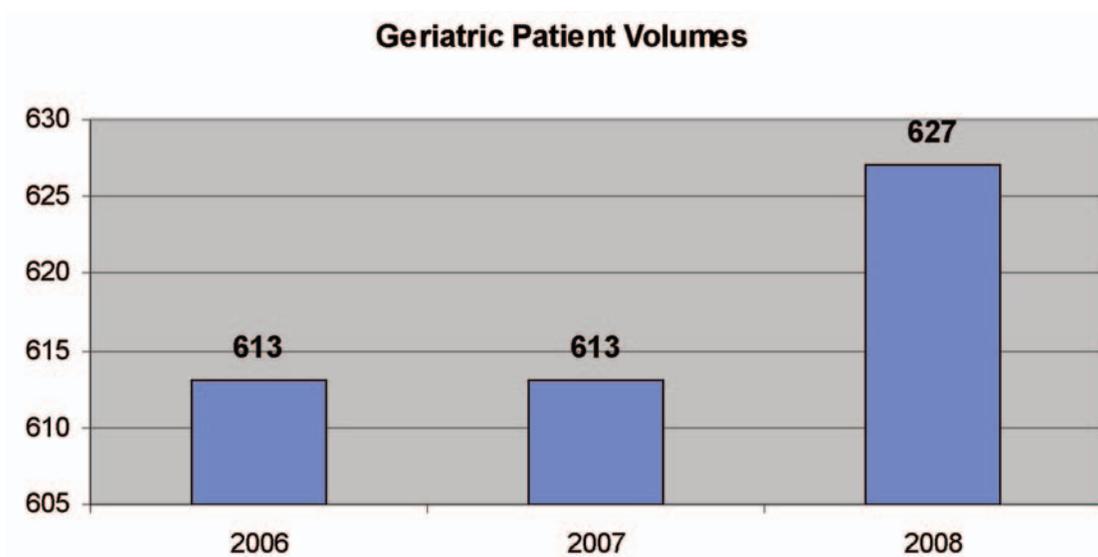


GERIATRIC TRAUMA

The geriatric population locally, as well as nationally, has increased over the years. The US Census Bureau reported nationally the geriatric population represents 12% of the total population. The Mahoning Valley is made up of 17% geriatrics. Through scientific and statistical analysis of the Ohio Trauma Registry data, the state EMS committee found a need for specific geriatric criteria regarding the care of these individuals. This population has a broad spectrum of injury patterns and a higher mortality from similar injuries. They are also challenged by multiple pre-existing medical conditions that affect their trauma care.

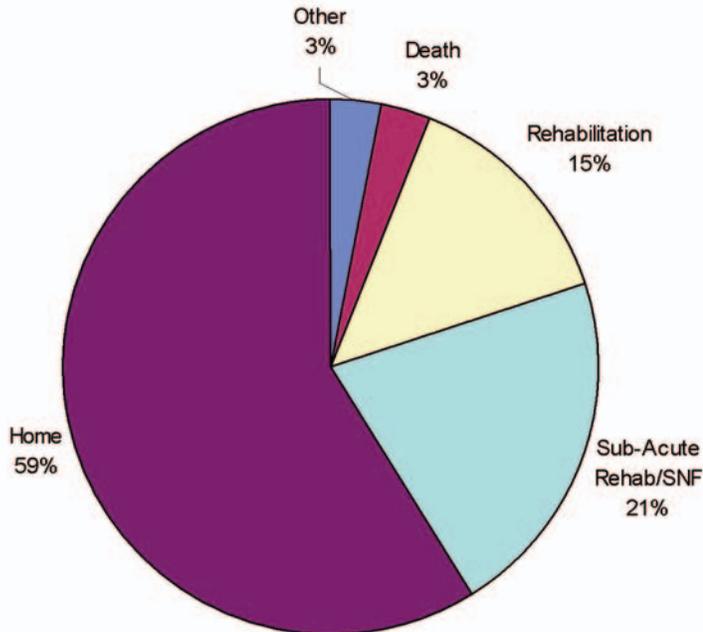
Effective December of 2008, the state EMS committee published pre-hospital guidelines for patients greater than 70 years old. These guidelines demonstrate when a trauma patient should be transported directly to a trauma center for treatment.

Comparing 2006 to 2008 there has been a 2% increase in geriatric trauma patients.



To provide ongoing care to trauma patients, the trauma surgeons and advanced practice nurses provide follow-up care at the Ambulatory Care Center at St. Elizabeth Health Center. This provides continuity of care and allows the patient and family to return to a familiar setting for outpatient treatment, which may include post-discharge wound care, medications or other services as needed.

Discharge Disposition



Our patient survival exceeds the national average – 3% of traumas result in death rather than 4.4% as reported by the National Trauma Data Bank®.

Kevin's Story

Miraculously, Kevin walked out of the hospital on his own two feet on March 23, the day after his mother's birthday. "At first I couldn't run or do pushups," he says. "But now I jog two miles at a time three days a week. I can do pretty much anything except for pushups."

Thanks to his care at SEHC, Kevin is back with the army, currently working in the Pentagon in Washington, D.C., for the U.S. Army Observation Group. "We send troops on peace-keeping missions, and I'm in charge of supplies," he says. "I like my job a whole lot."

INJURY PREVENTION AND COMMUNITY OUTREACH

While traumatic injury continues to occur in the community, the good news is that education does make a difference. One injury prevention program constantly targets the teen population in our five county area. The S.A.V.E. Program (Students Against Violence Education) takes at-risk teens and exposes them to the workings of the Level I Trauma Center, touring the trauma bay, intensive care area, and the morgue. The goal is to make them aware of the ramifications of making “wrong choices” and the eventual outcome.

We also work with other community agencies and organizations, such as the Victim Impact Panel held in Canfield every month.



M. Ben Melnykovich, RN, presents a graphic 45 minute program on impaired drivers to those who are court mandated to attend. This is done in cooperation with the local MADD chapter and the Mahoning County Sheriff’s office. Pre-prom activities are key in reaching teens before a fatal event occurs. Various pre-prom assemblies, programs and mock crash presentations are a few of the strategies employed to achieve this goal.



The Injury Prevention program cooperates on many of these events with the Mahoning County Safe Communities Coalition, as well as a variety of local EMS, fire and police agencies. We recently released a program to local school districts regarding gun safety and will continue to develop this throughout the year. Since “falls” rate as our number one mechanism of injury, we plan to implement a Falls Prevention program for the elderly in our community. Falls among the senior population have devastating effects on them and major consequences for the health care system. We anticipate positively affecting this problem with our new program.

We also participate and attend a variety of health fairs and exhibitions with trauma prevention information for the general public.

SEHC is responsible for providing regional leadership on trauma prevention and professional education. The Trauma Center offers many educational programs for both healthcare professionals and the community, including:

- Quarterly EMS Trauma Run Review – targeted education for EMS/Fire providers
- Advanced Trauma Life Support (ATLS) courses – trauma care updates for physicians
- Trauma Nursing Core Courses (TNCC) – continuing trauma education for nurses
- Emergency Nursing Pediatric Course (ENPC) – enhanced pediatric care for emergency nurses
- ENCARE – trauma nurses helping teens understand the dangers of alcohol use
- Trauma Nurses Talk Tough – program for alcohol, drug, and auto safety for all ages
- The Eddie Eagle Program – Gun safety for elementary school children

In 2008 the Orthopaedic Trauma Research Department expanded to encompass all of Trauma, including Trauma Nursing. Throughout 2008, thirty-nine projects were undertaken. Five projects were funded:

- Two Ohio Department of Public Safety (ODPS) EMS grants (2007-2008 and 2008-2009)
- Stryker Gamma3 Post-Market Study
- American Legacy Foundation program evaluation
- Ohio Tobacco Prevention Foundation (OTPF)

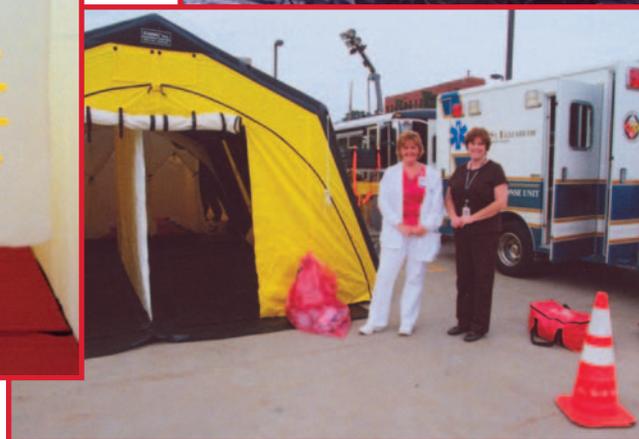
Other projects included twenty-five studies and nine case reports. Multiple studies were presented at national meetings such as the American Academy of Orthopaedic Surgeons (AAOS) and Orthopaedic Trauma Association. The trauma nurses also play an important part in research. They also had one poster accepted for presentation at the Northeastern Ohio Regional Trauma Network (NORTN) meeting.

DISASTER PREPAREDNESS

Trauma Service plays a vital role in disaster preparedness. In 2008, major initiatives included a total revision and enhancement of the Disaster Plan to incorporate an all hazards approach.

SEHC has worked with local public and private entities to establish mutual aid agreements of understanding (MOU's) for obtaining disaster support, supplies and equipment. SEHC also has established a collaborative and functional working relationship with the Mahoning and Trumbull County Emergency Management Agencies (EMA) for disaster response support. We conduct several exercises per year and participate with other area hospitals as a region.

Finally, SEHC staff continues to receive additional training for the decontamination process and weapons of mass destruction education.



Kevin's Story

Kevin's rescue from death – at the hands of SEHC's trauma team – was incredible enough. But another amazing aspect of the situation lies in the patient's 16-year military background. A Sergeant 1st Class, he has served the United States Army in Panama and Germany, as well as twice in Iraq, where he last served a 12-month tour of duty from March '04 to March '05.

According to Kevin, the two scariest moments of his military career took place in Iraq.

"We were on convoy missions transporting military supplies," he says. "One time we had to drive ammunition through Baghdad in the middle of the night, and during another convoy mission, our lead vehicle got blown up. That was pretty scary. But nothing prepared me for being shot eight times."

The McDonalds received much support from the Youngstown community. "We go to McGuffey Church of Christ in Youngstown, and they've been supportive big time," says Kevin. "My high school friends have been great too. This experience taught me to never take anything for granted. You should live life to the fullest because you never know what might happen."

Whenever he is in town, Kevin visits the SEHC staff. "I like to go see Diane Kupensky, Laurie Flowers, Dr. Dunham and all the others who helped me," he says.

His mother adds, "Between Dr. Dunham and God, Kevin is walking around. If ever there was a miracle, Kevin is it."



Thank you to Ann Gallagher, APR, for writing Kevin's story and allowing us to share it with you.