2010 Trauma Report

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Trauma Service: Clinical and Injury Prevention team

To the Greater Cincinnati Community...

The Cincinnati Children's Hospital Medical Center Trauma Service is one of the largest children's hospital based trauma services and arguably the leader in improving the care for injured children; from prevention to complete recovery. As we move forward in our quest to eliminate injury as the leading cause of death for children and to be the leader in improving the care of the injured child, we continue to explore unique ways to improve trauma care across all dimensions of traditional care silos.

The leadership of Cincinnati Children's Trauma Service appreciates the important contributions made by each individual who prevents or impacts the outcome for an injured child and their family. It remains our overarching goal to facilitate improvement in each of the phases of the continuum of care of the injured child through collaboration, research, prevention, education and advocacy.

This institution's experience with traumatic injuries and many of our exciting initiatives and research efforts are outlined in this report. The report recognizes that traumatic injury remains the most common cause of preventable death and disability among children and adolescents. While acknowledging this fact, Cincinnati Children's Trauma Service remains dedicated to continuing to improve the outcome for injured children through innovative and cutting edge approaches.

Richard A. Falcone, Jr, MD, MPH
Director, Trauma Service

"If you do what you've always done, you're gonna get what you always got." Yogi Berra

Although we wish no family would ever need the care provided by our trauma team, we need to be prepared to care for a child and their family following serious life threatening injuries.

A leader, visionary and friend steps down

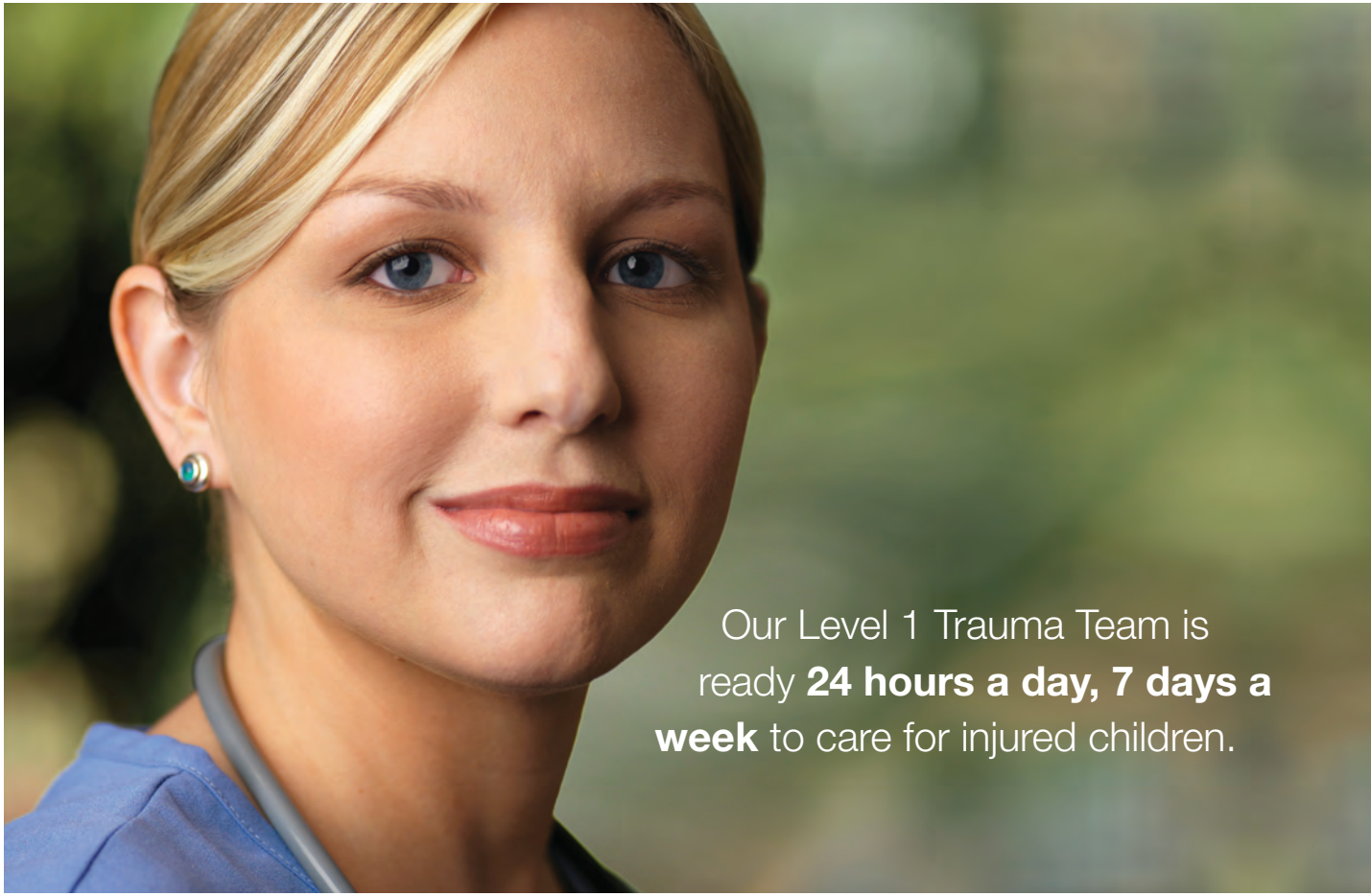
In July 2009, Dr. Victor F. Garcia, our founding director stepped down from his role as the leader of our Trauma Service. Under his leadership, Cincinnati Children's Trauma Services was one of the first to develop and consistently implement and improve the efficacy of evidence based guidelines for the management of pediatric injuries, develop a practice pattern employing nurse practitioners to improve care, support the development of a trauma core nursing group to enhance experience and therefore quality of care provided, and utilize high fidelity team training to reduce errors and improve safety. These innovative initiatives have been recognized by the American College of Surgeons and have resulted in quantified improvement in patient clinical outcomes, shorter lengths of hospital stay, lower mortality rates, decrease in health care costs and reduced errors.

Although the directorship has transitioned to Richard A. Falcone, Jr, MD, MPH, the remarkable foundation and exceptional trauma program developed by Dr. Garcia will remain an example of his undying commitment to eliminating injury as the leading cause of morbidity and mortality for children. In addition to all of the important clinical initiatives, Dr. Garcia's vision in the area of injury prevention has led to the implementation and success of several unique prevention initiatives. Examples of some of these initiatives are elaborated on in this report and include the African American and Hispanic Youth Injury Prevention programs. Fortunately Dr. Garcia will remain an integral part of our trauma program, continuing to be an invaluable resource to the persistent growth of our program.

The trauma program developed under Dr. Garcia's leadership has become the benchmark for Level I pediatric trauma centers across the nation and the world and countless children have and will benefit as a result of his vision, determination, and compassion.

We Know How To Treat Kids

The foundation of our Level I Trauma Center is the multidisciplinary team of specialty-trained healthcare experts, which includes trauma surgery, emergency medicine, orthopaedics, neurosurgery, rehabilitation, radiology and anesthesia, as well as nurses, social workers, child life specialists and chaplains.



Award Winning Care

Magnet Recognition

Cincinnati Children's has been awarded the coveted Magnet designation, the highest distinction for nursing excellence given by the American Nurses Credentialing Center, an arm of the American Nurses Association.

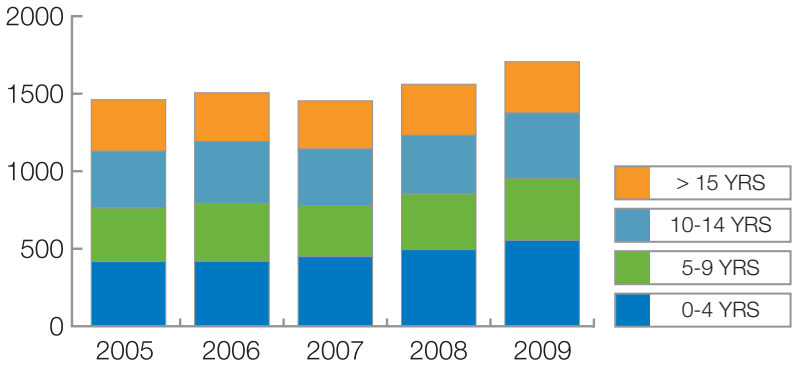
McKesson Quest for Quality

Cincinnati Children's received the 2006 American Hospital Association McKesson Quest for Quality Prize. This prestigious award is presented to an organization that demonstrates commitment to achieving the Institute of Medicine's six quality aims — safety, patient-centeredness, effectiveness, efficiency, timeliness and equity.

Leapfrog Group's "Top Hospitals"

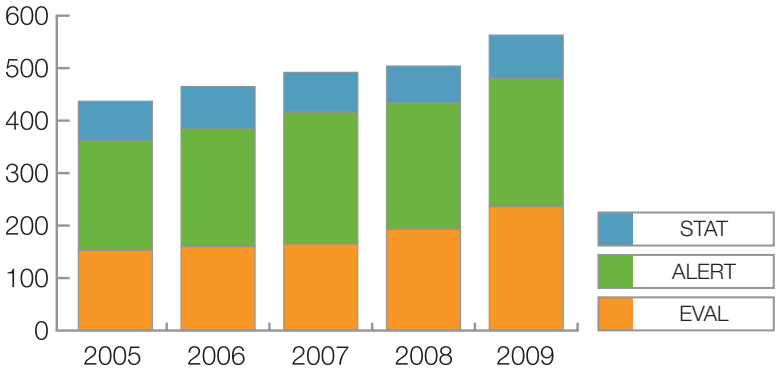
Cincinnati Children's is one of seven pediatric institutions and 33 hospitals of any kind in the nation to be named one of Leapfrog Group's 2008 "Top Hospitals". The Leapfrog Group considers the survey to be the nation's premier hospital patient safety evaluation tool.

Number of Trauma Patients Per Year



- Cincinnati Children's injury admissions have increased over 14% since 2005. Most of the increase is within the 0-4 age group.

Resuscitation Level by Year



There are three levels of trauma resuscitation team activations: Trauma Stat (most severe injuries), Trauma Alert (moderate injuries) and Trauma Evaluation (mild injuries with potential for deterioration).

- There has been a steady increase in the number of trauma team activations over the past 5 years.

Patient Definition:

All children admitted for treatment of injuries (including 23 hour observation), trauma resuscitation, and injured children who die in the Emergency Department.
For additional data, contact 513-636-3617.

Trauma Core Resuscitation Nurses (TCRN)

In 2005 a Trauma Core Resuscitation Nurse (TCRN) team was created to improve the consistency of trauma care from the resuscitation bay in the Emergency Department to the patients requiring admission. The unique team is comprised of registered nurses, all with a passion for the care of the injured patient. These highly motivated nurses have committed themselves to additional training, above their regular nursing staff requirements. These nurses advance their trauma knowledge by attending approximately 8 classes annually utilizing the high fidelity simulator, monthly trauma conferences, and didactic courses such as Advanced Trauma Life Support and Trauma Nurse Core Course.

Trauma Core Resuscitation Nurse (TCRN) team was created to improve the consistency of trauma care from the resuscitation bay to the admitted patient.

On a daily basis around-the-clock, 2 TCRNs are present to address the needs of the injured child. Both respond to every trauma resuscitation in the Emergency Department, performing as a nursing team leader or providing direct patient care. After leaving the Emergency Department, one TRCN collaborates with the Trauma Nurse Practitioner to facilitate the inpatient's plan of care, which also includes providing family education in preparation for the patient's discharge.

Besides clinical care, the TRCN actively participates in clinical and injury prevention research. In 2009, the TRCN team presented their award winning poster on passenger safety at a national trauma conference.

Ryan's determination and intense therapy allowed him to walk out of the hospital.

Ryan's Story

Life can change in an instant. On a beautiful Sunday in September 2008, 12-year-old Ryan Korengel went golfing with his friends. That evening, Ryan was having brain surgery at Cincinnati Children's. Part of his skull had been crushed and he was fighting for his life due to a sudden, unexpected and severe windstorm that hit the Ohio Valley.

Paramedics rushed Ryan to Cincinnati Children's, where the 18 member trauma team was ready and waiting for him to arrive. The team worked quickly and expertly to assess Ryan's injury and prepare him for his emergency trip to the operating room. His parents, Shelly and Don Koregal, were by his side the entire time.

"Cincinnati Children's was amazing" says Shelly. "Within minutes of his arrival, Ryan was prepped for surgery". The impact had shattered the right side of Ryan's skull, damaging about two thirds of the right side of his brain and coming within a millimeter of hitting his carotid artery. Pieces of Ryan's skull had crushed into his brain, tearing tissues and blood vessels. It was possible he could die before the night was through.

A Team Approach, Personalized Care

The skilled operating room team worked for five hours to save Ryan and stop the bleeding. During the operation, Todd Maugans, MD, a pediatric neurosurgeon, removed pieces of Ryan's skull, giving his brain room to swell after surgery. If this was not done, the brain would expand against the skull, and with nowhere to go, cause death.

Over the next few days, everyone waited for Ryan's vital signs to stabilize. Ryan's parents and 16-year-old sister, Megan, stayed with him by his bedside in the ICU, watching all the different monitors and machines hooked up to Ryan.

Richard Falcone, MD, director of Trauma Services, is quick to credit the entire team at Cincinnati Children's with Ryan's survival and continued recovery. "Ryan's case is an example of everything coming together to optimize an outcome", says Dr. Falcone. "No one person is responsible – a team approach and having everyone immediately available, is what saved Ryan's life."

In order to provide the highest quality of care, Cincinnati Children's takes a multidisciplinary approach to care, bringing together experts from multiple areas to provide the best possible care for patients. The trauma team is no exception. Trauma patients are cared for by a wide range of experts including emergency room physicians, trauma core nurses and other nurses throughout the hospital, orthopedic and neurosurgeons, a

highly skilled intensive care unit team, an expert operating room team, and the leadership of pediatric trauma surgeons. As the only Level I pediatric trauma center in the Tristate, Cincinnati Children's offers the most comprehensive care available to patients like Ryan.

Journey to Recovery Continues

Don and Shelly soon began to see proof that their Ryan – a sweet, funny kid who loves sports of all kinds – was trying to come back to them. Ryan had begun to move his hands and they quickly realized that he was spelling words to them. He began giving doctors thumbs-up in answer to questions, and he began writing to communicate. After a week in intensive care, Ryan had stabilized to the point where he was no longer considered critical. On Ryan's 11th day in the hospital, he was discharged from the ICU and into the Rehabilitation Unit at Cincinnati Children's, located at the main hospital.

Ryan embarked upon an intense schedule of physical, speech and occupational therapy to relearn basic skills – how to swallow and eat, how to keep his balance, move around, how to process and retain information, how to speak. For 49 days, a team of therapists worked with Ryan from 7 am to 5 pm six days a week to help him get strong and relearn skills that his body had forgotten.

The intensity of therapy, coupled with Ryan's determination, has served Ryan well. He told everyone that he would walk out of the hospital. Two months later, he did just that.

A New Ryan

Ryan's and his family's lives have changed. Ryan now has a titanium plate to replace the missing section of his skull and his vision is impaired. He continues to visit Cincinnati Children's on a regular basis, and physical and occupational therapy will remain a big part of his life for the foreseeable future.

Ryan's parents say they are proud of their son and all he has accomplished since his injury. They have chosen to be open about Ryan's physical progress and to freely share his amazing story. "Ryan lives a new kind of normal," says Shelly," and he is 100 percent our Ryan."

Although Ryan's story is one of remarkable success, Trauma Services at Cincinnati Children's is committed to continued improvement and research so that every injured child can have the best possible outcome. "We remain focused on being the leader in improving care for injured children and eliminating injury as the leading cause of death for children," Dr. Falcone says.

Development of the Comprehensive Children's Injury Center

Over the past year Trauma Services, in cooperation with leaders throughout Cincinnati Children's Hospital, has developed a collaborative and multidisciplinary injury center, the Comprehensive Children's Injury Center (CCIC). The CCIC focuses on the entire spectrum of childhood injury, from prevention to rehabilitation. The goals of the CCIC are to:

- Develop and use evidence-based methods to improve the quality and cost-effectiveness of pediatric injury prevention in the community, state and nation.
- Use health services research and improvement science to improve care and optimize outcomes for injured children.
- Develop educational activities to inform public health professionals, health care professionals, and the community in injury prevention and the care of injured children.
- Advocate for improved evidence-informed injury policy at the local, state and national levels and evaluate the impact of changes in injury policy.

By enhancing collaboration among a diverse group of individuals interested in improving the outcome for injured children, the CCIC will significantly improve the impact Cincinnati Children's can have on children's health within our community and beyond. Although the vision of the center is to impact all injured children the leadership of the center has decided to focus on the significant problem of pediatric traumatic brain injury (TBI) as our first initiative.

TBI impacts children of all ages and range from mild injuries to severe injuries associated with significant morbidity. Following a productive retreat comprised of a multi-disciplinary group of those involved in TBI care, prevention and advocacy the following priorities have been developed:

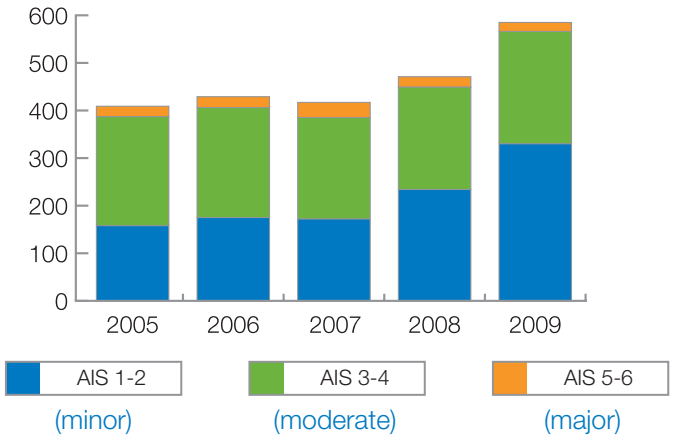
- Defining and measuring the outcomes we hope to impact
- Working to standardize TBI care across Cincinnati Children's
- Improving our systems for collecting data and maintaining a TBI patient registry
- Improving care coordination
- Establishing a TBI education and training program for clinicians and community members,
- Establishing a research agenda for traumatic brain injury.

It is anticipated that over the coming years the CCIC at Cincinnati Children's will not only significantly impact injury care in our community but will become a model utilized by other children's hospitals to improve care throughout the nation and the world.

Comprehensive Children's Injury Center

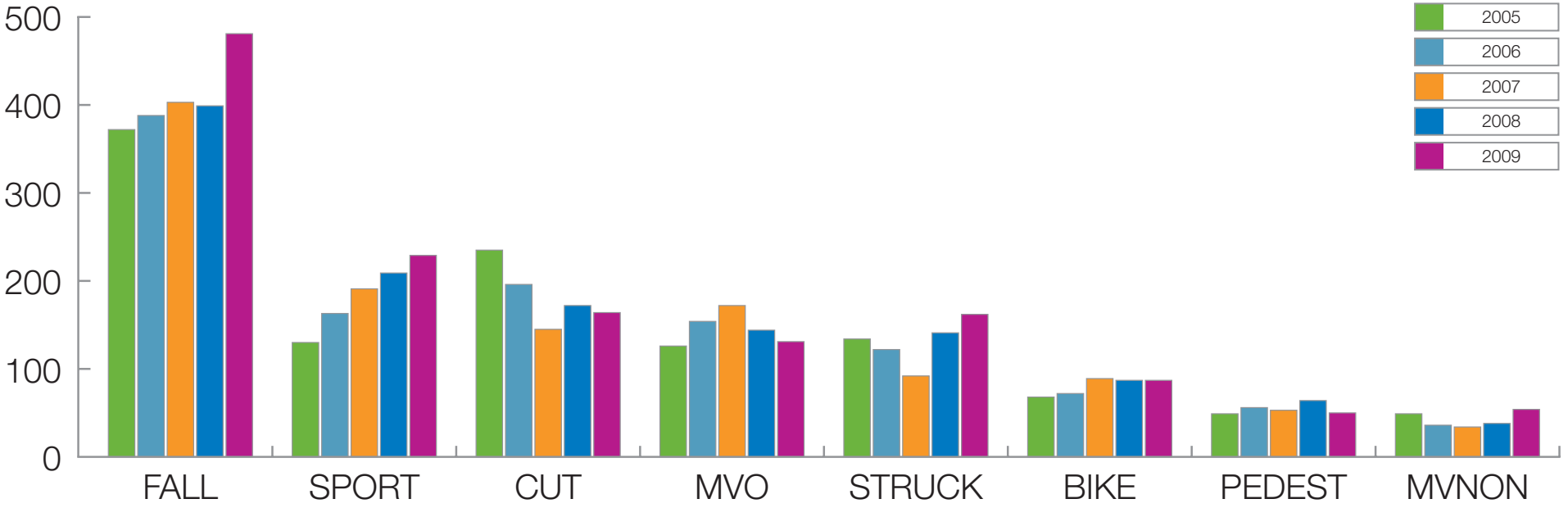
- Health Policy
- Government Affairs
- Community Relations
- Drug and Poison Information Center
- Bioinformatics
- General Pediatrics & Community Outreach
- SafeKids
- Sports Medicine
- Emergency Medicine
- Mayerson Center
- EMS & Transport
- Injury Free Coalition
- Center for Simulation and Research
- Trauma Program
- Rehab Medicine
- Hamilton County Public Health
- Development
- Marketing

Head Injury AIS Groups



- For children, national statistics indicate there are 400,000 traumatic brain injury (TBI) Emergency Department visits, with 37,000 hospitalizations and 2,500 deaths a year
- Survivors may have long term sequelae
- TBI admissions to Cincinnati Children's have continued to increase and now reach nearly 600 children a year

Leading Cause of Injury



- Falls remain the leading cause of childhood injury; fortunately, overall mortality for falls is quite low.
- Sports injuries continue to steadily increase each year, accounting for a 43% increase since 2005.

Note: **MVO** = Motor vehicle occupant
MVNON = Motor vehicle non traffic (ex: ATV, go-carts)

"Injuries to children can be devastating not only to the child but to the entire family. It remains our goal to reduce injuries through prevention and improve outcomes for children and their families following unfortunate injuries"

Richard A. Falcone, Jr, MD, MPH
Director Trauma Service

Clinical Care

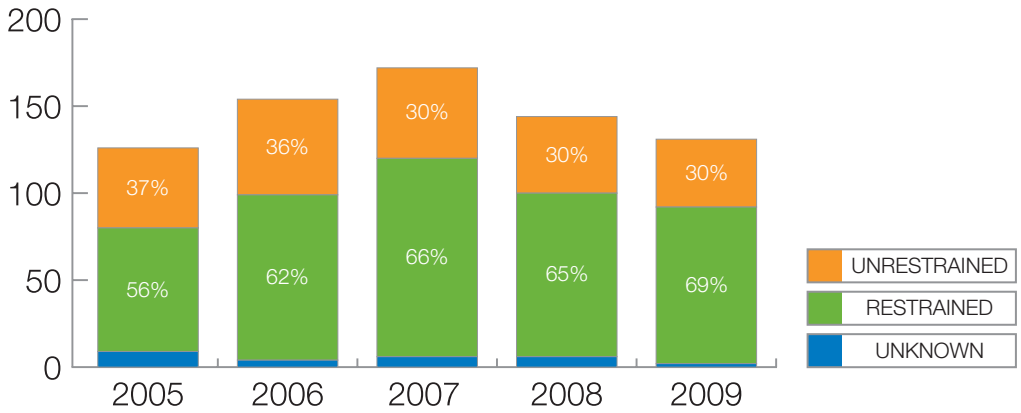
The Trauma Service at Cincinnati Children's is a multidisciplinary team of pediatric surgeons, nurse practitioners, core trauma nurses, trauma registrars, injury prevention coordinators, researchers, and support staff who work together to care for children who have suffered mild to severe injuries. In collaboration with the Pediatric Surgeons, comprehensive care is provided by the Trauma Nurse Practitioners over the course of the hospitalization and in the outpatient Trauma Clinic to optimize outcomes specific to the patient and the family's physical, emotional, and financial needs. Communication and care coordination with the patient/family, health care team, and specialty services are crucial in achieving these outcomes.

Accomplishments

- Development and implementation of child abuse screening guidelines to successfully decrease health disparities
- Development of massive blood transfusion guidelines to standardize safe, rapid preparation and delivery of blood products and coagulation factors
- Documented safe and efficient cervical spine clearance in the Trauma NP Clinic
- Development and implementation of a mild/moderate head injury guideline to promote consistent and efficient care and significantly improve the care of these children by decreasing excess radiation exposure and length of hospital stay
- Increased access to timely and convenient follow-up in Trauma NP Clinic Monday through Fridays

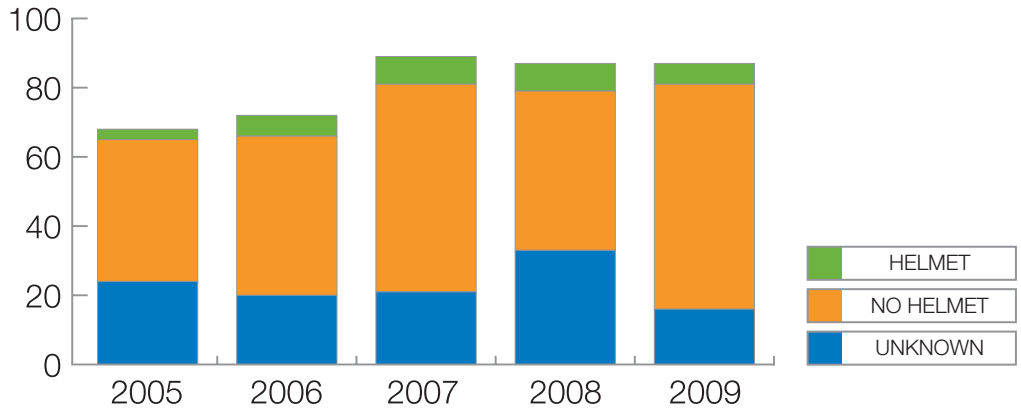
To contact the Trauma Nurse Practitioner or to arrange a Trauma Clinic appointment call 513-636-8556.

Number of Restrained Children in Motor Vehicle Collisions



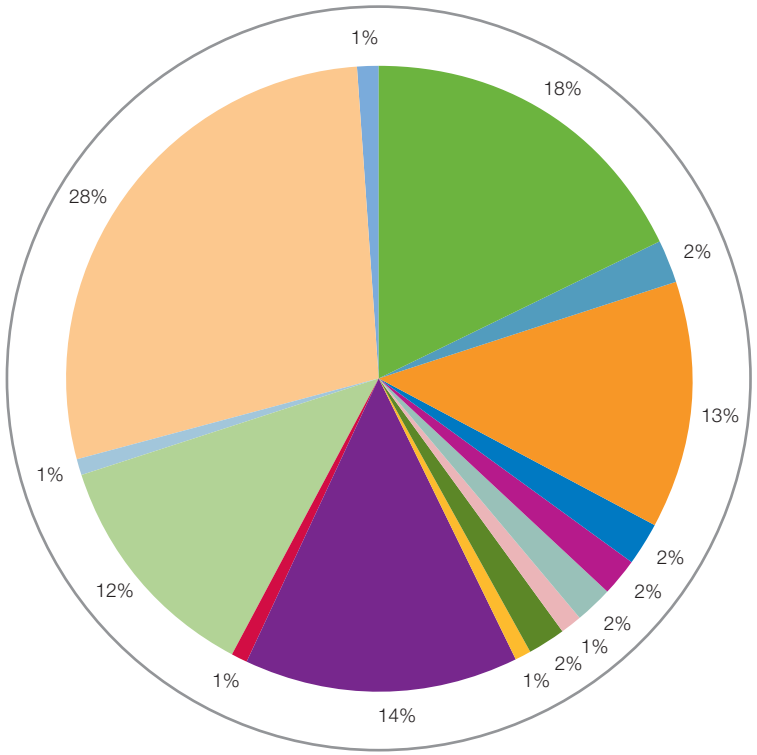
- Of the 727 children involved in car crashes over the past 5 years, only 64% were restrained, which was an increase from the previous 5 year data (2000-2004) which indicated 52% were restrained.
- The number of children admitted from car crashes peaked in 2007; with the percentage of unrestrained passengers remaining constant since 2006.

Helmet Usage



Despite the fact that helmets reduce the risk of brain injury by 85%, helmet usage remains extremely low for those children admitted after a bicycle accident.

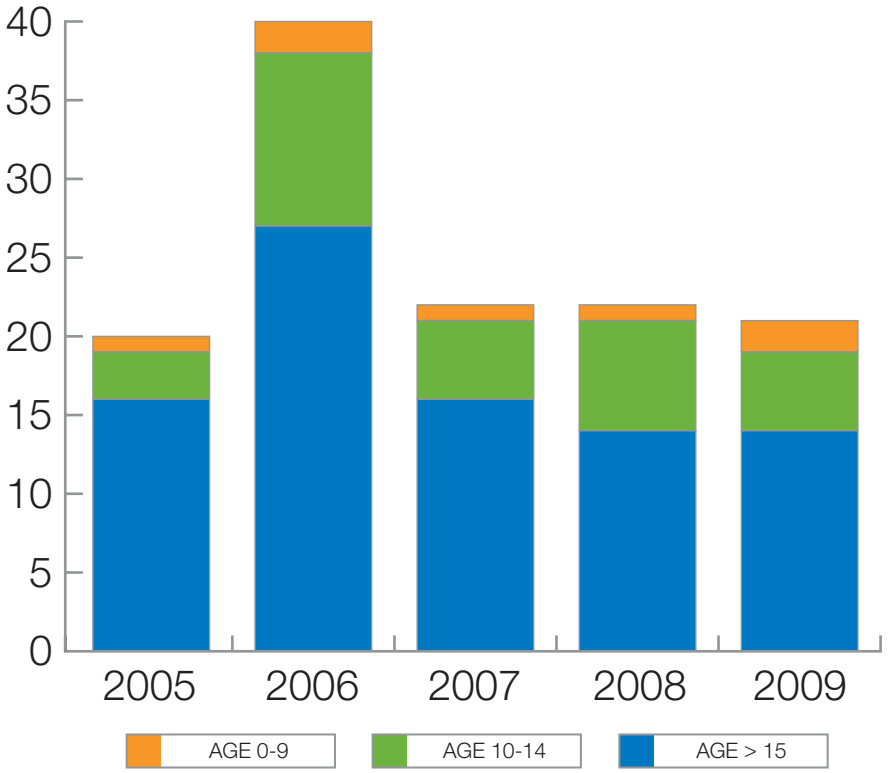
Deaths: Five Year Analysis



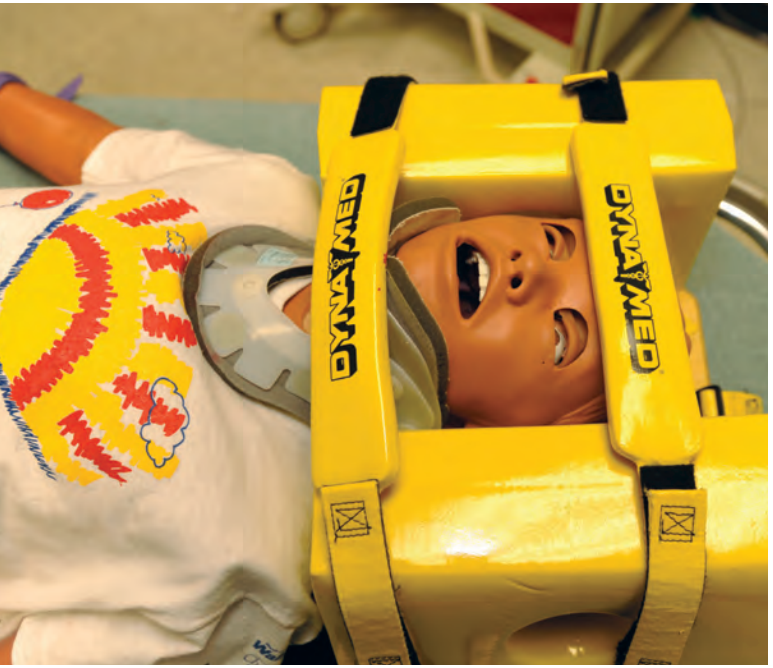
ABUSE	FIRE/FLAME	OTHER
BICYCLE	HOTSCALD/BURN	PEDESTRIAN
DROWN	MOTORCYCLE/MOPED	STRUCK
FALL	MVNON	SUFFOCATION
FIREARM	MVO	UNKNOWN

- The overall mortality rate remains low at 1.2% (N=94) for all injury related admissions over the past five years.
- Almost half of all deaths are a consequence of suffocation or child abuse.

Firearm Injuries



- The number of children admitted as a result of a firearm injury spiked in 2006 with almost twice the number usually admitted. Changes were noted in both the 10-14 year old population and the greater than 15 year olds.



Human Patient Simulation

Trauma resuscitations at Children's are managed by a complex multidisciplinary team consisting of trauma surgeons, emergency medicine physicians, residents, trauma core nurses, staff nurses, respiratory therapists and other ancillary personnel. This multidisciplinary team is often unfamiliar with each other and must function efficiently and safely in a dynamic and often stressful trauma resuscitation. Beginning in 2005, Trauma Services incorporated high fidelity human patient simulator (HPS) training to enhance team communication, overall quality of care, and patient safety.

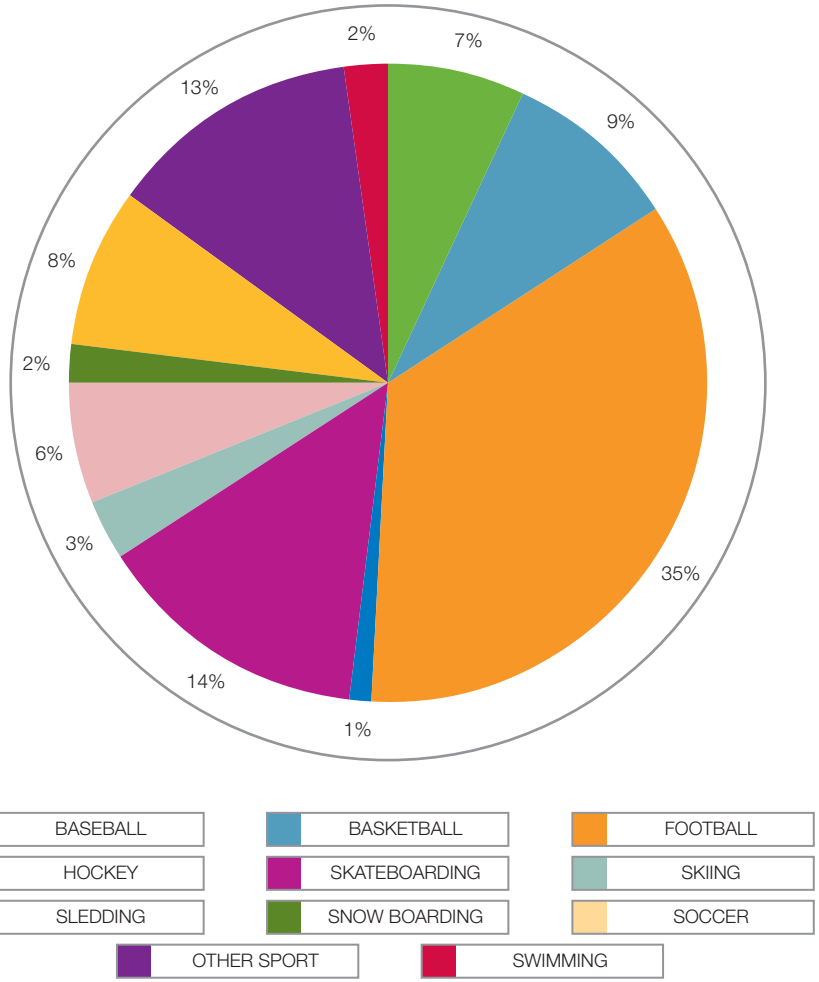
Simulation based training provides a method to improve reliability, teamwork and communication necessary to treat patients in the trauma bay. The high fidelity simulators are capable of exchanging real gasses and producing palpable pulses, audible heart and lung sounds, as well as other physiologic cues such as pupillary response and EKG waveforms. The simulators allow for real-time interventions such as defibrillation and medication delivery and provide a real-time "patient" response from the simulator.

Trauma Services conducts monthly two-hour training sessions with the multidisciplinary team using real trauma case based scenarios previously evaluated and treated at Children's. All members of the team are provided with a core curriculum of teamwork and communication prior to coming to the simulator. The group then participates in 2 trauma scenarios utilizing the HPS. After each scenario, formal debriefing with video review is performed. As a result we have observed both subjective and objective improvements in team performance.

The Trauma Core Resuscitation Nurses also attend quarterly training sessions in addition to the monthly sessions to expand their trauma knowledge as well as enhanced teamwork and communication practices.

The simulation experience combined with traditional teaching has provided a realistic and challenging experience that prepares the trauma team to perform successfully during trauma resuscitations. As a result of our successful program we had the pleasure of having providers from several other institutions come to Cincinnati Children's to participate in our training and to learn how to develop similar programs at their own institutions to provide improved care for injured children beyond Cincinnati.

Sports Injuries



- Sports injuries requiring hospital admission continue to increase, now accounting for 12% of all injury related admissions.
- The most common sports leading to serious injuries are football and skateboarding.

Special Needs

In an effort to address transportation issues of children with special health needs, Trauma Services Injury Prevention Program offers a variety of car seats designed for specific health-related issues. From premature infants with low birth weights to toddlers and teens with broken bones, our comprehensive special needs loaner program provides safe transportation options for children following their stay at Cincinnati Children's. Staff who have received specialized training in assessing and fitting children with special health care needs are available to meet with parents and children to offer transportation options to assure a safe ride home. Parents are required to watch a video about proper installation of car seats, and then assistance with positioning the child into the seat is provided. When the child no longer requires the use of the specialized car seat, it is returned to the hospital for inspection, cleaning and placement back into inventory for the next child to use. In 2009, there were approximately 120 children who benefitted from the loaner program.

Trauma personnel also work cooperatively with other hospital departments to provide similar services for those children who do not require hospitalization for their chronic illness. Often staff from the Occupational/Physical Therapy Departments consults with Trauma personnel about the physical needs of a child and how that might affect their transportation needs. A transportation plan is developed in such a way that all facets of a child's condition are considered. Safety is first and foremost the concern of Cincinnati Children's Injury Prevention Program.

Booster Seats

Following the passage of the Ohio booster seat law, Trauma Services Injury Prevention Program has been working collaboratively with a number of Cincinnati Children's departments, as well as, regional agencies and businesses to enhance awareness among families of the new law and the injury prevention benefits for children using booster seats when traveling.

Trauma Services Injury Prevention Program (IPP) in collaboration with the CCHMC Physician Representatives provided 100 community pediatrician offices, physician offices and all Cincinnati Children's outpatient clinics with a life-sized booster seat posters and booster seat educational materials. The IPP program worked in cooperation with Evenflo to provide these same posters to all 88 counties in Ohio. In addition, thanks to funding provided by Kohl's Cares for Kids, booster seat educational messages were broadcasted on a local radio stations to raise awareness of the new law. Thanks in part to generous support provided by Evenflo, Kohl's Cares for Kids, and the Greater Cincinnati Automobile Dealer Association over 500 booster seats were distributed to families in financial need throughout our community including locations in Adams, Brown, Butler, Clermont, Clinton, Hamilton, Highland and Warren County.

Although we believe the passage of the important booster seat law is an incredible step towards improving safety of children in our state we will continue to monitor the impact of the law on increasing compliance with the use of booster seats and the resulting reduction in injuries.

After several years of advocacy by Cincinnati Children's leaders in Trauma Services, Emergency Medicine and Government Relations along with the support of the entire Cincinnati Children's community, Ohio became the 44th state to pass a booster seat law to protect children from 4-8 years old while traveling in motor vehicles. The law went into effect on October 7, 2009.

St. Mary's Hospital Collaboration

In 2008 Trauma Services developed a partnership with St. Mary's Hospital in Evansville, Indiana in an effort to help improve the quality of care for injured children at this ACS verified Adult Level II trauma center. Under the leadership of Dr. William Milliken, the trauma medical director at St. Mary's, and with the support of their hospital administration they made a commitment to serve their community as a center dedicated to the care of the injured child. Although previously verified as an Adult Level II trauma center with "added qualifications in pediatrics" they sought to be come recognized as a fully verified Pediatric Level II trauma center.

Here at Cincinnati Children's we were impressed by both their enthusiasm and commitment to providing the highest level of care possible to children in their community we happily began a partnership to support their efforts. Over the past two years we have worked closely with the trauma team at St. Mary's to update their management guidelines for pediatric trauma, enhance their education through the use of high fidelity simulation, and actively participate in all of their trauma performance improvement meetings via teleconferencing to provide ongoing feedback and help determine opportunities for improvement. Over this period, as the result of the dedication of the trauma team and administration at St. Mary's and with our support they have reduced the rate of excess imaging of pediatric patients, improved their use of evidence based pediatric trauma management, held their first Pediatric Trauma Symposium and improved the overall care of injured children. They have also recently undergone a comprehensive evaluation by the American College of Surgeons Committee on Trauma and have been successfully recognized as a verified Pediatric Level II Trauma Center. Despite this important accomplishment both trauma services at Cincinnati Children's and St. Mary's are not content with these important achievements and are continuing to work closely to further learn and improve the care of injured children.

It is our belief that collaborative efforts like this significantly improve care for injured children and we are committed to expanding this model of collaboration to other centers that are interested and committed to a partnership centered on continual improvement.

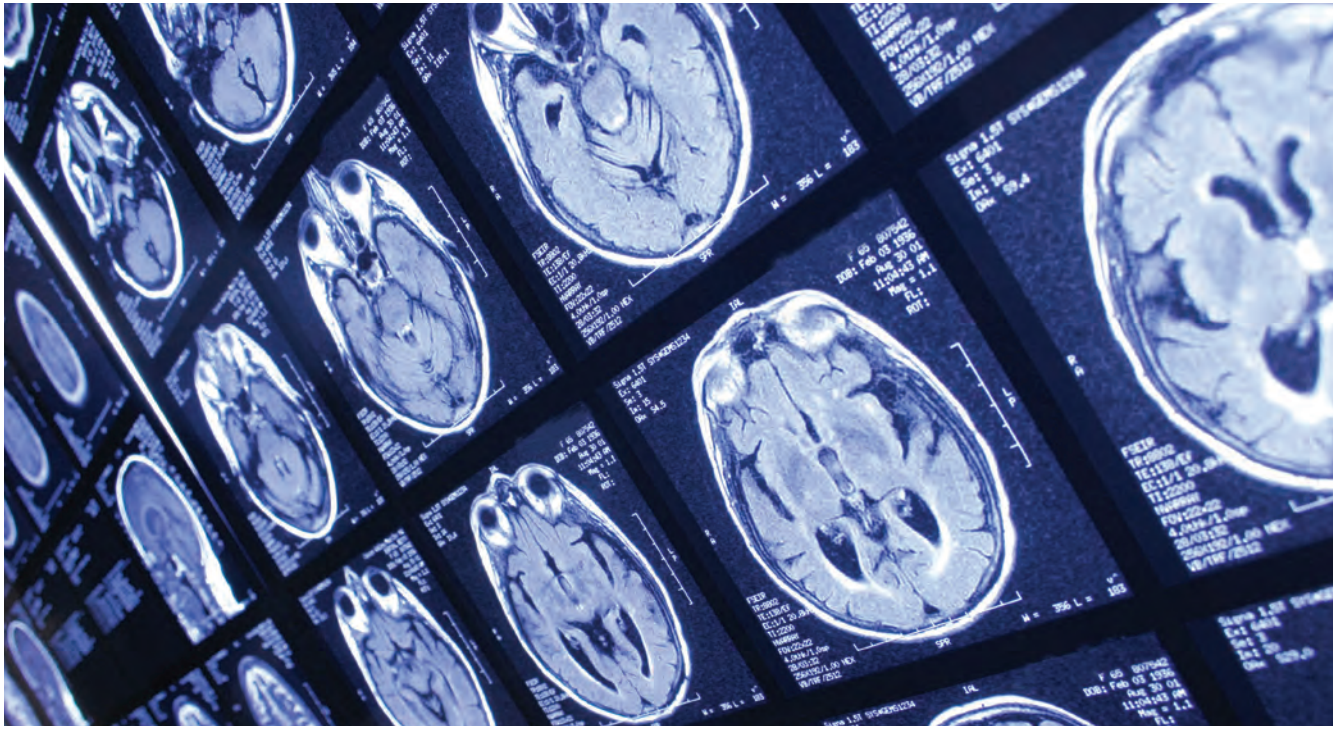
Top 10 Transferring Hospitals

St. Elizabeth South (Edgewood)
Bethesda North Hospital
Mercy Hospital, Anderson
Fort Hamilton Hughes Memorial Hospital
Dearborn County Hospital
Mercy Hospital of Fairfield
St. Luke West, Florence
Clermont Mercy Hospital
St. Luke East (Ft. Thomas)
Clinton Memorial Hospital

William Milikan, Jr., MD
Debbie Poole, MSN, RN, CNOR
Lisa Gray, RN, CPN

Research Update

Research continues to play an essential role in striving to achieve our mission of eliminating injury as the leading cause of death. We continue to explore and investigate improved methods to care for and prevent injuries as well as to educate parents, children and health care providers about pediatric injury. Some of our recent research highlights include work to understand delays in the appropriate transfer of the most seriously injured children to a trauma center, work to reduce variations in care and ensure the highest quality of care is consistently provided, testing our unique injury prevention programs in more distant locations throughout the state, and much more. In addition to more traditional research, we are continually employing improvement science techniques to systematically improve care and outcomes.



Recent research includes:

Assessing factors associated with the delayed transfer of pediatric trauma patients, to better understand the barriers to providing optimal care for children. (funded by the Ohio Department of Public Safety)

A retrospective look at head injury management and treatment. (funded by CCHMC Outcome Scholar Award)

Analyzing misuse rates of the HARE Traction splint.

A prospective analysis of all-terrain (ATV) injuries in children, which identifies the increasing problem of injuries related to these vehicles.

Outcomes of pediatric patients based on transfer time to a Level 1 trauma center. (funded by the Ohio Department of Public Safety)

An evaluation and adherence of the use of a guideline involving mild and moderate head Injuries.

Screening of adolescents for high risk behaviors related to alcohol and drug usage

An epidemiologic analysis of the health disparities affecting abused African American children.

Evaluating the impact of variations in care on disparate head injury outcomes. (funded by CCHMC Outcome Scholar Award)

Increasing motor vehicle restraint in the Hispanic community. (funded by the Ohio Department of Public Safety and Toyota)

Publications

Eliminating disparity in evaluation for abuse in infants with head injury: use of a screening guideline. Rangel EL. Cook BS. Bennett BL. Shebesta K. Ying J. Falcone RA Jr. [Journal Article] J Pediatr Surg. 2009 Jun;44(6):1229-34; discussion 1234-5. PMID: 19524746

Pediatric SBIRT: understanding the magnitude of the problem. Schweer LH. [Journal Article] J Trauma Nurs. 2009 Jul-Sep;16(3):142-7. PMID: 19888019

Severity of head computed tomography scan findings fail to explain racial differences in mortality following child abuse. Martin CA. Care M. Rangel EL. Brown RL. Garcia VF. Falcone RA Jr. [Journal Article] Am J Surg. 2010 Feb;199(2):210-215. Epub 2009 Nov 5. PMID: 19892316

Alarming trends in the improper use of motor vehicle restraints in children: implications for public policy and the development of race-based strategies for improving compliance. Rangel SJ. Martin CA. Brown RL. Garcia VF. Falcone RA Jr. [Journal Article] J Pediatr Surg. 2008 Jan;43(1):200-7. PMID: 18206483

The epidemiology of infant injuries and alarming health disparities. Falcone RA Jr. Brown RL. Garcia VF [Journal Article] J Pediatr Surg. 2007 Jan;42(1):172-6; discussion 176-7 PMID: 17208560

Pediatric trauma resuscitation: initial fluid management. Schweer L. [Journal Article] J Infus Nurs. 2008 Mar-Apr;31(2):104-11. PMID: 18344770

Pediatric trauma nursing education requirements: a national overview. Haley K. Schweer L [Journal Article] J Trauma Nurs. 2007 Oct-Dec;14(4):199-202. PMID: 18399378

Multidisciplinary pediatric trauma team training using high-fidelity trauma simulation. [Falcone RA Jr, Daugherty M, Haas L, Patterson M, Brown RL, Garcia VF. Journal Article] J Pediatr Surg. 2008 Jun;43(6):1065-71. PMID: 18558184

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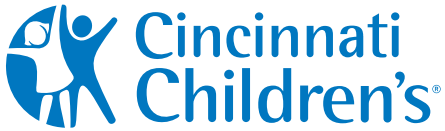
Herbert Hoover
31st US President



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