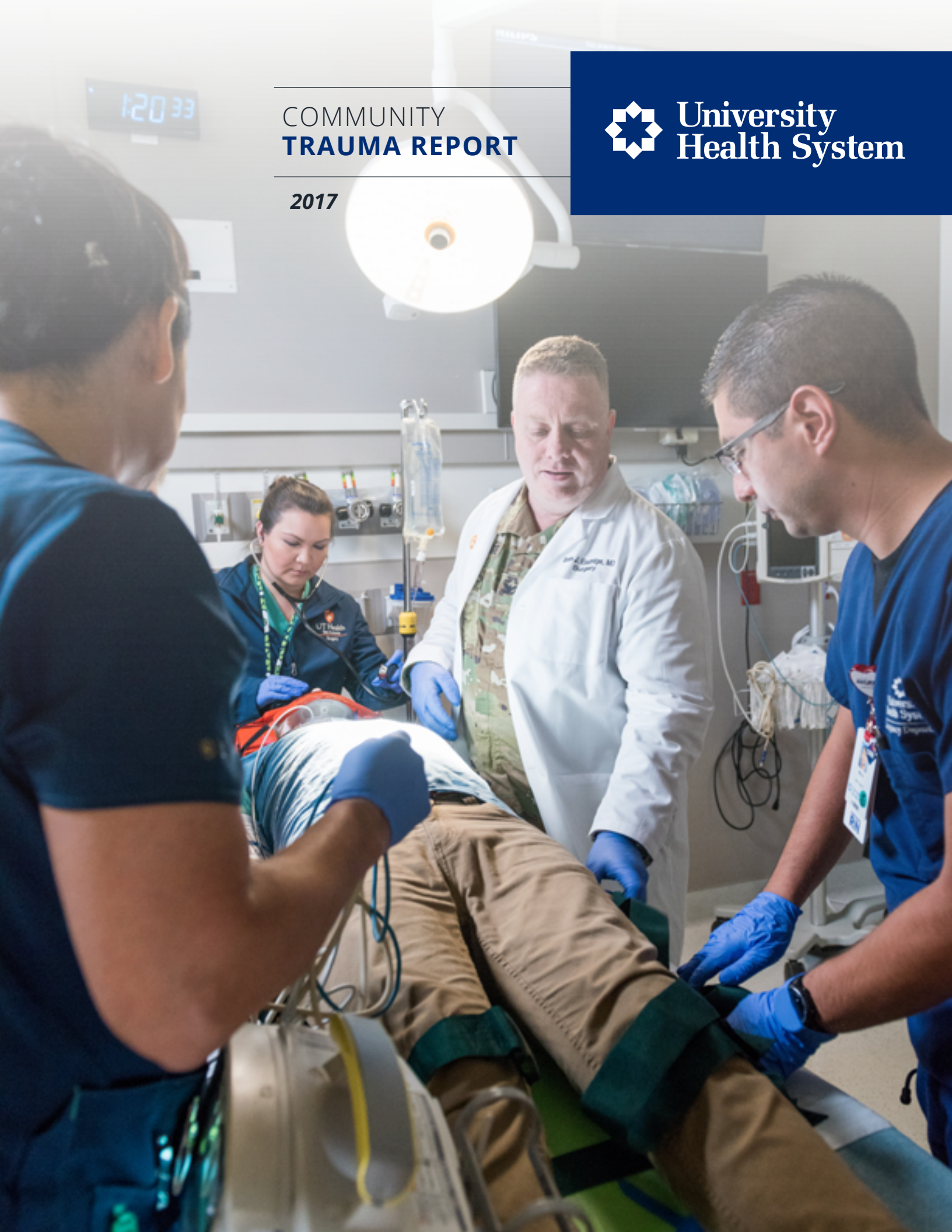


COMMUNITY
TRAUMA REPORT

2017

 **University
Health System**



Dr. Mark Muir, Trauma Medical Director





COMMUNITY TRAUMA REPORT

TABLE OF CONTENTS

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INTRODUCTION	4
Welcome	4
Top five causes	5
Spotlight	6-7
Fireworks	
Walking to school	
Pregnancy and trauma	
INJURIES TO CHILDREN	8
Injuries to children	8
Lexi Hartofelis	10
Injuries by age group	11
Five-year trends	12-13
Keeping our community safe	14-15
Burns	16
Sutherland Springs	17
INJURIES TO ADULTS	18
Injuries to adults	18
Tony Hayhurst	19
Injuries by age group	21
Five-year trends	22-23
Car crashes & violence	24
Military-civilian partnership	26
Stop the Bleed	27
INFORMATION	28
Resources	28
Research	29
People	30-31

COMMUNITY TRAUMA REPORT

WELCOME

Dr. Brian Eastridge

South Texas is extremely fortunate to enjoy a unique civilian-military partnership that provides not only the very best care to those who suffer life-threatening injuries, but also works together to improve that care through research and trauma system development. This partnership has greatly improved the survival odds in one of the fastest-growing regions in the nation.

University Hospital and Brooke Army Medical Center, or BAMC, are the two Level I trauma centers in our region. BAMC, which has provided civilian trauma care for decades, is unique in that it's the only Level I designated trauma center/military hospital in the world. In other parts of the country, military surgeons hone their skills in civilian hospitals. In San Antonio, they have a first-rate trauma center of their own.

The value of that partnership was evident on Sunday, Nov. 5, when both University Hospital and BAMC were alerted to the worst mass shooting in Texas history, in the small town of Sutherland Springs, about 30 miles southeast of San Antonio. Together, the two hospitals treated 17 patients. Connally Memorial Medical Center in Floresville received eight, transferring four to University Hospital. And EMS responders saved many of those patients by effective bleeding control at the scene. You can read more about our response to that tragedy elsewhere in this report. It is worth noting, however, that the combination of a sophisticated trauma system in our region — the result of decades of hard work, investment and cooperation — along with the superbly trained trauma teams at both institutions, saved lives that day, and in the days that followed.

The military's continued investment in trauma care at BAMC is partly dependent on having adequate numbers of cases to maintain the skills of their doctors, nurses and support staff, and to support their lifesaving research — all of which benefits our region and our fighting forces. In other cities, competitive forces have led private hospitals to seek a higher trauma level designation. We hope our state officials and elected leaders will take note of our unique situation and its importance to the nation. While we believe competition is generally a good thing, in the care of life-threatening injuries it can have unintended consequences.

The military's trauma mission has greatly shaped University Hospital and its academic partner, UT Health San Antonio. Some of the military's most distinguished alumni — experts who have redesigned the care that wounded soldiers receive, making survival from battlefield injuries much more likely — have joined our team after retiring from active duty. They include Dr. Donald Jenkins, one of the architects of the military's redesigned wartime trauma system; and Dr. Basil Pruitt, who served for many years as head of the famed Army Institute of Surgical Research at Joint Base Fort Sam Houston, and led improvements in burn care that are now standard practice around the world. Dr. Ramon Cestero and Dr. Deborah Mueller, too, came to us with invaluable experience from their military service.

I, too, made that leap. My years of service, which included four stints as director of the U.S. CENTCOM Joint Theater Trauma System during Operation Iraqi Freedom/Operation Enduring Freedom, gave me skills and experience I use each day to serve the people of South Texas. Last year, I took over as division chief of trauma and emergency surgery from Dr. John Myers, who was promoted to vice chair for clinical operations in the Department of Surgery at UT Health. I am grateful for Dr. Myers' leadership and look forward to continuing his good work in maintaining our role as one of the top trauma programs in the nation.

Thank you for taking time to read this community report and for your interest in helping build a safer community.

Brian Eastridge, MD
Chief of Trauma and Emergency Surgery
Professor, Department of Surgery
UT Health San Antonio

TOP 5 INJURY CAUSES 2017

Falls

Motor vehicle crashes

Burns

Struck by object

Pedestrians hit by cars

SPOTLIGHT

*A closer look at three major causes of injury
in our community, identified by the doctors
and nurses of our trauma team*

CHILDREN AND FIREWORKS

THE NUMBERS — Last year, 19 children ages 17 and younger had burn and blast injuries from fireworks that were serious enough to require care at University Hospital's Level I pediatric trauma center and burn program. That number was up from 16 the previous year.

THE PROBLEM — Fireworks are a major cause of burns and eye injuries. Even sparklers, which many consider a safer alternative for young children, can produce temperatures of 3,000 degrees Fahrenheit — the same heat as a blow torch. In addition to serious burns and blast injuries, fireworks also lead to fires. Fire risk is particularly serious when conditions are dry — which is often the case in South Texas.

THE RECOMMENDATIONS — Leave fireworks to the professionals. Attend public fireworks displays instead. Children under age 7 should never handle fireworks because they lack coordination skills. Let young children use glow sticks instead of sparklers. Adults should supervise all fireworks activities. Avoid loose clothing, and don't light them near dry grass. Point fireworks away from homes and avoid brush, leaves or anything flammable. Stand several feet away from lit fireworks. If one doesn't go off, don't investigate. Pour water on it and dispose of it properly. Always have a bucket of water or fire extinguisher nearby. If a child is hurt, get help immediately. If the injury is to an eye, don't let the child touch or rub it, which can worsen the injury.

**WALKING TO SCHOOL**

THE NUMBERS — University Hospital's Level I pediatric trauma center treated 89 children last year who were hit by cars while walking or playing. While the exact number injured going to or from school is unknown, the recommendations are the same.

THE PROBLEM — All children are pedestrians at some point during the school day, whether they are walking to school or the bus stop, or through the parking lot. Too many are distracted or not following common-sense rules of the road.

THE RECOMMENDATIONS — Teach kids to keep their phones (and headphones) in pockets, purses or backpacks when walking in or near traffic. Children (and adults) should never cross streets in the middle of the block or between cars, but instead should cross at the intersection or crosswalk. When crossing, look left, right and left, and then keep looking in all directions when crossing. Pause at each lane of traffic and make eye contact with the drivers. Walk on sidewalks or paths. If no sidewalk is available, walk facing oncoming traffic as far from cars as possible. Be especially alert for cars that might be backing up in driveways or parking lots. And avoid dark

STAY SAFE WHEN WALKING

A good, kid-friendly app with advice on pedestrian safety can be found at safekids.org/howtowalk



clothes when walking before dawn or after dusk. Wear light colors and reflective gear to be visible to drivers. Parents and caregivers should be mindful that small children often can't be seen when backing up. Before backing out of a driveway, walk around the vehicle to check for children or toys. For a great, kid-friendly app on safe walking with these basic rules, go to safekids.org/howtowalk.

PREGNANCY AND TRAUMA

THE NUMBERS — In all, 101 pregnant women were treated in University Hospital's trauma center in 2017.

THE PROBLEM — Any injury in pregnancy should be taken seriously. One in 12 pregnancies includes a trauma-related complication, and injuries are the leading non-obstetric cause of death among pregnant women. And although nine out of 10 traumatic injuries during pregnancy are considered minor, they can have serious consequences. Between 60 percent and 70 percent of fetal losses after trauma are due to minor injuries.

THE RECOMMENDATIONS — Use extra caution and do not engage in distracted driving during pregnancy. Put away your cell phone and don't eat while driving. While it may be uncomfortable, wear your seatbelt. Four out of five fetal deaths from car crashes are due to mothers not wearing seatbelts. The shoulder belt should lay across your chest between your breasts and away from your neck. Move the lap belt below your belly so it fits snugly across your hips and pelvic bone, NEVER across your belly. Adjust your seat to keep as much distance as possible between your belly and the steering wheel, yet close enough to comfortably reach the pedals. Do not turn off the airbag. Keep at least 10 inches between your chest and the steering wheel or dashboard so that the seatbelt and airbag can provide the best protection for you and your unborn child. If you are in a crash, call your provider as special monitoring may be recommended.



INJURIES TO CHILDREN

In 2017 1,932 children ages 16 and younger were treated at the Level I pediatric trauma center at University Hospital, a 15 percent increase from the 1,680 children treated the previous year.

The No. 1 cause of injuries to children at our trauma center was car crashes. In 2017, 511 children were hurt in motor vehicle crashes — a big jump from 439 the previous year, and 244 the year before that. Over a five year period, the number of children injured in car crashes and treated at University Hospital increased by 173 percent.

Cars also injured 89 children who were playing in neighborhoods or walking to school in 2017, an increase of 89 percent in the number of children treated at our hospital over a five year period. University Health System's injury prevention team, including its Safe Kids San Antonio Coalition, worked to raise awareness of this problem by teaching safe walking skills to kids at 32 area schools, reaching more than 9,400 students. It was one of many programs aimed at preventing motor vehicle-pedestrian injuries in our community.

Another 45 children were injured while riding their bikes, the largest number in at least a decade. Over five years, that number is up 36 percent.

Falls, the No. 2 injury cause among children, rose from 396 in 2016 to 439 last year. In general, very young children are injured falling from beds and couches, while older children are hurt falling from bicycles or trampolines, or taking part in sports.

Seventy five children were bitten severely enough by animals to require care in our trauma center, up from 63 the previous year. 2017 saw an increase in the number of childhood burns treated at University Hospital at 347, up from 306 the previous year.

As San Antonio and surrounding communities continue to grow in population, the number of injured patients treated at our trauma centers will continue to rise. However, with a robust injury prevention program housed within our Level I trauma center, it is our goal to decrease the rate of preventable injuries in South Texas.



University Hospital is the only Level I pediatric trauma center in South Texas, verified by the American College of Surgeons. It houses the only pediatric burn program in the region. Research has found that younger and more seriously injured children have fewer complications at a pediatric trauma center, which is staffed by specially trained physicians and nurses, lifesaving equipment, medications and special protocols for imaging.

INJURIES TO CHILDREN

•

BY AGE GROUP

YOUNGER THAN 1 YEAR

1. Falls
2. Motor vehicle crashes
3. Burns
4. Assaults
5. Pedestrians hit by cars

AGES 1-4

1. Burns
2. Falls
3. Motor vehicle crashes
4. Hit by objects
5. Animal bites

AGES 5-9

1. Motor vehicle crashes
2. Falls
3. Burns
4. Hit by objects
5. Pedestrians hit by cars

AGES 10-14

1. Motor vehicle crashes
2. Hit by objects
3. Falls
4. Burns
5. Pedestrians hit by cars

AGES 15-16

1. Motor vehicle crashes
2. Falls
3. Hit by objects
4. Burns
5. Pedestrians hit by cars

LEXI HARTOFELIS

Lexi Hartofelis was on the back of a three-person watercraft, skimming across the cool water at Lake LBJ. It was Father's Day weekend, the day was winding down, and the three girls were taking one last ride before heading back to shore.

Lexi, a 15-year-old looking forward to her sophomore year at Reagan High School, was enjoying a lazy day with her mom at a friend's lake house. Her father and younger brother had left for home earlier, and a younger sister was at camp.

Another boat zipped past the girls, leaving behind some waves in its wake. The driver of the Jet Ski turned towards the wake and gunned the engine to ride the waves — sending the watercraft upward as it hit the first wave. As it rose, Lexi lost her grip and fell backward — “almost like a tree falling, slowly,” said her mother, Lisa Hartofelis, who was watching from nearby.

As she fell backwards, the powerful force of the water — pumped through the engine to propel the watercraft — perforated Lexi's bowel.

“The fall didn't look bad,” her mother recalled. “She went under and she came back up. They were all wearing life jackets. She was crying. She couldn't catch her breath.”

One of her friends jumped in to help Lexi and yelled to the adults nearby that she was bleeding. Two men in the group — one a San Antonio EMS paramedic — jumped on a second watercraft and went to help. On shore, they could see that she had some visible lacerations and her stomach was distended.

They drove her to the Baylor Scott and White Medical Center in Marble Falls, where the doctor told them she'd need a trauma center. The San Antonio paramedic suggested University Hospital and its Level I pediatric trauma center. A helicopter delivered her.

“In the ER, it was really kind of crazy,” Lisa Hartofelis said. “I tell people it was like the movies. You've got 15 doctors and nurses on her, and everybody is doing something. The doctor came out and said she had severe and extensive injuries.”

The first surgery took six and a half hours. Infection was a major concern — not only because of the damaged bowel,



but also the lake water that had filled her belly. They cleansed her abdomen several times over the next few days and gave her antibiotics. Dr. Lillian Liao, medical director of the pediatric trauma and burn program, oversaw her care.

The surgery required an ileostomy procedure that would divert waste from her intestines through her abdomen while she healed. The surgeons removed 11 inches of destroyed rectum and colon. Dr. Haisar Dao, a surgeon specializing in colorectal surgery, was brought in.

“Initially, I think she kind of took it all in,” her mother said. “Cried, and was angry that all of this happened. But she handled it with so much grace.”

Lexi was hospitalized for five weeks, losing 23 pounds in the process. Initially, the family was told the ileostomy might be in place for a year. In fact, doctors were able to reconnect her digestive tract in half that time.

Today, she's back at school and looking forward to playing volleyball again with her high school team after regaining her strength and stamina.

Her mother points out the watercraft had a kill switch that cuts the engine if the driver is thrown. A similar kill switch for the passengers might have prevented the worst of Lexi's injuries.

“She's come through so much,” her mother said. “There's a confidence and strength that exudes from her that really wasn't there before. She can do just about anything she puts her mind to. I just know it.”



From left to right: Jenny Oliver, trauma administrative nurse; Amanda Loquias, nurse practitioner; Dr. Anh Dinh, critical care; Dr. Izabella Tarasiewicz, neurosurgeon; Dr. Lillian Liao, Pediatric Trauma & Burn Medical Director

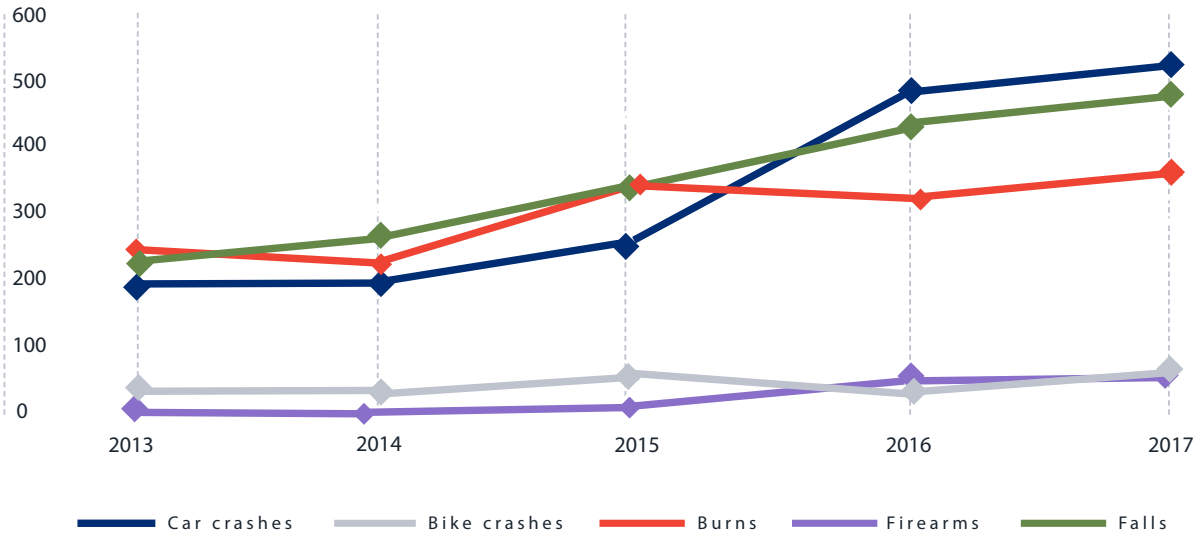
INJURIES TO CHILDREN AGES 16 and younger

	2013	2014	2015	2016	2017	2013-2017
	Number	Number	Number	Number	Number	Change
CRASHES	323	318	389	592	707	119%
Car or truck	187	189	244	439	511	173%
Motorcycle	3	10	6	6	14	367%
Bicycle	33	25	44	21	45	36%
Pedestrian	47	47	64	80	89	89%
Railway	0	1	1	0	0	-
Other vehicles	53	46	30	46	48	-9%
NON-VEHICLE INJURIES	326	354	428	509	617	89%
Burn	232	214	347	306	347	50%
Animal bite	44	42	47	63	75	70%
Struck by object	11	59	31	117	166	1,409%
Machinery	5	10	3	1	3	-40%
Electrical shock	5	10	9	6	7	40%
Fireworks	29	19	21	16	19	-34%
VIOLENCE	29	27	24	85	70	141%
Firearms	9	8	4	38	31	244%
Stabbing	5	3	2	30	4	--20%
Assault	15	16	18	17	35	133%
FALLS	216	266	317	396	439	103%
OTHER	200	200	184	98	99	-51%
TOTAL INJURIES	1,094	1,165	1,342	1,680	1,932	77%

*Trends involving small numbers of injuries may be difficult to analyze.

**Firearm injuries are those caused by intentional assault against another person. Accidental shootings, suicides and gas- or air-powered guns are excluded.

INJURIES TO CHILDREN



CHILDREN AND BURNS

AGE OF PATIENT

Infant	36	10.4%
1 - 4	178	51.3%
5 - 9	66	19.0%
10 - 14	49	14.1%
15 - 16	18	5.2%

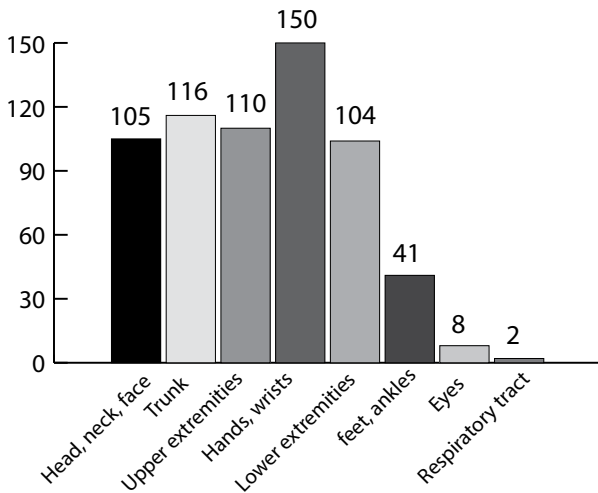
SEVERITY OF BURN

Less than 10% body surface	79%
10-19% body surface, less than 10% 3rd degree	8%
20-29% body surface, less than 10% 3rd degree	1%
30-39% body surface, less than 10% 3rd degree	1%
Burn confined to eye	2%
Smoke inhalation	1%
Electrical	1%
Other	7%

LEADING BURN CAUSES

<i>Causes of burns</i>	<i>Number</i>	<i>Percent</i>
Soup	56	16%
Boiling water	40	12%
Hot drinks	26	7%
Hairstyling tool	18	5%
Explosive materials	17	5%
Other food	14	4%
Stove	14	4%
Coals	13	4%
Oil	12	3%
Hot iron	10	3%
Other fluids	9	3%
Grease	9	3%
Barbecue flames	8	2%
Chemicals	8	2%
Other	93	27%

LOCATION OF BURN(S)



MAY INVOLVE MORE THAN ONE SITE



- 80%: Home
- 5%: Recreation
- 3%: Public building
- 12%: Other

Almost two-thirds of the 347 children brought to University Hospital's Pediatric Burn Center with serious injuries in 2017 were pre-schoolers, younger than 4 years of age. Boys made up 58 percent of patients. Hot soup was the No. 1 cause, and along with boiling water and hot drinks made up over one third of all burns seen at University Hospital.

KEEPING OUR COMMUNITY SAFE

An ounce of prevention is worth a pound of cure where injuries are concerned

Stopping injuries before they happen is the goal of University Health System's Adult & Pediatric Injury Prevention Program. Whether it involves distributing car seats and boosters (and making sure they're installed properly), educating the community on the hazards of impaired and distracted driving, or working with the elderly to prevent falls, our injury prevention team is a critical piece of our Level I trauma programs.

In 2016, the J.C. Montgomery Jr. Child Safety Award was presented to Safe Kids San Antonio, a group led by University Health System. The award, by the Texas Office for Prevention of Developmental Disabilities and the Child Safety Task Force, recognizes people and groups that "exemplify innovation, efficacy, community involvement and dedication to the safety of all children." Safe Kids San Antonio was nominated for the award by state Sen. José Menéndez.

Safe Kids San Antonio was recognized for its Buckle UP program, which provides child passenger safety education and car seats or boosters to at-risk families in Bexar and surrounding counties. The program has several components in which certified technicians offer free child safety seat checks in the community, work with families of babies in University Hospital's newborn nursery and NICU, teach a Car Seat 101 class to expectant parents attending the Baby U program, and work



with pediatric patients in the hospital's trauma, orthopedic and pediatric floors who might need adaptive seats.

Last year, the Buckle UP program educated more than 6,100 people on car seat safety, installed 1,948 car seats and boosters, distributed 1,124 seats to individuals and families, and hosted community car seat events that included special programs for refugee communities and the military, along with the general public.

The Safe Kids San Antonio program provided a number of injury prevention initiatives that reached 31,995 people in our community in 2017. In addition to the child passenger safety campaign, those programs included bike safety, burn prevention, home, medication and pedestrian safety.

Adult programs, which reached 5,863 people in 2017, included older adult fall awareness and prevention, CarFit checks, distracted and impaired driving awareness, and home and medication safety.



Dr. Ramon Cestero
Medical Director Surgical ICU

SUTHERLAND SPRINGS

An unimaginable tragedy strikes close to home

For years, University Health System's physicians and staff trained to prepare for all types of mass casualty situations as part of its role and responsibility as a Level I trauma center. On Sunday, Nov. 5, 2017, those preparations were needed as the deadliest mass shooting in Texas history unfolded only 30 miles away.

In the early afternoon of Sunday, Nov. 5, 2017, University Hospital received word of a mass shooting in the small town of Sutherland Springs, about 30 miles southeast of Bexar County. A gunman had systematically opened fire on congregants of the First Baptist Church, killing 26 people and injuring 20.

In the end, nine patients — five adults and four children — were brought to University Hospital. Another eight were taken to the Level I trauma center at Brooke Army Medical Center. It would prove to be the deadliest mass shooting in Texas history.

When the initial call came, seven trauma surgeons were present at University Hospital. By the time the first patient arrived, dozens of surgeons were in place to provide care — as were a number of experienced, highly trained multidisciplinary teams.

Many members of the trauma team are former military members with combat experience, and all of the teams had trained for mass casualties. Even so, the nature and brutality of the attack, along



with the families and small children in a house of worship — was difficult and challenging for physicians and staff.

One young patient died after reaching the hospital. Others underwent multiple operations. Within a week, all but three had recovered to the degree they could be discharged.

The following day, trauma medical director Dr. Brian Eastridge stood in

University Hospital's lobby before a dozen TV cameras from across the nation. A news conference had been planned for weeks to honor a group of San Antonio Fire Department first responders who had saved the life of a young man shot three months earlier, using the skills that the trauma team had been teaching people from all walks of life as part of the Stop the Bleed campaign. The idea behind Stop the Bleed is that bystanders can be turned into lifesavers, preventing the injured from bleeding to death until help can arrive.

"As yesterday's terrible shooting in Sutherland Springs show us — along with the many other mass casualty events that occur much too often throughout our country — we can never know when these important skills will be needed to save lives," Dr. Eastridge said.

As Dr. Eastridge spoke, a blood drive in the hospital lobby drew more than 170 local members of our community. People who felt compelled to help in the wake of that senseless act showed up that day to roll up their sleeves.

INJURIES TO ADULTS

A record 5,361 seriously injured adults were treated at University Hospital's Level I trauma center in 2017, a number that has risen 65 percent over a five-year period. Only one major category of adult injury — railway injuries — saw a decline over that five-year span from 2013 to 2017.

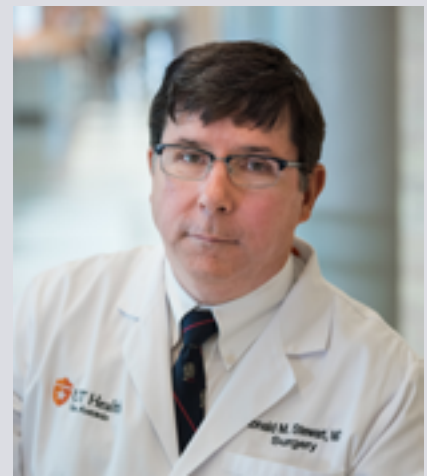
Falls were the leading injury cause among adults again in 2017, with 1,519 people treated, up from 1,513 the previous year. Over a five year period, the number of adult injuries from falls is up 66 percent.

Car crashes were the second leading cause, although the number decreased from the previous year. In 2017, 1,372 adults were treated for car crash injuries, down from 1,447 in 2016. Over a five-year period, the number of car crash injuries is up 45 percent.

The number of pedestrians hit by cars remained roughly the same in 2017 — with 341 treated here, compared to 340 the previous year. Over a five-year period, the number of those injuries treated at University Hospital rose by 114 percent.

After a steady decline from 2012 to 2015, the number of motorcycle injuries rose in both 2016 and 2017, with 218 and 296 recorded. The number of adults injured on motorcycles in 2017 was 25 percent higher than five years earlier.

The number of adults injured by stabbing or cutting increased in 2017 while the number of adults injured by firearms declined to 174 last year from 207 the year before. Still the number of firearms-related injuries treated at University Hospital last year was 112 percent higher than five years earlier. Unarmed assaults also declined to 331 from 371 the previous year.



Dr. Ronald Stewart, trauma surgeon and chairman of surgery at UT Health San Antonio, is immediate past-chair of the American College of Surgeons Committee on Trauma, the organization charged with setting standards for trauma care and verifying the qualifications of trauma centers around the world. University Hospital's adult Level I trauma center has been at the forefront of trauma care and trauma system development across the nation since the 1970s.

TONY HAYHURST

Tony Hayhurst had heard just about every sound that a drilling rig could make. And the noise that was coming from the rotary table at his feet was an odd one.

Mr. Hayhurst was an old hand at the oil business. He started working for his father's drilling company when he was just 15 years old. Now 59, he still lived in the same town he was born in — Dudley, about 20 miles southeast of Abilene. He still worked for the same company, Hayhurst Drilling, driving each day through ranchlands to whatever rig needed his attention, his dog Susie riding alongside him.

And while his lifetime of experience gave him an easy familiarity with the job, it was tempered by a healthy sense of caution.

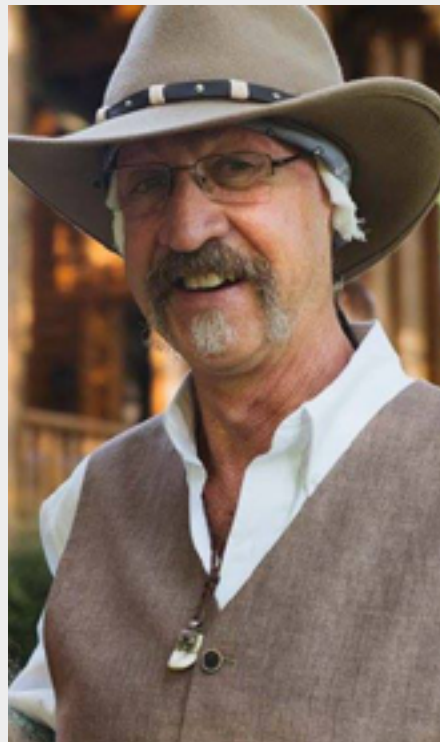
"It is dangerous," he said. "But you just keep your wits about you and do your business and take care of other people, as well as yourself."

He and a co-worker crawled under the rig to find out where the noise was coming from. Mr. Hayhurst wore his hair long but under a hard hat, with a ponytail tucked into the back of his shirt.

Despite those precautions, the driveline of the rig somehow snagged his hair. And the force of the machinery ripped the scalp off of his head to the bone, from the nape of his neck to his eyebrows — including his ears. It threw him several feet backwards, where he landed on his knees. He never lost consciousness.

His coworkers helped him into a pickup and drove him toward the nearest

hospital in Eden, about 20 miles away. The driver was frantic and speeding, and Mr. Hayhurst — alert throughout — tried to calm him down. That proved to be a bit challenging when they ran into a stretch of road construction where they had to wait for a pilot vehicle to escort them up the one open lane.



At the hospital in Eden, a doctor quickly made the decision to fly him to University Hospital. The co-workers had the presence of mind to bring along his scalp, and the doctor thought a big, academic hospital would have a better chance of reattaching it.

That proved to be impossible. There was too much damage to the tissue and blood vessels to reattach it. But over the next two months, Mr. Hayhurst underwent a slow and deliberate process in which plastic surgeon Dr. Amita Shah, assistant professor of surgery at UT Health San Antonio, created a foundation of collagen and glycosaminoglycans that would bind to a skin graft. She created tiny holes in his skull to allow new blood vessels to grow. A special suction cap removed excess fluid as it healed.

After many weeks, Dr. Shah performed a skin graft using skin from his legs. Mr. Hayhurst's graft was 1,300 centimeters.

Dr. Randall Otto, professor and chair of otolaryngology-head and neck surgery at UT Health, implanted bone anchors for his prosthetic ears. Mr. Hayhurst's wife, Shawna, became the model. "They molded my ears and elongated them a little bit," she said — adding with a laugh: "They didn't improve his hearing any."

Today, Mr. Hayhurst is back home and going to work each day — with a few limitations. He can't wear a hard hat — only soft material as his scalp is thinner. And he can't tolerate too much heat. Unlike most people, his head doesn't release heat efficiently. But retirement isn't an option at the moment. "I'm one of those old working Joes," he said. "We're doing OK. It will be all right."

And the Hayhursts are grateful that he survived his severe injury, and for the care he received. "I'm so thankful to still be here with my wife and my family."

Dr. Susannah Nicholson,
Director of Research Operations



INJURIES TO ADULTS

•

BY AGE GROUP

AGES 17-24

1. Motor vehicle crashes
2. Falls
3. Pedestrians hit by cars
4. Assaults
5. Hit by objects

AGES 25-34

1. Motor vehicle crashes
2. Falls
3. Assaults
4. Motorcycle crashes
5. Stabbings/cuttings

AGES 35-44

1. Motor vehicle crashes
2. Falls
3. Assaults
4. Motorcycle crashes
5. Pedestrians hit by cars

AGES 45-54

1. Falls
2. Motor vehicle crashes
3. Assaults
4. Motorcycle crashes
5. Pedestrians hit by cars

AGES 55-64

1. Falls
2. Motor vehicle crashes
3. Pedestrians hit by cars
4. Motorcycle crashes
5. Hit by objects

AGES 65 AND OLDER

1. Falls
2. Motor vehicle crashes
3. Hit by objects
4. Pedestrians hit by cars
5. Assaults

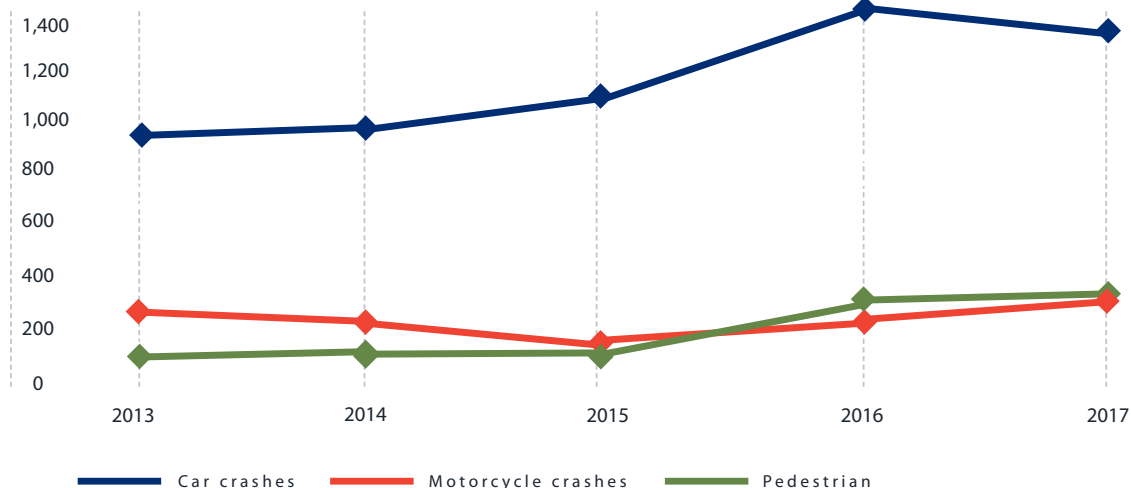
INJURIES TO ADULTS AGES 17 and older

	2013	2014	2015	2016	2017	2013-2017
	Number	Number	Number	Number	Number	Change
CRASHES	1,434	1,484	1,591	2,087	2,200	53%
Car or truck	943	1,001	1,162	1,447	1,372	45%
Motorcycle	236	229	187	218	296	25%
Bicycle	42	41	51	34	98	133%
Pedestrian	159	178	179	340	341	114%
Railway	3	4	0	1	1	-67%
Other vehicles	51	31	12	47	92	80%
NON-VEHICLE INJURIES	160	259	228	326	550	244%
Burn	23	12	28	49	101	339%
Animal bite	38	60	57	66	78	105%
Struck by object	27	92	84	118	278	930%
Machinery	66	79	44	82	70	6%
Electrical shock	5	4	2	4	6	20%
Blast	2	12	13	7	17	750%
VIOLENCE	407	480	510	752	700	72%
Firearms	82	94	103	207	174	112%
Stabbing	123	123	125	174	195	59%
Assault	202	263	282	371	331	64%
FALLS	917	967	1,255	1,513	1,519	66%
OTHER	328	282	377	487	392	20%
TOTAL INJURIES	3,246	3,472	3,938	5,165	5,361	65%

*Trends involving small numbers of injuries may be difficult to analyze.

**Firearm injuries are those caused by intentional assault against another person. Accidental shootings, suicides and gas- or air-powered guns are excluded.

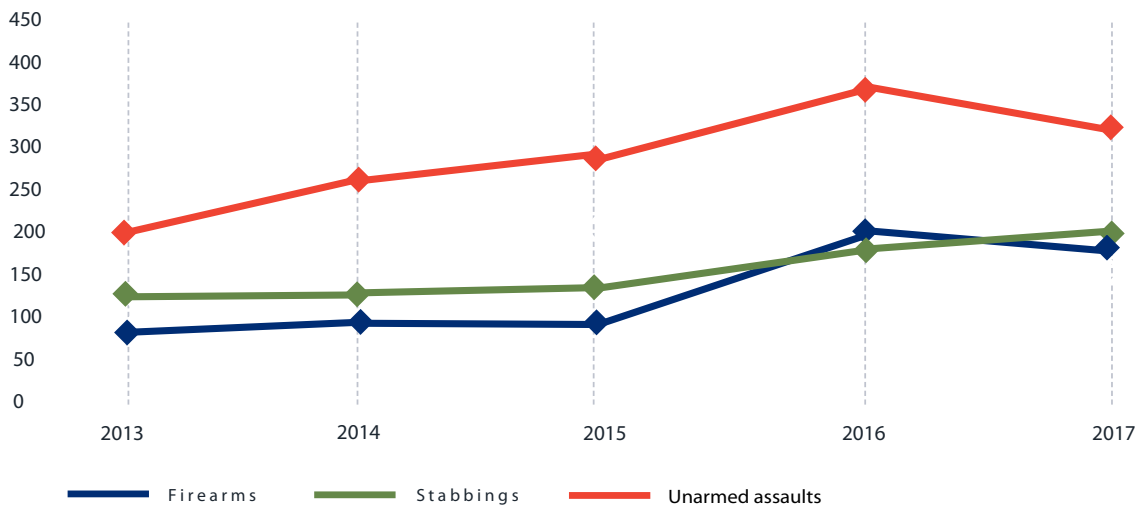
ADULT CRASH INJURIES



The number of adults brought to University Hospital with car crash injuries declined slightly in 2017 after a fairly steady rise over the previous three years. The increase over a five-year period was 45 percent. Adult motorcycle injuries have increased the past two years after a three-year decline.

Among violent injuries treated at University Hospital, the number of adults injured in stabbings rose the past two years after remaining flat the previous three. Injuries from both shootings and unarmed assaults declined from 2016 to 2017.

ADULT VIOLENCE



ADULTS AND CAR CRASHES



- 82%: Home
- 3%: Death
- 15%: Needed care after leaving hospital

ALCOHOL INVOLVED **21%**

DRUGS INVOLVED **31%**

AGE OF PATIENT

Age Group	Count	Percentage
17 - 24	358	26%
25 - 44	552	40%
45 - 64	257	19%
65 and older	205	15%

Of 1,372 adults injured in car crashes and brought to University Hospital, roughly two-thirds were between the ages of 17 and 44. Three-quarters were wearing seatbelts — a higher percentage than in previous years. Alcohol was involved in 21 percent of crash injuries, and drugs in 31 percent. A total of 139, or 10 percent, involved both alcohol and drugs.





Dr. Donald Jenkins, Vice Chair for Quality

The National Academies of Science recently highlighted the partnership between University Hospital and Brooke Army Medical Center in a 2016 report, noting that BAMC's "verification as a Level I trauma center and its integration into the regional civilian trauma system enables military physicians, nurses, and medics to attain and sustain expertise in trauma care and to interact, conduct research, and collaborate with civilian trauma care providers." (Source: *National Trauma Care System: Integrating Military and Civilian Trauma Systems to Achieve Zero Preventable Deaths after Injury*, NAS, 2016)



The partnership between the two Level I adult trauma centers in our region, University Hospital and Brooke Army Medical Center, or BAMC, is unique in the nation — a partnership that has saved or restored countless lives over the decades.

Together they care for those with life-threatening injuries throughout the vast, 22-county Trauma Region P, in collaboration with the Southwest Texas

Regional Advisory Council, its member hospitals and EMS organizations.

In 2016, BAMC cared for 4,127 adult trauma patients and 750 adult burn patients — 85 percent of them civilians. To maintain Level I status, a trauma center must treat a high volume of trauma patients. BAMC is able to achieve this volume in part by treating civilians from within the Trauma Service Area.

BAMC is the only Level I trauma center operated by the military. Not only is BAMC's trauma mission central to all combat casualty training in our Armed Forces, but its surgeons and research staff — often in collaboration with those at University Hospital and UT Health San Antonio — develop new and better treatments and systems of care that save lives on the battlefield and back home in the United States.

STOP THE BLEED

A community campaign to save lives in an emergency

University Health System's trauma team has taught hundreds of people from all walks of life the skills needed to keep a badly bleeding person alive as part of the Stop the Bleed campaign. Those skills saved the life of Tobias Walker after he was shot in the neck outside his home.

Tobias Walker doesn't remember much about the evening in early August when a bullet passed through his neck and out his back. The gunman at his door was someone he knew. A neighbor he considered "a second mom" came over to intervene. When the gunman turned his pistol to her, Mr. Walker moved to protect her and the gun fired.

"I took two steps and collapsed," he said. "Everyone tells me, you were gushing blood. There was no way you would have made it out of your front yard without help."

Help came in the form of paramedics from San Antonio EMS and firefighters from the San Antonio Fire Department. They stuffed the gaping wound with clot-forming gauze and used manual pressure on the way to the hospital to keep him alive until he could reach the operating table at University Hospital.

The steps those professionals took to keep Mr. Walker alive are the same skills that University Health System's trauma team has been teaching members of the public for the last year as part of Stop the Bleed, a nationwide campaign.



A number of groups, including the American College of Surgeons Committee on Trauma, the Department of Defense and the Federal Emergency Management Agency, came together to launch Stop the Bleed.

The goal is to turn bystanders into immediate responders," said Dr. Ronald Stewart, chair of surgery at University Health System and UT Health San Antonio, and immediate past-chair of the ACS Committee on Trauma.

Since February, 2017, the trauma team has held free Stop the Bleed classes at University Hospital on the first Monday of each month. They've also provided training to community groups, businesses and schools, often in collaboration with the Southwest Texas Regional Advisory Council.

As of late November, 584 people had been taught the skills needed to slow life-threatening blood loss until help arrives.

Class times and locations can be found on the calendar section of University Health System's website, UniversityHealthSystem.com, or at StopTheBleedTX.org. To reserve a seat at one of the monthly classes or request an instructor to come and teach a class, email: stopthebleed@uhs-sa.com.

In November, Mr. Walker, 26, returned to University Hospital to present an award to the two paramedics and four firefighters who saved his life. University Health System's trauma team wanted to honor those first responders for the lifesaving actions they took that day to Stop the Bleed.



Teaching the proper way to apply a tourniquet at a Stop the Bleed class at University Hospital

RESOURCES

University Health System

Adult & Pediatric Injury Prevention Program

Car seat distribution and education, safe driving, elderly fall prevention, school, community and family education
universityhealthsystem.com/services/injury-prevention

Safe Kids San Antonio

Local chapter of Safe Kids Worldwide, led by University Hospital's Level I pediatric trauma center. Car-seat checkups, safety workshops and sports clinics, with links to injury prevention information of all sorts.
safekids.org/coalition/safe-kids-san-antonio

CDC Injury Center

Safe driving, violence prevention, falls, home safety, animal bites, concussions.
cdc.gov/injury

San Antonio Fire Department Safety Page

Smoke detectors and carbon monoxide safety, fireworks safety, water safety
sanantonio.gov/safd/safetyinformation

National Highway Traffic Safety Administration

Bike safety, 5-star crash ratings, child passenger safety, teen driving, distracted driving, substance abuse
safecar.gov

Texas Parks & Wildlife

Firearm safety, hunting safety, boater education.
tpwd.texas.gov

Texas Falls Prevention Coalition

Classes and programs for the elderly, fall-proofing at home
fallsfreetexas.org

Consumer Product Safety Commission

Recalls and alerts, product safety advice
cpsc.gov

Texas Department of Transportation

State laws, safe driving tips, traffic conditions, child safety, motorcycle safety classes
txdot.gov/driver

Occupational Safety and Health Administration

A wide range of topics for worksite health promotion and injury prevention by industry and specific hazards
osha.gov

Stop the Bleed

National campaign to teach the public how to control life-threatening bleeding, information, training courses and more
bleedingcontrol.org

RESEARCH AND INNOVATION

The next generation of treatments

As the premier Level I trauma center for South Texas, University Hospital doctors and staff are not only tasked with saving lives, but with finding new and better ways to save lives through research. Below is a sample of research studies and articles published in 2016-17

Alarhayem AQ, Cohn SM, Muir MT, Myers JG, Fuqua J, Eastridge BJ. Organ donation, an unexpected benefit of aggressive resuscitation of trauma patients presenting dead on arrival. *J Am Coll Surg*. 2017 May;224(5):926-932. PMID: 28263857

Alarhayem AQ, Myers JG, Dent D, Liao L, Muir M, Mueller D, Nicholson S, Cestero R, Johnson MC, Stewart R, O'Keefe G, Eastridge BJ. Time is the enemy: Mortality in trauma patients with hemorrhage from torso injury occurs long before the "golden hour." *Am J Surg*. 2016 Dec;212(6):1101-1105. PMID: 27832843

Fowler AL, Hughes DW, Muir MT, VanWert EM, Gamboa CD, Myers JG. Resource utilization after Snakebite Severity Score implementation into treatment algorithm of Crotaline bite. *J Emerg Med*. 2017 Oct 25; doi: 10.1016/j.jemermed.2017.08.095. [Epub ahead of print]. PMID: 29102095

Holloway TL, Nicholson SE, Rani M, Cap AP, Schwacha MG. Toll-like receptor responses are suppressed in trauma ICU patients. *J Surg Res*. 2016 Nov;206(1):139-145. PMID: 27916353

Jenkins DH, Bailey JA. Origins and importance of the joint trauma system. *J Trauma Acute Care Surg*. 2016 Nov;81(5 Suppl 2 Proceedings of the 2015 Military Health System Research Symposium):S75-S76. PMID: 27768656

Jenkins DH, Winchell RJ, Coimbra R, Rotondo MF, Weireter LJ, Bulger EM, Kozar RA, Nathens AB, Reilly PM, Henry SM, Jimenez MF, Chang MC, Coburn M, Dodd J, Neal ML, Rosen J, Clemency J, Hoyt DB, Stewart RM. Position statement of the American College of Surgeons Committee on Trauma on the National Academies of Sciences, Engineering and Medicine Report, A National Trauma Care System: integrating military and civilian trauma systems to achieve zero preventable deaths after injury. *J Trauma Acute Care Surg*. 2016 Nov;81(5):819-823. PMID: 27533902

Johnson M, Alarhayem A, Convertino V, Carter R 3rd, Chung K, Stewart R, Myers J, Dent D, Liao L, Cestero R, Nicholson S, Muir M, Schwacha M, Wampler D, DeRosa M, Eastridge B. Comparison of compensatory reserve and arterial lactate as markers of shock and resuscitation. *J Trauma Acute Care Surg*. 2017 May 22. doi: 10.1097/TA.0000000000001595. [Epub ahead of print]. PMID: 28538624

Johnson M, Alarhayem A, Convertino V, Carter R 3rd, Chung K, Stewart R, Myers J, Dent D, Liao L, Cestero R, Nicholson S, Muir M, Schwacha M, Wampler D, DeRosa M, Eastridge B. Compensatory Reserve Index: Performance of a novel monitoring technology to identify the bleeding trauma patient. *Shock*. 2017 Aug 1. doi: 10.1097/SHK.0000000000000959. [Epub ahead of print] PMID: 28767544

Stewart RM, Basil A, Pruitt Jr. MD and the US Army Institute for Surgical Research: Five decades of science, clinical care, mentorship, and leadership. *J Trauma Acute Care Surg*. 2017 Aug 24. doi: 10.1097/TA.0000000000001681. [Epub ahead of print]. PMID: 28846547

TRAUMA FACULTY & STAFF

The trauma faculty and staff of University Hospital and UT Health San Antonio School of Medicine

Dr. Ronald Stewart, Professor & Chair, Department of Surgery,
Dr. Witten B. Russ Chair in Surgery

Dr. Brian Eastridge, Professor & Division Chief, Jocelyn and Joe Straus
Chair in Trauma Surgery, Chief of Trauma and Emergency Surgery

Dr. Mark T. Muir, Assistant Professor, Trauma Medical Director

Dr. Lillian Liao, Associate Professor, Pediatric Trauma & Burn Director

Dr. Ramon F. Cestero, Associate Professor, Medical Director Surgical ICU

Dr. Christopher Crane, Assistant Professor

Dr. Daniel L. Dent, Distinguished Teaching Professor,
General Surgery Residency Program Director, Professor of Surgery

Dr. Donald Jenkins, Clinical Professor, Division of Trauma and
Emergency Surgery, Vice Chair for Quality, Department of Surgery,
Betty and Bob Kelso Distinguished Chair in Burn and Trauma Surgery

Dr. Ashley McGinity, Clinical Assistant Professor

Dr. Deborah L. Mueller, Clinical Associate Professor

Dr. John G. Myers, Professor, Trauma and Emergency Surgery

Dr. Susannah Nicholson, Assistant Professor,
Director of Research Operations

Dr. Elizabeth Scherer, Assistant Professor

Dr. Basil A. Pruitt, Clinical Professor of Surgery, Dr. Ferdinand P. Herff
Chair in Surgery

Dr. Harlan D. Root, Clinical Professor

Martin G. Schwacha, PhD, Professor

Bill Butler, PA-C, Specialist

Jason D. Gourlas, PA-C, Specialist

Kaytlin Kuecker, PA-C, Specialist

Amanda Loquias, MSN, RN, FNP, Specialist

Daniel Martin, RN, ACNP, Specialist

Susan McCollow, RN, FNP-C, Specialist

Lindsey Rippee, RN, ACNP, BC, Specialist

Cassandra Rubio, PA-C, Specialist

Kelly Sponhaltz, PA-C, Specialist

Blanca Ulloa, PA-C, Specialist

Mary Von Heiland, RN, FNP, Specialist

Ernest L. Wheeler, PA, Specialist

Jeni Wilson, MS, RN, APRN, BC, Specialist

Sylvia Castillo, Manager Finance & Administration,
Trauma & Emergency Surgery

Mark DeRosa, CRT, CCRC, Clinical Research Project Manager

Rachelle Jonas, BSN, RN, Manager of Research Operations

Stephanie DeMoor, Research Area Specialist

Santiago Pedraza, Research Area Specialist

Meenakshi Rani, PhD, Research Scientist

Naresh Babu Talathoti, Clinical Research Project Manager

Ryan Wallace, Research Area Specialist

Tracy Cotner-Pouncy, BSN, RN, TCRN, Senior. Director, Trauma Services

Jennifer Northway, BS, CHES, CPSTI, Director,
Adult & Pediatric Injury Prevention

Dawn Belscamper, BSN, RN, Assistant Director, Trauma Services

Sondra Epley, RN, Assistant Director, Pediatric Trauma & Burn

Rose Marie Bolenbaucher, MSN, RN, TCRN, Trauma Educator

Jenny Oliver, BSN, RN Trauma Administrative Nurse

Katrina D. Williams-Freeman MPH, BS, Sr Quality Data Analyst,
Trauma Services

Michael Shiels, BSN, RN, Clinical Informaticist

Deirdre (Dee) Fitzpatrick, Trauma Registrar

Nadia Compton, Trauma Registrar

Michele Rodriguez, Trauma Registrar

Jestine Pena, Trauma Registrar

Raquel Sanchez, Trauma Registrar

Juanita Cantu, Trauma Registrar

Kassi Resendez, Trauma Registrar

Valerie Arreguin, Trauma Registrar

Olga (Reyna) De Hoyos, Trauma Registrar

Fara Smith, CPST, Buckle Up! Coordinator

Mandy Fultz, CPST, SafeKids Coordinator

Rose Williams, CHW, Adult Injury Prevention Coordinator

Marcia Cabrerra Benites, CPST, Buckle Up! NICU Liaison

Alicia Valle, CPST, Buckle Up! OB/Nursery Liaison

Andrea Morales Schindler, CPST, Community Outreach Specialist

Marcia Cabrerra Benites, Administrative Assistant



LEADERSHIP

BEXAR COUNTY

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Bexar County Judge
Sergio “Chico” Rodriguez
Commissioner Precinct 1
Paul Elizondo
Commissioner Precinct 2
Kevin Wolff
Commissioner Precinct 3
Tommy Calvert
Commissioner Precinct 4

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Ted Day, Executive Vice President/Strategic
Planning and Business Development
Michael Roussos, Hospital Administrator
Tommye Austin, Senior Vice President/CNO

COMMUNITY TRAUMA REPORT

2016

Leni Kirkman, Senior Vice President,
Strategic Communications and Patient Relations
Don Finley, Director, External Communications,
Project Manager
Mark Greenberg Photography





4502 Medical Drive
San Antonio, Texas 78229
210-358-4000

UniversityHealthSystem.com