



Kessler Trauma Center

ANNUAL REPORT

2022





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Pictured from left to right: Julius Cheng, M.D., M.P.H.; Paul Bankey, M.D., Ph.D.; Yanjie Qi, M.D.; Mark Gestring, M.D.; Nicole Stassen, M.D.; Michael A. Vella, M.D., M.B.A.; Ayodele Sangosanya, M.D., M.B.A.; Michael Nabozny, M.D.

About the Kessler Trauma Center:

The Kessler Trauma Center at the University of Rochester-Strong Memorial Hospital is proud to provide state-of-the-art injury care to the citizens of the Finger Lakes Region of Western New York. Verified by the American College of Surgeons and designated by the N.Y. State Department of Health as a Level one trauma center, the hospital serves a population of over 1.5 million residents spanning 16 counties. Strong Memorial Hospital is a 900-bed tertiary care facility that admits over 2,500 injured patients each year. The trauma center is staffed around the clock by fellowship-trained and board-certified trauma surgeons and surgical intensivists supported by orthopedic, neuro, vascular and plastic surgeons.

The facility boasts a specialized Burn-Trauma Intensive Care Unit, multiple operating rooms, modern imaging technology, a full-service blood bank, an in-house Commission on Accreditation of Rehabilitation Facilities (CARF) accredited rehabilitation unit and a highly-experienced team of nurses, technicians and other specialized providers. The focus on clinical excellence is supported by the Trauma Center's commitment to community outreach, education, injury prevention and research. This helps the trauma center team achieve the best possible outcomes for injured patients starting at time of injury through the rehabilitation process.

Letter from the Trauma Medical Director, Michael A. Vella, M.D., M.B.A., F.A.C.S.



The last few years have been difficult, from the COVID-19 pandemic to significant increases in gun violence witnessed across our country.

At the Kessler Trauma Center, our overall trauma volumes increased by 25% between 2019 and 2021, including a 174% increase in annual firearm

related injuries. Despite these challenges, our program has thrived. In our most

recent Trauma Quality Improvement Program (TQIP) report, we rank in the top 10% of US trauma centers with respect to overall major hospital complications and mortality.

As the only trauma center in the Finger Lakes region, we offer a full spectrum of cutting-edge trauma care from initial management through rehabilitation. We are proud to present our Trauma Annual Report.

As you will see, we, along with our sub-specialty colleagues, continue to advance trauma care through our ongoing clinical, educational, community outreach, and research efforts. I want to highlight a few recent accomplishments below.

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- In 2021, we became one of relatively few civilian trauma centers offering whole blood resuscitation for bleeding trauma patients. Our surgeons were instrumental in lobbying for helicopter emergency medical services in New York State to carry and transfuse blood. We now have whole blood available in the pre-hospital setting.
 - We continue to offer newer technologies like Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) for use in non-compressible torso hemorrhage as well as rib and sternal plating for severe chest wall fractures.
 - We have implemented a close collaboration with our Physical Medicine and Rehabilitation colleagues to facilitate early identification and consultation for those with brain or spinal cord injuries in order to reduce overall length-of-stay and improve functional outcomes.
 - We implemented a medicine co-management/geriatric trauma consultation service to assist with the management of acute and chronic comorbidities in our increasingly elderly trauma population.
 - As many of our patients are underserved, we recently implemented a collaboration with our

internal medicine colleagues to provide primary care follow up for discharged trauma patients and improve health equity. These follow-up resources include integrated mental health services, especially pertinent to patients at high risk of post-traumatic stress disorder (PTSD).

- Our faculty continue to lead on the local stage and beyond. Dr. Yanjie Qi was recently appointed as the general surgery residency program director and Dr. Michael Nabozny won the prestigious Seymour I. Schwartz, M.D. Faculty Excellence in Teaching Award presented annually by the general surgery residents to recognize a leader in surgical education. Our faculty serve on and lead committees of the American Association for the Surgery of Trauma (AAST), Eastern Association for the Surgery of Trauma (EAST), and the American College of

Surgeons Committee on Trauma (ACS-COT).

Dr. Nicole Stassen was elected to the American Board of Surgery Trauma, Burns, and Surgical Critical Care Board. Dr. Paul Bankey remains very active as a site reviewer for the Verification Review Committee of the American College of Surgeons. Our program also houses a Surgical Critical Care fellowship that continues to attract some of the best residents from across the country.

- Our Division Chief, Dr. Mark Gestring, was recently appointed by the U.S. Secretary of Transportation to be the Trauma Surgeon Representative to the National EMS Advisory Council (NEMSAC), and he was instrumental in developing the newly revised National Trauma Field Triage Guidelines published in August 2022.



Pictured: Julius Cheng, M.D., M.P.H., and residents

- We continue to offer the Rural Trauma Team Development Course (RTTDC) to non-trauma centers across our region and we held our first Disaster Management and Emergency



Preparedness (DMEP) course in September 2022—the first of its kind in the Upstate region. We have also expanded our Advanced Trauma Life

Support (ATLS) program, now offering eight courses a year.

- We recently purchased an ambulance and state-of-the-art trauma simulators in order to offer trauma education and skills training at our institution as well as hospitals and emergency medical service agencies across our region. We offer five to ten Stop the Bleed Courses each month, and our program is actively engaged in local violence prevention and firearm injury prevention efforts in conjunction with local advocates, legislators, and law enforcement. High-fidelity trauma and surgical critical care team simulations to enhance training and readiness occur on a monthly basis.
- Our robust performance improvement (PI) program, including trauma video review capabilities, compliments and enhances our

clinical care. Our faculty and program staff are engaged in national PI efforts through EAST as well as the New York State TQIP Collaborative. Our trauma registrars are Certified Specialists in Trauma Registries (CSTR).

- Our program is currently involved in four society-sponsored multi-institutional studies, multiple ongoing local research projects, and the development of two society-sponsored practice management guidelines. The Kessler Trauma Center is the lead institution in the Upstate Acute Care Surgery Research Collaborative, a group of Upstate, New York trauma centers that meets on a regular basis to facilitate multicenter research projects and discuss best practices. Our trauma residents and program staff have won numerous research awards through presentations at national meetings over the past year.

It is a privilege to serve as Trauma Medical Director at this world-class institution, and our trauma program looks forward to sharing our accomplishments in the following pages.

Michael A. Vella, M.D., M.B.A., F.A.C.S.

Kessler Trauma Center Team

Surgeons:



Mark L. Gestring, M.D., F.A.C.S.,
Professor of Surgery, Pediatrics and
Emergency Medicine
Chief, Division of Acute Care Surgery



Michael Rotondo, M.D., F.A.C.S.,
Professor of Surgery; Associate Vice
President for Administration;
Chief Executive Officer; Vice Dean
for Clinical Affairs



Paul E. Bankey, M.D., Ph.D., F.A.C.S.,
Professor of Surgery and Pediatrics
Medical Director, Nutrition
Support Service



**Ayodele T. Sangosanya, M.D.,
M.B.A., F.A.C.S.,**
Associate Professor of Surgery
and Pediatrics



**Julius D. Cheng, M.D., M.P.H.,
F.A.C.S.,**
Professor of Surgery and Pediatrics;
Professor of Clinical Nursing, School
of Nursing



Nicole A. Stassen, M.D., F.A.C.S.,
Professor of Surgery and Pediatrics
and Medical Director of the Kessler
Family Burn/Trauma ICU; Surgical
Critical Care Fellowship Director



Yanjie Qi, M.D., F.A.C.S.,
Associate Professor of Surgery;
General Surgery Residency
Program Director



**Michael A. Vella, M.D., M.B.A.,
F.A.C.S.,**
Assistant Professor of Surgery;
Trauma Medical Director



Michael Nabozny, M.D., F.A.C.S.,
Assistant Professor of Surgery

Administrative Team:

Frank Manzo, M.S.N., A.C.N.P., E.M.T.-P.,
Trauma Program Manager

Lauren Wittman, R.N., B.S.N., C.C.R.N.-C.M.C.,
T.C.R.N., *Pediatric Trauma Program Manager*

Kate Dellonte, R.N., B.S.N., M.B.A.,
*Associate Trauma Program Manager & Trauma
Performance Improvement Coordinator*

Adam Oplinger, B.S., R.N., C.E.N., *Trauma Injury
Prevention/Outreach Coordinator*

Becky Chatt, R.N., M.S., *Trauma Program Educator*

Brooke Streiff, M.H.A., *Trauma Program
Administrator*

Advanced Practice Providers:

Jacob Privitera, P.A., *Lead Trauma APP*

Nichole Coleman, N.P.

Leah Green, N.P.

Andrea Masiello, N.P.

Kelsey Potter, N.P.

Caitlin Randall, N.P.

Zachary Woughter, P.A.

Trauma Registrars:

Stacie Gell, C.S.T.I.R., C.A.I.S.S.

Abby Rothwell

Margaret Vercruysse, B.S., L.P.N., C.S.T.I.R., C.A.I.S.S.

Rachael Podsiadlo, B.S.N., R.N

Liaisons:

Derek Wakeman, M.D., *Pediatric Trauma*

Medical Director

Andrea Miglani, M.D., *Emergency Medicine*

Heather Ma, M.D., *PM&R*

Mark Adams, M.D., *Radiology*

G. Edward Vates, M.D., *Neurosurgery*

David Grimes, D.O., *Anesthesia*

John Gorczyca, M.D., *Orthopedic Surgery*

Debra Roberts, M.D., Ph.D., *Neuro Medicine ICU*

Justin Hopkin, M.D., *Hospital Medicine*

Ciandra D'Souza, M.D., *Hospital Medicine*

Burn Trauma Critical Care

Advanced Practice Providers:

Jonathan Krotz, N.P., *Lead BTICU APP*

Brent LaRiccia, P.A.

Lisa Judge, N.P.

Matthew Traub, N.P.

Lauren Dunning, P.A.

Kylie Terwilliger, N.P.

Sarah Jones, P.A.

Paige Kuebler, P.A.

Jessica Falk, N.P.



Pictured: Kessler Trauma Team



Pictured: Becky Chatt, R.N., M.S., during a Trauma Skills Lab simulation

Education

Regular trauma-related continuing medical education efforts ensure that all providers remain current with the latest advances in trauma care. The Kessler Trauma Center at Strong Memorial Hospital is committed to teaching staff and our community partners how to stabilize and manage critically injured patients.

ADVANCED TRAUMA CARE FOR NURSES (ATCN®)

Advanced Trauma Care for Nurses (ATCN®) is an advanced course designed for the nurse interested in increasing his/her knowledge in the management of the injured patient. Benefits of ATCN® training include an educational, team building, collaborative, and synchronized approach to trauma care. The Kessler Trauma Center has increased this educational offering to ten times per year, including an instructor course.

ADVANCED TRAUMA LIFE SUPPORT (ATLS®)

ATLS® was developed by the American College of Surgeons to provide a systematic, concise approach to trauma care that is applicable to any hospital setting. ATLS® focuses primarily on rapid assessment and initial stabilization and provides the cornerstone of management of the most critically injured patients. The Kessler Trauma Center has increased this educational offering to eight times per year, hosting students from across the U.S. and beyond.

TRAUMA SKILLS LAB

This hands-on educational offering occurs at least once a month and provides an opportunity for all learners (residents, nurses, advanced providers, patient care technicians, respiratory therapists, etc.) to gain experience with trauma-specific equipment, procedural set-up, and procedural skills. Taught by experienced surgeons and trauma program staff, the course includes training on intra-osseous and vascular access, application of tourniquets and pelvic binders, the use of Resuscitation Balloon Occlusion of the Aorta (REBOA), ultrasound, chest tube insertion, and emergency department operative procedures, to name a few. This course is required for all surgical/trauma trainees at least once a year.



MOBILE SKILLS LAB

The Mobile Skills Lab is an extension of the trauma skills lab, providing a similar experience to our regional hospital and EMS partners. Our Mobile Education Unit and state-of-the-art trauma simulator allow us to teach trauma-specific skills



Pictured: Michael Vella, M.D., M.B.A., on Good Day Rochester

outside of our facility to improve the overall care of injured patients in our larger region.

TRAUMA SIMULATION

Trauma simulation provides an opportunity to practice technical and team skills in a controlled and safe environment. Utilizing the most advanced trauma simulators, we host monthly simulations in the adult and pediatric emergency departments as well as the BTICU. Simulated scenarios are based on actual trauma resuscitations in which we identified potential opportunities for improvement.

RURAL TRAUMA TEAM DEVELOPMENT COURSE (RTTDC®)

The Rural Trauma Team Development Course was developed by the American College of Surgeons and is intended to improve the quality of care in rural settings by helping non-trauma centers

recognize critically injured patients and offering tools for stabilizing these patients for transfer to a trauma center. This course is typically offered four times in the spring and four times in the fall, or as requested, at facilities in rural communities.

DISASTER MANAGEMENT AND EMERGENCY PREPAREDNESS (DMEP®)

DMEP® teaches planning methods, preparedness and medical management of trauma patients in mass casualty disaster situations. The Kessler Trauma Center is the first institution in the Upstate region to offer this important course.

TRAUMA EDUCATION CONFERENCE

The Trauma Education Conference is a home-grown program offering monthly trauma education on topics ranging from wound care to physical therapy to clinical management of specific injuries.

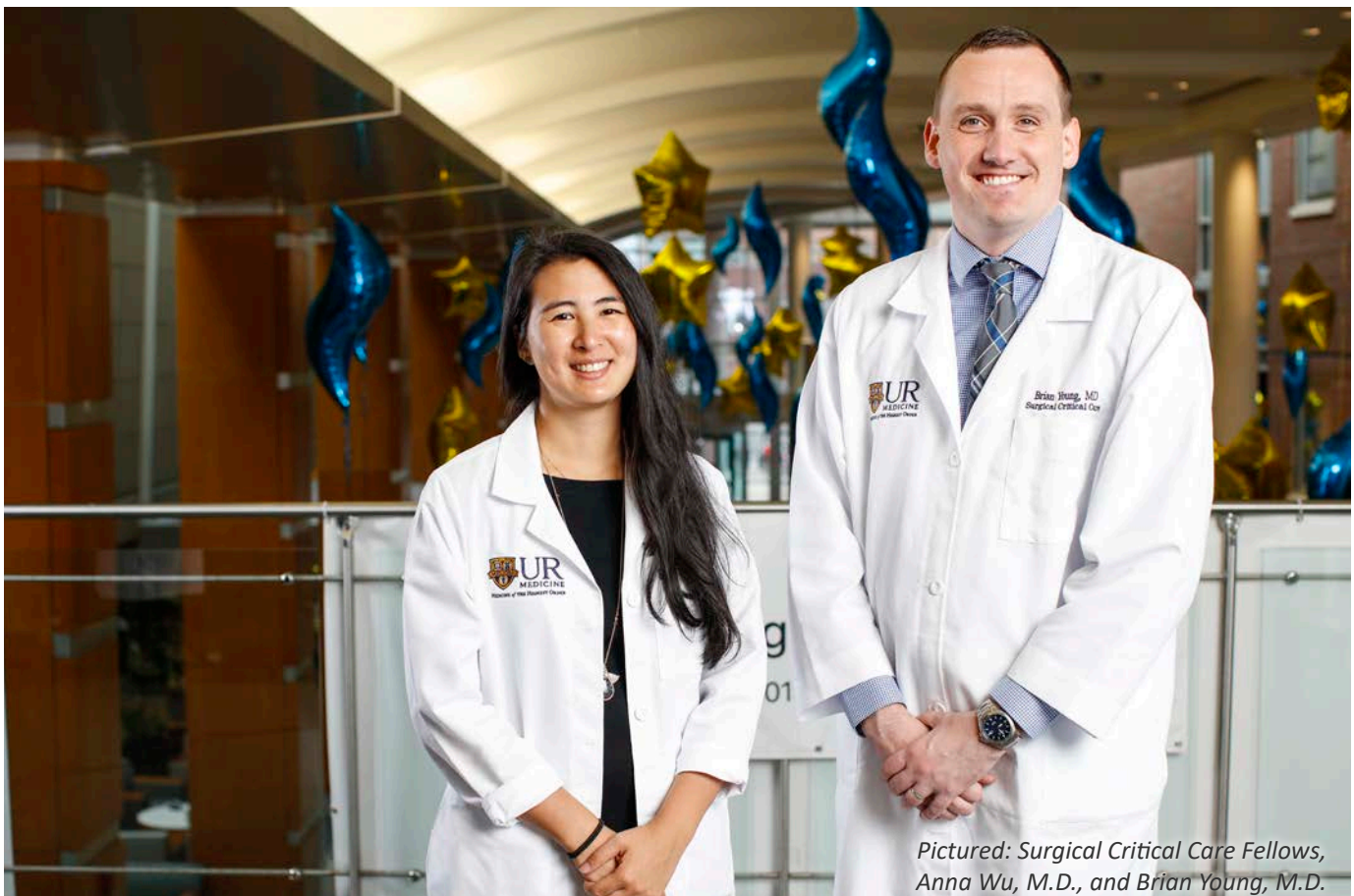
Instructors include local experts as well as those on the national stage. This virtual course is also offered to our regional partners.

TRAUMA SURVIVOR'S NETWORK (TSN)

The Kessler Trauma Center is now part of the Trauma Survivor's Network (TSN). TSN is designed to help trauma centers provide support services to patients and their families during recovery from a serious injury, often through support groups and individual connections with other survivors. TSN has allowed us to build a community of advocates dedicated to improving prevention efforts and trauma outcomes.

SURGICAL CRITICAL CARE FELLOWSHIP

The Division houses a long standing ACGME-accredited one-year surgical critical care fellowship which provides significant flexibility for trainees to tailor their education to their unique goals. Fellows rotate through our busy burn trauma, surgical, and neuromedicine intensive care units and participate in the acute management and operative care of injured patients. We are proud to train the next generation of surgical critical care leaders.



Pictured: Surgical Critical Care Fellows, Anna Wu, M.D., and Brian Young, M.D.

trauma survivors
network
provided by ATS
survive. connect. rebuild.



 **UR**
MEDICINE
Kessler Trauma Center


Rochester
Spinal Association



Challenger
MIRACLE FIELD

Pictured: Becky Chaff, R.N., M.S., Nicole Stassen, M.D., and Brooke Streiff, M.H.A., at a Trauma Survivors Network event

Injury Prevention & Outreach

A robust program of community outreach and injury prevention has seen staff from the Kessler Trauma Center interact with thousands of individuals throughout Rochester, Monroe County and the Finger Lakes Region, delivering a variety of programs including:

STOP THE BLEED®

Developed by the American College of Surgeons to provide hemorrhage control training for members of the lay public, Stop The Bleed® (STB) has been one of our most popular offerings. As one of the largest STB training centers in the Northeast, we have delivered this training in various settings over 50 times in 2022, to include everything from small groups of less than ten to large groups of 300 and everything in between. We partner with Stop The Bleed® instructors from many different first responder organizations in our area to deliver this life-saving training.



RESPONSIBLE GUN OWNERSHIP

In partnership with the Monroe County Sheriff's Office, the Responsible Gun Ownership program puts Trauma Program staff together with Monroe County Sheriff's deputies who are experts in firearms use and law to engage with legal gun owners on the topics of keeping their firearms safe. Points of discussion include safe firearm and ammunition storage, firearm safety around

children, firearm safety with at-risk individual and family members and safe firearm handling.

SMARTPHONE EMERGENCY MEDICAL ID

A new program in 2022, the Smartphone Emergency Medical ID (SEMID) program is based on

research done by our Trauma Medical

Director, Dr. Michael Vella, and

his colleagues that identified

a need to educate the public

and medical providers on

this feature of a device that

nearly every individual now

carries with them all the time.

The Trauma Program produced

several videos on how to set

up this feature on different types of

smart phones and how to access the information

on these devices. These videos are posted to the

Kessler Trauma Center YouTube channel and are

available for free for the general public to view. We

also partner with local first response agencies to

increase awareness of this feature, and we provide

them with educational materials that they can use

when interacting with members of the public to

help increase awareness and use of this potentially

life-saving feature of their smartphone.



Pictured: Emergency training simulation

Patient Experience

A 55 y/o male, Mr. Smith, is severely injured in a high-speed motor vehicle crash about 60 miles from the University of Rochester. The responding emergency medical crew is acutely aware that Mr. Smith meets the criteria requiring the services of a trauma center. He is rapidly transported by medical helicopter to the Kessler Trauma Center at Strong Memorial Hospital in Rochester, the only American College of Surgeons (ACS) Verified trauma center in the Finger Lakes Region of New York. En route, a breathing tube is placed and he is transfused with whole blood due to a concern for ongoing major bleeding. The in-house team at the Kessler Trauma Center is alerted to the pending arrival of Mr. Smith by a communications nurse and quickly mobilizes in one of the trauma bays in the emergency department. A pre-brief is performed to introduce the team, review patient information, and prepare for any anticipated procedures.

Upon arrival, Mr. Smith is brought to the trauma bay, which is staffed with an attending trauma surgeon, attending emergency medicine physician, surgical and emergency medicine residents, advanced practice providers, critical care nurses, patient care technicians, a respiratory care technician, and additional sub-specialty support such as orthopedic surgery when indicated. Social workers and a chaplain are also mobilized to the area for additional support.

Mr. Smith is found to have a low blood pressure, presumably due to ongoing major bleeding. Additional whole blood and tranexamic acid are immediately administered and the trauma massive transfusion protocol is activated. Immediately available bedside x-ray and ultrasound imaging reveal no major bleeding in the chest or abdomen but concern for a major pelvic fracture with ongoing bleeding. The trauma and orthopedic teams place a pelvic binder device to rapidly slow major bleeding, and a catheter with a balloon tip is placed into the abdominal aorta via the right groin in order to stop major blood flow into the pelvis and slow bleeding. Meanwhile, a timer on the wall of the trauma bay keeps track of resuscitation time with a goal disposition of 15 minutes to the next phase of care.

With improved vital signs, Mr. Smith is taken to one of two state-of-the-art CT scanners immediately adjacent to the trauma bay within 15 minutes of arrival. The team closely monitors the patient from the CT control room during his scan while watching his vital signs via the portable cardiac



monitor. The additional imaging confirms multiple pelvic fractures with active bleeding. The on-call interventional radiology team is consulted and within 60 minutes performs a minimally invasive intervention to stop bleeding from the major arteries in the pelvis. The previously placed aortic catheter is removed.

Mr. Smith is then brought to our specialized Burn Trauma Intensive Care Unit (BTICU) for close vital sign monitoring and additional resuscitation. The BTICU is staffed with critical care trained surgeons and anesthesiologists as well as advanced practice providers and nurses. The majority of our nurses on all trauma units are trained in Advanced Trauma Care for Nursing (ATCN®) and certified as Trauma Certified Registered Nurses (TCRN). We ensure that our nurses are trained to the highest level as

exhibited by our Magnet Hospital status.

On hospital day two, Mr. Smith is taken to the operating room where the orthopedic surgery team repairs his pelvic fractures and his breathing tube is removed. The following day he begins to work with our specialty-trained physical and occupational therapists. Our social worker performs a comprehensive assessment with Mr. Smith and his wife, discussing factors like the number of floors in his home and locations of bedrooms and bathrooms in order to prepare for and ensure an appropriate discharge. Mr. Smith is deemed appropriate for discharge from the BTICU on hospital day four and is transferred to our 26-bed general trauma unit. He progressively regains strength and mobility through working with the physical therapist and is evaluated on his ability to perform activities of



Pictured: Yanjie Qi, M.D., and resident



Pictured: Patient using SafeGait system

daily living (ADLs) with the occupational therapist. The team ultimately decides that Mr. Smith would benefit from more intensive rehabilitation prior to discharge home, and our Physical Medicine and Rehabilitation (PM&R) team is consulted. They agree that Mr. Smith would benefit from our Commission on Accreditation of Rehabilitation facilities (CARF) Accredited Acute Inpatient Rehabilitation Unit, which is located just down the hall from our general trauma ward.

On hospital day seven, Mr. Smith is discharged to our rehabilitation unit, which is staffed by rehabilitation medicine physicians (physiatrists), rehabilitation nurses, dedicated physical and occupational therapists, and social workers. They utilize robot technology to allow patients to practice movement, a computerized therapy

system, and SafeGait, which is a ceiling-mounted body-weight support and fall protection system. The facility also has a mocked-up apartment to practice ADLs and a car to practice transfers in and out of a vehicle.

On rehabilitation day ten, the PM&R team deems Mr. Smith safe for discharge home. The discharge coordinator and social worker arranged for a hospital bed and shower chair to be delivered to his home. A wheelchair is delivered to his room, while a ramp is built at his residence by his oldest son. The staff wheel Mr. Smith down to his awaiting transportation and watched him successfully transfer into the vehicle. Mrs. Smith drives the couple home. Outpatient follow-up with the trauma and orthopedic surgery services as well as physical therapy is arranged.



Pictured: Mark Gestring, M.D., receiving the FBI's Directors Community Leadership Award

Achievements, Performance Improvement & Registry

Benchmark achievements

LEVEL 1 TRAUMA CENTER RE-VERIFICATION

In February 2020, we were re-verified by the American College of Surgeons Committee on Trauma as a Level I trauma center (the highest designation) for another three-year term.

The reviewers noted that the trauma team's commitment to providing quality care across the region was a notable strength.

TRAUMA QUALITY IMPROVEMENT PROGRAM (TQIP) BENCHMARK REPORTING

We have been recognized by the American College of Surgeons TQIP program as a top ten percent performing trauma center in the following categories relative to peer institutions across the United States:

- Adverse hospital events including mortality in patients with severe traumatic brain injury (Fall 2021, Spring 2022, Fall 2022).
- Adverse hospital events including mortality for all patients (Fall 2021, Spring 2022, and Fall 2022)
- Adverse hospital events for blunt multisystem patients (Spring 2022, Fall 2022)

- Complications of ventilator-associated pneumonia and unplanned return to the operating room (Fall 2021, Spring 2022, Fall 2022).

Performance Improvement

PERFORMANCE IMPROVEMENT (PI) PROCESS

Performance improvement (PI) is the cornerstone of our trauma program, ensuring that we are providing exceptional, evidence-based care and maintaining the highest level of standards required for trauma center verification. As such, we continually evaluate and improve upon our already robust PI process. Trauma program leadership formally meets once a week to review all cases meeting pre-specified criteria requiring more in-depth review and to ensure compliance with institutional protocols. This process allows us to proactively identify trends in care that may indicate need for improvements prior to receiving our TQIP reports. Cases or specific trends requiring additional review are sent to formal morbidity and mortality conference, our monthly multidisciplinary conference or for broader institutional review if required. This rigorous process highlights our program and institutional commitment to the PI process and maintaining the highest standards of care.



Pictured: Kelsey Potter, N.P. , Leah Green, N.P., Nichole Coleman, N.P., Caitlin Randall, N.P.

Performance Improvement Highlights

TERTIARY SURVEY PERFORMANCE IMPROVEMENT PROJECT

All admitted trauma patients receive what is termed a “tertiary survey”, or a full head-to-toe evaluation to identify any injuries not found during the initial assessment when more serious injuries may have taken precedence. We recently expanded this assessment to incorporate 1) screening, brief intervention, and referral to treatment (SBIRT) for substance use disorders, 2) intimate partner violence screening, and 3) a more detailed comorbidity assessment to accurately capture

and management baseline medical issues. This has led directly to improved capture of medical comorbidities as well as increased SBIRT screening and referral rates.

ALERT NURSE PROGRAM

In conjunction with our Burn Trauma Intensive Care Unit (BTICU) team, we created the role of “Alert Nurse” (AN). This individual is a BTICU nurse assigned each shift to respond to all top tier trauma activations and assist the emergency department nurses in resuscitations. In addition, the AN travels with patients for testing and transfer to admitting units in order to ensure continuity of care, a safe handoff, and allow the emergency department nurses to return to other patients. Following

implementation, we have noted significant reductions in time to ICU disposition, allowing patients to leave the emergency department faster.

HOSPITAL MEDICINE & TRAUMA CO-MANAGEMENT TEAM

With the recent implementation of the Hospital Medicine Co-management Team, we now have expert hospitalists with general medical and geriatric expertise embedded into the trauma program. These physicians assist with the care of medically complex trauma patients and/or those with advanced age. Specifically, this role includes management of acute and chronic medical comorbidities (such as diabetes), prevention of complications, management of geriatric syndromes (delirium, polypharmacy, etc.), medication reconciliation, evaluation and management of traumatic ground-level falls, advanced care directive planning, and assisting with safe and appropriate disposition. This program will allow better capture of comorbidities, decrease need for ICU level care, decrease length of stay and improve acute and long-term outcomes.

PRE-HOSPITAL AND EMERGENCY MEDICAL SERVICES (EMS) PERFORMANCE IMPROVEMENT

We continue to provide detailed feedback to our pre-hospital providers using standardized rubrics, which include metrics of interest to EMS, recognition of exceptional care, and identified opportunities for improvement. We submit monthly data reports to our EMS agencies and engage in standing monthly meetings with regional EMS

leadership and individual agencies to identify opportunities to improve regional trauma care.

IMPROVING VENOUS THROMBOEMBOLISM (VTE) COMPLICATION RATES

Last year we noticed an increase in venous thromboembolism rates, which was also reflected in our TQIP report at the time. In conjunction with our pharmacists and multidisciplinary trauma team, we created a robust, trauma-specific VTE prophylaxis clinical practice guideline reflecting the most recent national recommendations.

Following implementation, we noticed a marked decrease in VTE rates and have been on target on our two most recent TQIP reports. We follow compliance with our VTE protocol on an ongoing basis to ensure sustained progress.



PROGRESSIVE CARE UNIT

We created and opened a Progressive Care Unit on our dedicated trauma floor unit. These beds are reserved for patients not requiring intensive care unit (ICU) admission but who may require increased frequency of monitoring due to complex injuries or medical comorbidities. Nurses caring for these patients have decreased patient ratios in order to provide a higher level of care while allowing

patients to remain out of the ICU and closely monitored. These changes alleviate stressors on our ICU and allow additional space for more critically injured patients.

WHOLE BLOOD PROGRAM

The use of cold-stored whole blood has seen a resurgence in the civilian trauma community, with recent reports showing a survival benefit when compared with other blood products. Our whole blood program was started in January 2021 through a joint effort with our blood bank and the American Red Cross. In the first 18 months of the program, we transfused over 100 patients



and have demonstrated a marked improvement in the ratio of blood products transfused to this critically injured population. Our surgeons recently lobbied New York State to allow helicopter emergency medical services

to carry and transfuse blood, which came to fruition in July 2022 as multiple services in our area now offer these life-saving products.

GOLD LEVEL BEACON AWARD FOR EXCELLENCE

In August 2019, the Kessler Family Burn/Trauma ICU (BTICU) received a Gold Level Beacon Award for Excellence from the American Association of Critical Care Nurses (AACN). This award recognizes

intensive care units dedicated to improving all aspects of patient care and creating a healthy work environment for all staff. Specifically, the BTICU received the highest level of recognition for its use of Unit-Based Safety Nurses (who audit, assess, educate and evaluate current ICU practices), Interdisciplinary Safety Retreats, and reducing Hospital Acquired Conditions among many other initiatives. Our BTICU continues to raise the bar in critical care management.

Registry

DATA COLLECTION

Our highly-trained trauma registrar team uses specialized software to collect over 200 data points on each trauma patient meeting pre-specified inclusion criteria based on New York State Department of Health and the American College of Surgeons TQIP standards. In addition, we include a significant number of additional filters specific to our institution to ensure a more granular data collection process for research and performance improvement.

DATA VALIDATION IMPROVEMENTS

Accurate data capture is critical in creating local and national (TQIP) PI reports. Our program created an extensive data dictionary to clearly define data points and indicate where this information can be found in the electronic medical record. We then developed data validation workflows and educational resources to improve data accuracy. Through this process we found that an increase in



Pictured sitting from left to right: Becky Chatt, R.N., M.S.; Kate Dellonte, R.N., B.S.N., M.B.A.; Margaret Vercruysse, B.S., L.P.N., C.S.T.R., C.A.I.S.S.; Brooke Streiff, M.H.A.; Frank Manzo, M.S.N., R.N., A.C.N.P., E.M.T-P.

Standing from left to right: Rachael Podsiadlo, B.S.N., R.N.; Adam Oplinger, B.S., R.N., C.E.N.; Mark Gestring, M.D.; Michael A. Vella, M.D., M.B.A.; Stacie Gell, C.S.T.R., C.A.I.S.S. (Abby Rothwell, *not pictured*)

ventilator associated pneumonia (VAP) rate was related to discrepancies in data collection rather than a true quality of care issue. With improved data accuracy, our VAP rate markedly improved to the point that we were identified as a top national performer in our Fall 2022 TQIP report.

IMPROVING REGISTRY EFFICIENCY

In the fall of 2021 we performed a “registry reboot”, where trauma program staff and leadership

implemented new workflows aimed at improving registry practices and optimizing efficiency, productivity, and data accuracy. Within the first six months of piloting these changes, we noted marked improvements in case closure rate within 60 days (99.6%), exceeding the expectation of the American College of Surgeons level 1 verification criteria of 80%. We also improved the average inter-rater reliability score to 94% among all of our registrars, indicating high consistency with data abstraction.

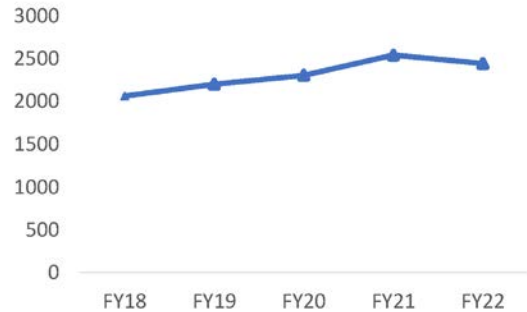
Kessler Trauma Center Data

Volumes:

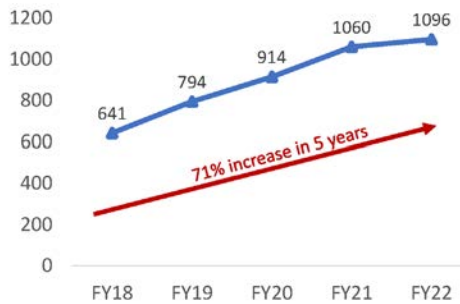
Total Injured Patients



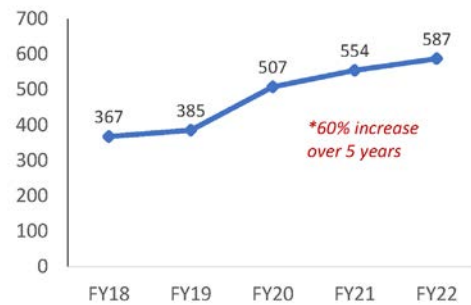
Total Admission Volume (All Services)



Total Trauma Surgery Service Admissions



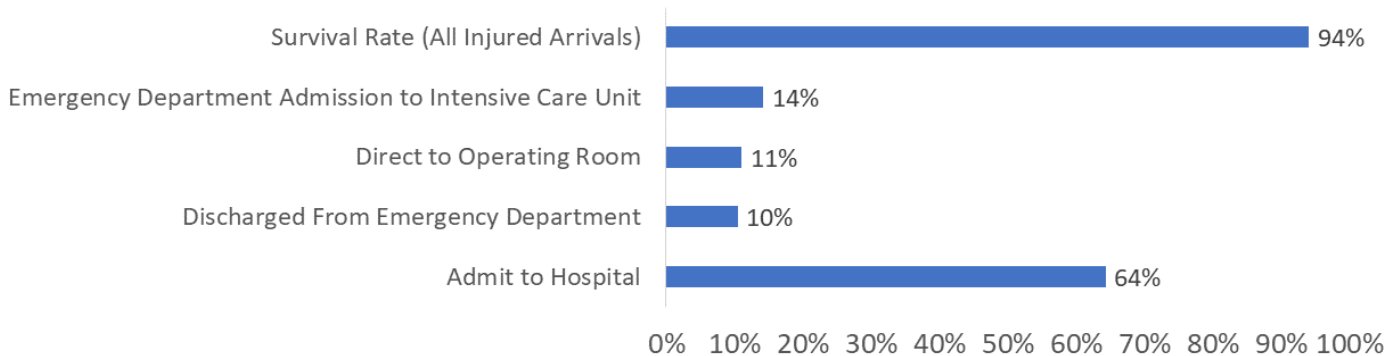
Total Burn Trauma ICU Admissions



Outcomes:

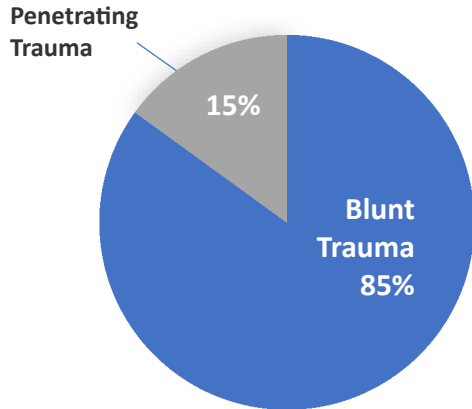
Disposition Data

Average % of Patients
2018-2022

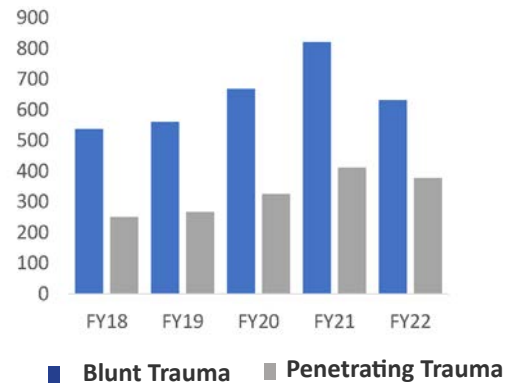


Injuries:

Mechanism of Injury Trends
Based on total patient arrivals
2018-2022



Mechanism of Injury
Trauma Team Activations

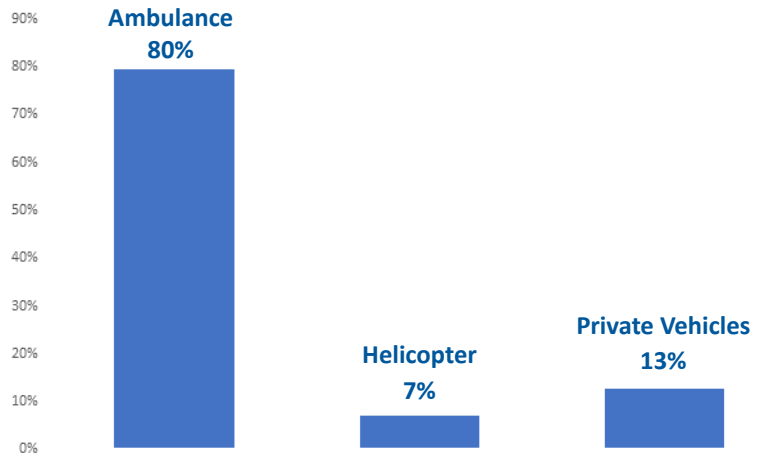


Pre-Hospital:

Top 5 Mechanisms of Injury
2020-2022

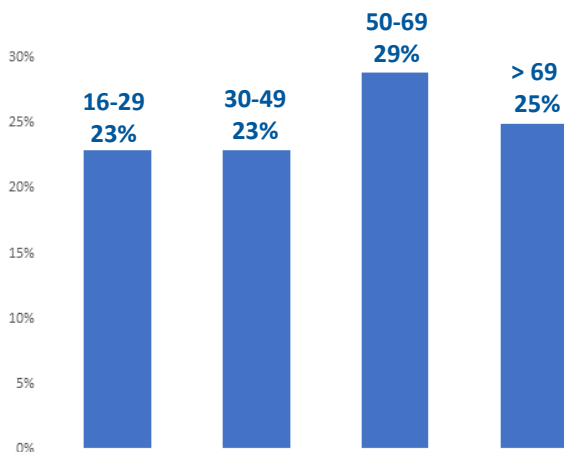
- Fall: 39%
- Motor Vehicle Crash: 19%
- Gunshot Wound: 8%
- Stab Wound: 6%
- Motorcycle Crash: 5%

Patient Arrival Method
2018-2022

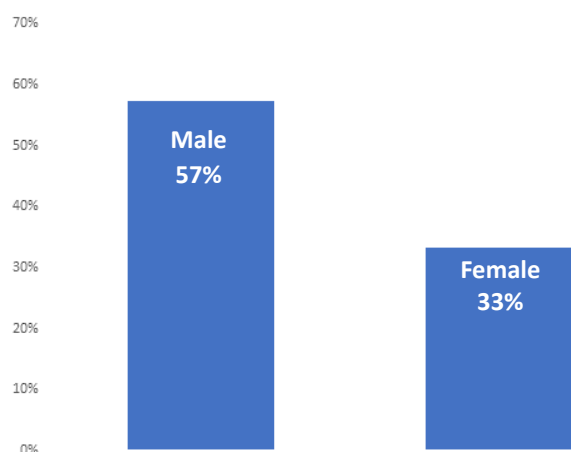


Demographics:

Average Age of Trauma Patients
2018-2022



Sex
2018-2022



Recent Publications

ACUTE CARE SURGERY and TRAUMA:

Ruffolo LI, Gaba H, Dale BS, Sandler M, **Vella MA**, **Stassen NA**, **Wilson NA**, **Wakeman DS**. Outcomes after child physical abuse and association with community-level social determinants of health. *J Am Coll Surg*. 2022, Online ahead of print. doi: 10.1097/XCS.0000000000000302.

Ganpo-Nkwenkwa NS, **Wakeman DS**, Pierson L, **Vella MA**, **Wilson NA**. Long-term functional, psychological, emotional, and social outcomes in pediatric victims of violence. *J Pediatr Surg*. 2022, Article in press. doi: 10.1016/j.jpedsurg.2022.07.021.

Dumas RP, Cook C, Holena DN, **Qi Y**, Tabone N, Studwell SL, Miglani A, **Vella MA**. Roll the tape: Implementing and harnessing the power of trauma video review. *J Surg Educ*. 2022, Online ahead of print. doi: 10.1016/j.jsurg.2022.08.010.

Rees JR, Maher Z, Dumas RP, **Vella MA**, Schroeder ME, Milia DJ, Zone AI, Cannon JW, Holena DN. Trauma video review outperforms prospective real-time data collection for study of resuscitative thoracotomy. *Surgery*. 2022, Online ahead of print. doi: 10.1016/j.surg.2022.06.021.

Newgard CD, Fischer PE, **Gestring M**, Michaels HN, Jurkovich GJ, Lerner EB, Fallat ME, Delbridge TR, Brown JB, Bulger EM. National guideline for the field triage of injured patients: Recommendations of the

National Expert Panel on Field Triage, 2021. *J Trauma Acute Care Surg*. 2022;93(2):e49-e60. doi: 10.1097/TA.00000000000003627.

Lupton JR, Davis-O'Reilly C, Jungbauer RM, Newgard CD, Fallat ME, Brown JB, Mann NC, Jurkovich GJ, Bulger E, **Gestring ML**, Lerner EB, Chour R, Toten AM. Mechanism of injury and special considerations as predictive of serious injury: A systematic review. *Acad Emerg Med*. 2022;29(9):1101-1117. doi: 10.1111/acem.14489.

Lupton JR, Davis-O'Reilly C, Jungbauer RM, Newgard CD, Fallat ME, Brown JB, Mann NC, Jurkovich GJ, Bulger E, **Gestring ML**, Lerner EB, Chour R, Toten AM. Under-triage and over-triage using the Field Triage Guidelines for injured patients: A systematic review. *Prehosp Emerg Care*. 2022, Online ahead of print. doi: 0.1080/10903127.2022.2043963.

Fischer PE, **Gestring ML**, Sagraves SG, Michaels HN, Patel B, Dodd J, Champion EM, VanderKolk WE, Bulger EM. The national trauma triage protocol: How EMS perspective can inform the guideline revision. *Trauma Surg Acute Care Open*. 2022;7(1):e000879. doi: 0.1136/tsaco-2021-000879.

Morgan MM, Perina DG, Acquisto NM, Fallat ME, Gallagher JM, Brown KM, Ho J, Burnett A, Laret J, Rowe D, **Gestring ML**. Ketamine use in prehospital and hospital treatment of the acute trauma patient: A joint position statement. *Prehosp Emerg Care*.



Pictured: Kessler Trauma Team at a Red Wings baseball outreach event

2021;25(4):588-592. doi:10.1080/10903127.2020.1801920.

Tseng ES, Weaner JL, **Sangosanya AT**, Gelbard RB, Martin MJ, Tung L, Santos AP, McCunn M, Bonne S, Joseph B, Zakrisson TL and the Eastern Association for the Surgery of Trauma Equity, Quality, Inclusion Committee. And miles to go before we sleep: EAST diversity and inclusivity progress and remaining challenges. *Ann Surg*. 2021, Online ahead of print. doi: 10.1097/SLA.0000000000005290.

Rivas L, **Vella M**, Ju T, Fernandez-Moure JS, Sparks A, Seamon MJ, Sarani B. Early chemoprophylaxis against venous thromboembolism in patients with traumatic brain injury. *Am Surg*. 2021;88(2):187-93. doi: 10.1177/0003134820983171.

Burchard PR, Poleshuck EL, Yates EH, Cerulli C, **Gestring ML**, **Vella MA**. A different city's experience

with COVID-19 and interpersonal violence: Increase support-seeking but decreased service use. *J Am Coll Surg*, Article in Press. doi: 10.1016/j.jamcollsurg.2020.12.065.

Rivas L, Estroff J, Sparks A, Nahmias J, Allen R, Smith SR, Kutcher M, Carter K, Grigorian A, Albertson S, Turay D, Quispe JC, Luo-Owen X, **Vella M**, Pascual J, Tortorello G, Quattrone M, Bernard A, Ratnasekera A, Lee A, Tamburrini D, Rodriguez C, Harrell K, Jeyamurugan K, Bugaev N, Warner A, Weinberger J, Hazelton JP, Selevany M, Wright F, Kovar A, Urban S, Hamrick A, Mount M, Carrick M, Cullinane DC, Chang G, Jain G, Spalding C, Sarani B. The incidence of venous thromboembolic events in trauma patients after tranexamic acid administration: An EAST multicenter study. *Blood Coagul Fibrinolysis*. 2021;32(1):37-43. doi: 10.1097/MBC.0000000000000983.

Taghavi S, Maher Z, Goldberg AJ, Chang G, Mendioloa M, Anderson C, Ninokawa S, Tatebe L, Maluso P, Raza S, Keating JJ, Burruss S, Reeves M, Coleman LE, Shatz DV, Goldenberg-Sandau A, Bhupathi A, Spalding MC, LaRiccia A, Bird E, Noorbakhsh MR, Babowice J, Nelson MC, Jacobson LE, Williams J, **Vella MA, Dellonte K**, Hayward TZ, Holler E, Lieser MJ, Berne J, Mederos DR, Askari R, Okafor B, Haut ER, Etchill E, Fang R, Roche SL, Whittenburg L, Bernard AC, Haan J, Lightwine KL, Norwood S, Murry J, Gamber MA, Carrick



MM, Bugaev N, Tatar A, Duchesne J, Tatum D. An Eastern Association for the Surgery of Trauma Multicenter Trial Examining Prehospital Procedures in Penetrating Trauma

Patients. *J Trauma Acute Care Surg.* 2021;91(1):130-140. doi: 10.1097/TA.0000000000003151.

Taghavi S, Maher Z, Goldberg AJ, Haut ER, Raza, S, Chang G, Tatebe L, Toraih E, Mendioloa M, Anderson C, Ninokawa S, Maluso P, Keating JJ, Burruss S, Reeves M, Coleman LE, Shatz DV, Goldenberg-Sandau A, Bhupathi A, Spalding MC, LaRiccia A, Bird E, Noorbakhsh MR, Babowice J, Nelson MC, Jacobson LE, Williams J, **Vella MA, Dellonte K**, Hayward TZ, Holler E, Lieser MJ, Berne J, Mederos DR, Askari R, Okafor B, Etchill E, Fang R, Roche SL, Whittenburg L, Bernard AC, Haan J, Lightwine KL, Norwood

S, Murry J, Gamber MA, Carrick MM, Bugaev N, Tatar A, Tatum D. An Analysis of Police Transport in An Eastern Association for the Surgery of Trauma Multicenter Trial Examining Prehospital Procedures in Penetrating Trauma Patients. *J Trauma Acute Care Surg.* 2022, Online Ahead of Print. doi: 10.1097/TA.0000000000003563.

VASCULAR SURGERY:

Kruger JL, Balceniuk MD, Zhao P, Ayers BC, **Ellis JL, Doyle AJ, Glocker RJ, Stoner MC.** Left subclavian artery coverage is not associated with neurological deficits in trauma patients undergoing thoracic endovascular repair. *Ann Vasc Surg.* 2022, Online ahead of print. doi: 10.1016/j.avsg.2022.04.050.

NEUROSURGERY:

George DD, Houk C, Pieters TA, Towner JE, **Stone JJ.** Meningitis due to intra-abdominal cerebrospinal fluid fistula following gunshot wound successfully treated with antibiotics and blood patch: A case report and literature review. *Surg Neurol Int.* 2022;13(308). doi: 10.25259/SNI_390_2022.

ORTHOPEDIC SURGERY:

Samborski SA, Haws BE, Karnyski S, **Soles G, Gorczyca JT, Nicandri G, Voloshin I, Ketz JP.** Outcomes for type C proximal humerus fractures in the adult population: Comparison of nonoperative treatment, locked plate fixation, and reverse shoulder arthroplasty. *JSES International.* 2022, Online ahead of print. doi: 10.1016/j.jseint.2022.05.006

The Kesslers



For many years Laurence and Dennis Kessler have dedicated themselves to helping people in their time of greatest need. Through their efforts and those of the managers and employees of the Kessler Group, Inc., the Laurence and Dennis Kessler Regional Trauma Unit in Strong Memorial Hospital's Emergency Department was dedicated in 1997. In 2003, Kessler Family, LLC employees joined in fundraising efforts for the first time, initiating a new and generous commitment to name this Burn/Trauma Intensive Care Unit. In 2010, the Kessler Burn & Trauma Center was named in honor of the Kesslers generosity and extraordinary commitment to the

burn and trauma programs at the hospital and the thousands of patients they serve each year.

Successful businessmen, philanthropists, and individuals dedicated to the health of the region, the Kesslers have built an invaluable legacy for the Rochester community and beyond. The charitable works of their employees exemplify their compassionate and generous spirit.

Giving

The Kessler Burn & Trauma Center relies on the generous giving of past patients and their families and friends, health professionals, alumni, and community residents. Gifts to the Center have a tremendous impact. Funds are used to improve patient care, continue education, and develop community programs.

The Kessler Burn & Trauma Center, as a part of the University of Rochester Medical Center, is a not-for-profit organization and all gifts made to the Center are deductible according to IRS guidelines.

Please contact Valerie Donnelly to learn more about ways you can help.

(585) 276-4978 Valerie.Donnelly@rochester.edu



Sneak Peak

When the Strong Memorial Hospital Emergency Department expansion project is completed in 2027, it will include a state of the art trauma resuscitation bay designed specifically to support regional injury care for decades to come. The new space will be significantly larger and will include enhanced resuscitation and imaging capabilities. In addition to clinical space, this new trauma facility is designed to support multi-casualty and disaster care in the event that such flexibility is required.

KESSLER TRAUMA CENTER
DEPARTMENT OF SURGERY
601 Elmwood Avenue
Rochester, NY 14642

