

2024

Trauma Report



Trauma Annual Report

Community Regional Medical Center

UCSF Fresno

Introduction

Community Regional Medical Center is located in downtown Fresno, California, and is home to a Level I Trauma Center, which is the highest distinction verified by the American College of Surgeons.

The trauma center has 24 hours, 7 days a week coverage by 12 surgeons board certified in surgery and critical care. Patients are treated through a multi-disciplinary approach involving advanced practice personnel, nurses, respiratory, physical, speech, and occupational therapists, social workers, dietitians, and pharmacists.

In addition to caring for patients, trauma center personnel strive to educate healthcare professionals throughout the Central Valley in the care of trauma patients. This includes education for nurses, physicians, and overall education for rural healthcare facilities that might be the first to receive and stabilize injured patients.

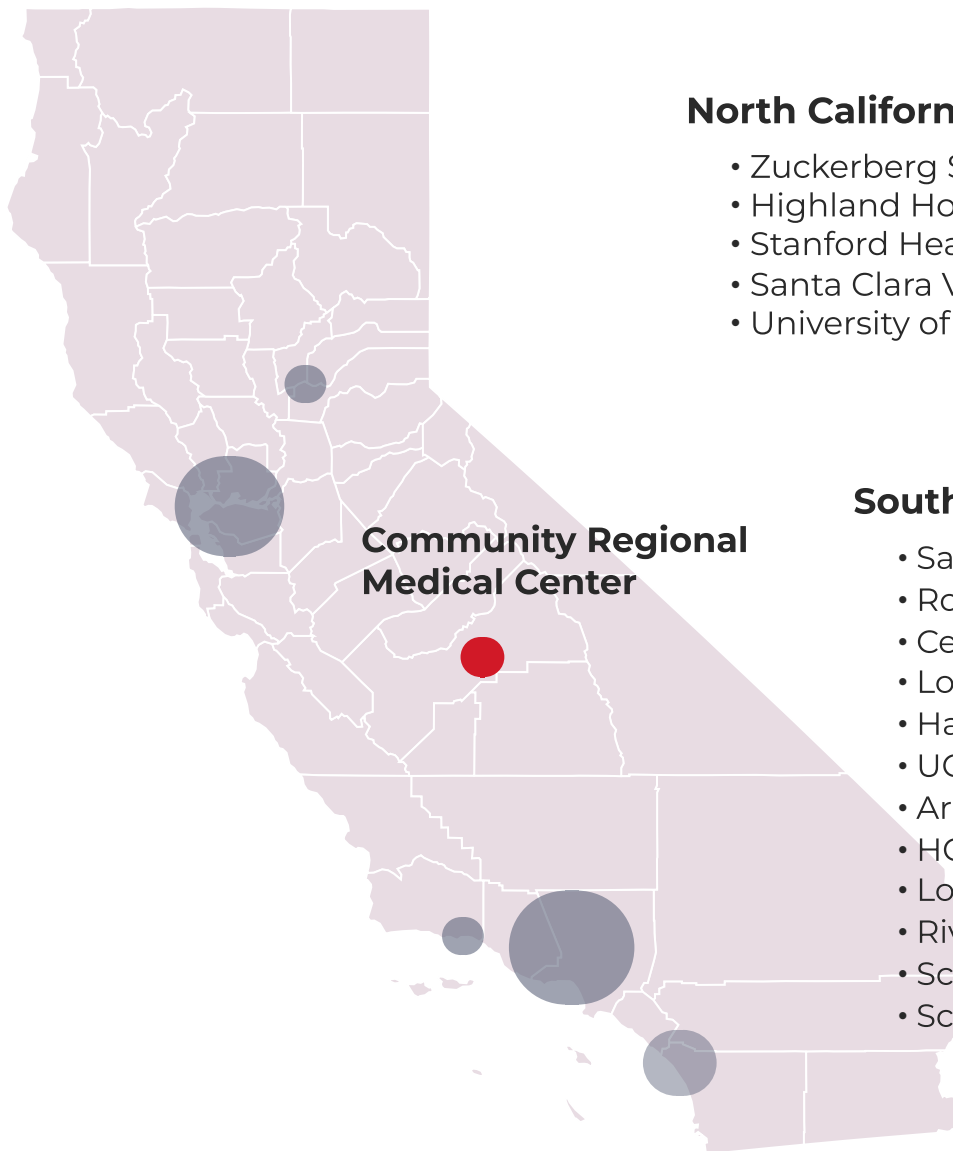
One major component of being a trauma center is educating the public on preventing injuries. Our institution has many outreach programs for the public, including: Matter of Balance, Impact Teen Drivers, Stop the Bleed, and Violence Intervention and Prevention program.

The treatment of trauma patients is constantly evolving in order to improve outcomes, which is made possible through research. Community Regional Medical Center has a robust trauma research program with many different areas of study. This research is published in peer-reviewed medical journals and presented at national and international conferences to share results with other trauma practitioners and advance the knowledge of caring for trauma patients.



Level I Trauma Centers in California

Community Regional Medical Center is located in downtown Fresno, California. It serves a 15,000-square-mile service area as the only Level I Trauma Center between Los Angeles and Sacramento.



North California

- Zuckerberg San Francisco General Hospital
- Highland Hospital
- Stanford Health Care
- Santa Clara Valley Medical Center
- University of California, Davis Medical Center

South California

- Santa Barbara Cottage Hospital
- Ronald Reagan UCLA Medical Center
- Cedars-Sinai Medical Center
- Los Angeles General Medical Center
- Harbor UCLA Medical Center
- UC Irvine Health
- Arrowhead Regional Medical Center
- HCA Riverside Community Hospital
- Loma Linda University Medical Center
- Riverside University Health Systems
- Scripps Memorial Hospital
- Scripps Mercy Hospital

Trauma Surgeons



Sue Lawrence, MD, FACS
Trauma Medical Director



David Jeffcoach, MD, FACS
Assistant Trauma Medical Director



James Davis, MD, FACS
Chief of Surgery



Jordan Lilienstein, MD, FACS



Krista Kaups, MD, MSc,
FACS, FCS



Amy Kwok, MD, MPH,
FACS



Andrea Long, MD, FACS



Shana Ballow, DO, FACS



Nancy Parks, MD, FACS



Elliot Williams, MD



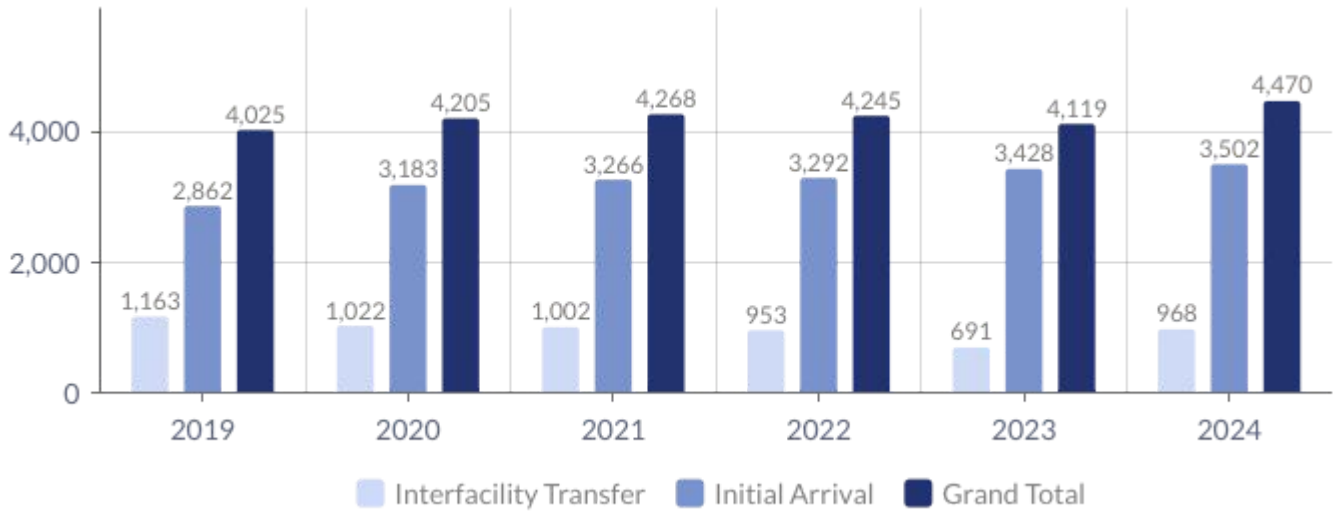
A. Sarada Rao, MD



Nicole Kopari, MD, FACS

Trauma Stats

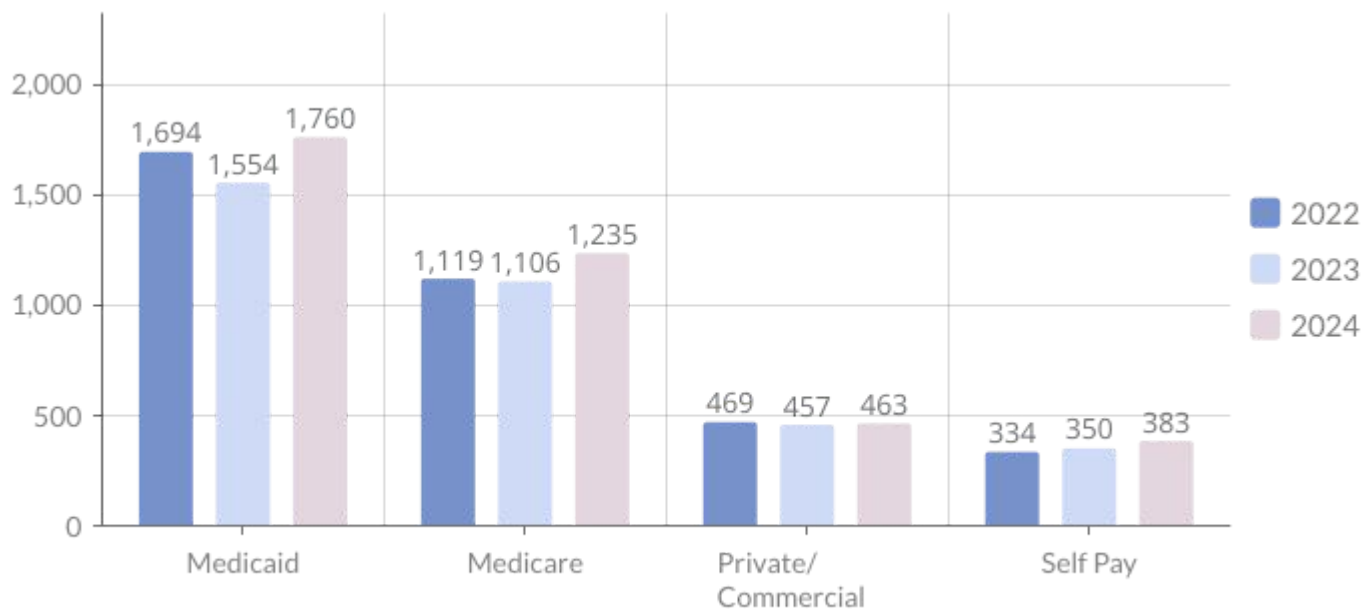
Trauma Volume by Year: Initial Arrival vs Interfacility Transfer



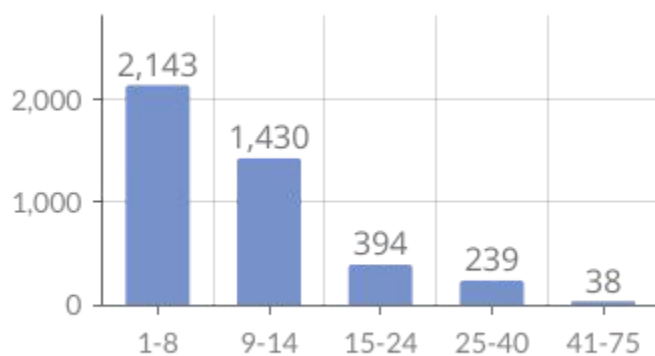
Trauma Demographics 2024

Description		
Injury Type		
	Blunt	3948 (88.3%)
	Penetrating	484 (10.8%)
	Other	38 (0.84%)
Race/Ethnicity		
	Hispanic	2134 (47.7%)
	White	1735 (38.8%)
	Black	304 (6.8%)
	Asian	155 (3.5%)
	Other	142 (3.2%)
Age Group		
	0-17	220 (4.9%)
	18-34	1143 (25.6%)
	35-64	1725 (38.6%)
	65-89	1241 (27.8%)
	90+	141 (3.2%)
Sex		
	Female	1579 (35.3%)
	Male	2891 (64.7%)

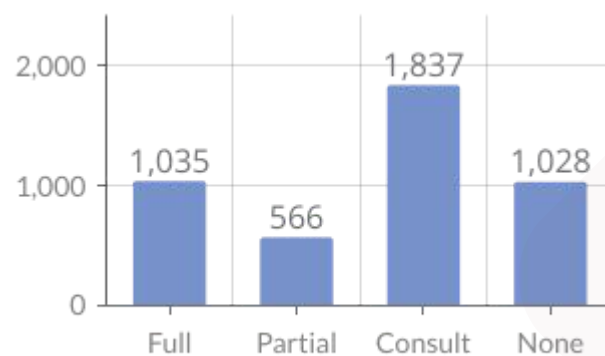
Top 4 Types of Payment Sources



Injury Severity Score (ISS)



Trauma Activation Level

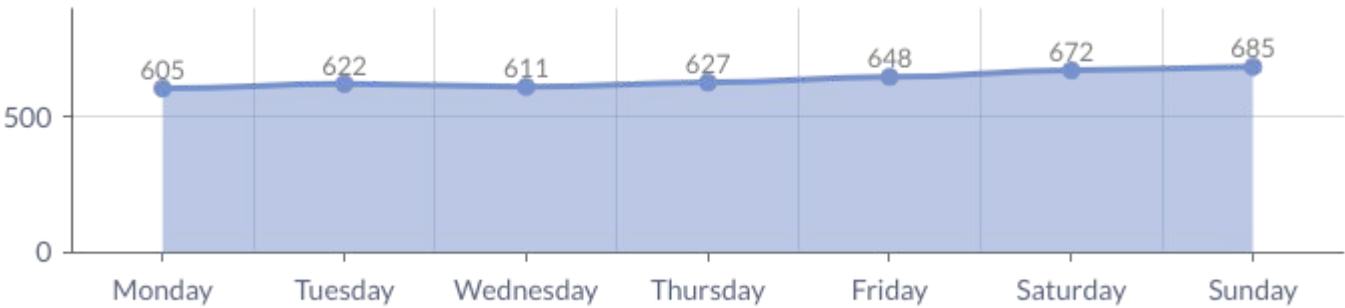


Trauma Volume 2024

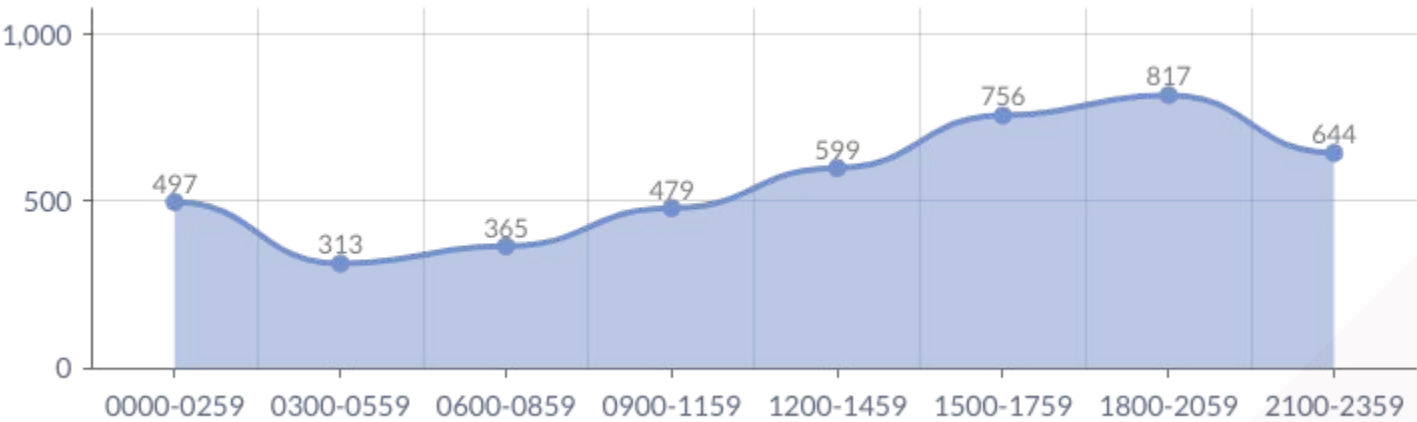
Trauma Volume by Month



Trauma Volume by Day of the Week



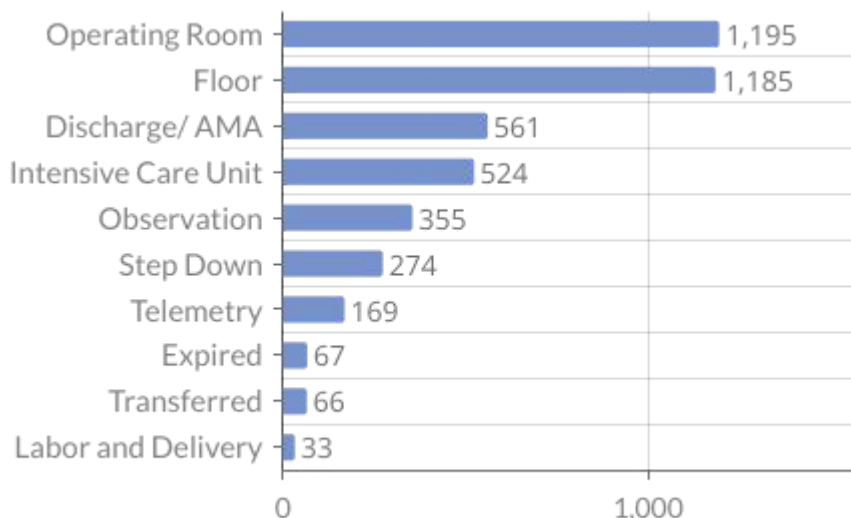
Trauma Volume by Time



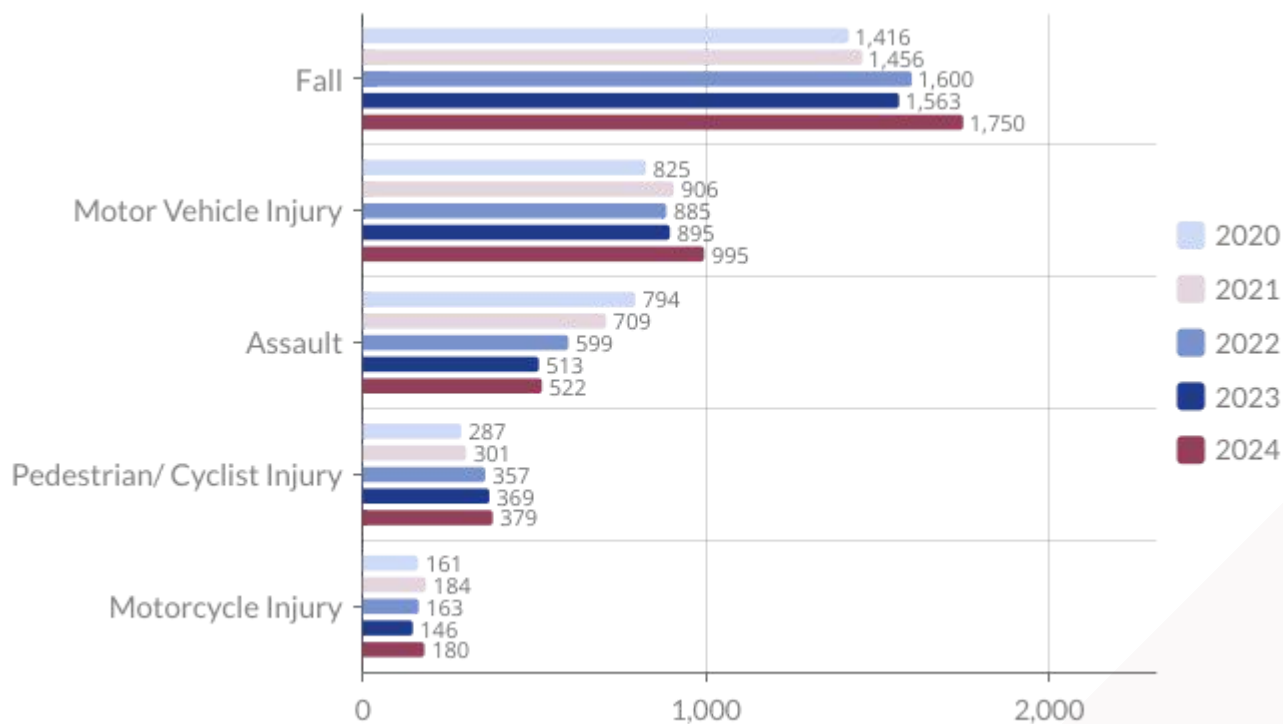
Mode of Transportation



ED Disposition



Top 5 Mechanism of Injury, 2020 - 2024



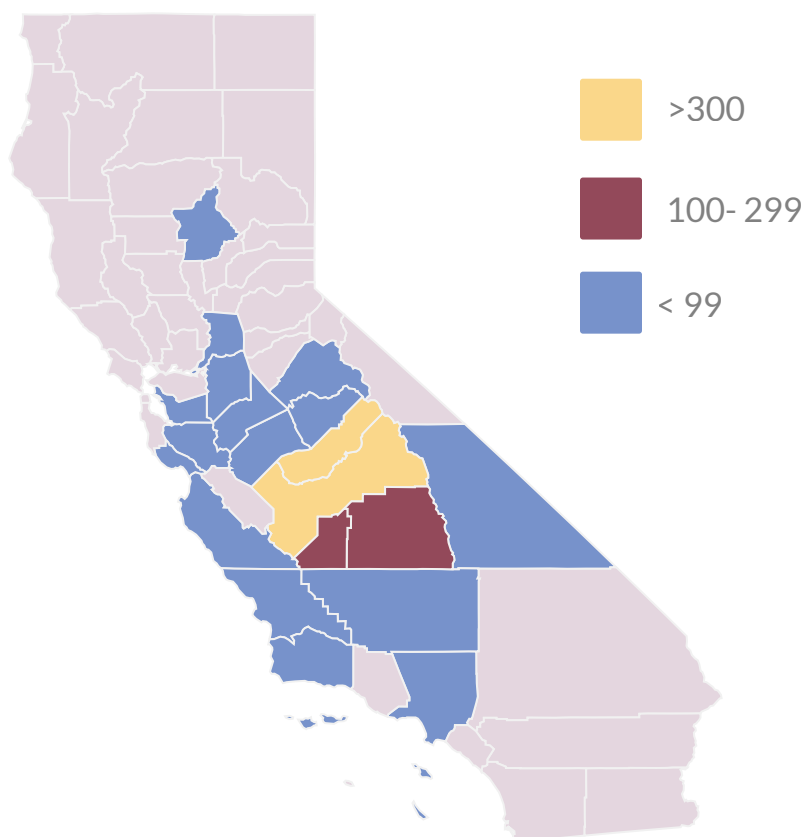
Common Procedures in Trauma Patients, 2024

120 Exploratory Laparotomy

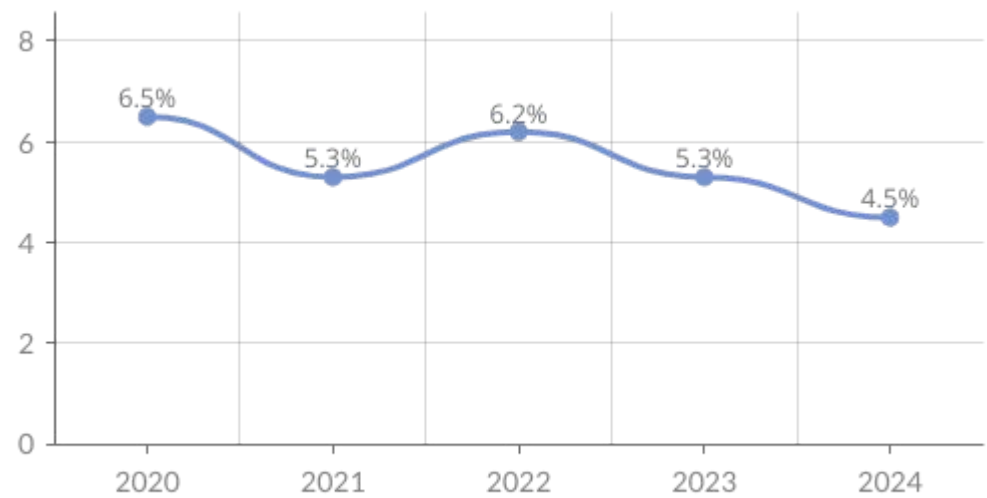
76 Craniotomy

19 Thoracotomy

Distribution of Trauma Patients, 2024

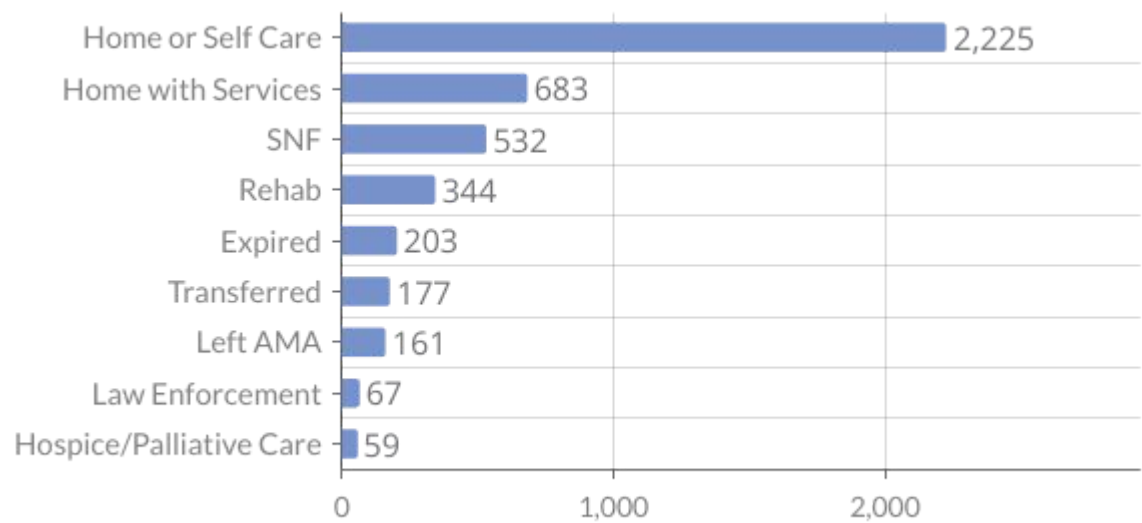


Annual Mortality Rate



"Mortality has decreased from **274** deaths in 2020 (6.5%) to **203** deaths in 2024 (4.5%), reflecting ongoing quality improvements in trauma care.

Discharge Disposition



Youth (0-17)

Total Trauma Registry Patients = **220**

Average LOS = **4 days**

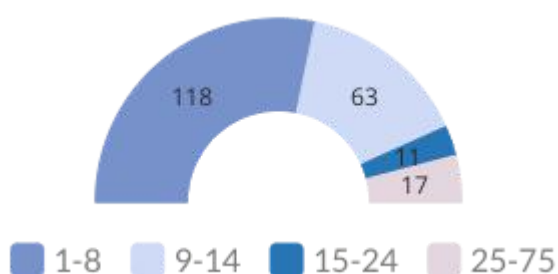
Average ICU LOS = **7 days**

13% of patients were transferred in

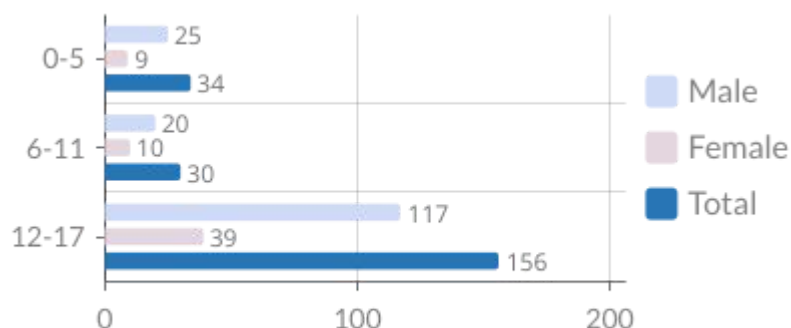
Top 5 Mechanism Of Injury

- 62 - Motor Vehicle Injury
- 40 - Fall
- 31 - Pedestrian/ Cyclist Injury
- 24- Assault
- 13 - Atv/ Dirt Bike Injury

ISS Group



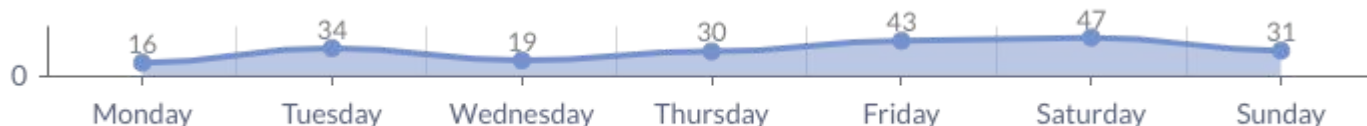
Age Group by Gender



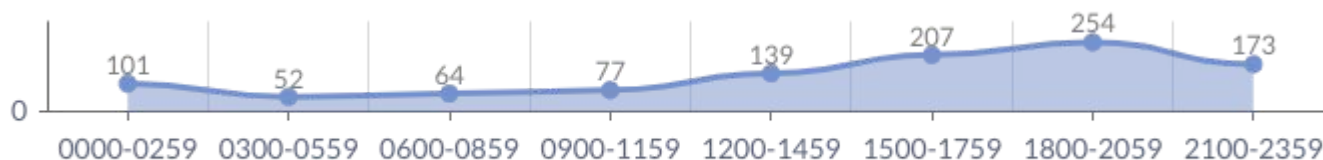
Trauma Arrival by Month



Trauma Arrival by Day of the Week



Trauma Arrival by Time



Adult (65+)

Total Trauma Registry Patients = **1,382**

Average LOS = **6 days**

Average ICU LOS = **6 days**

32% of patients were transferred in

Top 5 Mechanism Of Injury

1,038 - Fall

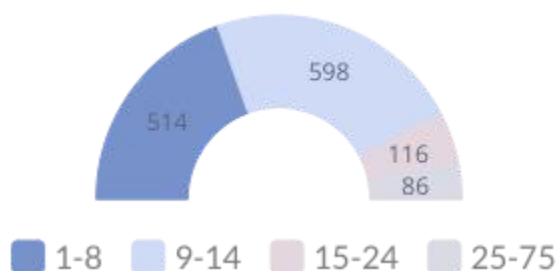
150 - Motor Vehicle Injury

52 - Pedestrian/ Cyclist Injury

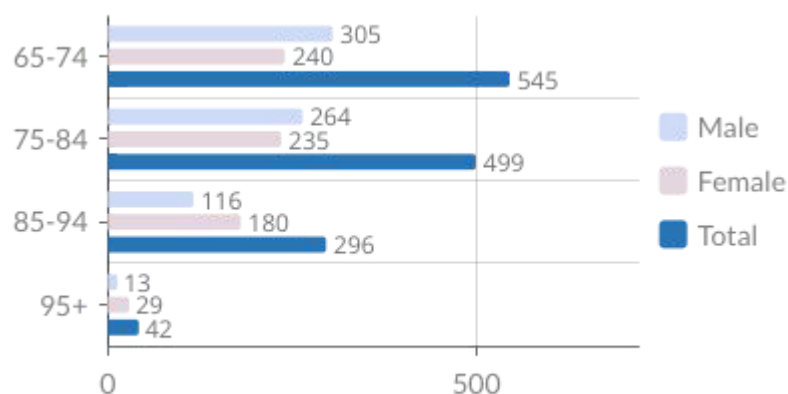
19- Assault

14 - Motorcycle Injury

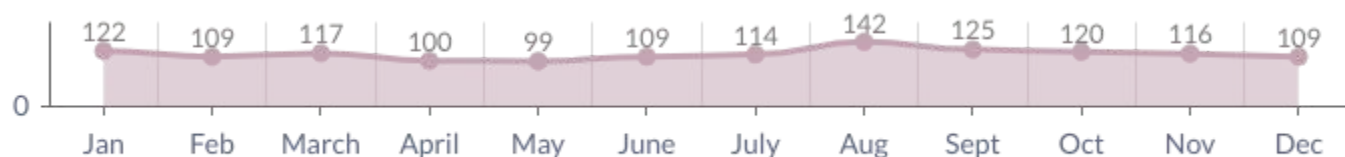
ISS Group



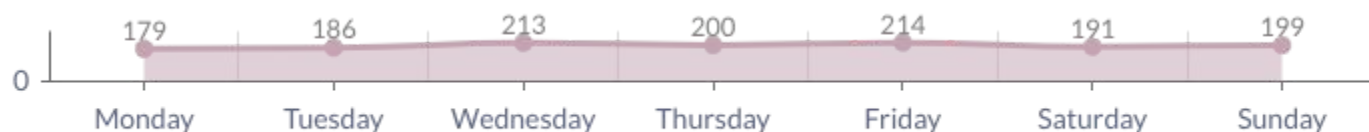
Age Group by Gender



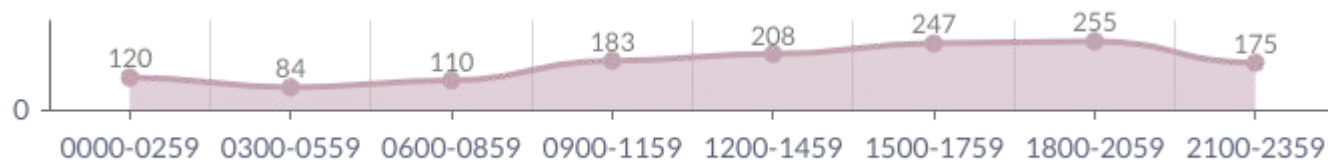
Trauma Arrival by Month



Trauma Arrival by Day of the Week



Trauma Arrival by Time



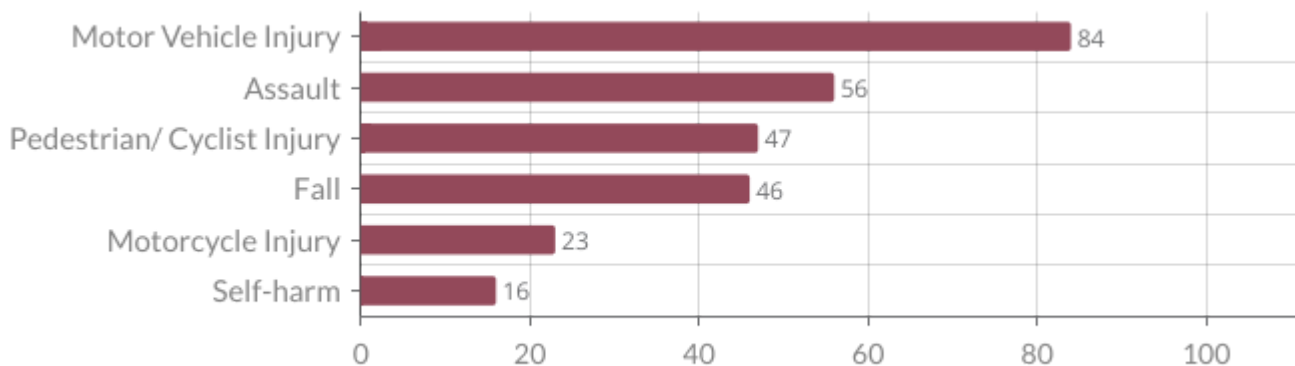
Blood Transfusion

Total number of trauma patients given blood:

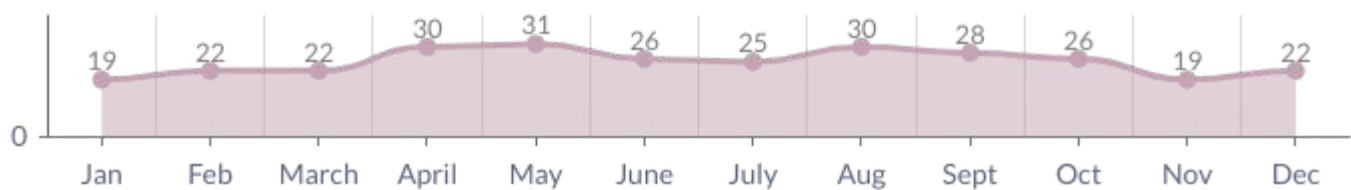
Within 4 hours of arrival - **300**

Within 24 hours of arrival - **383**

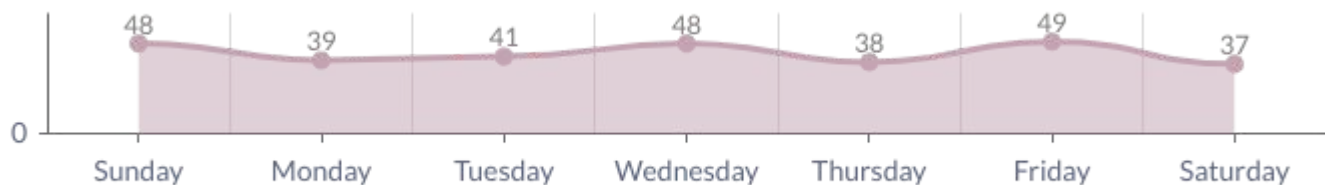
Top 6 Mechanism of Injury: Blood given within 4 hours



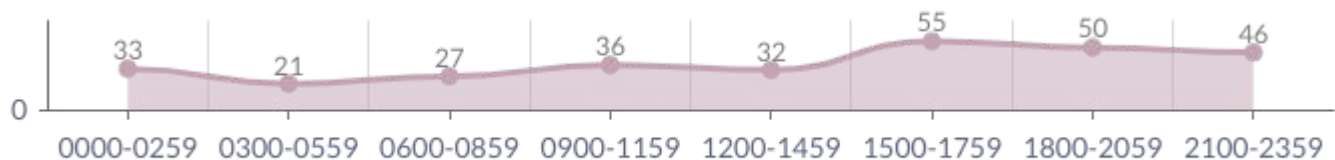
Trauma Patients given blood within 4 hours of Arrival by Month



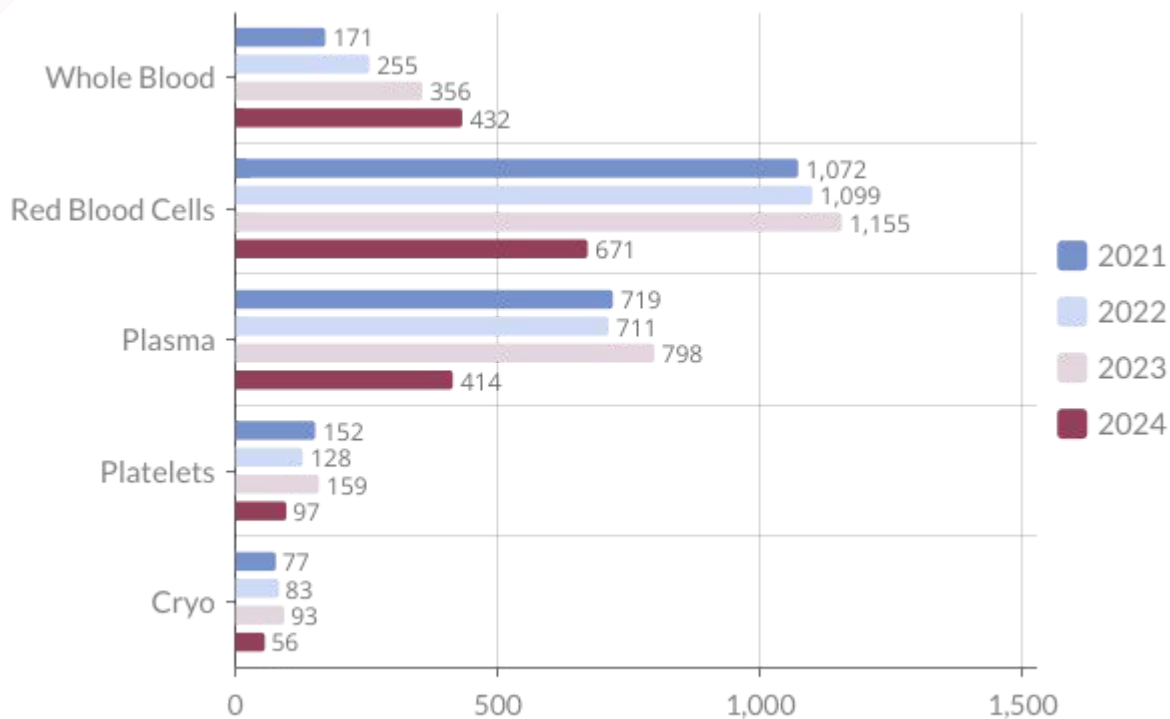
Trauma Patients given blood within 4 hours of Arrival by Day of the Week



Trauma Patients given blood within 4 hours of Arrival by Time

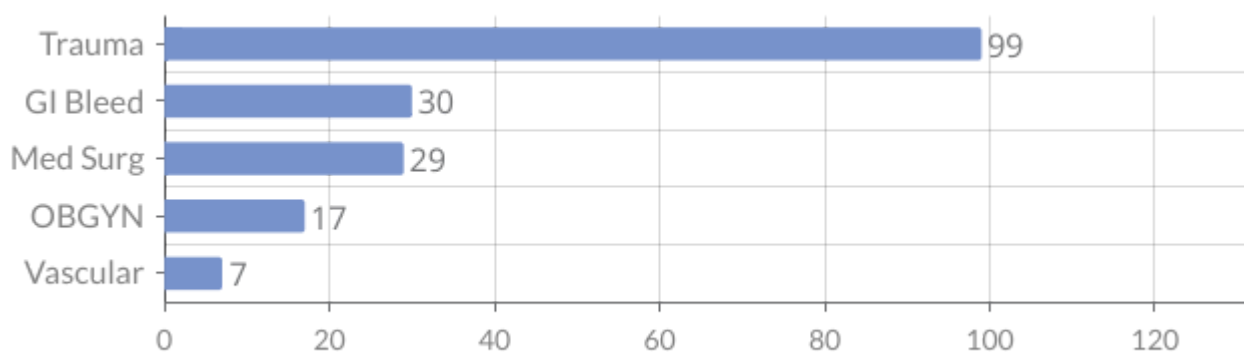


Total Blood Units Given Within 4hrs of Arrival: 2021- 2024



Massive Transfusion Protocol (MTP) is a coordinated, rapid-response system designed to deliver large volumes of blood products to patients experiencing life-threatening hemorrhage. In 2024, Community Regional Medical Center had **183** MTPs.

MTPs given by Admitting Service





Trauma Education

Advanced Trauma Care for Nurses (ATCN)

Provides the registered nurse with increased knowledge in managing the trauma patient and includes a hands-on, scenario-based approach

Trauma Nurse Core Course (TNCC)

Delivers the knowledge, critical thinking skills, and hands-on training needed to keep trauma patients safe

Advance Trauma Life Support (ATLS)

Provides a safe and reliable method for immediate management of injured patients including resuscitation, stabilization, and determining if the needs of the patient exceed those of the facility

Advanced Surgical Skills for Exposure in Trauma (ASSET)

Uses human cadavers to teach surgical exposure of anatomic structures that, when injured, may pose a threat to life or limb

Rural Trauma Team Development Course (RTTDC)

Emphasizes the initial evaluation and resuscitation of the trauma patient at a rural facility to assist healthcare professionals with determining the need to transfer the patient to a higher level of care

Central California Trauma Symposium

Educates healthcare providers on current trends in trauma and critical care management in the prehospital, emergency, and ICU settings

Pediatric Trauma Across the Care Continuum (PTACC)

Provides education to nurses who care for admitted pediatric trauma patients. The content was designed to close the identified educational gap for this group

Trauma Research

The trauma surgeons have a variety of research interests and develop their own studies, as well as participate in multi-institutional studies with other organizations from around the country. Our residents, fellows, and faculty frequently present research at national and international conferences, including the American Association for the Surgery of Trauma, Southwestern Surgical Congress, Western Trauma Association, Society for Critical Care Medicine, and the American College of Surgeons. Below are several publications for 2024:

- Aryan, N., Grigorian, A., Tay-Lasso, E., Cripps, M., Carmichael, H., McIntyre Jr, R., ... & Nahmias, J. (2024). High-grade liver injuries with contrast extravasation managed initially with interventional radiology versus observation: A secondary analysis of a WTA multicenter study. *The American Journal of Surgery*, 234, 105-111.
- Ratnasekera, A. M., Seng, S. S., Kim, D., Ji, W., Jacovides, C. L., Kaufman, E. J., ... & Ferrada, P. (2024). Propensity weighted analysis of chemical venous thromboembolism prophylaxis agents in isolated severe traumatic brain injury: An EAST sponsored multicenter study. *Injury*, 55(9), 111523.
- LaGrone, L. N., Stein, D., Cribari, C., Kaups, K., Harris, C., Miller, A. N., ... & Napolitano, L. M. (2024). American Association for the Surgery of Trauma/American College of Surgeons Committee on Trauma: Clinical protocol for damage-control resuscitation for the adult trauma patient. *Journal of Trauma and Acute Care Surgery*, 96(3), 510-520.
- Lui, A., Bonney, P. A., Burke, J., Kanter, J. H., Yue, J. K., Takegami, N., ... & DiGiorgio, A. M. (2024). The correlation of neurosurgery motor examinations with ISNCSCI motor examinations in patients with spinal cord injury: a multicenter TRACK-SCI study. *Journal of Neurosurgery: Spine*, 42(1), 120-128.
- Cooper, R. J., Akie, T. E., Gujral, T., Rana, S., Bui, K., Factora, R., ... & Mower, W. R. (2024). Traumatic injury to the posterior fossa: a secondary analysis and description of case series from the NEXUS head injury dataset. *The Lancet Regional Health–Americas*, 34.
- Lilienstein, J., Lowry, D., Long, A., Kaups, K., Chan-Golston, A., Gallegos, J., ... & Davis, J. Don't break the (blood) bank: Can waste be minimized in a whole blood program?. *The American Journal of Surgery*, 240, 116082.
- Kaups, K. L. (2024). Surgical critical care certification: generally speaking—it's thriving!. *Trauma Surgery & Acute Care Open*, 9(1).
- Pillado, E., & O'Banion, L. A. (2024). The need for standardizing care for pediatric and geriatric vascular trauma patients. *Journal of Vascular Surgery Cases, Innovations and Techniques*, 10(6), 101627

Trauma Injury Prevention

Because traumatic injuries are frequently preventable, injury prevention is aimed at educating the public and reducing the number of injuries within the community.

Injury prevention activities and courses include:

- **Matter of Balance**
Teaches strategies to help older adults reduce their fear of falling and increase activity levels
- **Pediatric Injury Prevention**
Child passenger safety education, pedestrian, and water safety
- **Impact Teen Drivers**
Raises awareness among teens to reduce auto collisions due to reckless and distracted driving
- **Stop the Bleed**
Teaches the public how to quickly stop blood loss in an emergency
- **Violence Intervention and Prevention**
Outreach to victims of gang violence to prevent recurrence



World Day of
Remembrance for
Road Traffic Victims



CRMC Pedestrian
Safety Day



Trauma Survivor Day
Trauma Program



Multi Agency Education
Fresno Unified & OES

Stop the Bleed



Our trauma program and local partners trained **3,861** in Stop the Bleed in 2024.



Trauma Symposium

May 17, 2024

The 10th Annual Central California Trauma Symposium was highly successful, with strong attendance and participation. 229 attendees received CME credits and 21 exhibitors participated in the event. In all, 294 people attended the symposium.



Trauma Reunion

November 2, 2024

21 trauma survivors and their loved ones attended the event. We had a total of 120 attendees this year including nurses, doctors, PA, PT, RT, and the trauma program.



Terminology

AMA - Against Medical Advice

ICU - Intensive Care Unit

LOS - Length of Stay

NSS - Neurosurgery Service

OBGYN - Obstetrics and Gynecology

SNF - Skilled Nursing Facility

Trauma Team



**RACHEL
VAN NOY**
Trauma Director



**SARAH
ELLIS**
Nurse Educator



**JANNA
MARTINEZ**
PI Nurse



**SHELLI
CONLEY**
Lead Registrar



**LIZ
SCARFONE**
PI Nurse



**EMILY
VA**
PI Nurse



**JENNIFER
FREEMAN**
Administrative
Assistant



**JESSICA
GALLEGOS**
Clinical Research
Coordinator



**ELIANA
TRONCALE**
Injury Prevention
Specialist



**VERONICA
VIDAL**
Registrar



**LINDA
THAO**
Registrar



**ARSEN
STEPANYAN**
Registrar



**AMANDA
NAKAYAMA**
Registrar



**TATIANA
HOLLAND**
Registrar



**ALICIA
ALVAREZ**
Registrar

For inquiries or additional information, please contact:



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