Memorandum #01-25

Date: January 23, 2025

To: **SOUTHERN NEVADA DISTRICT BOARD OF HEALTH**

From: **Stacy Johnson, MSN, RN,** *Regional Trauma Coordinator* SJ
John Hammond, Paramedic, *EMS & Trauma System Manager* JH
Cassius Lockett, PhD, *Director of Community Health*
Fermin Leguen, MD, MPH, *District Health Officer* FL

Subject: Application for Renewal of Authorization as an Adult Trauma Center with Change of Level from Level II to Level I for Sunrise Hospital

I. BACKGROUND:

The American College of Surgeons (ACS) emphasized in its 2015 position statement that trauma center designation should be driven by the needs of the population-based system, with patient welfare as the highest priority. While the ACS conducts site visits to verify that hospitals have the necessary resources for the level of designation they seek, the actual authority to designate trauma centers rests with state and local authorities. These designations are based on criteria that vary by location and are typically established through regulations or legislation. This process is outlined in Southern Nevada Trauma System Regulation 300.300.

In February 2024, Sunrise Hospital initiated the process for applying for provisional authorization as a trauma center with a change of level, as outlined in the Southern Nevada Trauma System Regulations. The hospital applied through the Office of Emergency Medical Services and Trauma System (OEMSTS) for Provisional Authorization and paid the associated fees.

In the subsequent months, the OEMSTS staff presented an Impact Report to the Regional Trauma Advisory Board (RTAB) and the Trauma Medical Audit Committee (TMAC.) The Impact Report highlighted the differences between Level I and Level II trauma center criteria and assessed how these differences, whether positive or negative, could affect the community and existing trauma centers. At the same meetings, Sunrise Hospital also delivered presentations. Lastly, the OEMSTS released the 2023 Trauma System Report which includes the last five years of trauma data.

II. RECOMMENDATIONS:

RTAB: Deny the application based on the information presented not establishing need.

- Yes – 13
- No – 4
- Abstain – 2

TMAC: The committee does not support the application for an upgrade from Level II to Level I.

- Yes – 4
- No – 3
- Abstain – 1

OEMSTS supports the proposed upgrade of Sunrise Hospital's trauma designation from Level II to Level I, recognizing both the immediate and long-term benefits for the community and the trauma system. While current patient volume, acuity levels, and transport times do not suggest an urgent system-wide need, OEMSTS concludes that the upgrade will have minimal, if any, negative impact on existing trauma centers since catchment areas are expected to remain unchanged. However, it is acknowledged that UMC, as the community's sole current Level I trauma center, could face financial implications due to a potential loss of exclusive opportunities tied to its designation, such as federal and state grants specifically directed to Level I facilities. The proposal aims to enhance system-wide capacity and resilience while maintaining the overall balance of patient distribution and care quality across the region.

This transition represents a critical step forward in advancing healthcare excellence in Nevada. Elevating Sunrise Hospital's trauma designation highlights a commitment to physician training, expanding research capabilities, and offering highly specialized services such as microvascular and craniofacial surgery. These enhancements are essential in a state ranked near the bottom nationwide for active physicians, according to the American Medical Association. Approving this designation will not only assist in addressing Nevada's physician shortage but also enhancing patient care and driving medical innovation. Sunrise Hospital has thoroughly prepared for this transition by investing in the necessary resources, and failure to approve this upgrade risks losing these critical assets.

When evaluating the proposal, the benefits outweigh any perceived lack of immediate need to address trauma care while ignoring the need for additional trauma related postgraduate medical education opportunities in this community. Sunrise already meets the volume requirements for a Level I trauma center without altering catchment areas. More importantly, this upgrade prioritizes benefits—improved physician training, expanded medical research, and specialized care—that will elevate the standard of care for our growing community and visitors. Approval of this upgrade is a key step in addressing the evolving needs of Nevada's healthcare system.

III. CONDITIONS:

If approved, staff recommends the following conditions:

1. ACS-COT verification and subsequent renewals of verification
2. Continued participation in the Southern Nevada Trauma System

Attachments

A. Sunrise Hospital application of a Level I Trauma Center
B. OEMSTS Impact Report
C. Sunrise Hospital's ACS Certificate of Verification for Level I Trauma Center
D. Executive Summary

SNHD
Southern Nevada Health District

APPLICATION FOR RENEWAL OF AUTHORIZATION AS A CENTER FOR THE TREATMENT OF TRAUMA

Name of Institution: Sunrise Hospital and Medical Center

Street Address: 3186 S Maryland Parkway

City: Las Vegas State: NV Zip Code: 89109

Telephone: 702-961-9011 FAX: 866-499-3591 E-Mail: todd.sklamberg@hcahealthcare.com

Owner of Facility: HCA, Inc

Street Address: One Park Plaza

City: Nashville State: TN Zip Code: 37203

Telephone: 615-344-9551 FAX: E-Mail:

Hospital Administrator/Director: Todd P. Sklamberg, CEO

Contact Person for Application Processing: Cheryl Malone, Trauma Services Director

Telephone: 702-961-7821 FAX: 702-961-7829 E-Mail: cheryl.malone@hcahealthcare.com

Level of Center for the Treatment of Trauma renewal being sought:

- ☑ Level I
- ☐ Level II
- ☐ Level III
- ☐ Pediatric Level I
- ☐ Pediatric Level II

Date of original designation: October 1989 Level III; August 2005 Level II

Date of last renewal of designation: February 2023

Briefly describe any changes in the hospital's capacity to provide trauma services in the community during the past designation period:

Sunrise Hospital and Medical Center (SHMC) is seeking Level I American College of Surgeons (ACS) Trauma Verification July 9 – July 10, 2024. SHMC is currently verified as a Level II Trauma Center through July 11, 2024 with ACS. Recent capacity upgrades include: new trauma bays (four trauma resuscitation bays), upgraded Trauma Surgical ICU which is located in a new tower just above the Emergency Department, adding 36 inpatient rooms. Additionally, SHMC continues to provide TNCC, TCAR nursing education, ATLS for physician education and trauma emergency medical services outreach and education.

Briefly describe any changes in the hospital's capabilities to provide trauma services in the community during the past designation period:

SHMC has qualified personnel to deliver care for patients sustaining traumatic injuries arriving to the hospital via EMS, private vehicle and /or transfer-in for higher level of care. The hospital provides staffing to meet the needs of the Level I Trauma Center injured patient and has all the necessary capacity, equipment, supplies and Medical Staff Providers to provide treatment, monitoring and resuscitation meeting ACS Level I Trauma Verification 2022 Standards. SHMC has the appropriate surgical specialists availability, soft tissue coverage and cranial facial expertise, replant and microvascular services, ENT, and medical specialists (including, but not limited to Emergency Medicine, Anesthesiology, Interventional Radiology, and Radiology).

Briefly describe any changes in the hospital's longitudinal commitment (expected to be greater than five years) to provide trauma services in the community during the past designation period:

SHMC has longitudinal commitment by SHMC's Board of Trustees and Medical Executive Committee to ensure continued adherence to the required standards. They affirm the provision of essential personnel, facilities and equipment are made available to treat and care for the communities critically injured patients, including research and scholarly activities. Additionally, there is dedicated commitment to post-graduate education requirements within the collaborative trauma care system in Clark County, Nevada, ensuring compliance with ACS Level I Trauma Standards.

Additional information the applicant would like to provide in support of their request:

SHMC continues to serve the community by providing trauma care and ancillary personnel that are dedicated to setting the standard of excellence in care. SHMC collaborates with the community and national partners to provide outreach education and injury prevention.
Additional Information:

1. Population Served: SHMC service is defined by the Southern Nevada Health District, Office of Emergency Medical Services & Trauma System regulations. The Southern Nevada Health District, Office of Emergency Medical Services & Trauma System is responsible to establish, review, and adjust catchment areas for Trauma or Pediatric Trauma Centers to facilitate timely transportation of trauma patients from the scene of an emergency and not for the purposes of restricting referral of patients requiring transfer to a higher level of care.
2. Hospital Capacity to Provide Level I ACS Trauma Services in the Community:
    - 834 licensed hospital beds (144 bed capacity increase since 2019)
    - 3,855 employees and 1,543 physicians and advanced practice providers
    - 2 helipads
    - 4 trauma resuscitation rooms
    - 100 Emergency Department beds
    - 5 CT Scanners (2- 256 slice and 3-64 slice)
    - 3 MRIs (1- 1.5T and 2- 3T)
    - 2 Focus Assessment with Sonography in Trauma (FAST)
    - 23 Operating Rooms
    - 2 IR Suites (1 additional IR Suite build planned)
    - 110 Intensive Care Beds (46 dedicated Trauma Surgical ICU)
    - 391 Med-Surg Beds (36 Trauma Bed Unit)
    - 206 Children's Beds (Med-Surge, MBU, PICU, CICU, NICU, and L&D)
    - 42 Inpatient Rehabilitation Bed Unit
    - SHMC has the inpatient and operating room capacity to support Level I Trauma Center Verification and Designation. Additionally, it has an inpatient rehabilitation unit, which has the resources to help trauma patients recover from their injuries.
3. Hospital Capabilities to Provide Level I ACS Trauma Services in the Community: SHMC treats more than 177,569 patients per year and admits nearly 40,000 (39,914) patients. Additionally, SHMC cares for 698 patients meeting National Trauma Data Standards with Injury Severity Scores greater than 15. Current capabilities include:
    - Trauma Staff:
        - Trauma Medical Director, Board Certified in General Surgery and Surgical Critical Care
        - Trauma Surgeon expertise to manage critically injured patients
        - Trauma Program Director
        - Trauma Program Staff; 11 full time employees to support Trauma Program's performance improvement and patient safety program, injury prevention, education and outreach activities, research and 10 full time Trauma Registrars, including support from a Trauma Registry Operations Manager and two Trauma Registry Leads, including a Certified Abbreviated Injury Scale Specialist
    - Physician Staffing and Training
        - Level I Surgical Specialists, Ophthalmology Services, Soft Tissue Coverage Expertise, Craniofacial Expertise, Replant Services, Medical Specialist services, including Burn Services.
        - Advanced Trauma Life Support (ATLS) Program; Course Director and two Program Coordinators
        - Graduate medical education (i.e., residency) programs
    - Leading Services: As the healthcare leader in Southern Nevada, Sunrise Hospital offers a full range of specialized services including:

- The Nevada Neurosciences Institute, is supported by the region's first and only Joint Commission certified Advanced Comprehensive Stroke Center and is home to some of the area's most prestigious neurologists and neurosurgeons
- Comprehensive Cancer Center recognized by the American College of Surgeons
- An innovative, comprehensive Breast Center with advanced services for the diagnosis, treatment and management of all types of breast disease
- The Epilepsy Center at Sunrise, with a dedicated Chief Epileptologist, is the only center of its kind in Nevada offering a dedicated epilepsy monitoring unit
- Trauma and Emergency Services Department
- Specialty services in women's health, pulmonology, critical care, complex surgery and rehabilitation
- Expertise of Sunrise Children's Hospital, the most comprehensive children's hospital in Nevada

- Ancillary Services
  - Level I ancillary services including, but not limited to:
    - Comprehensive Radiology and Interventional Radiology Services
    - Laboratory, Blood Bank and Pathology Services
    - Pharmacy Services
    - Nutritional Services
    - Hemodialysis
    - Respiratory Therapy
    - Therapy (Physical Therapy, Occupational Therapy and Speech Therapy)
    - Social Services / Case Management
    - Child Life Specialists
    - Cardiac Services
    - Burn Services
    - Replant Services
    - Surgical and Medical Physician Coverage
    - Extracorporeal Membrane Oxygenation (ECMO) Services
    - Organ Procurement Program
    - Level III Neonatal ICU
    - Comprehensive inpatient rehabilitation and physiatrist services available
- Trauma Program Expertise
  - Comprehensive quality assessment program (i.e., performance improvement (PI), clinical guidelines, audit filters, loop closure, documentation/outcomes, multidisciplinary operational and peer review committee with specialist liaisons)
  - Fully supported trauma program
  - Participation in ACS Trauma Quality Program, including TQIP
  - Evidence-based Trauma Registry data validation (inter-rater reliability, single and multivariate reports)
  - Daily Multidisciplinary Trauma Rounds
- Education / Research
  - Trauma-specific onboarding and continuing education, including Trauma Nurse Core Course and Trauma Care After Resuscitation
- Trauma Research:
  - The infrastructure of the trauma research program at SHMC is a collaborative model comprised of dedicated physician research time as well as a full time Trauma Research Coordinator. Resident involvement in research is available through GME collaboration. Additional resources to the Trauma Research Program include an IRB at SHMC and access to research experts at the corporate level (Center for Trauma and Acute Care Surgery Research, CTACSR) to assist with statistical computation, epidemiologists and promotion of collaboration amongst other HCA facilities participating in multicenter research projects. Through our corporate partnership, we have access to national trauma databases (including CMS) and collaboration in research activities.
  - Resident scholarly activity/research to support the advancement of resident and faculty knowledge of scholarly activity and perform scholarly works as required by ACGME
- Injury Prevention and Outreach
  - Comprehensive Injury Prevention and Outreach Program to reduce and/or eliminate trauma related injuries in our community by direct education, public policy change
  - SHMC has been the lead organization for Safe Kids Clark County, Nevada since 1993
  - SHMC is a Trauma Survivors Network Facility.

Has the applicant been in compliance with the conditions for authorization as a center for the treatment of trauma as outlined below during this past designation period?

1. Submitted trauma data to SNHD and the State Trauma Registry.

   [X] Yes [ ] No

2. Actively participated in the Regional Trauma Advisory Board and Trauma System Performance Improvement activities.

   [X] Yes [ ] No

3. Complied with all applicable SNHD regulations and State Health Division requirements for authorized and designated centers for the treatment of trauma.

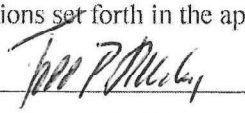
   [X] Yes [ ] No

I have read and completed the application to the best of my ability and attest to the fact the information provided is true and complete to the best of my knowledge.

I authorize the release of such information as may pertain to the purpose of this application.

I understand any misstatements or omissions of material facts may cause forfeiture of the right to authorization as a center for the treatment of trauma.

I understand and agree to comply with the conditions set forth in the application.

Signature of Hospital Administrator or Owner  Date: 02/09/2024

Printed Name of Hospital Administrator or Owner: Todd P. Sklamberg

Title of Person signing the Application: Chief Executive Officer

Southern Nevada
TRAUMA SYSTEM
UMC • SUNRISE • ST. ROSE SIENA • O'CALLAGHAN

Level II to Level I Trauma Upgrade Report

Office of EMS and Trauma System

American College of Surgeons: Resources for Optimal Care of the Injured Patient 2022

Standard	Required for Level I, not Level II
Level I Adult Trauma Patient Volume Criteria	A Level I adult trauma center must care for at least 1,200 trauma patients per year or at least 240 trauma patients with Injury Severity Score (ISS) greater than 15 per year.
Soft Tissue Coverage Expertise	Level I trauma centers must have the capability for comprehensive soft tissue coverage of wounds, including microvascular expertise for free flaps.
Craniofacial Expertise	Level I trauma centers must have the capability to diagnose and manage acute facial fractures of the entire craniomaxillofacial skeleton, including the skull, cranial base, orbit, midface, and occlusal skeleton, with expertise contributed by any of the following specialists: otolaryngology, oral maxillofacial surgery, or plastic surgery.
Disaster Management and Emergency Preparedness Course	In Level I adult and pediatric trauma centers, the trauma surgeon liaison to the disaster committee must successfully complete the Disaster Management and Emergency Preparedness (DMEP™) course at least once.
Commitment to Postgraduate Education	Level I trauma centers must demonstrate commitment to postgraduate training and education by having residency rotations in trauma that meet all of the following conditions • There must be a defined trauma curriculum and trauma specific objectives for junior and senior residents • The rotations must be available to, at minimum, general surgery, orthopedic, neurosurgery, and emergency medicine residents. • All residents on the trauma service must be from an Accreditation Council for Graduate Medicine Education (ACGME) accredited program • There must be a sufficient volume and breadth of cases to provide general surgery senior residents the opportunity to meet the competency requirements for senior general surgery residents in trauma set forth by the ACGME • The rotation must be continuously available to residents to assure ample exposure to trauma care
Research and Scholarly Activities	Level I trauma centers must demonstrate the following scholarly activities during the verification cycle: • At least 10 trauma-related research articles* • Participation by at least one trauma program faculty member as a visiting professor, invited lecturer, or speaker at a regional, national, or international trauma conference • Support of residents or fellows in any of the following

	scholarly activities: laboratory experiences; clinical trials; resident trauma paper competitions at the state, regional, or national level; and other resident trauma research presentations *Fulfillment of the research requirement must also meet the following criteria: • At least three articles must be authored by general pediatric trauma surgeons • Research activity must be performed at the trauma center • If case series are to be counted, they must include more than five patients • Basic science research must involve topics directly related to the pathophysiology of injury • At least three articles must be from disciplines other than general/pediatric surgery • All articles must be published or accepted for publication in peer-reviewed and indexed journals • Authors from the trauma center must meet accepted authorship requirements of the International Committee of Medical Journal Editors • One paper from acute care surgery may be included

IMPACTS SPECIFIC TO THE SOUTHERN NEVADA COMMUNITY

TRAUMA ACUITY DISTRIBUTION

Based on current protocols, Sunrise already receives all levels of adult trauma injury, including steps 1, 2, 3, and 4.

TFTC Transports by Trauma Center, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiological	655	750	818	964	896
Step 2: Anatomical	779	904	947	836	857
Step 3: Mechanism	4921	4103	4696	4495	4660
Step 4: Special Considerations	6946	6383	7289	8025	8231
Other	0	32	26	19	30
All	13301	12172	13776	14339	14674
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System.					

Sunrise TFTC Transports by Step, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiologic	**146**	**231**	**248**	**240**	**197**
Step 2: Anatomic	**207**	**261**	**310**	**268**	**257**
Step 3: Mechanism	**851**	**702**	**837**	**690**	**767**
Step 4: Special Considerations	**1799**	**1577**	**1644**	**1674**	**1994**
Other	**0**	**32**	**23**	**3**	**19**
Total	**3003**	**2803**	**3062**	**2875**	**3234**
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System.					

In 2023, Sunrise received 22% of the overall Step 1 patients and 30% of the overall Step 2 patients.

Impact: The acuity distribution should not change with an upgrade as both Level I and Level II trauma centers already receive all steps.

TRANSPORT VOLUMES

Transport volumes (the number of patients that meet trauma field triage criteria that are transport to the hospital by ambulance) should be unaffected with an upgrade from Level II to Level I. Level II centers already receive all Step 1 and Step 2 patients within the assigned catchment areas.

TFTC Transports by Trauma Center, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Mike O'Callaghan	0	0	0	35	208
St. Rose-Siena	853	847	1028	1748	1013
Sunrise	3003	2803	3062	2875	3234
UMC	9445	8522	9686	9681	10209
All	13301	12172	13776	14339	14664
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System.					

In 2023, Sunrise received 22% of the total TFTC patients.

Impact: This volume should not change with an upgrade as there would be no change to the current catchment areas.

CATCHMENT

"CATCHMENT AREA" means the geographical area described by the Office of Emergency Medical Service & Trauma System when more than one Designated Trauma Center or Pediatric Trauma Center is established in close proximity in its plan for providing treatment for trauma as the area served by those Trauma Centers.

Impact: The catchment area would not change based on an upgrade from Level II to Level I.

INTERFACILITY TRANSFERS

Per the Resources for Optimal Care of the Injured Patient, All trauma centers must have clearly defined transfer protocols that include the types of patients, expected time frame for initiating and accepting a transfer, and predetermined referral centers for outgoing transfers (5.12). In all trauma centers, the decision to transfer an injured patient must be based solely on the needs of the patient, without consideration of their health plan or payor status (5.13).

Facility Patient Transferred to	# of Trauma Cases
Sunrise Hospital Medical Center	750
University Medical Center	582

*Nevada Trauma Annual Report 2022

Impact: Interfacility transfers and transfer agreements are not controlled by OEMSTS and should not change based on an upgrade from Level II to Level I other than the ability to now receive soft tissue and craniofacial patients.

TRANSPORT TIMES

There are no established or scientifically defined optimal transport times (the time it takes to get a patient from the scene to the hospital). Therefore, for Southern Nevada, transport times are provided to subject-matter-experts to allow for analysis based on, but not limited to, geographic layout and infrastructure for the community's needs.

Southern Nevada Median Transport Time by Step (1-4), 2019-2023

		Year				
		2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiologic	N	504	591	637	742	688
	Median (Minutes)	13m 24s	13m 48s	13m 24s	14m 24s	14m 30s
Step 2: Anatomic	N	631	718	768	663	666
	Median (Minutes)	12m 36s	12m 42s	13m 12s	13m 0s	13m 48s
Step 3: Mechanism	N	4065	3507	3968	3687	3778
	Median (Minutes)	16m 12s	15m 24s	15m 36s	15m 48s	16m 12s
Step 4: Special Considerations	N	5730	5430	6250	6729	6385
	Median (Minutes)	16m 0s	15m 24s	16m 12s	16m 24s	17m 24s
Other	N	0	9	2	6	10

Source: SNHD TFTC Data

Note: Data not listed if out of state or if zip code is unavailable. Service area for Southern Nevada includes the following zip codes where the injury took place: 89002, 89004, 89005, 89007, 89011, 89012, 89014, 89015, 89018, 89019, 89021, 89027, 89029, 89030, 89031, 89032, 89034, 89039, 89040, 89044, 89046, 89052, 89054, 89074, 89081, 89084, 89085, 89086, 89101, 89102, 89103, 89104, 89106, 89107, 89108, 89110, 89113, 89115, 89117, 89118, 89120, 89121, 89122, 89123, 89124, 89128, 89129, 89130, 89131, 89134, 89135, 89138, 89139, 89141, 89142, 89143, 89144, 89145, 89146, 89147, 89148, 89149, 89156, 89161, 89166, 89178, 89179, and 89183. Includes TFTC transports with a transport time greater than 0 seconds.

Impact: Transport Times should not be affected by an upgrade from Level II to Level I based on no changes to the catchment areas.

RESEARCH/EDUCATION

Level I trauma centers have an obligation to innovate and advance trauma care through research and other scholarly activities. These activities also create opportunities for the development of future trauma leaders.

Adding research requirements to a program can:

- Advance medical knowledge
- Improve QI/PI
- Improve public health initiatives
- Evidence-based practice
- Attract talent
- Encourage collaboration and research

Impact: These residency programs are already established at Sunrise and do not work with the same University as other local residency programs. Introducing additional residency rotations within the system could potentially boost the number of new physicians for Southern Nevada. Integrating research requirements into a program can lead to significant benefits for the community by driving advancements in healthcare, promoting educational excellence, and addressing local health needs.

SPECIALTY PHYSICIANS

Impact: These physicians are already contracted and would not take away from current physician specialty pools. By including these additional medical specialty physicians into the system, patients wouldn't need to be transferred from this facility with these injuries.

COST

Trauma activation fees were created in 2002 to recuperate some of these readiness costs, which had previously never been covered by charges to individual patients. The fees can offset costs such as administrative fees, trauma team member salaries, equipment, supplies, physician trauma coverage agreements, trauma medical director and trauma registrar time, operating room readiness, blood product availability, education, protocol development, and local county emergency medical services fees. There is currently no standard fee schedule or uniform approach to calculating trauma activation fees; therefore, it is left to the discretion of each individual trauma center and program leadership to determine their price for being trauma ready.

Primary Source of Payment	**2019**	**2020**	**2021**	**2022**
Medicare	37.0%	33.5%	34.2%	33.5%
Private Insurance	20.6%	19.4%	18.0%	16.3%
Medicaid	17.4%	20.6%	21.8%	19.5%
Self-Pay	5.7%	6.2%	6.4%	7.2%
Other Commercial	5.0%	4.3%	4.7%	5.1%
No Fault Automobile	1.5%	1.1%	1.4%	1.2%
Other Government	3.5%	3.4%	3.2%	2.4%
Worker's Compensation	1.5%	1.4%	1.5%	2.6%
Other	1.4%	0.8%	0.6%	1.0%
Military	0.6%	1.0%	1.6%	1.1%
Charity	0.1%	0.1%	0.0%	0.0%
Unknown	5.7%	5.0%	6.6%	10.2%

*Nevada Trauma Annual Report 2022

Impact: Trauma activation fees and payor sources are not controlled by nor regulated by OEMSTS. It is unknown if this data would be affected.

ACS SURGICAL QUALITY PARTNER

ACS Trauma
Verified Trauma Center

Certificate of Verification

The American College of Surgeons Verification, Review, and Consultation Program recognizes

HCA Sunrise Hospital and Medical Center

Las Vegas, NV
as a Level I Trauma Center
Accredited through 07/11/2025

Patricia L. Turner, MD, MBA, FACS
Executive Director & CEO

Clifford Y. Ko, MD, MS, MSHS, FACS, FASCRS
Director, ACS Division of Research and Optimal Patient Care

Avery Nathens, MD, FACS
Medical Director, Trauma Quality Programs

Scott G. Sagraves, MD, FACS
Chair, Verification, Review, and Consultation Program

ACS AMERICAN COLLEGE OF SURGEONS

Executive Summary

Sunrise Hospital has been designated as a Level II Trauma Center since 2005, after initially holding a Level III designation from 1989. The current Level II designation is valid until February 2026. Before the Board today is an application submitted by Sunrise Hospital to change its Trauma Center Designation level from a Level II to a Level I.

Trauma centers, like Sunrise, are integral components of Southern Nevada's Trauma System, which is designed to ensure that critically injured patients receive prompt, specialized care through a coordinated network of emergency responders, transportation, and medical facilities.

Southern Nevada's Trauma System, managed by the Southern Nevada Health District's Office of Emergency Medical Services and Trauma Services (OEMSTS), sets standards and regulations to oversee operations to ensure optimal care.

Trauma center designations—Levels III, II, and I—are governed by standards set by the American College of Surgeons (ACS), with increasing requirements at higher levels. A Level II designation requires adherence to rigorous standards for service, timeliness, and performance. Advancing to a Level I designation introduces additional criteria, emphasizing research, disaster management, and physician training rather than further enhancements to the quality or timeliness of care.

ACS Additional Standards for Level I Trauma Centers:

Standard 1.2. Research Support
Standard 2.4. Patient Volume
Standard 4.23. Soft Tissue Coverage Expertise
Standard 4.24. Craniofacial Expertise
Standard 4.36. Disaster Management and Emergency Preparedness Course
Standard 8.4. Commitment to Post Graduate Education
Standard 9.1. Research and Scholarly Activities

Each Standard is outlined in the attached Impact Report prepared by OEMSTS.

Southern Nevada Trauma System Regulation 300.300

The Board's approval or denial of a request to increase designation level is determined by a demonstration on needs based on:

1. The information provided by the applicant, including its agreement to meet ACS standards for Level I trauma centers. (Application is attached)
2. An impact report prepared by OEMSTS (Attached)
3. Advisory positions of the Regional Trauma Advisory Board and Trauma Medical Audit Committee (included in the Petition)
4. A review of the most current Trauma System Report, Nevada State Trauma Registry Report, and the location, depth, and utilization of the trauma resources in the system (Online links provided on Petition)

Health District regulations require OEMSTS to review the above criteria and provide a statement to the Board recommending approval or denial of the application.

1. Review of Sunrise's Application

   Staff reviewed Sunrise's application for compliance with Health District Regulation 300.300(II)(A)(i), i.e., a commitment to meet all additional ACS standards applicable to Level I trauma centers. In its application, Sunrise commits to adhering to the required ACS standards for Level I trauma centers, including providing all essential personnel, facilities, and equipment. Achievement of these standards is assessed by ACS.

   The ACS conducted a comprehensive two-day review in July to verify compliance with all minimum requirements. The review confirmed that all standards necessary for Level I verification were successfully met. A certificate issued by ACS verifying Sunrise's eligibility to meet Level I standards was issued and included as an attachment.

2. Review of Impact Report

   OEMSTS Staff reviewed the potential impact of adding the above ACS standards that are unique to Level I trauma centers. Utilizing trauma system data such as the number of patients transported to each of the four trauma centers, interfacility transfers, transport times. Staff's review centered on how the provision of these services might impact the Southern Nevada Trauma System.

   After review, it was determined a change in level is not likely to have a negative impact on the System or any other trauma center in the system based on the relevant ACS standards. For example, staff determined that distribution of patients between trauma centers is unlikely to be impacted. This is because Level II and Level I trauma centers are approved to accept the most severely injured patients, Step 1 and Step 2/ Red level patients. That is, there is not an injury severity that would require a patient to be transported to Level I trauma center instead of a Level II trauma center. If Sunrise's application is approved and its designation level is upgraded to Level I, Staff does not expect any changes in patient distribution since the catchment areas will remain unchanged.

3. Advisory positions from RTAB and TMAC

   In the subsequent months, the Pursuant to Health District Regulation 300.300(III)(B), OEMSTS staff presented Sunrise's application and the attached Impact Report to the Regional Trauma Advisory Board (RTAB) and Trauma Medical Audit Committee (TMAC) during public meetings. The Impact Report highlighted the differences between Level I and Level II trauma center criteria and assessed how these differences, whether positive or negative, could affect the community and existing trauma centers. At the same meetings, a representative of Sunrise' Hospital also delivered presentations and made himself available for questions. Lastly, the OEMSTS released the 2023 Trauma System Report which includes the last five years of trauma data.

Following discussion of the matter, both bodies adopted motions that did not support Sunrise's application. A recording of the meetings is available online and full motion and voting results are included in the Petition.

4. Review of 2023 Trauma System Report and Nevada State Registry Report

A Level I adult trauma center must care for at least 1,200 trauma patients per year or at least 240 trauma patients with Injury Severity Score (ISS) greater than 15 per year. (This number represents a serious/severe injury)

Southern Nevada Trauma Sytem's Total Number of Trauma Patients: 12,566

- UMC: 3533
- Sunrise: 3473

Total Number Trauma Patients w/ ISS >15 in Southern Nevada: 1425

Southern Nevada Trauma System Annual Report 2023:
https://media.southernnevadahealthdistrict.org/download/ems/2023/southern-nevada-trauma-aystem-report.pdf

Nevada State Annual Trauma Report 2023:
https://dpbh.nv.gov/uploadedFiles/dpbhnvgov/content/Programs/EBV/2023%20Annual%20Trauma%20Report.pdf

SOUTHERN NEVADA TRAUMA SYSTEM

ANNUAL REPORT

2023

Southern Nevada TRAUMA SYSTEM
UMC • SUNRISE • ST. ROSE SIENA • O'CALLAGHAN

SNHD Southern Nevada Health District

Contents

Acknowledgments

The Southern Nevada Trauma System report was prepared by staff in the Southern Nevada Health District Office of Emergency Medical Services & Trauma System, Southern Nevada Health District Informatics and Public Information Offices, and Southern Nevada Health District Office of Epidemiology. The Health District appreciates the contributions of the following organizations:

- American College of Surgeons Committee on Trauma
- Nevada State Division of Health
- Regional Trauma Advisory Board
- Trauma Medical Audit Committee
- University Medical Center
- Sunrise Hospital & Sunrise Children's Hospital
- St. Rose Dominican Hospitals – Siena Campus
- Mike O'Callaghan Military Medical Center

Thanks to the members of the Regional Trauma Advisory Board, all SNHD EMS committees, participating trauma center medical directors, program managers, and registrars. Their dedication to continuously improving data collection makes it possible to fully evaluate and advance the Southern Nevada Trauma System.

Southern Nevada Trauma System Review

Introduction

This Southern Nevada Trauma Annual Report comprehensively describes the ongoing development, operation, and maintenance of the Southern Nevada Trauma System using a 5-year calendar review. Since its inception in 2005, trauma system leadership continues to make significant strides to provide a well-coordinated trauma system to serve the trauma transport and treatment of Southern Nevada residents, bordering states, and visitors each year.

The Need for a Trauma System

Trauma systems embody extensive infrastructures designed to deliver top-tier care for injured individuals. They cover a broad range of services, including initiatives for injury prevention, a cohesive network of trauma centers, and coordinated research initiatives. Traumatic injury is the leading cause of death among young people and a significant health threat to Southern Nevada and its millions of visitors each year. Using evidenced based data to recognize top injury mechanisms, preparedness and injury prevention efforts can be directed at decreasing injury before it occurs.

Southern Nevada is an expert in providing care for large scale events, including concerts, conferences, and major sporting events.

What is a Trauma System?

A trauma system is an organized, coordinated, comprehensive injury response network of essential resources that promote injury prevention and control initiatives and provides specialized care for the injured. The system facilitates appropriate triage and transportation of trauma patients through the emergency medical services system to designated health care facilities that possess the capability, competence, and commitment to providing optimum care for trauma victims. It also promotes rehabilitation services to decrease the likelihood of long-term disability and maximize injured patients' potential to return to their prior functional capacity and reintegration into the community.

The goals of a trauma care delivery system are to:

- reduce the incidence and severity of injuries;
- improve the health outcome of those who are injured by ensuring equitable access to the most appropriate health care resources promptly;
- promote efficient, cost-effective delivery of care;
- implement performance improvement activities to ensure quality care throughout the system; and
- advocate for sufficient resources to meet the needs of the injured in the community.

Trauma System Components

Prehospital Emergency Medical Services

The prehospital component of the trauma system is designed to provide initial assessment and management of injured patients at the scene of an emergency with safe and efficient transport to the most appropriate health care facility.

Level I

A Level I trauma center provides comprehensive care for the most severely injured patients. The required clinical resources include emergency medicine, general and subspecialty surgical and anesthesia services. A Level I trauma center is expected to provide leadership in trauma system planning, education, and research. The center must also meet specific volume performance standards (at least 1200 patients annually). A 24-hour in-house availability with a 15-minute maximum acceptable response is required for the highest-level trauma activation.

Level II

A Level II trauma center provides comprehensive trauma care based on the environment of the region. In population-dense areas, Level II should supplement the Level I facility's clinical activity and expertise. A Level II trauma center is expected to provide initial and definitive trauma care for severely injured patients, including all the clinical services provided by a Level I trauma center except hand and microvascular surgical services. A 24-hour in-house availability with a 15-minute maximum acceptable response is required for the highest-level trauma activation.

Level III

A Level III trauma center typically serves communities without immediate access to Level I or II resources. When multiple trauma centers function within a community (e.g., metropolitan area), a Level III trauma center may be required to participate within a trauma system (see Level III- Southern Nevada Trauma System). The required resources include emergency medicine and general and orthopedic surgical services to treat and stabilize all the Center for Disease Control guidelines for trauma triage. The other subspecialties are desired but not required. Level III trauma centers then function to transfer injured patients that exceed the facility resources to Level I and Level II trauma centers. As such, participation in a regional trauma system is essential. A 24-hour availability with a 30-minute maximum acceptable response is required for the highest-level trauma activation.

Pediatric Level I or II

A Pediatric Level I or Level II trauma center is a health care facility that has committed the necessary resources and expertise to meet the pediatric population's specialized needs. A pediatric trauma center is expected to assume a leadership role in the care of injured children within their community.

Rehabilitation, Data Collection, Injury Prevention, Performance Improvement

All trauma centers commit to an optimal performance that includes these four key points. The rehabilitation of injured patients reduces costs; each trauma center establishes local agreements with rehabilitation centers to provide post-trauma care. Data collected to analyze and evaluate system performance is used to improve responses, conserve resources, implement prevention strategies, and comply with reporting statutes.

Southern Nevada Trauma System

The establishment of a Trauma System is mandated by Nevada law. The authority to plan, implement, and monitor the Southern Nevada Trauma System was delegated to the Southern Nevada District Board of Health (Board). The Board has established and adopted a comprehensive trauma system plan and regulations. As the lead regulatory agency in Southern Nevada, the Southern Nevada Health District plays a central role in acquiring and analyzing trauma system data. Through the Office of Emergency Medical Services & Trauma System (OEMSTS), the Health District provides a continuous assessment of the trauma system. In addition, the Regional Trauma Advisory Board (RTAB) and Trauma Medical Audit Committee (TMAC) share responsibility for interpreting the data to evaluate the system's efficiency and effectiveness. In Southern Nevada, all trauma centers are verified by the American College of Surgeons Committee on Trauma (ACS-COT) and designated by the Nevada Division of Public and Behavioral Health (DPBS) every three-years. With a population of over 700,000, the Board must participate in the designation process.

Office of Emergency Medical Services & Trauma System

OEMSTS is comprised of a Manager, Supervisor, Regional Trauma Coordinator, EMS Project/Program Coordinators, EMS Field Representatives, and Senior Administrative Assistant. Additionally, the Health District contracts a licensed physician to serve as the EMS Medical Director. OEMSTS receives direction from the District Health Officer and Director of Community Health.

American College of Surgeons Committee on Trauma

ACS-COT focuses on improving injured patients' care. Their guidelines were developed for a verification process whereby a hospital could be evaluated to determine if all the needed criteria to function as a trauma center are being met.

Optimal versus Minimal Standard

The American College of Surgeons Committee on Trauma (ACS-COT) has developed a classification system to verify the necessary resources to provide optimal care to injured patients. It is not a ranking of medical care provided by a health care facility but the recognition of the depth of resources available within the institution. In Nevada, any healthcare facility that has not been verified by the ACS-COT meets a minimum standard, through state and federal industry certifications, and not an optimal standard. Nevada Administration Code (NAC) 450B.819 requires ACS-COT verification to be considered for designation.

Verification versus Designation

Verification: A hospital verified by the ACS-COT demonstrates it meets the criteria contained in *Resources for Optimal Care of the Injured Patient*. This verification process requires a visit by the ACS-COT to determine if all criteria are optimally met. Any hospital seeking to be designated to perform as a Trauma Center in Southern Nevada must be verified.

Designation: The regulatory and bureaucratic process needed by a hospital to be designated as a Trauma Center is performed by the Nevada Division of Public and Behavioral Health of the Department of Health and Human Services. Additionally, in Southern Nevada, as defined by its population, a hospital seeking designation must obtain a letter from the Southern Nevada District Board of Health that provisionally authorizes its designation. To be included in the Southern Nevada Trauma Catchment Areas, a hospital must be designated.

Southern Nevada Verified and Designated Trauma Centers

- University Medical Center Level I and Pediatric Level II Trauma Center
- Sunrise Hospital Level II Trauma Center
- St. Rose Dominican Hospitals – Siena Campus Level III Trauma Center
- Mike O'Callaghan Miliary Medical Center Level III Trauma Center

Southern Nevada Emergency Medical Services

In Southern Nevada, the public fire departments provide emergency medical services (EMS): Boulder City Fire Department, Clark County Fire Department, Henderson Fire Department, Las Vegas Fire & Rescue, Mesquite Fire & Rescue, and North Las Vegas Fire Department. The private franchised EMS agencies serving the area are American Medical Response, Community Ambulance, Guardian Elite Medical Services, and MedicWest Ambulance. Air ambulance services are provided by Guardian Flight (fixed wing), Optimumedicine (fixed wing), and Mercy Air Service Inc. (rotor wing).

Southern Nevada Trauma Catchment Areas

To facilitate the timely transportation of trauma patients from the scene of an emergency to the closest appropriate trauma center, the Office of Emergency Medical Services & Trauma System (OEMSTS) creates and determines geographic catchment areas (Appendix B). The office monitors trauma patients' distribution to ensure patients are matched with the appropriate resources while providing sufficient volume to each trauma center to provide stability within the trauma system. In 2024, the prehospital emergency services triage for trauma patients will be implemented to reflect the CDC's updated 2021 Guidelines for field triage of injured patients.

Non-Trauma Center Hospitals

The Southern Nevada Trauma System recognizes that hospital facilities that provide emergency services contribute to its inclusive trauma system. These facilities are known as Non-Trauma Center Hospitals and provide prompt assessment, resuscitation, emergency operations, and stabilization and arrange for transfer to a designated trauma center. Most trauma patients arrive at Non-Trauma Center Hospitals by self-delivery or by EMS provider judgment exemptions. If injured patients meet trauma criteria, they may be transferred through inter-local agreements to a designated Trauma Center.

Leadership and Legislation

The Administrator of Nevada's Department of Health and Human Services, in conjunction with the Deputy of the Division of Public and Behavioral Health, has the authority to designate a health care institution as a trauma center based on a proposal that must include a verification of the American College of Surgeons classification system and approval of a district board of health in any county whose population is 700,000 or more. During the 2005 state legislative session, Nevada Revised Statute (NRS) 450B.237 was promulgated, authorizing the Southern Nevada District Board of Health to establish and adopt a comprehensive trauma system plan concerning trauma treatment in Clark County. During the 2020 state legislative session, NRS 450B.237 was altered. The overall designation process remained the same except that approval of a new Level III trauma center must come from the Nevada State Health Division's Administrator after they have conducted a comprehensive assessment of needs. Additionally, the Southern Nevada District Board of Health cannot approve the proposal without having met the criteria outlined.

The Health District's Regional Trauma Coordinator, as part of OEMSTS, provides administrative oversight of the Southern Nevada Trauma System. With the assistance of local trauma leaders and community stakeholders, the Southern Nevada Trauma System regulations were first adopted by the District Board of Health in May 2007.

To assist the District Health Officer and OEMSTS in fulfilling the responsibilities defined in regulations, the RTAB was created. The primary mission of the RTAB is to support the District Health Officer to ensure a quality system of patient care for the victims of trauma within Southern Nevada. The RTAB makes recommendations and assists in the ongoing design, operation, evaluation, and revision of the trauma system from initial patient access to definitive patient care. The members of the RTAB include a trauma surgeon and trauma program manager from each designated trauma center; the chairman of the Health District's Emergency Medical Services Medical Advisory Board; an administrator from a non-trauma hospital; a person representing the public providers of advanced emergency care; a person representing the private franchised providers of advanced emergency care; a person representing health education and prevention services; a person representing the payors of medical benefits for the victims of trauma; and a person representing the general public. RTAB meets, at minimum, quarterly according to the trauma system's needs.

Trauma System Evaluation and Performance Improvement

An essential component of any trauma system is a continuous, comprehensive, multidisciplinary, data-driven assessment process. This process monitors and evaluates the trauma system's structure and outcome measures through all phases of care. The Southern Nevada Trauma System Improvement Plan consists of three major elements: 1) internal performance improvement and patient safety program within each trauma center; 2) scheduled independent evaluations of trauma care by trauma care experts from the American College of Surgeons; and quarterly trauma system review and analysis by the Trauma Medical Audit Committee; and 3) ongoing data collection, management, and analysis at the local, state and national level to ensure system effectiveness and identify trends and needs within the system.

The cornerstone of the Southern Nevada Trauma System medical review process is the Trauma Medical Audit Committee (TMAC). It is a peer review committee that meets quarterly to review, monitor, and evaluate trauma system performance and make recommendations for system improvements. The TMAC derives its authority and privilege from NRS 49.117 - 49.123; NRS 49.265; and NRS 450B.237. The members of the TMAC include the trauma medical director and program manager from each designated trauma center; the Southern Nevada medical examiner or designee; the Health District's Regional Trauma Coordinator; a neurosurgeon; an anesthesiologist; an orthopedic surgeon; and an emergency physician not affiliated with a trauma center.

Effectively evaluating trauma system performance is contingent upon appropriate data collection, management, analysis, and reporting. NRS 450B.238 requires each designated trauma center to provide data on any person who sustains an acute injury, which has the potential of being fatal or producing major disability to the state trauma registry managed by the State Health Division, Bureau of Health Planning and Statistics. The State Trauma Registry is one source of valuable information needed to describe injured patients with an ISS greater than fifteen within the Southern Nevada Trauma System.

Each designated Trauma Center also voluntarily provides data to the National Trauma Data Bank maintained by the ACS-COT. This data includes patients evaluated for trauma by the mechanism of injury and special considerations. This criterion is based on injury patterns, mental status and vital signs, mechanism, and EMS judgement outlined in the Southern Nevada EMS System Trauma Field Triage Criteria Protocol (TFTC). In addition, injury mortality data provided by the Southern Nevada Coroner's Office is used by the TMAC to evaluate trauma system resource utilization and planning for improved system effectiveness and efficiency.

Purpose of Southern Nevada Trauma Annual Report

To provide a data-driven assessment of the Southern Nevada Trauma System, the Regional Trauma Coordinator produces the annual Southern Nevada Trauma System Report. Where able, a 5-year data set will be used to present the most current information available. All sources are chosen to provide an overview of injury and trauma system utilization at the local level. As defined in NRS, the District Board of Health shall consider plans for future county trauma needs, designation of new trauma centers, and the most effective way to provide trauma services. This report is intended as a tool for the Southern Nevada Trauma System's subject-matter experts to review the overall system to recognize trends and provide decision-makers with informed guidance.

Data Sources

The Center for Business and Economic Research University of Nevada, Las Vegas

Southern Nevada Department of Comprehensive Planning

Nevada State Trauma Registry

The Nevada Trauma registry is a repository of trauma incident data from across the state. All hospitals within Nevada are required to submit data quarterly. To be classified as a trauma, a series of criteria identified by the American College of Surgeons must be met. For an incident to be classified as a trauma, the patient must have:

- At least one diagnostic code for injury:
    - ICD-10 code from the following ranges: S00-S99 (7th Character Modifier A, B, or C), T07, T14, T20-T28 (7th Character modifier A), T30-32, and T79.A1-T79.A9 (7th character modifier A) and the patient must have:
- At least one of the following criteria:
    - Patient was in the hospital for at least 24 hours due to injuries;
    - Injury resulted in death; or
    - Patient was transferred between hospitals using EMS or air ambulance.

Trauma Field Triage Criteria (TFTC) 2023 Data

The designated trauma centers in Southern Nevada submit data to the OEMSTS related to patients transported according to the Health District's EMS Operations Trauma Field Triage Criteria Protocol criteria. The TFTC algorithm is a triage decision scheme developed by the American College of Surgeons Committee on Trauma.

Prehospital professionals are trained to perform a physical assessment of trauma patients and recognize specific injuries and injury mechanisms that are likely to cause severe injury. The data, verified through First Watch, includes:

- day and time;
- address with longitude and latitude coordinates;
- injury code;
- EMS response time-stamps;
- transport destinations;
- out-of-area.

Patients are transported to area trauma centers based on these criteria:

Step 1 (Physiologic): A trauma patient whose injury is so severe that their vital signs or level of consciousness are abnormal.

Step 2 (Anatomic): A trauma patient whose vital signs and level of consciousness are within normal limits, but they have sustained an obvious serious injury; for example, an open or depressed skull fracture, pelvic fracture, or paralysis.

Step 3 (Mechanism): A trauma patient whose vital signs and level of consciousness are within normal limits. They do not appear to have an obvious serious injury. Still, they have experienced high energy impact to the body that may have caused a severe injury that is not immediately obvious.

Step 4 (Special Considerations): A trauma patient whose circumstances merit special considerations, for example, older adults, children, anticoagulants/bleeding disorders, and pregnancy.

In 2024, the steps will shift to align with the updated guidelines from the CDC.

Limitations

One of the most critical limitations of the trauma system report is the lack of consistency in trauma data collection at the state and local levels. Variability was noted in disease classification coding, case definitions, and inclusion criteria among the organizations that collect injury data.

It is the desire of the OEMSTS and members of the RTAB to be evidence-based in making decisions regarding future planning, development, and modification of the Southern Nevada Trauma System. The stakeholders are working diligently to improve data collection activities specific to Southern Nevada.

The Trauma System During COVID

The trauma system functioned as intended during the COVID pandemic without interruption of services. Complications arose when ACS-COT was unable to provide in-person verification visits. This required the ACS-COT to develop web-based verification visits. Siena Level III Trauma Center was reverified as part of the pilot web-based verification process. Sunrise Level II Trauma Center was reverified via the web-based verification process. All three trauma centers were granted one-year extensions to their designations by the Administrator of the Nevada Department of Health and Human Services due to the ACS-COT delays.

During the COVID pandemic, trauma case numbers and type remained the same, though initially, there appeared to be an increase in interpersonal violence (e.g., stabbings). The increase was attributed to a decrease in other injuries (e.g., automobile accidents) that subsequently raised the percentage of certain injuries without an actual increase in cases.

Future Plans

The trauma system's future evolution depends on a reliable surveillance system to monitor trends, identify opportunities for improvement, and provide valuable information to health care leaders, emergency managers, and policymakers. Access to quality data contributes to the accurate assessment of current resources and assists in developing comprehensive, evidence-based, and integrated strategic plans to promote effective and efficient emergency medical care for injured patient.

The OEMSTS, during 2024, will be focusing on the following:

- Review of Trauma System Plan and Performance Improvement Plan
- Review of trauma system data
- Transition of TFTC data to the updated CDC guidelines

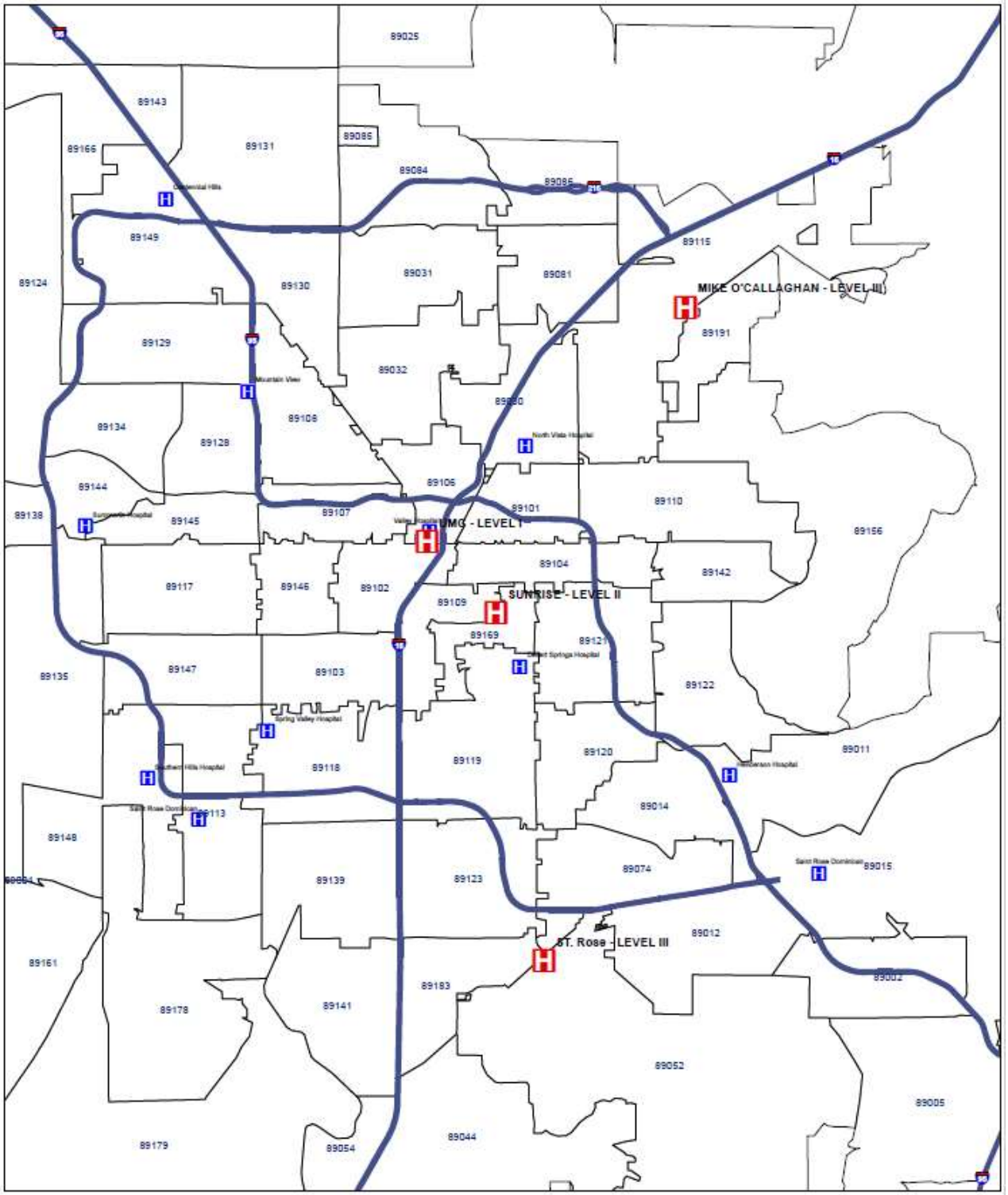
The Office of Emergency Medical System & Trauma System appreciates our community partners' contributions and support in maintaining the Southern Nevada Trauma System and have committed to building on the achievements to date.

Population Data

Intent

The intent of including population data is to examine if there has been statistically significant population growth or decline and determine if population changes will impact patient care. The data is populated to provide evidence of where growth or decline is happening, how fast, and if it is expected to continue. While population changes are not always associated with increased or decreased trauma volumes, the change needs to be identified to consider its impact. When a population change occurs, it congruently may affect but is not limited to roadways, infrastructure, emergency and healthcare providers, and socioeconomic factors.

Clark County ZIP Code Map



Clark County Population Forecast: 2023-2065

Year	Population Forecast	Change in Population Forecast	Growth in Population (Percent)
2023	2,374,000*	42,066	1.8%
2024	2,407,000*	33,000	1.4%
2025	2,438,000*	31,000	1.3%
2026	2,494,000	56,000	2.3%
2027	2,542,000	48,000	1.9%
2028	2,583,000	41,000	1.6%
2029	2,617,000	34,000	1.3%
2030	2,645,000	28,000	1.1%
2031	2,670,000	25,000	0.9%
2032	2,691,000	21,000	0.8%
2033	2,711,000	20,000	0.7%
2034	2,731,000	20,000	0.7%
2035	2,750,000	19,000	0.7%
2036	2,770,000	20,000	0.7%
2037	2,789,000	19,000	0.7%
2038	2,809,000	20,000	0.7%
2039	2,828,000	19,000	0.7%
2040	2,848,000	20,000	0.7%
2041	2,866,000	18,000	0.6%
2042	2,884,000	18,000	0.6%
2043	2,902,000	18,000	0.6%
2044	2,919,000	17,000	0.6%
2045	2,935,000	16,000	0.5%
2046	2,951,000	16,000	0.5%
2047	2,967,000	16,000	0.5%
2048	2,983,000	16,000	0.5%
2049	2,999,000	16,000	0.5%
2050	3,014,000	15,000	0.5%
2051	3,030,000	16,000	0.5%
2052	3,046,000	16,000	0.5%
2053	3,062,000	16,000	0.5%
2054	3,078,000	16,000	0.5%
2055	3,095,000	17,000	0.6%
2056	3,111,000	16,000	0.5%
2057	3,127,000	16,000	0.5%
2058	3,144,000	17,000	0.5%
2059	3,160,000	16,000	0.5%
2060	3,176,000	16,000	0.5%
2061	3,192,000	16,000	0.5%
2062	3,207,000	15,000	0.5%
2063	3,222,000	15,000	0.5%
2064	3,236,000	14,000	0.4%
2065	3,250,000	14,000	0.4%

** SNRPC Census population estimate.*

Source: The Center for Business and Economic Research University of Nevada, Las Vegas

Note: The average annual forecasted growth rate is 0.7 percent.

Clark County Historical Population by Zip Code, 2018-2023

ZIP	2018	2019	2020	2021	2022	2023	Absolute Growth	Growth Rate (%)

							2018-2023	2018-2023
89002	36,793	37,804	38425	38515	38176	38,536	1,743	4.74
89004	315	308	303	150	151	153	-162	-51.43
89005	16104	16398	16505	15250	14972	15,023	-1,081	-6.71
89007	1064	1074	1068	991	939	929	-135	-12.69
89011	31074	34521	37424	40068	41693	45,239	14,165	45.58
89012	36374	36360	36607	37311	36366	36,697	323	0.89
89014	42471	42753	42773	42223	42512	42,905	434	1.02
89015	42528	42205	42658	43447	41972	42,969	441	1.04
89018	1153	1300	1353	1114	1407	1,554	401	34.78
89019	2786	2838	2908	2808	2570	2,565	-221	-7.93
89021	3554	3544	3610	2733	3059	3,059	-495	-13.93
89025	1452	1449	1453	1278	1308	1,284	-168	-11.57
89027	20158	21020	21955	19703	18673	18,993	-1,165	-5.78
89029	10538	10515	10931	9734	9350	9,297	-1,241	-11.78
89030	54973	56328	56289	56056	50691	50,444	-4,529	-8.24
89031	71137	72506	73842	76085	78527	79,427	8,290	11.65
89032	46542	47941	48263	49448	48816	49,669	3,127	6.72
89034	2707	3117	3601	3372	3474	3,817	1,110	41.00
89039	206	227	231	149	156	154	-52	-25.24
89040	3776	3922	4023	3455	3259	3,259	-517	-13.69
89044	23420	25971	27455	27551	30804	33,931	10,511	44.88
89046	406	424	437	485	479	453	47	11.58
89052	58648	60356	62576	61276	61079	62,031	3,383	5.77
89054	102	102	102	62	66	63	-39	-38.24
89074	55455	54863	55749	54376	52941	53,002	-2,453	-4.42
89081	38540	38840	39622	41804	42546	42,706	4,166	10.81
89084	28263	29726	32752	37263	38175	40,532	12,269	43.41
89085	3747	3627	3671	3699	4263	4,266	519	13.85
89086	5103	6037	6679	8660	10735	12,517	7,414	145.29
89101	41672	44179	45257	46728	41479	42,513	841	2.02
89102	38181	40100	41080	37782	34614	34,204	-3,977	-10.42
89103	49618	50396	51624	45150	45170	45,303	-4,315	-8.70
89104	37032	39691	39826	38337	36516	36,449	-583	-1.57
89106	26751	30087	30767	31678	30811	30,796	4,045	15.12
89107	40580	39340	39331	38623	38891	39,111	-1,469	-3.62
89108	80869	78900	79111	78128	76138	76,685	-4,184	-5.17
89109	5539	6464	6608	7165	6880	6,739	1,200	21.66
89110	79077	80581	80441	78526	74821	74,649	-4,428	-5.60
89113	31853	33936	34803	34794	37623	40,384	8,531	26.78
89115	74336	75243	77533	75196	73305	70,694	-3,642	-4.90
89117	58913	57184	57174	55761	55750	55,750	-3,163	-5.37
ZIP	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**Absolute Growth 2018-2023**	**Growth Rate (%) 2018-2023**
89118	25884	26417	27433	26082	26979	27,840	1,956	7.56
89119	49614	49860	51001	50411	47594	48,785	-829	-1.67

89120	24506	26026	26647	24084	24366	24,374	-132	-0.54
89121	72173	69543	69532	66209	67609	68,186	-3,987	-5.52
89122	55750	56498	56994	56056	55706	55,683	-67	-0.12
89123	64061	62305	63176	58763	58026	57,938	-6,123	-9.56
89124	7169	7202	6891	6616	6861	6,786	-383	-5.34
89128	39379	39753	39749	39775	38716	38,742	-637	-1.62
89129	56848	54566	55755	55565	54158	54,585	-2,263	-3.98
89130	33556	32325	32836	32490	32357	32,413	-1,143	-3.41
89131	49455	50176	50474	50227	50354	50,484	1,029	2.08
89134	25298	25486	25486	24205	23820	23,806	-1,492	-5.90
89135	32316	32617	33828	33092	32928	34,405	2,089	6.46
89138	18748	20001	22074	23289	26515	29,218	10,470	55.85
89139	41653	42064	44127	43112	45600	46,376	4,723	11.34
89141	38678	40006	43865	41017	43033	45,284	6,606	17.08
89142	37609	36391	36888	35568	36010	36,046	-1,563	-4.16
89143	14658	13406	13409	13350	13879	15,072	414	2.82
89144	19824	20162	20160	19291	18980	19,000	-824	-4.16
89145	28171	28481	28594	28452	27908	27,896	-275	-0.98
89146	19739	19918	20057	18686	19008	18,903	-836	-4.24
89147	60349	60183	60934	56287	56070	56,253	-4,096	-6.79
89148	66931	68749	71877	65967	66568	67,827	896	1.34
89149	41365	43739	44504	42908	44915	45,454	4,089	9.89
89156	30418	31514	31508	29945	30895	31,270	852	2.80
89158	0	1543	1549	1367	476	736	736	0.00
89161	506	502	502	443	0	479	-27	-5.34
89166	17830	19253	20957	23425	28834	32,921	15,091	84.64
89169	24946	27047	28273	26853	25852	24,981	35	0.14
89178	35355	38514	40314	41198	43852	45,733	10,378	29.35
89179	9740	11422	11688	11819	11856	11,856	2,116	21.72
89183	38275	37955	38786	39602	39788	43,497	5,222	13.64
Total	2,284,616	2,325,798	2,325,798	2,325,798	2,325,798	2,371,586	86,970	3.81
Clark County Department of Comprehensive Planning								
Source: Southern Nevada Census Population Estimate, August - Roll Close 2020								

SNHD Trauma Field Triage Criteria (TFTC) Data

Intent

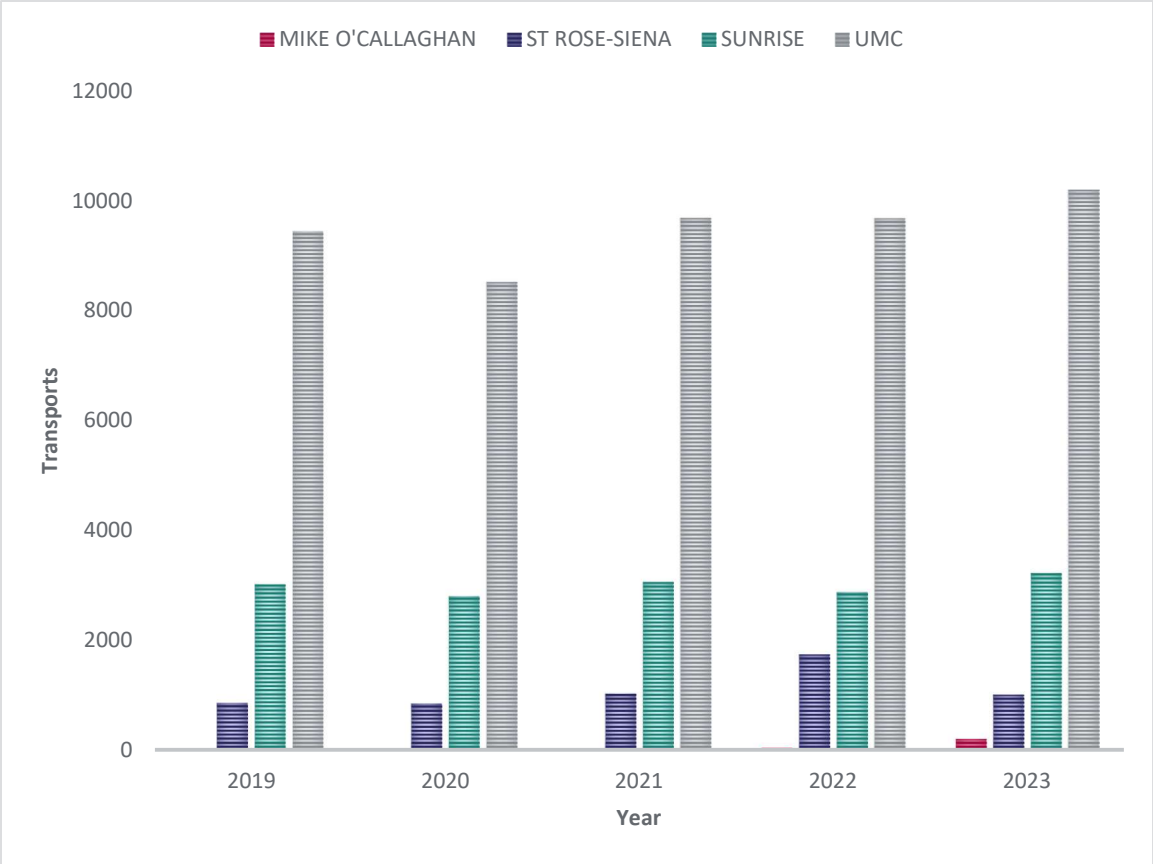
The intent of including TFTC data is to examine and determine the number of reported trauma cases at all designated Trauma Centers in Southern Nevada. This data can then be used to analyze capacity, determine unmet needs, identify negative outcomes, and recognize barriers to access healthcare. TFTC data is abstracted by trained data extractors to be reported, compiled, verified, and generated by a collaborative effort between designated trauma centers and the Office of Emergency Medical Services and Trauma System (OEMSTS). This data is separate from the data criteria required and submitted to the Nevada State Trauma Registry. All data points include a date, time, location, injury code, transporting agency, and receiving facility. Current Southern Nevada TFTC is guidance provided by the CDC and approved by the Medical Advisory Board.

Appendix A: Trauma Field Triage Criteria

Number of TFTC Transports by Step, 2019-2023

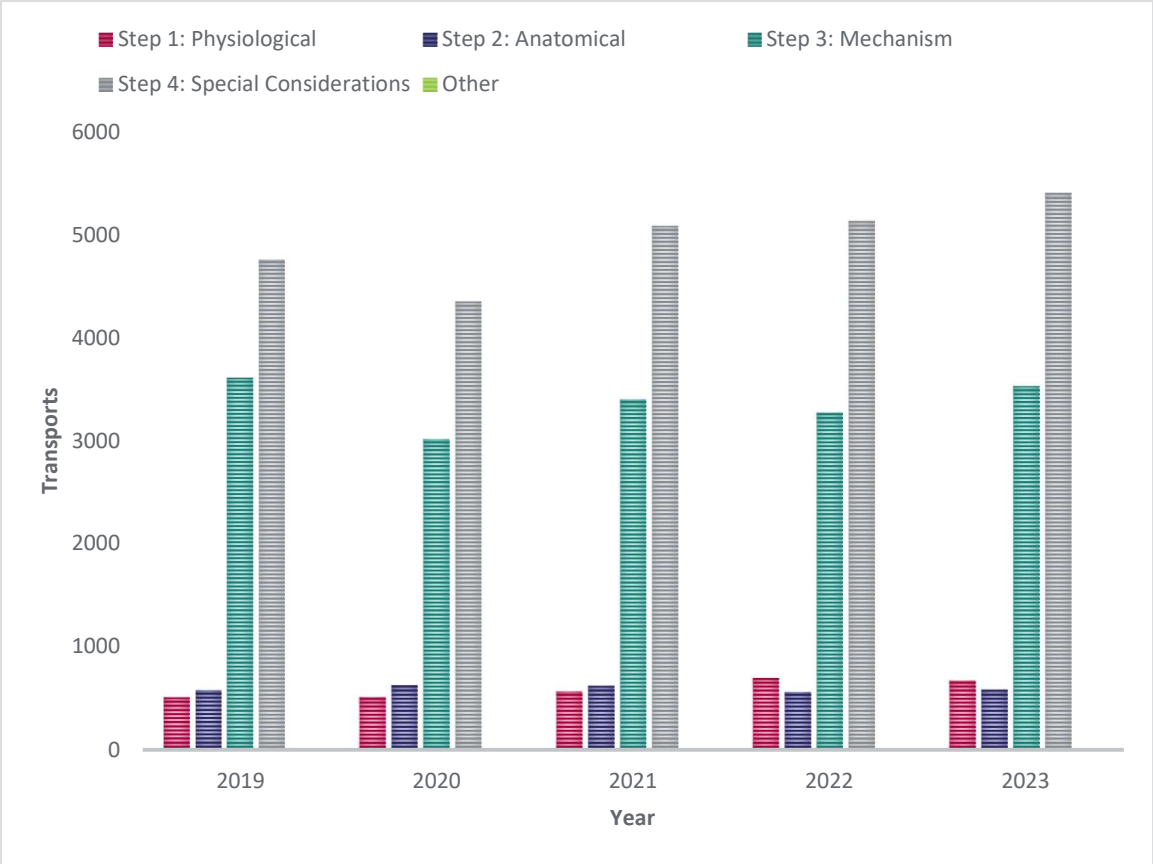
TFTC Transports by Trauma Center, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiological	655	750	818	964	896
Step 2: Anatomical	779	904	947	836	857
Step 3: Mechanism	4921	4103	4696	4495	4660
Step 4: Special Considerations	6946	6383	7289	8025	8231
Other	0	32	26	19	30
All	13301	12172	13776	14339	14674
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System.					

TFTC Transports by Trauma Center, 2019-2023



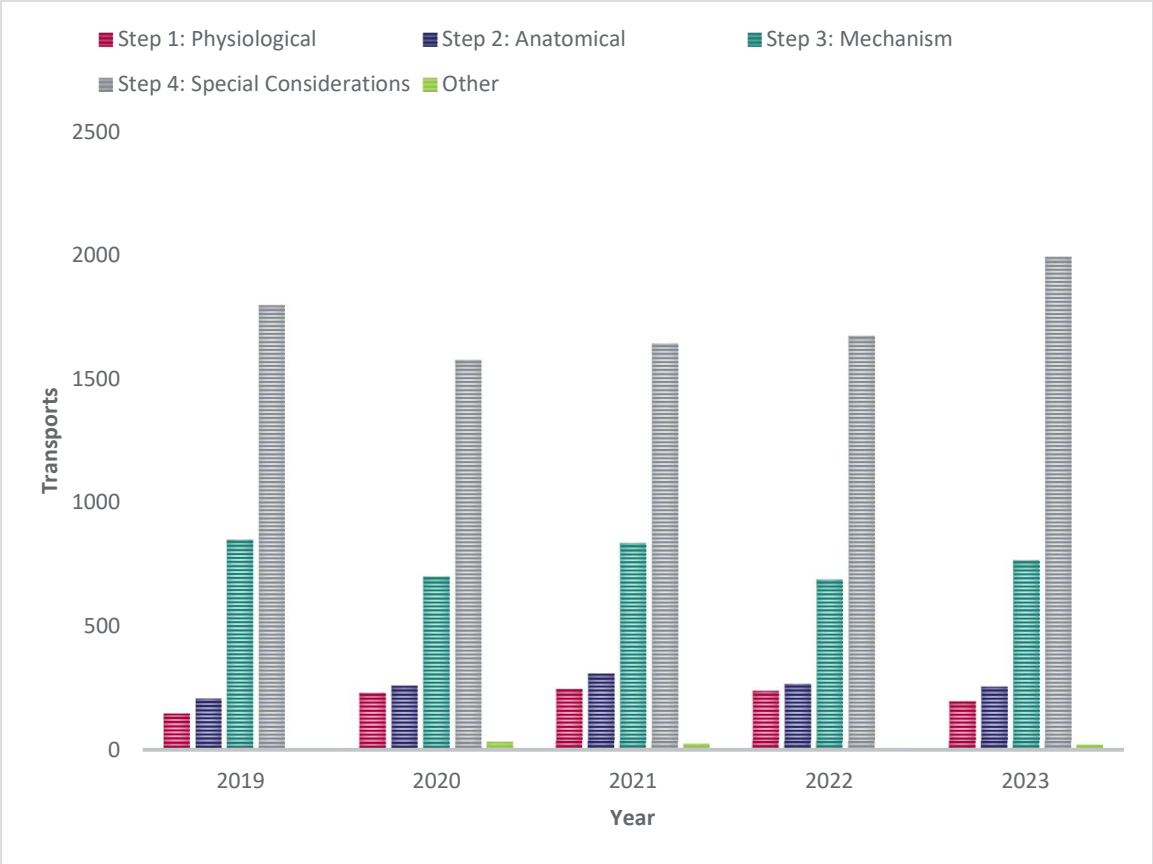
TFTC Transports by Trauma Center, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Mike O'Callaghan	0	0	0	35	208
St. Rose-Siena	853	847	1028	1748	1013
Sunrise	3003	2803	3062	2875	3234
UMC	9445	8522	9686	9681	10209
All	13301	12172	13776	14339	14664
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System.					

UMC TFTC Transports by Step, 2019-2023



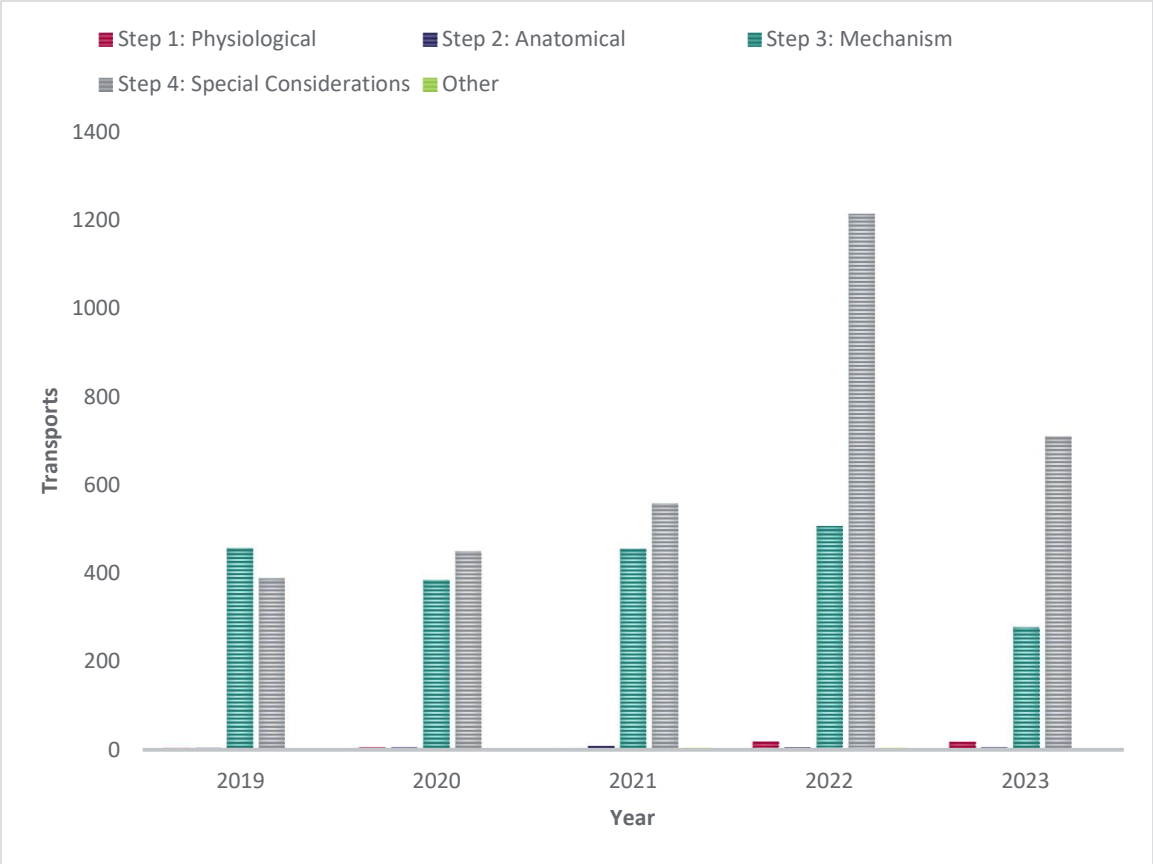
UMC TFTC Transports by Step, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiologic	505	513	569	703	676
Step 2: Anatomic	569	637	627	564	590
Step 3: Mechanism	3613	3016	3403	3277	3533
Step 4: Special Considerations	4758	4356	5087	5134	5409
Other	0	0	0	3	1
Total	9445	8522	9686	9681	10209
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System.					

Sunrise TFTC Transports by Step 2019-2023



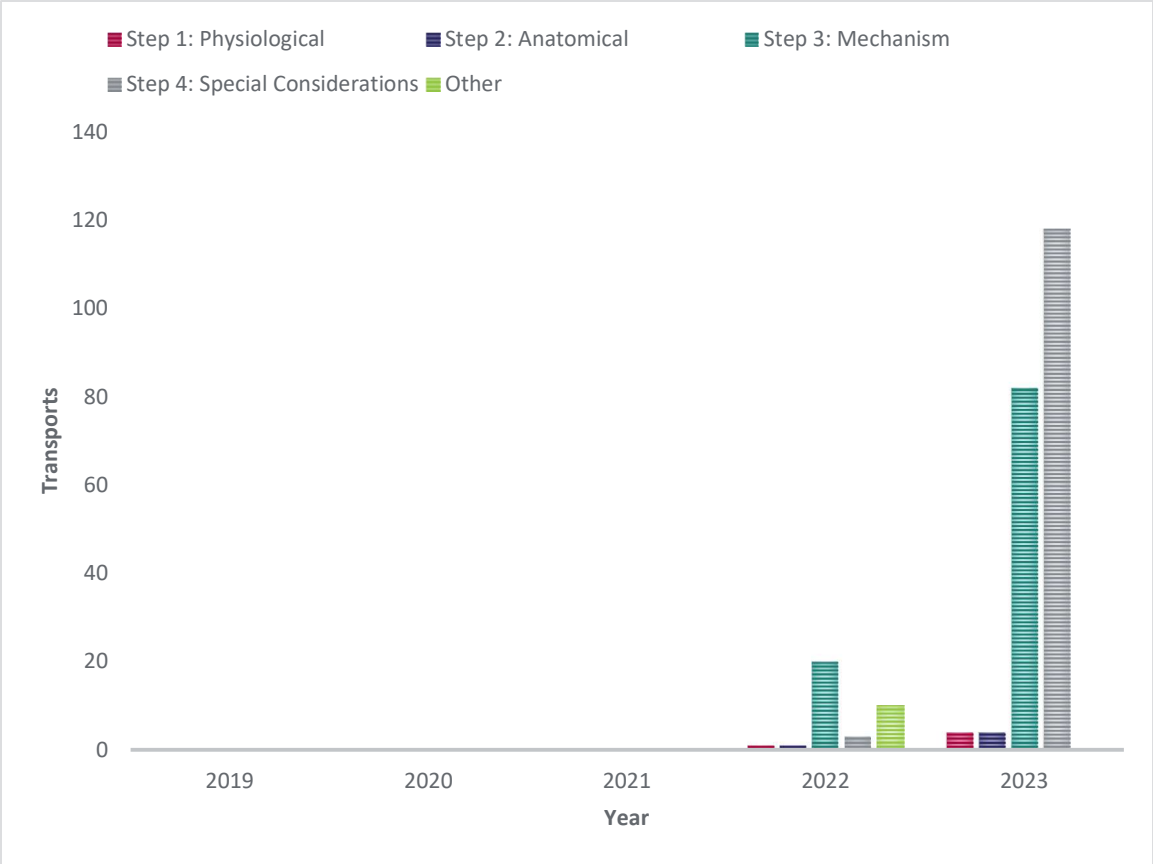
Sunrise TFTC Transports by Step, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiologic	146	231	248	240	197
Step 2: Anatomic	207	261	310	268	257
Step 3: Mechanism	851	702	837	690	767
Step 4: Special Considerations	1799	1577	1644	1674	1994
Other	0	32	23	3	19
Total	3003	2803	3062	2875	3234
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System.					

St. Rose – Siena TFTC Transports by Step, 2019-2023



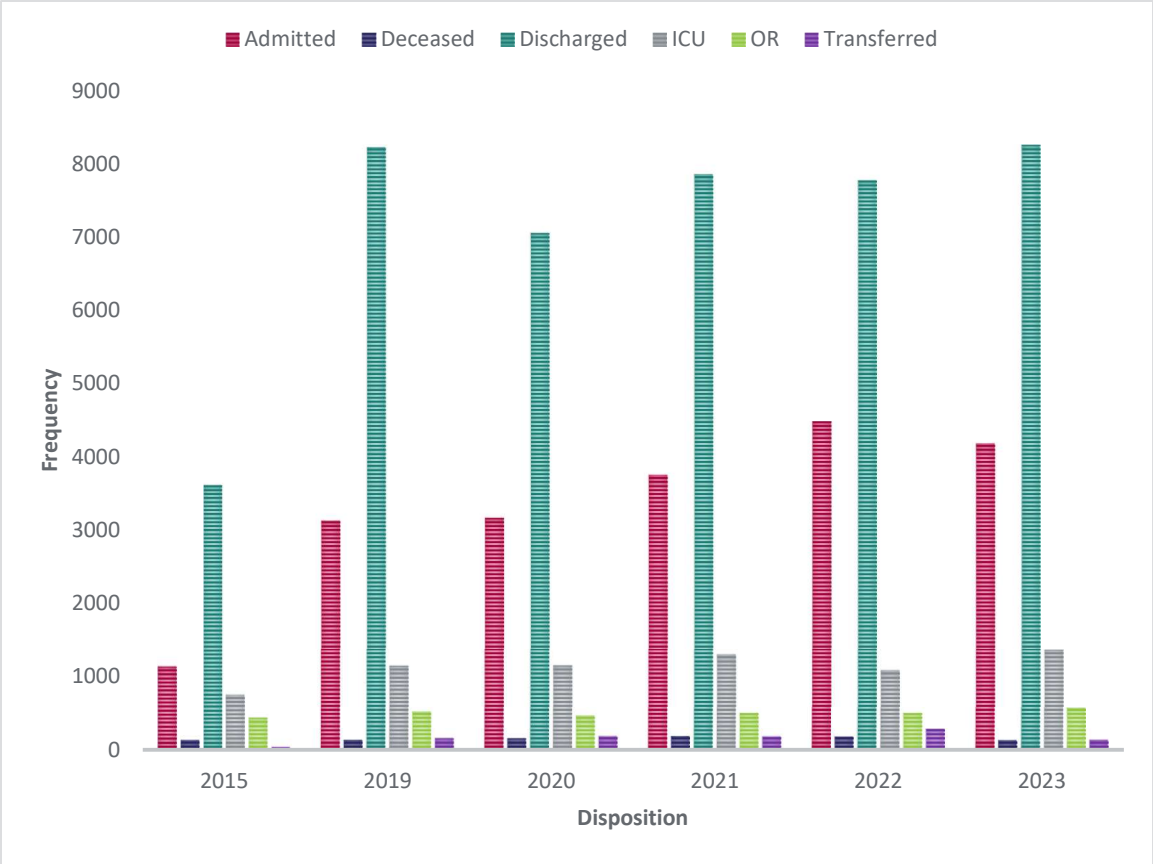
St Rose – Siena TFTC Transports by Step, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiologic	4	6	1	20	19
Step 2: Anatomic	3	6	10	3	6
Step 3: Mechanism	457	385	456	508	278
Step 4: Special Considerations	389	450	558	1214	710
Other	0	0	3	3	0
Total	853	847	1028	1748	1013
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System.					

Mike O'Callaghan TFTC Transports by Step, 2019-2023



Mike O'Callaghan TFTC Transports by Step, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiologic	0	0	0	1	4
Step 2: Anatomic	0	0	0	1	4
Step 3: Mechanism	0	0	0	20	82
Step 4: Special Considerations	0	0	0	3	118
Other	0	0	0	10	0
Total	0	0	0	35	208
Source: SNHD TFTC Data					
Note: Mike O'Callaghan became a Level III Trauma Center in 2022. Includes all TFTC transports in the Southern Nevada Trauma System.					

TFTC Transports (1-4) by Disposition 2019-2023



TFTC Transports (1-4) by Disposition, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Admitted	3129	3167	3753	4490	4184
Deceased	137	161	192	182	135
Discharged	8218	7053	7854	7770	8255
ICU	1139	1144	1293	1079	1357
OR	516	460	498	495	565
Transferred	158	184	181	290	139
All	13297	12170	13771	14306	14635
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System with a Documented Disposition. Includes 1 unclassified disposition in 2020.					

TFTC Steps (1-4) by Disposition, 2019-2023						
		2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiological	Admitted	129	171	153	223	213
	Deceased	86	96	123	135	91
	Discharged	106	125	127	170	168
	ICU	265	291	351	335	325
	OR	67	66	64	96	93
	Transferred	2	1	0	4	5
Step 2: Anatomical	Admitted	167	208	215	211	221
	Deceased	25	47	53	33	26
	Discharged	278	318	350	306	283
	ICU	112	118	123	111	116
	OR	196	209	203	170	207
	Transferred	1	4	3	5	3
Step 3: Mechanism	Admitted	916	777	877	835	870
	Deceased	21	11	10	6	11
	Discharged	3485	2865	3363	3263	3342
	ICU	342	326	313	248	314
	OR	115	88	99	84	90
	Transferred	42	36	34	49	27
Step 4: Special Considerations	Admitted	1917	1998	2502	3061	2875
	Deceased	5	6	5	8	7
	Discharged	4349	3732	4004	4020	4453
	ICU	420	406	501	541	597
	OR	138	96	131	145	175
	Transferred	113	143	144	231	104
Other	Admitted	0	13	6	4	5
	Deceased	0	1	1	0	0
	Discharged	0	13	10	10	9
	ICU	0	3	5	1	5
	OR	0	1	1	0	0
	Transferred	0	0	0	1	0
All		13297	12170	13771	14306	14635
Source: SNHD TFTC Data						
Note: Includes all TFTC transports in the Southern Nevada Trauma System with a Documented Disposition. Includes 1 unclassified step in 2020.						

Transport Times

Intent

The intent of analyzing Trauma Field Triage Criteria (TFTC) transport times is to evaluate patient transport time to identify if a barrier exists to the prompt treatment of trauma. The goal of a trauma system is to get the right patient the right care in the right place at the right time. Prompt trauma treatment may shorten the recovery period and return a patient to pre-accident functionality. Patients transported by EMS providers to trauma centers must satisfy TFTC. These patients vary in the severity of the mechanisms of injury. The less severe, which represent a larger number of patients, are awake, alert, and have normal vital signs. While they appear less injured, some patients have significant, often occult injuries. Most will be discharged home after evaluation, but some require life-saving interventions identified by expedited resources available at trauma centers. There are no established or scientifically defined optimal transport times. Therefore, for Southern Nevada, transport times are provided to subject-matter-experts to allow for analysis based on, but not limited to, geographic layout and infrastructure for the community's needs.

Appendix B: Southern Nevada Trauma Catchment Areas

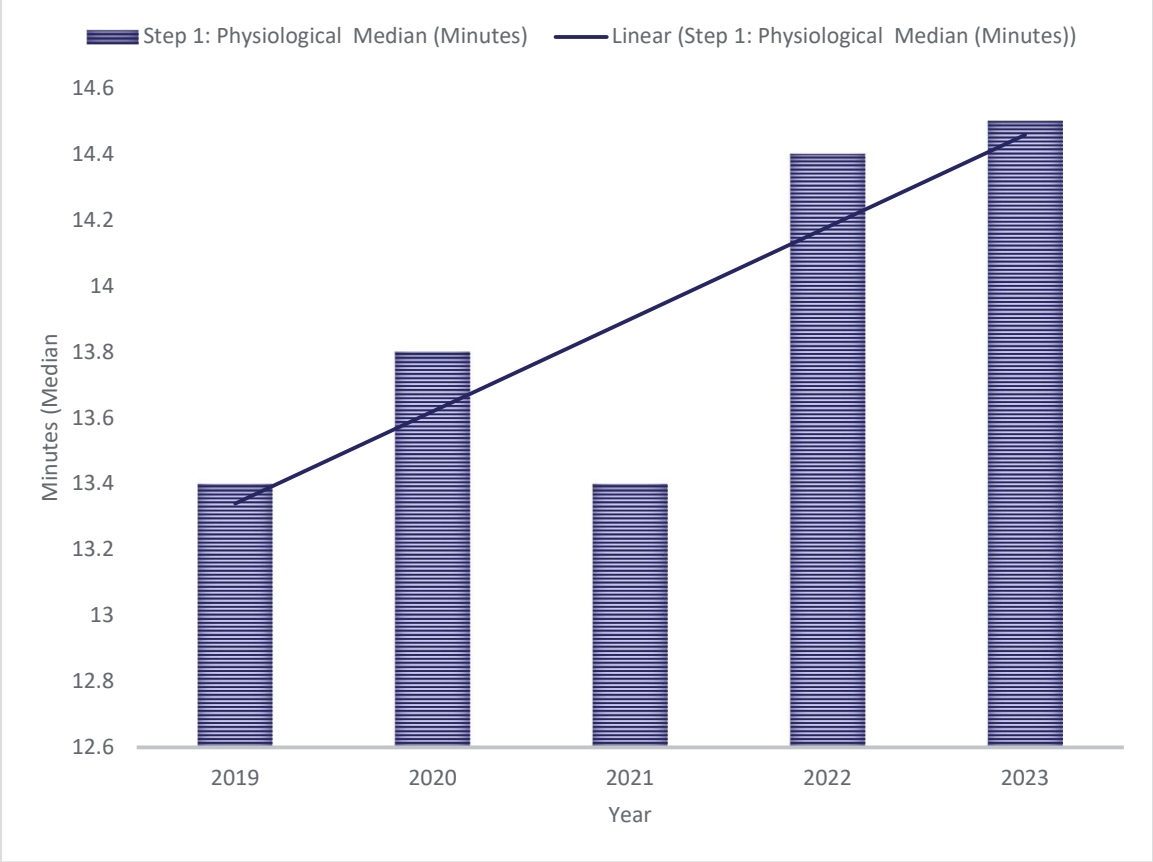
Southern Nevada Median Transport Time in Minutes (Steps 1-4), 2019-2023

Southern Nevada Median Transport Time by Step (1-4), 2019-2023						
		Year				
		2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiologic	N	504	591	637	742	688
	Median (Minutes)	13m 24s	13m 48s	13m 24s	14m 24s	14m 30s
Step 2: Anatomic	N	631	718	768	663	666
	Median (Minutes)	12m 36s	12m 42s	13m 12s	13m 0s	13m 48s
Step 3: Mechanism	N	4065	3507	3968	3687	3778
	Median (Minutes)	16m 12s	15m 24s	15m 36s	15m 48s	16m 12s
Step 4: Special Considerations	N	5730	5430	6250	6729	6385
	Median (Minutes)	16m 0s	15m 24s	16m 12s	16m 24s	17m 24s
Other	N	0	9	2	6	10

Source: SNHD TFTC Data

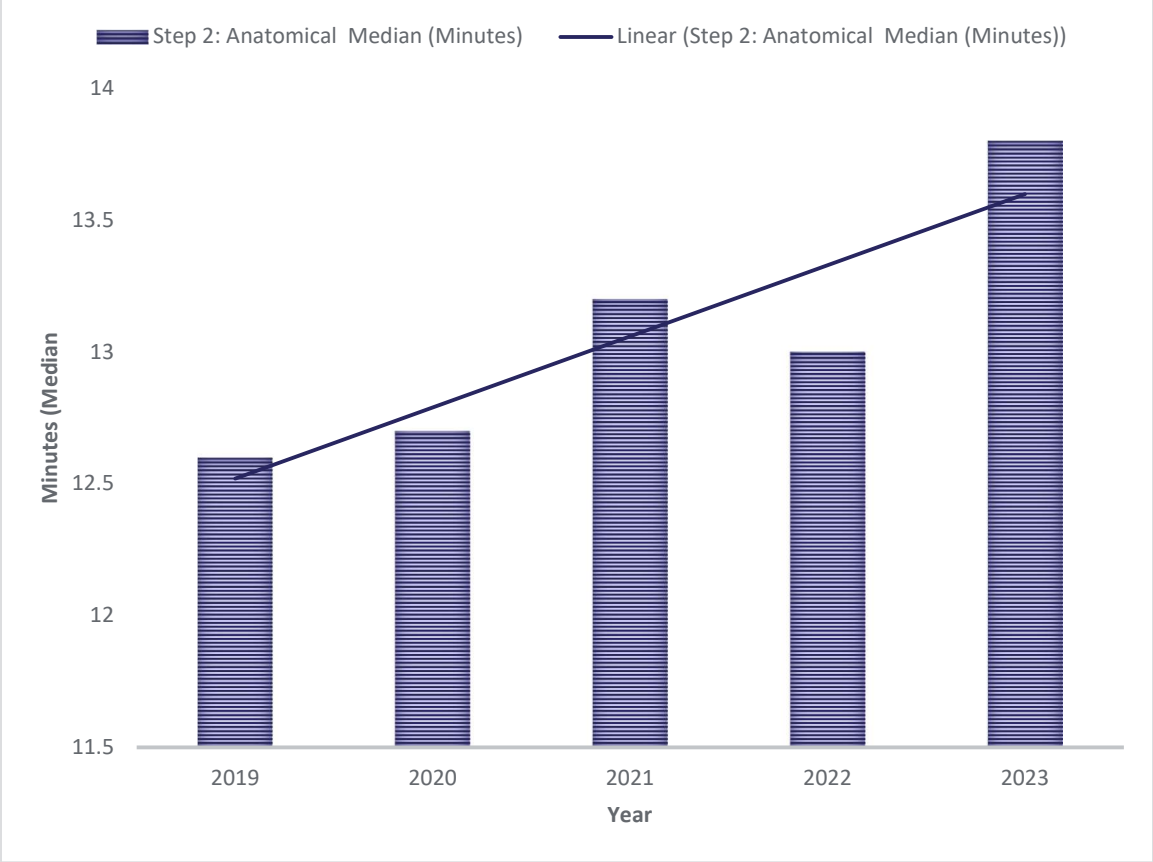
Note: Data not listed if out of state or if zip code is unavailable. Service area for Southern Nevada includes the following zip codes where the injury took place: 89002, 89004, 89005, 89007, 89011, 89012, 89014, 89015, 89018, 89019, 89021, 89027, 89029, 89030, 89031, 89032, 89034, 89039, 89040, 89044, 89046, 89052, 89054, 89074, 89081, 89084, 89085, 89086, 89101, 89102, 89103, 89104, 89106, 89107, 89108, 89110, 89113, 89115, 89117, 89118, 89120, 89121, 89122, 89123, 89124, 89128, 89129, 89130, 89131, 89134, 89135, 89138, 89139, 89141, 89142, 89143, 89144, 89145, 89146, 89147, 89148, 89149, 89156, 89161, 89166, 89178, 89179, and 89183. Includes TFTC transports with a transport time greater than 0 seconds.

Southern Nevada Step 1 Median Transport Time, 2019-2023



Southern Nevada Step 1 Median Transport Time, 2019-2023						
		Year				
		2019	2020	2021	2022	2023
Step 1: Physiologic	N	504	591	637	742	688
	Median (Minutes)	13m 24s	13m 48s	13m 24s	14m 24s	14m 30s
Source: SNHD TFTC Data						
Note: Data not listed if out of state or if zip code is unavailable. Service area for Southern Nevada includes the following zip codes where the injury took place: 89002, 89004, 89005, 89007, 89011, 89012, 89014, 89015, 89018, 89019, 89021, 89027, 89029, 89030, 89031, 89032, 89034, 89039, 89040, 89044, 89046, 89052, 89054, 89074, 89081, 89084, 89085, 89086, 89101, 89102, 89103, 89104, 89106, 89107, 89108, 89110, 89113, 89115, 89117, 89118, 89120, 89121, 89122, 89123, 89124, 89128, 89129, 89130, 89131, 89134, 89135, 89138, 89139, 89141, 89142, 89143, 89144, 89145, 89146, 89147, 89148, 89149, 89156, 89161, 89166, 89178, 89179, and 89183. Includes TFTC transports with a transport time greater than 0 seconds.						

Southern Nevada Step 2 Median Transport Time, 2019-2023

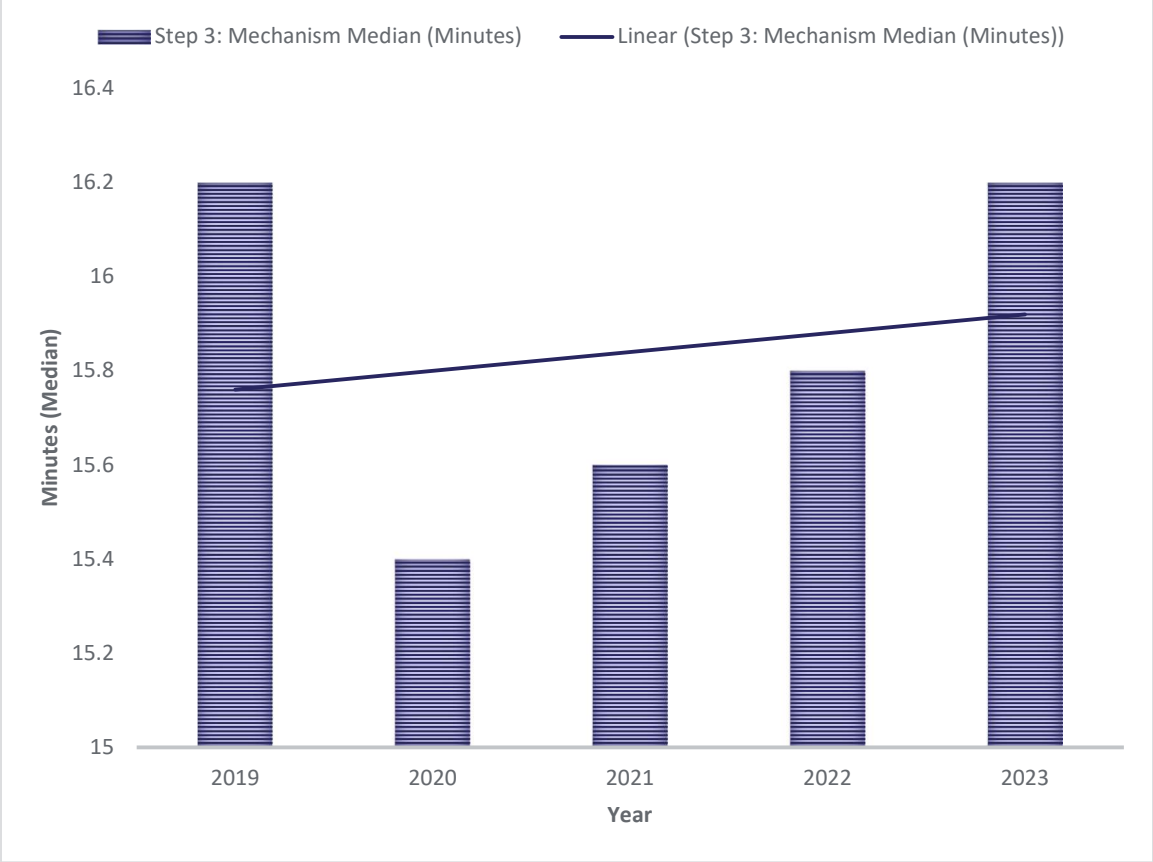


Southern Nevada Step 2 Median Transport Time, 2019-2023						
		Year				
		2019	2020	2021	2022	2023
Step 2: Anatomic	N	631	718	768	663	666
	Median (Minutes)	12m 36s	12m 42s	13m 12s	13m 0s	13m 48s

Source: SNHD TFTC Data

Note: Data not listed if out of state or if zip code is unavailable. Service area for Southern Nevada includes the following zip codes where the injury took place: 89002, 89004, 89005, 89007, 89011, 89012, 89014, 89015, 89018, 89019, 89021, 89027, 89029, 89030, 89031, 89032, 89034, 89039, 89040, 89044, 89046, 89052, 89054, 89074, 89081, 89084, 89085, 89086, 89101, 89102, 89103, 89104, 89106, 89107, 89108, 89110, 89113, 89115, 89117, 89118, 89120, 89121, 89122, 89123, 89124, 89128, 89129, 89130, 89131, 89134, 89135, 89138, 89139, 89141, 89142, 89143, 89144, 89145, 89146, 89147, 89148, 89149, 89156, 89161, 89166, 89178, 89179, and 89183. Includes TFTC transports with a transport time greater than 0 seconds.

Southern Nevada Step 3 Median Transport Time, 2019-2023

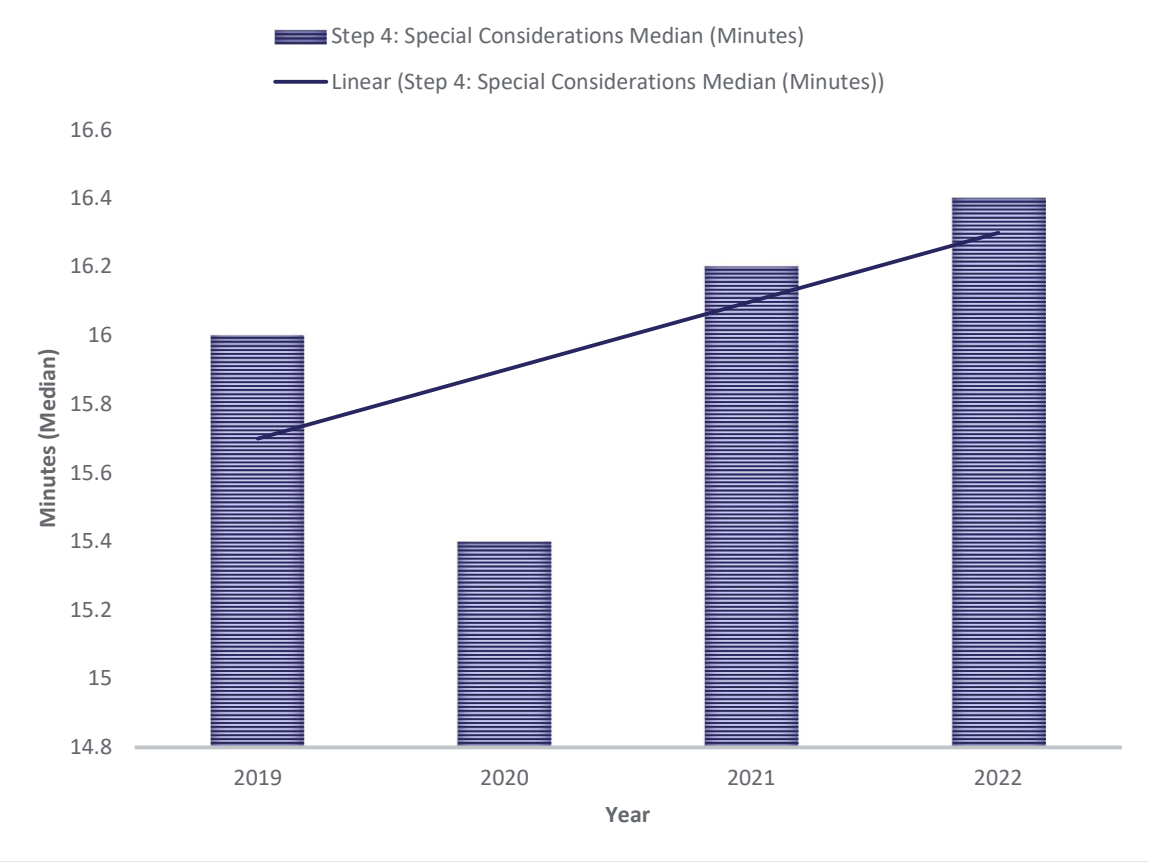


Southern Nevada Step 3 Median Transport Time, 2019-2023						
		Year				
		2019	2020	2021	2022	2023
Step 3: Mechanism	N	4065	3507	3968	3687	3778
	Median (Minutes)	16m 12s	15m 24s	15m 36s	15m 48s	16m 12s

Source: SNHD TFTC Data

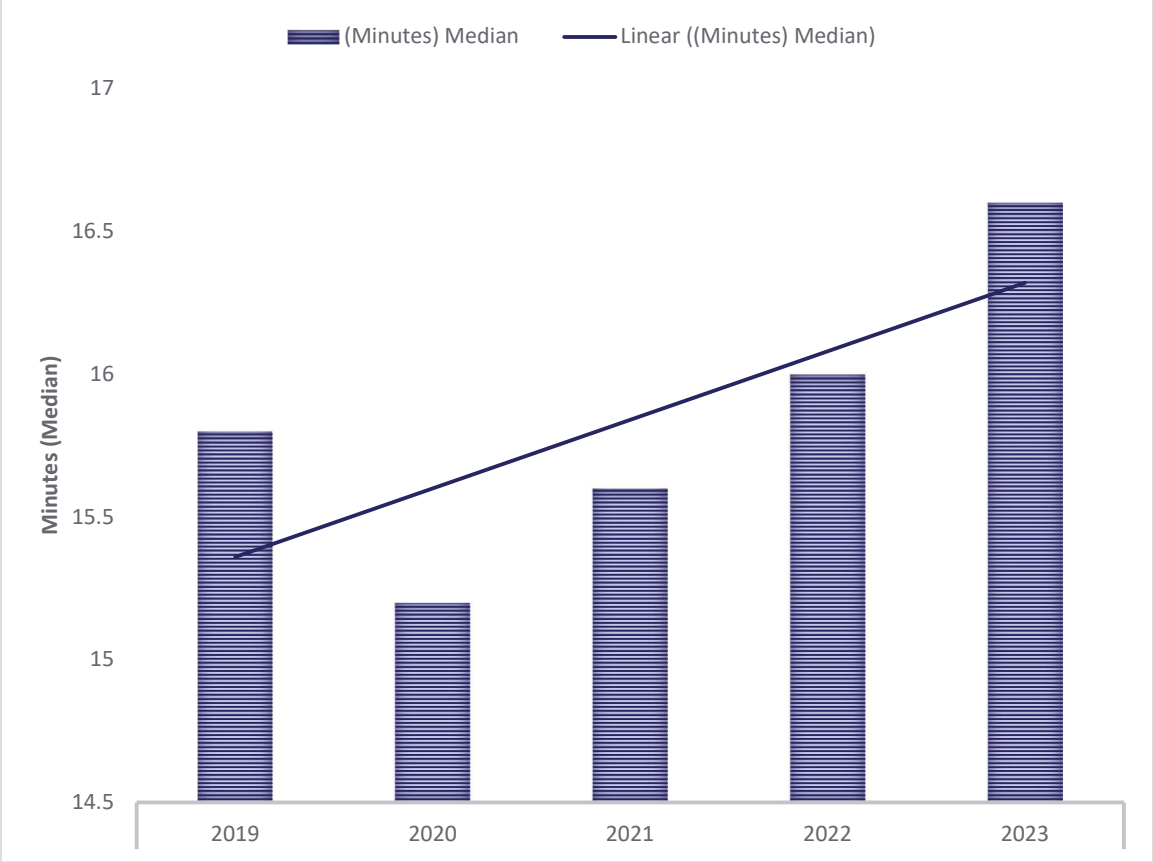
Note: Data not listed if out of state or if zip code is unavailable. Service area for Southern Nevada includes the following zip codes where the injury took place: 89002, 89004, 89005, 89007, 89011, 89012, 89014, 89015, 89018, 89019, 89021, 89027, 89029, 89030, 89031, 89032, 89034, 89039, 89040, 89044, 89046, 89052, 89054, 89074, 89081, 89084, 89085, 89086, 89101, 89102, 89103, 89104, 89106, 89107, 89108, 89110, 89113, 89115, 89117, 89118, 89120, 89121, 89122, 89123, 89124, 89128, 89129, 89130, 89131, 89134, 89135, 89138, 89139, 89141, 89142, 89143, 89144, 89145, 89146, 89147, 89148, 89149, 89156, 89161, 89166, 89178, 89179, and 89183. Includes TFTC transports with a transport time greater than 0 seconds.

Southern Nevada Step 4 Median Transport Time, 2019-2023



Southern Nevada Step 4 Median Transport Time, 2019-2023						
		Year				
		2019	2020	2021	2022	2023
Step 4: Special Considerations	N	5730	5430	6250	6729	6385
	Median (Minutes)	16m 0s	15m 24s	16m 12s	16m 24s	17m 24s
Source: SNHD TFTC Data						
Note: Data not listed if out of state or if zip code is unavailable. Service area for Southern Nevada includes the following zip codes where the injury took place: 89002, 89004, 89005, 89007, 89011, 89012, 89014, 89015, 89018, 89019, 89021, 89027, 89029, 89030, 89031, 89032, 89034, 89039, 89040, 89044, 89046, 89052, 89054, 89074, 89081, 89084, 89085, 89086, 89101, 89102, 89103, 89104, 89106, 89107, 89108, 89110, 89113, 89115, 89117, 89118, 89120, 89121, 89122, 89123, 89124, 89128, 89129, 89130, 89131, 89134, 89135, 89138, 89139, 89141, 89142, 89143, 89144, 89145, 89146, 89147, 89148, 89149, 89156, 89161, 89166, 89178, 89179, and 89183. Includes TFTC transports with a transport time greater than 0 seconds.						

Southern Nevada (Composite) Median Transport Time by Step (1-4), 2019-2023

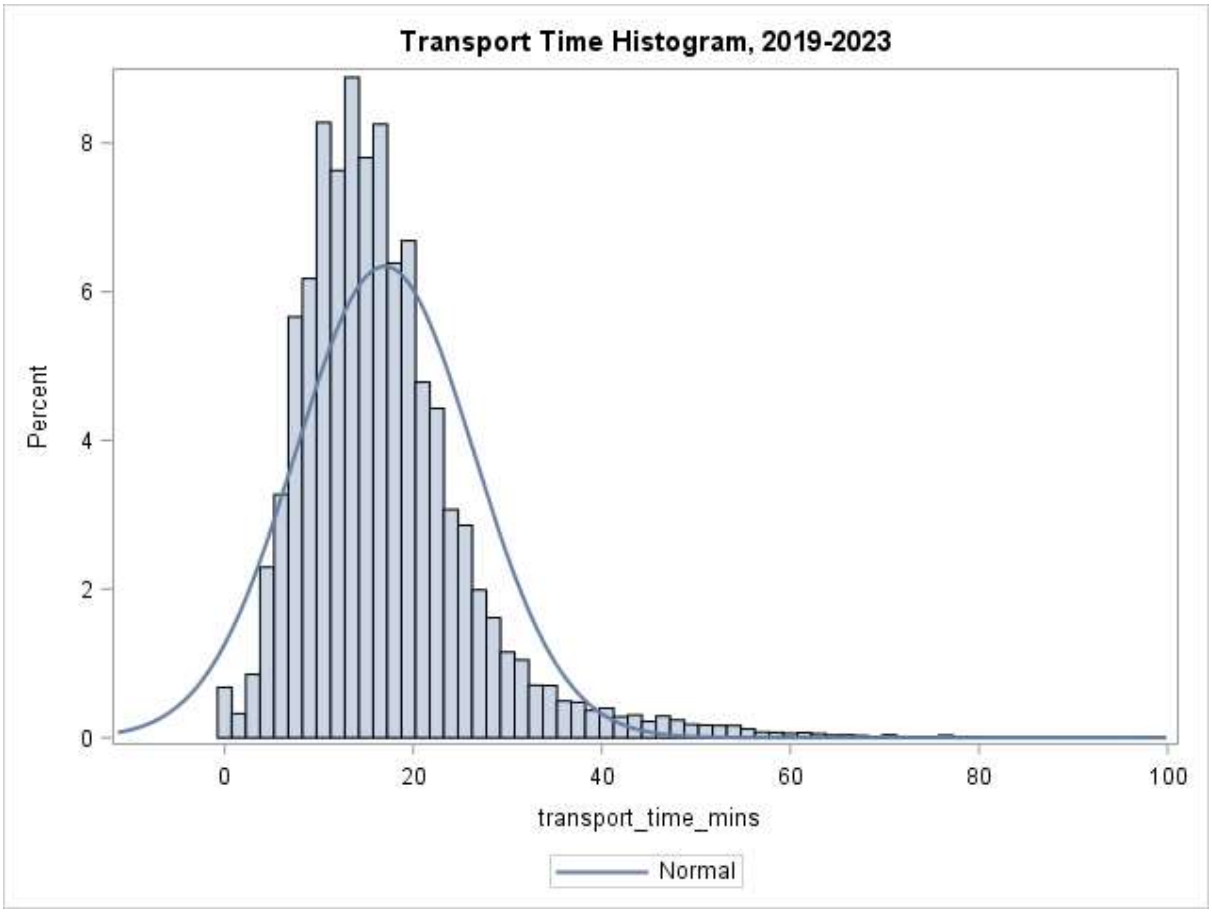


Southern Nevada Median Transport Time (Step 1-4), 2019-2023						
		Year				
		2019	2020	2021	2022	2023
Transport Time (Minutes)	N	10930	10255	11625	11827	11527
	Median	15m 48s	15m 12s	15m 36s	16m 0s	16m 36s

Source: SNHD TFTC Data

Note: Data not listed if out of state or if zip code is unavailable. Service area for Southern Nevada includes the following zip codes where the injury took place: 89002, 89004, 89005, 89007, 89011, 89012, 89014, 89015, 89018, 89019, 89021, 89027, 89029, 89030, 89031, 89032, 89034, 89039, 89040, 89044, 89046, 89052, 89054, 89074, 89081, 89084, 89085, 89086, 89101, 89102, 89103, 89104, 89106, 89107, 89108, 89110, 89113, 89115, 89117, 89118, 89120, 89121, 89122, 89123, 89124, 89128, 89129, 89130, 89131, 89134, 89135, 89138, 89139, 89141, 89142, 89143, 89144, 89145, 89146, 89147, 89148, 89149, 89156, 89161, 89166, 89178, 89179, and 89183. Includes TFTC transports with a transport time greater than 0 seconds.

Histogram and Interquartile Range of Transport Time, 2019-2023



Interquartile Range of Transport Time, 2019-2023					
	Year				
	2019	**2020**	**2021**	**2022**	**2023**
25th Percentile Transport Time (Minutes)	10m 36s	10m 12s	10m 48s	11m 0s	11m 36s
50th Percentile Transport Time (Minutes)	15m 12s	14m 36s	15m 12s	15m 36s	16m 12s
75th Percentile Transport Time (Minutes)	21m 0s	19m 48s	20m 36s	21m 0s	21m 36s
Quartile Range Transport Time (Minutes)	10m 24s	9m 36s	9m 48s	10m 0s	10m 0s
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System with a transport time greater than 0 seconds. Histogram is restricted to show transport times between values greater than 0 and less than or equal to 100.					

TFTC Incidents by Transport Time and Step, 2019-2023

TFTC Incidents by Transport Time and Step, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
>15 Minutes					
Step 1	224	254	270	369	350
Step 2	253	255	321	278	300
Step 3	2475	1943	2264	2153	2260
Step 4	3547	3035	3869	4257	4341
>20 Minutes					
Step 1	109	122	135	196	158
Step 2	123	120	157	149	140
Step 3	1417	1017	1171	1173	1234
Step 4	1942	1515	2098	2300	2457
>25 Minutes					
Step 1	54	57	62	83	75
Step 2	50	64	83	67	66
Step 3	747	507	613	626	638
Step 4	954	682	1022	1145	1249
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System.					

Percentage of TFTC Incidents with Transport Time ≤15, 2019-2023

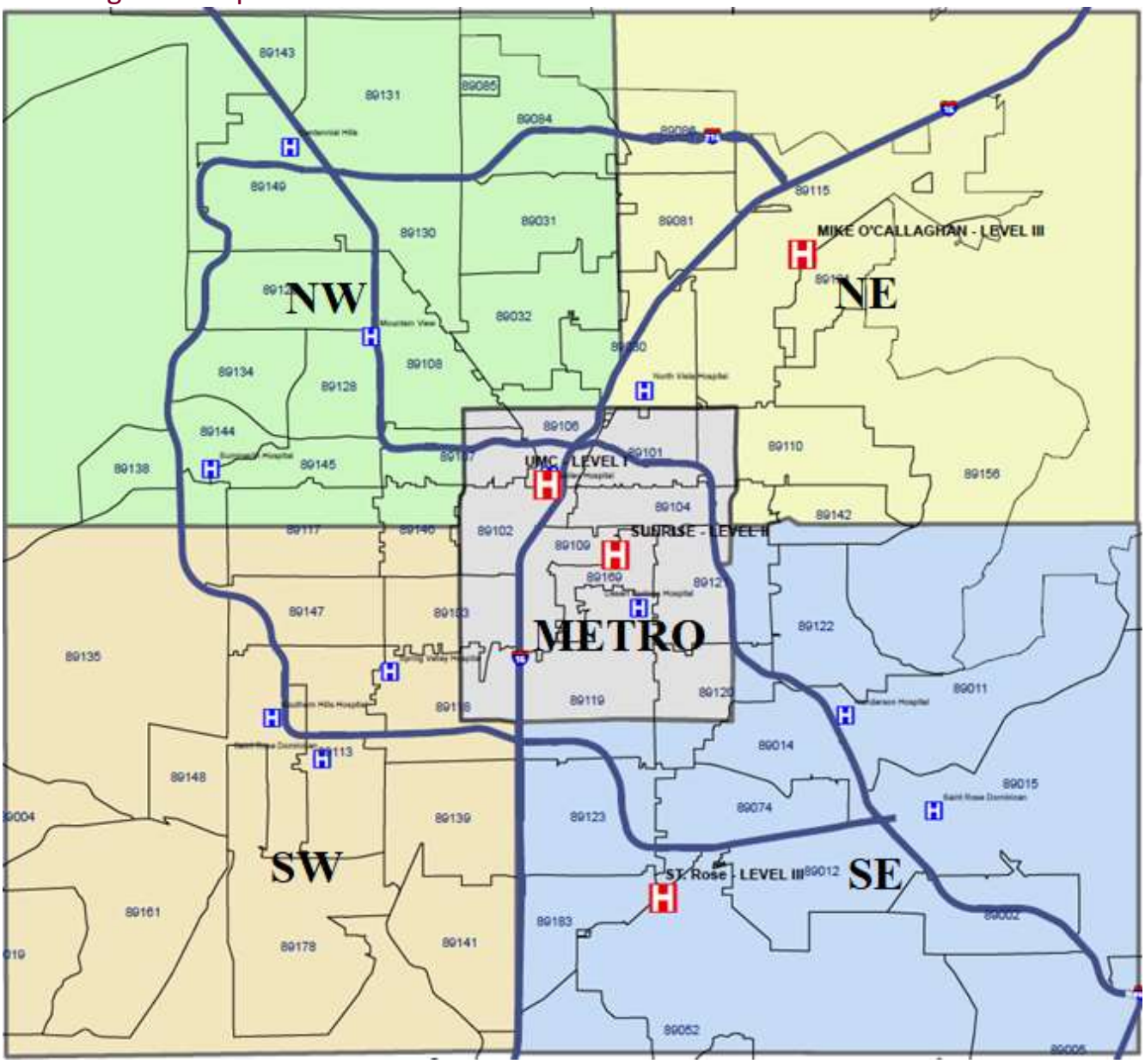
Percentage of TFTC Incidents with Transport Time ≤15 Minutes, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
≤15 Minutes					
Step 1	382	433	494	508	426
Total	606	687	764	877	776
%	63.04%	63.03%	64.66%	57.92%	54.90%
Step 2	479	608	598	518	452
Total	732	863	919	796	752
%	65.44%	70.45%	65.07%	65.08%	60.11%
Step 3	2179	1928	2205	2024	1839
Total	4654	3871	4469	4177	4099
%	46.82%	49.81%	49.34%	48.46%	44.86%
Step 4	3265	3185	3310	3418	2888
Total	6812	6220	7179	7675	7229
%	47.93%	51.21%	46.11%	44.53%	39.95%
Other	0	4	2	3	5
Source: SNHD TFTC Data					
Note: Includes all TFTC transports in the Southern Nevada Trauma System with a transport time greater than 0 seconds.					

TFTC Regional Incidents

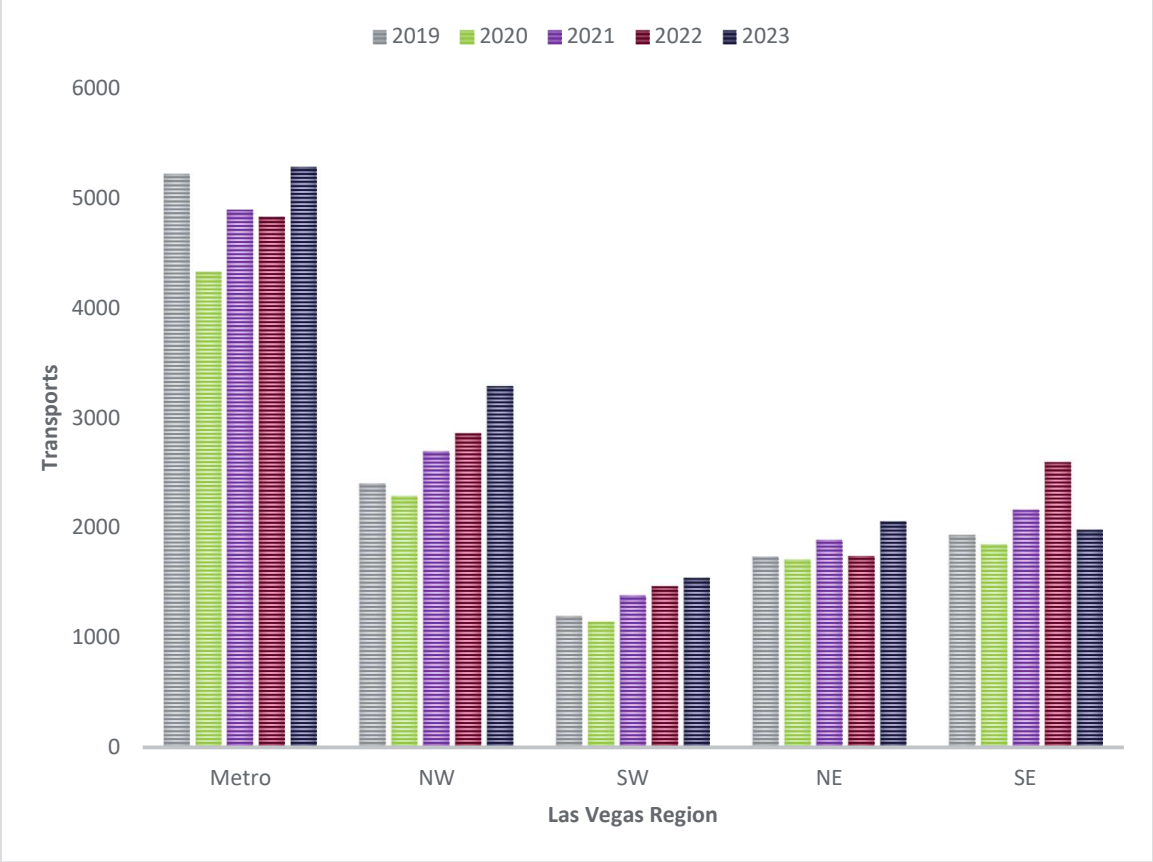
Intent

TFTC Regional Incidents is provided to analyze trauma in Southern Nevada's metropolitan area. Divided into five regions that contain unique geographical, socioeconomic, and infrastructure, the transport times and number of incidents are intended to identify barriers to access to care. This further develops an approach to monitor unmet needs to create new capacity when and where needed. The five regions were agreed upon by the RTAB, TMAC, and generated by OEMSTS. (Note: These regions are not catchment areas.)

TFTC Regional Map



TFTC Incident Total by Las Vegas Region, 2019-2023



TFTC Transports by Las Vegas Region, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Metro	5218	4325	4900	4833	5286
NW	2407	2292	2698	2864	3291
SW	1201	1149	1387	1473	1549
NE	1741	1716	1892	1746	2061
SE	1938	1851	2166	2600	1987
Total	12505	11333	13043	13516	14174
Source: SNHD TFTC Data					
Note: Only includes transports with a step designation					

TFTC Transports by Las Vegas Region and Step, 2019-2023

TFTC Transports by Las Vegas Region and Step, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1					
Metro	230	254	307	324	317
NW	139	136	138	197	195
SW	73	59	87	79	91
NE	70	106	100	132	139
SE	84	121	124	147	111
Step 2					
Metro	290	357	386	353	330
NW	131	149	149	136	143
SW	58	57	54	58	73
NE	134	163	155	130	159
SE	113	125	156	133	114
Step 3					
Metro	1513	1158	1408	1377	1475
NW	913	785	944	882	1026
SW	615	512	539	508	603
NE	614	561	632	557	723
SE	783	684	791	794	617
Step 4					
Metro	3185	2556	2799	2779	3164
NW	1224	1222	1467	1649	1927
SW	455	521	707	828	782
NE	923	886	1005	927	1040
SE	958	921	1095	1526	1145
Source: SNHD TFTC Data					
Note: Only includes transports with a step designation.					

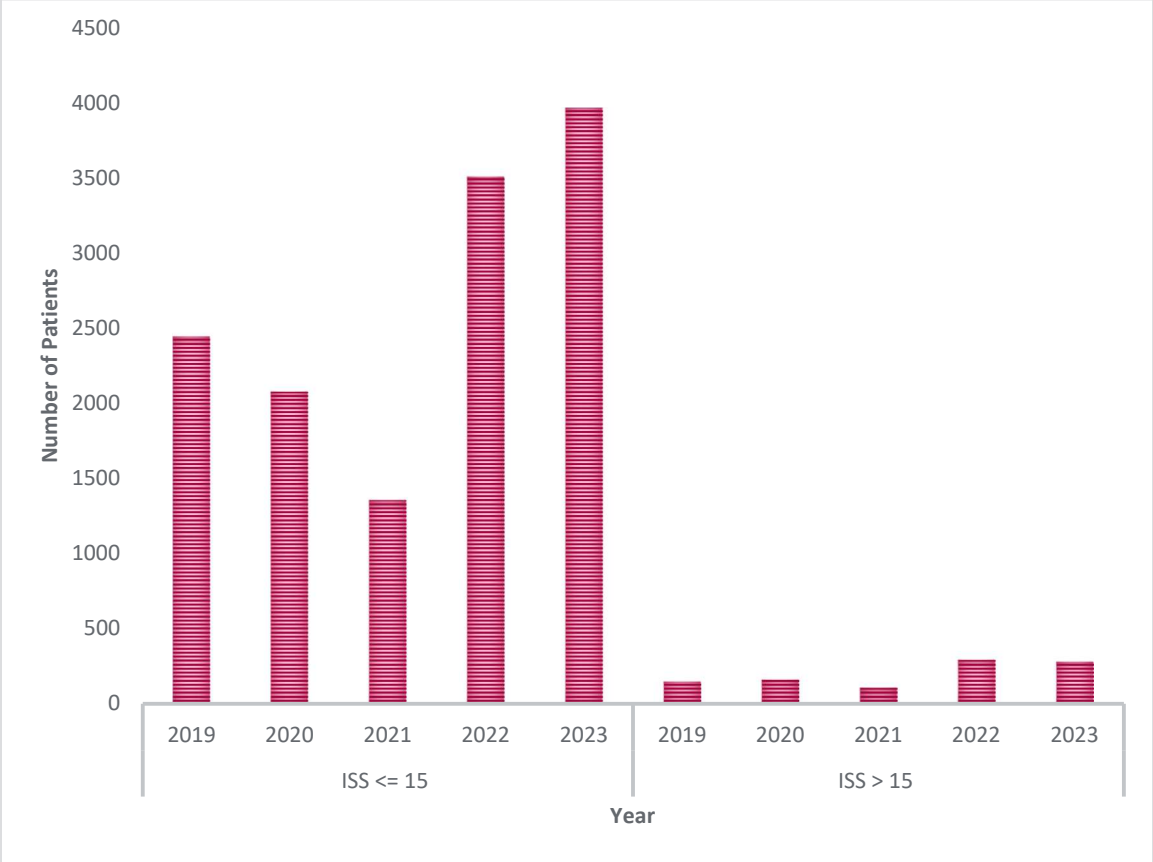
Non-Trauma Center Hospital Data

Intent

Non-Trauma Center Hospital Data is provided to analyze trauma outside of the four designated trauma centers. Due to the inclusion criteria and collection methods, the NV State Trauma Registry and the TFTC Trauma Center Trauma Registry are incompatible. Patients identified as meeting trauma inclusion criteria at non-trauma hospitals are still part of Southern Nevada's inclusive trauma system. Since the two data sets cannot be combined, an accurate calculation of overtriage and undertriage is not possible. Still, it is important to capture and analyze all trauma within our community to determine capacity and injury prevention needs.

Note: The Injury Severity Score (ISS) is a system for numerically stratifying injury severity, which correlates with mortality, morbidity, and other severity measures. The risk of death increases with a higher score. It requires extensive training and experience to calculate and determine the score. This report categorizes an ISS score that is equal to or less than 15 as minor or moderate. A score greater than 15 is considered severe to very severe.

Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital by Injury Severity Score (ISS) in Southern Nevada, 2019-2023



Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital by Injury Severity Score (ISS) in Southern Nevada, 2019-2023					
	ISS ≤ 15				
	2019	**2020**	**2021**	**2022**	**2023**
All	2445	2078	1357	3507	3966
	ISS > 15				
All	150	162	110	294	282
Source: State Trauma Registry data					

Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity (ISS) >15 by Facility in Southern Nevada, 2019-2023

Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) > 15 by Facility in Southern Nevada, 2019-2023					
	2019	2020	2021	2022	2023
Boulder City Hospital	1	1	0	1	1
Centennial Hills Hospital	13	4	8	16	23
*Desert Springs Hospital Medical Center	0	0	1	1	1
Henderson Hospital	4	3	4	1	1
*Henderson Hospital - ER at Green Valley	3	1	0	1	1
Mesa View Regional Hospital	0	1	0	0	6
Mountain View Hospital	31	18	21	45	25
*Mountain View Hospital - ER at Aliante	0	1	0	1	0
*Mountain View Hospital - ER at Skye Canyon	0	0	0	2	0
North Vista Hospital	70	113	68	155	138
*Southern Hills Hospital - ER at the Lakes	0	1	0	1	2
Southern Hills Hospital Medical Center	2	3	0	1	13
*Spring Valley Hospital - ER at Blue Diamond	0	0	0	0	1
Spring Valley Hospital Medical Center	3	3	1	4	6
St. Rose Dominican Hospital - Blue Diamond	0	0	0	1	10
*St. Rose Dominican Hospital - De Lima Campus	2	0	2	0	1
*St. Rose Dominican Hospital - North Las Vegas	0	0	0	8	16
St. Rose Dominican Hospital - San Martin Campus	1	0	0	3	3
*St. Rose Dominican Hospital - West Flamingo	0	0	0	3	1
*St. Rose Dominican Hospital - West Sahara	0	0	0	2	8
Summerlin Hospital Medical Center	17	9	4	45	19
Valley Hospital Medical Center	3	4	1	3	6
All	150	162	110	294	282
Source: State Trauma Registry data **Free-Standing Remote ER*					

Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity (ISS) ≤15 by Facility in Southern Nevada, 2019-2023

Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) ≤ 15 by Facility in Southern Nevada, 2019-2023					
	2019	2020	2021	2022	2023
Boulder City Hospital	41	42	22	58	52
Centennial Hills Hospital	190	178	103	301	349
*Desert Springs Hospital Medical Center	22	23	19	85	64
Henderson Hospital	353	277	130	284	425
*Henderson Hospital - ER at Green Valley	64	60	27	29	31
Mesa View Regional Hospital	48	22	3	59	49
Mountain View Hospital	471	497	358	700	754
*Mountain View Hospital - ER at Aliante	8	15	2	26	21
*Mountain View Hospital - ER at Skye Canyon	0	0	0	11	10
North Vista Hospital	50	10	3	5	5
*Southern Hills Hospital - ER at South Las Vegas B	0	0	0	17	26
*Southern Hills Hospital - ER at the Lakes	13	7	0	13	31
Southern Hills Hospital Medical Center	73	131	8	295	347
*Spring Valley Hospital - ER at Blue Diamond	6	19	7	35	68
Spring Valley Hospital Medical Center	657	399	328	655	785
St. Rose Dominican Hospital - Blue Diamond	3	14	6	35	35
*St. Rose Dominican Hospital - De Lima Campus	94	86	61	104	103
*St. Rose Dominican Hospital - North Las Vegas	36	18	14	70	64
St. Rose Dominican Hospital - San Martin Campus	88	75	43	144	157
*St. Rose Dominican Hospital - West Flamingo	5	4	3	25	25
*St. Rose Dominican Hospital - West Sahara	4	10	4	35	47
Summerlin Hospital Medical Center	195	173	202	480	502
Valley Hospital Medical Center	24	18	14	41	16
All	2445	2078	1357	3507	3966
Source: State Trauma Registry data **Free-Standing Remote ER*					

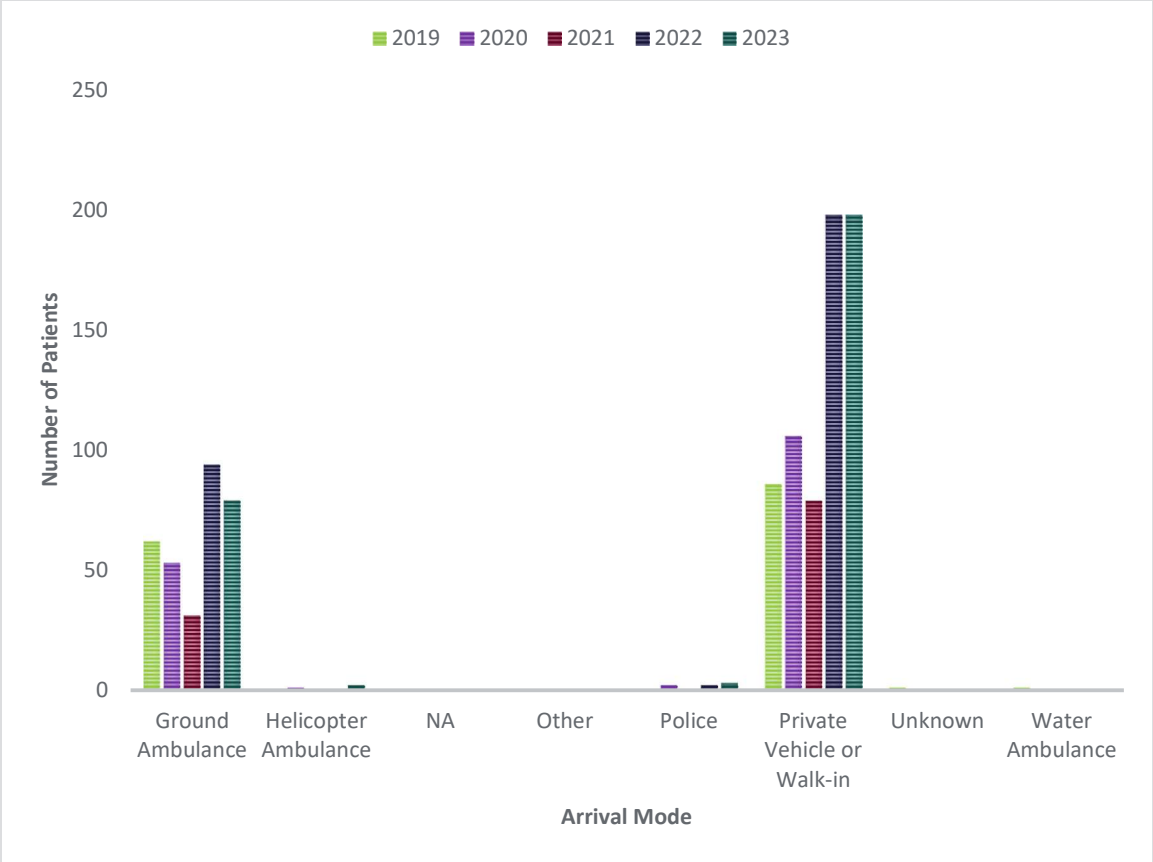
Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital who were Transferred to a Trauma Hospital with an Injury Severity (ISS) >15 by Facility in Southern Nevada, 2019-2023

Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital who were Transferred to a Trauma Hospital with an Injury Severity Score (ISS) > 15 by Facility in Southern Nevada, 2019-2023					
	2019	2020	2021	2022	2023
	N	N	N	N	N
Boulder City Hospital	0	1	0	1	0
Centennial Hills Hospital	5	4	8	13	11
*Desert Springs Hospital Medical Center	0	0	1	1	1
Henderson Hospital	0	1	1	1	0
*Henderson Hospital - ER at Green Valley	1	1	0	1	1
Mesa View Regional Hospital	0	0	0	0	2
Mountain View Hospital	1	2	1	3	1
*Mountain View Hospital - ER at Aliante	0	1	0	0	0
*Mountain View Hospital - ER at Skye Canyon	0	0	0	2	0
North Vista Hospital	47	108	65	153	137
*Southern Hills Hospital - ER at the Lakes	0	1	0	0	1
Southern Hills Hospital Medical Center	1	1	0	0	1
*Spring Valley Hospital - ER at Blue Diamond	0	0	0	0	1
Spring Valley Hospital Medical Center	0	0	1	0	2
St. Rose Dominican Hospital - Blue Diamond	0	0	0	0	9
*St. Rose Dominican Hospital - De Lima Campus	1	0	2	0	1
*St. Rose Dominican Hospital - North Las Vegas	0	0	0	8	15
St. Rose Dominican Hospital - San Martin Campus	0	0	0	3	3
*St. Rose Dominican Hospital - West Flamingo	0	0	0	3	1
*St. Rose Dominican Hospital - West Sahara	0	0	0	2	7
Summerlin Hospital Medical Center	4	3	3	29	12
Valley Hospital Medical Center	2	4	1	3	6
All	62	127	83	223	212
Source: State Trauma Registry data					

Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital who were Transferred to a Trauma Hospital with an Injury Severity (ISS) <= 15 by Facility in Southern Nevada, 2019-2023

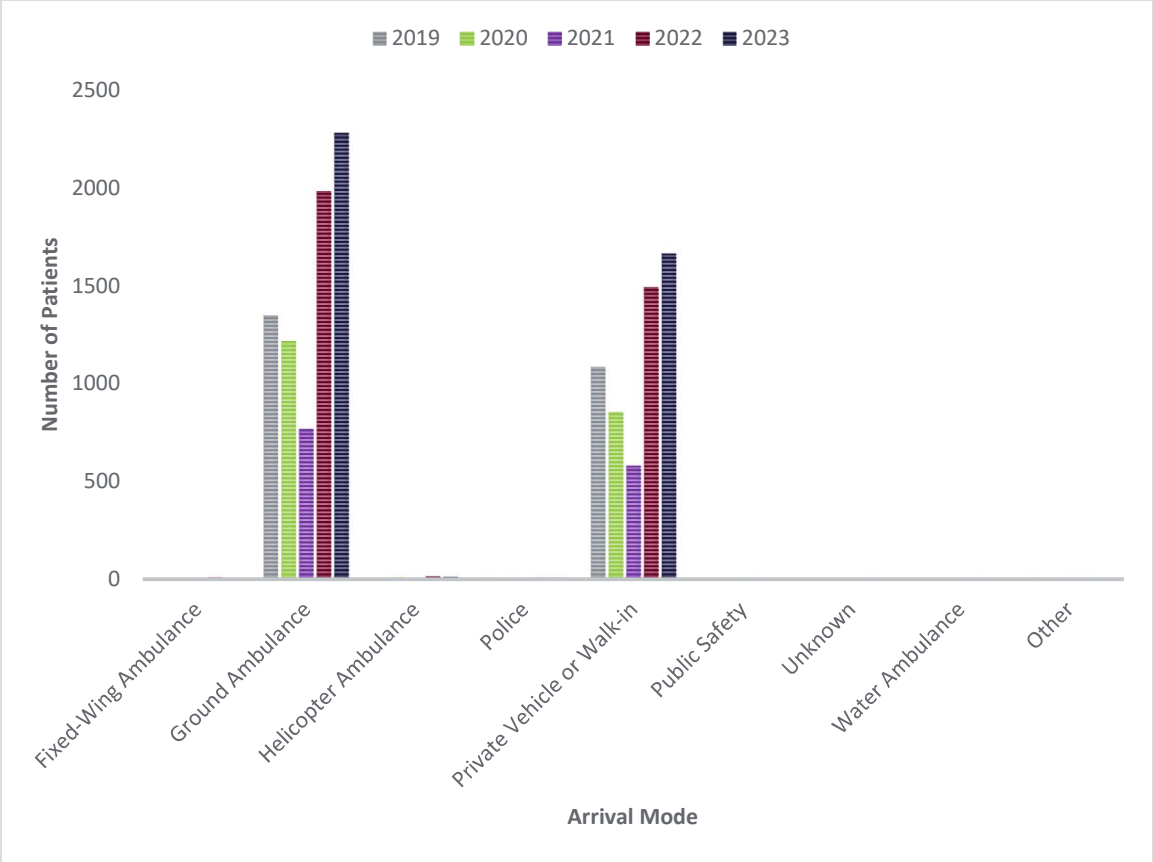
Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital who were Transferred to a Trauma Hospital with an Injury Severity Score (ISS) ≤ 15 by Facility in Southern Nevada, 2019-2023					
	2019	2020	2021	2022	2023
Boulder City Hospital	11	25	11	43	31
Centennial Hills Hospital	27	27	29	57	57
*Desert Springs Hospital Medical Center	13	23	19	40	27
Henderson Hospital	44	61	44	90	75
*Henderson Hospital - ER at Green Valley	22	23	7	15	18
Mesa View Regional Hospital	8	6	1	23	21
Mountain View Hospital	17	32	24	56	17
*Mountain View Hospital - ER at Aliante	2	6	1	11	0
*Mountain View Hospital - ER at Skye Canyon	0	0	0	2	0
North Vista Hospital	34	10	3	5	5
*Southern Hills Hospital - ER at South Las Vegas B	0	0	0	9	1
*Southern Hills Hospital - ER at the Lakes	12	6	0	5	5
Southern Hills Hospital Medical Center	19	22	7	50	2
*Spring Valley Hospital - ER at Blue Diamond	0	10	2	19	24
Spring Valley Hospital Medical Center	44	42	41	71	72
St. Rose Dominican Hospital - Blue Diamond	2	12	3	30	27
*St. Rose Dominican Hospital - De Lima Campus	48	65	46	77	75
*St. Rose Dominican Hospital - North Las Vegas	23	16	12	61	54
St. Rose Dominican Hospital - San Martin Campus	0	0	0	35	60
*St. Rose Dominican Hospital - West Flamingo	1	3	1	21	15
*St. Rose Dominican Hospital - West Sahara	4	8	4	27	35
Summerlin Hospital Medical Center	22	25	52	93	82
Valley Hospital Medical Center	17	18	14	41	16
All	370	440	321	881	719
Source: State Trauma Registry data					

Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) >15 by Arrival Mode in Southern Nevada, 2019-2023



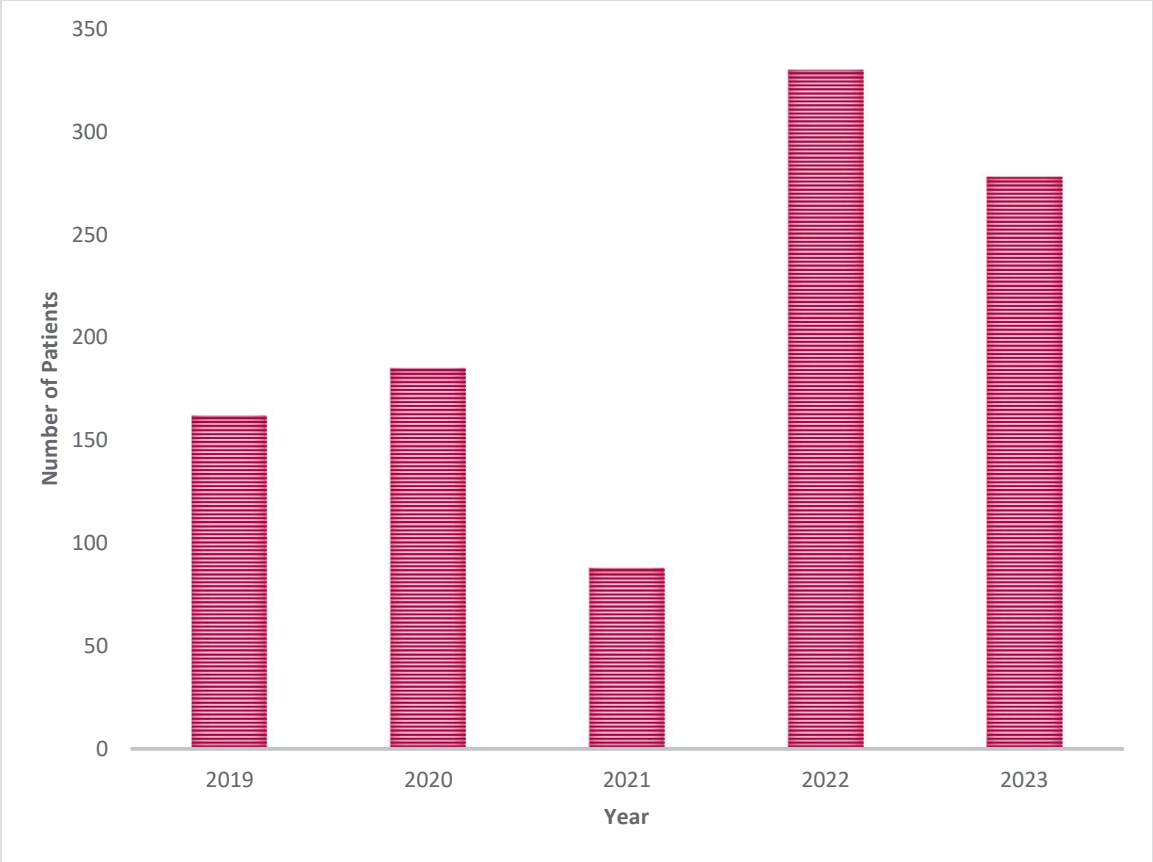
Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) > 15 by Arrival Mode in Southern Nevada, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Ground Ambulance	62	53	31	94	79
Helicopter Ambulance	0	1	0	0	2
Police	0	2	0	2	3
Private Vehicle or Walk-in	86	106	79	198	198
Water Ambulance	1	0	0	0	0
Other	0	0	0	0	0
Unknown	1	0	0	0	0
N/A	0	0	0	0	0
All	150	162	110	294	282
Source: State Trauma Registry data					

Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) ≤15 by Arrival Mode in Southern Nevada, 2019-2023



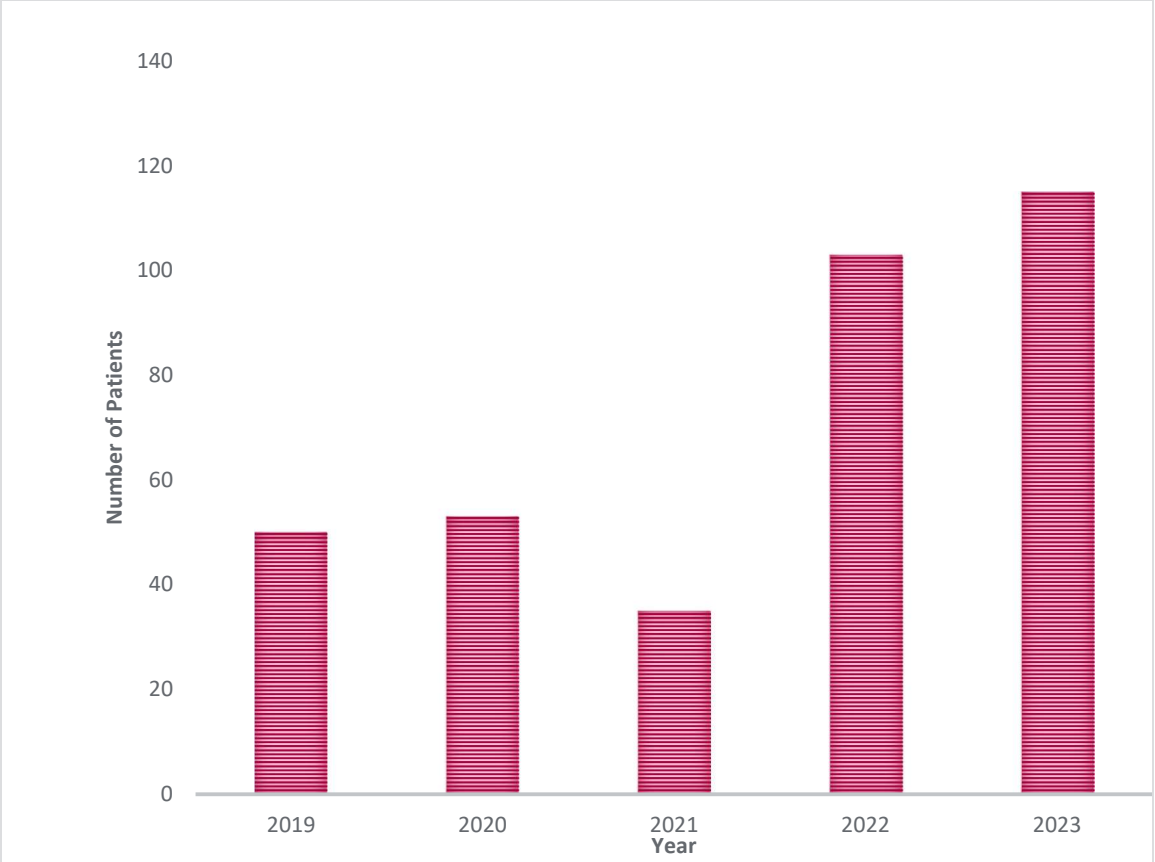
Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) <= 15 by Arrival Mode in Southern Nevada, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Fixed-Wing Ambulance	0	0	1	7	1
Ground Ambulance	1348	1219	768	1982	2281
Helicopter Ambulance	1	4	3	15	11
Police	5	2	2	6	6
Private Vehicle or Walk-in	1085	853	581	1491	1664
Public Safety	0	0	0	1	0
Unknown	2	0	0	1	0
Water Ambulance	0	0	0	1	0
Other	4	0	2	3	3
N/A	0	0	0	0	0
All	2445	2078	1357	3507	3966
Source: State Trauma Registry data					

Number of Deceased Patients Meeting Trauma Criteria at a Trauma Hospital with an Injury Severity Score (ISS) >15 in Southern Nevada, 2019-2023



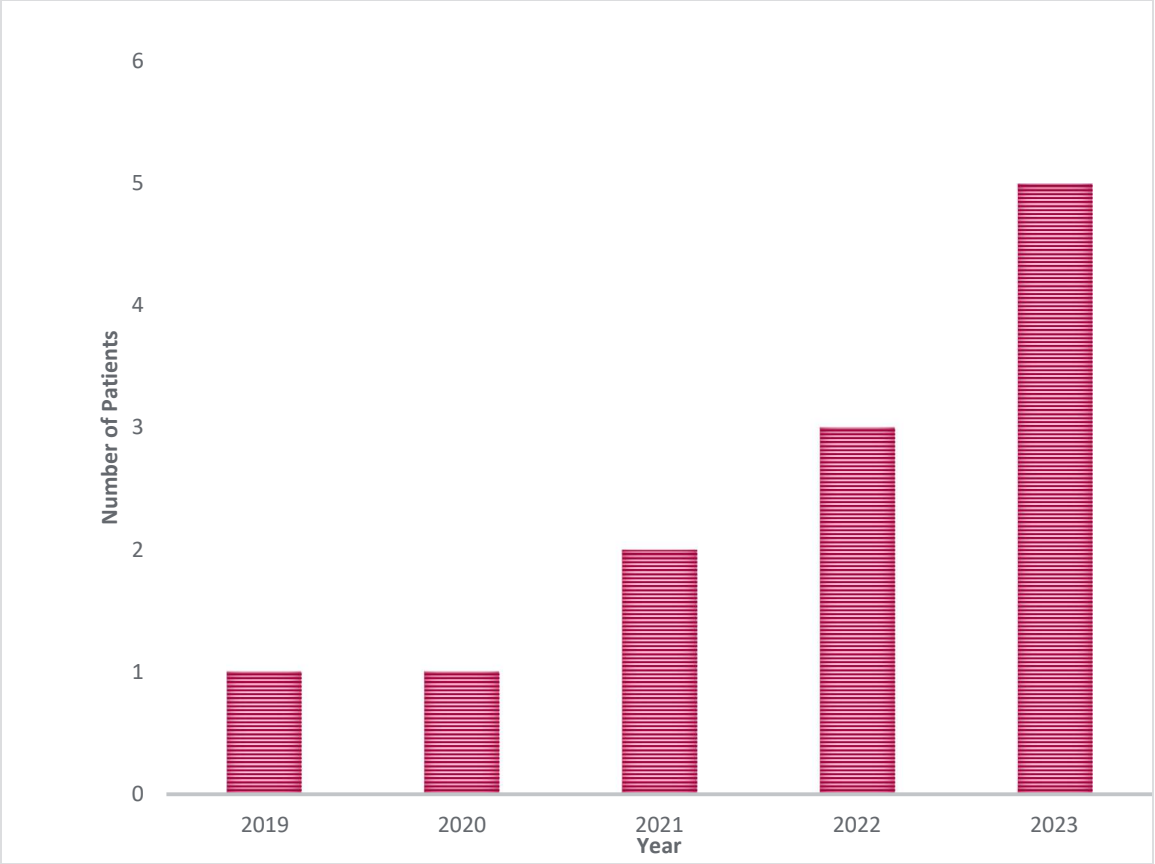
Number of Deceased Patients Meeting Trauma Criteria at a Trauma Hospital with an Injury Severity Score (ISS) >15 in Southern Nevada, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
All	162	185	88	330	278
Source: State Trauma Registry data					

Number of Deceased Patients Meeting Trauma Criteria at a Trauma Hospital with an Injury Severity Score (ISS) ≤15 in Southern Nevada, 2019-2023



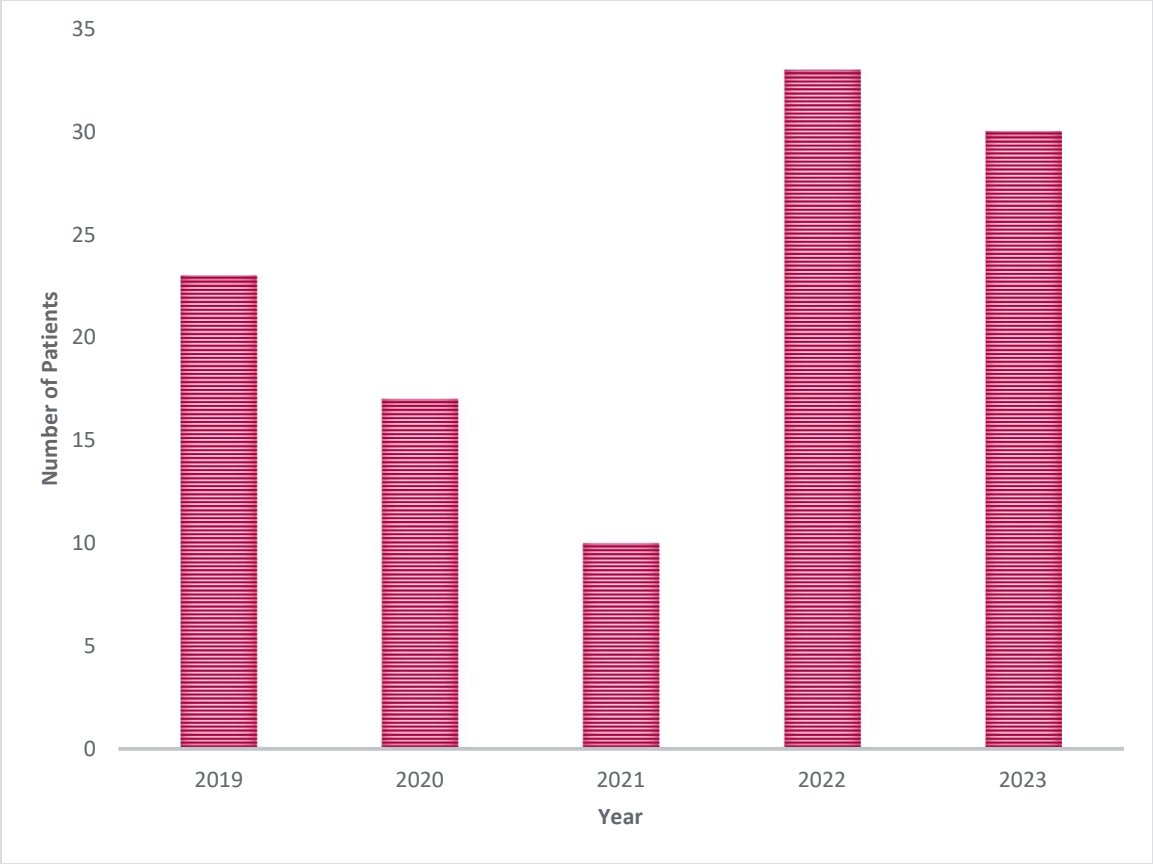
Number of Deceased Patients Meeting Trauma Criteria at a Trauma Hospital with an Injury Severity Score (ISS) <=15 in Southern Nevada, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
All	50	53	35	103	115
Source: State Trauma Registry data					

Number of Deceased Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) >15 in Southern Nevada, 2019-2023



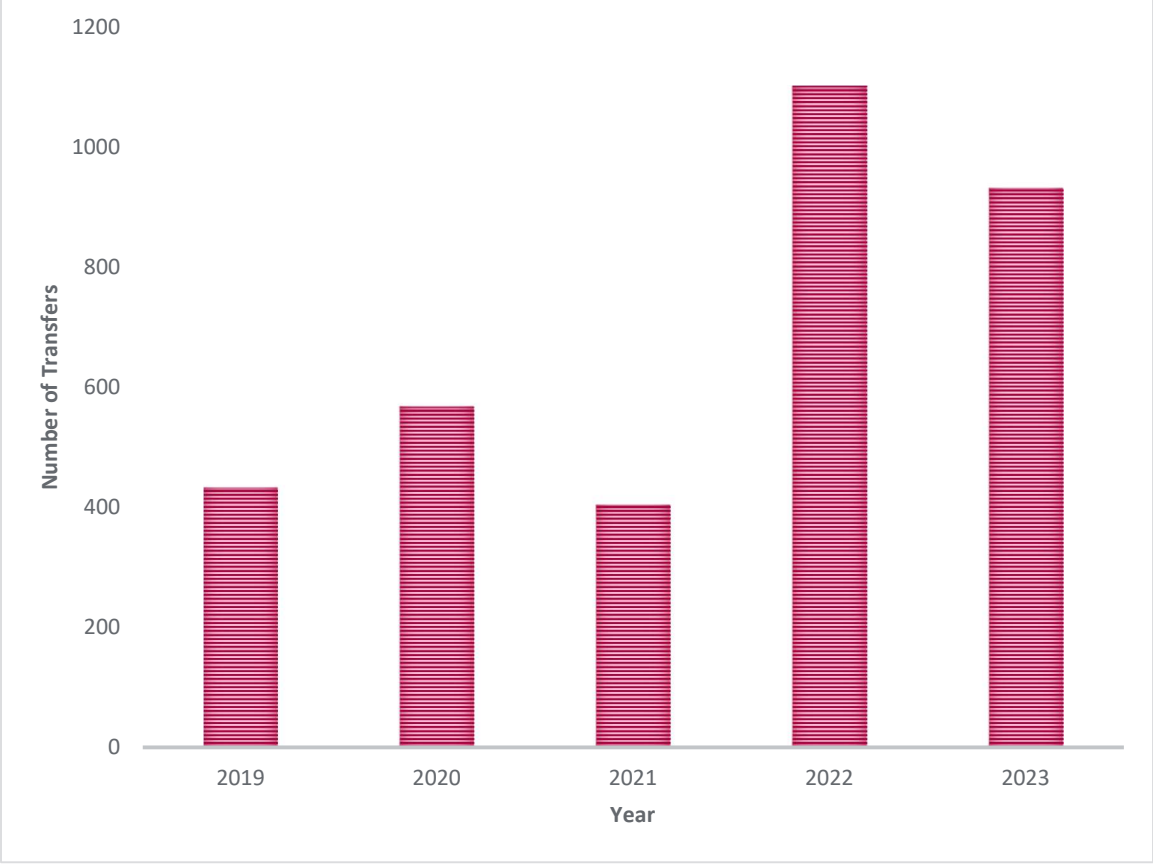
Number of Deceased Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) >15 in Southern Nevada, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
All	1	1	2	3	5
Source: State Trauma Registry data					

Number of Deceased Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) ≤15 in Southern Nevada, 2019-2023



Number of Deceased Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) <=15 in Southern Nevada, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
All	23	17	10	33	30
Source: State Trauma Registry data					

Transfers to Southern Nevada Trauma Centers from Non-Trauma Centers, 2019-2023



Transfers into Southern Nevada Trauma Centers from Non-Trauma Centers, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
All	434	569	405	1104	933
Source: State Trauma Registry data					

Emergency Department and Trauma Center Hours, 2019-2023

Intent

Southern Nevada's inclusive trauma system includes designated Trauma Centers and Non-Trauma Center Hospitals (Emergency Departments). Traditionally, Emergency Departments (ED) met the demands of trauma-related injuries. Trauma Centers were developed to provide an expedited resource for the optimal care of trauma patients. When there is a designated Trauma Center, the trauma system is designed to transport the patient to the most appropriate destination, bypassing EDs that may be closer. Most Trauma Centers are integrated into EDs but function separately. All hospitals (EDs & Trauma Centers) must develop protocols to manage a crisis that may require closure. The crisis may be that capacity is met, and no additional patients can be received, or that an internal disaster/failure (e.g., infrastructure, technology, medical professionals) requires closure. The protocols developed to manage the closure of an ED and Trauma Center are separate. An ED may declare it is on Internal Disaster, but that declaration would never include the Trauma Center. A Trauma Center, even if an integrated part of an ED, will remain open and be able to receive trauma patients while the ED is closed. When a Trauma Center closes, it is called Trauma Bypass. It is rare for a Trauma Center to close. As part of the ACS-COT verification process, a Trauma Center must not be on bypass more than 5 percent of the time.

Definitions specific to Southern Nevada Trauma System and Emergency Medical System:

Trauma Bypass- Closure of a Trauma Center. If on Trauma Bypass, which is a mandated reported requirement, the center cannot take patients. All EMS agencies can view this real-time status via telemetry. The time spent on trauma bypass is regularly reviewed at TMAC and is part of ACS-COT criteria.

Internal Disaster- Closure of an Emergency Department. If on Internal Disaster, the ED is not able to take patients. All EMS agencies can view this real-time status via telemetry.

Operational Hours for Emergency Departments and Trauma Centers, 2019-2023

* Source: Juvare EMS Data System

University Medical Center

	2019	2020	2021	2022	2023
ED Open Total Hours	8683	8634	8510	8518	8440
ED Closed Total Hours	77	149	250	242	320
ED % of Total Hours Open	99%	98%	97%	97%	96.3%
Trauma Center Bypass Event Hours	0	0	0	0	0
Trauma Center % Open	100%	100%	100%	100%	100%

Sunrise Hospital

	2019	2020	2021	2022	2023
ED Open Total Hours	8760	8784	8760	8760	8760
ED Closed Total Hours	0.2	0	0	0	0
ED % of Total Hours Open	100%	100%	100%	100%	100%
Trauma Center Bypass Event Hours	0	0	0	0	0
Trauma Center % Open	100%	100%	100%	100%	100%

St. Rose Siena

	2019	2020	2021	2022	2023
ED Open Total Hours	8530	8400	8188	8480	8708
ED Closed Total Hours	230	383	572	280	52
ED % of Total Hours Open	97%	95%	94%	97%	99.4%
Trauma Center Bypass Event Hours	0	0	0	0	0
Trauma Center % Open	100%	100%	100%	100%	100%

Michael O'Callaghan

	2019	2020	2021	2022	2023
ED Open Total Hours	N/A	N/A	N/A	8732	8746
ED Closed Total Hours	N/A	N/A	N/A	28	14
ED % of Total Hours Open	N/A	N/A	N/A	99%	99.8%
Trauma Center Bypass Event Hours	N/A	N/A	N/A	0	15
Trauma Center % Open	N/A	N/A	N/A	100%	99.8%

Southern NV Hospitals					
	2019	**2020**	**2021**	**2022**	**2023**
ED Open Total Hours	220k	236k	243k	269k	262k
ED Closed Total Hours	9094	1330	3073	2245	3639
ED % of Total Hours Open	96%	99%	98%	99%	98.6%
Trauma Centers Bypass Event Hours	0	0	0	0	15
Trauma Centers % Open	100%	100%	100%	100%	99.9%

Trauma Medical Audit Committee

The Trauma Medical Audit Committee (TMAC) is a multidisciplinary closed medical peer review committee of the District Board of Health that meets quarterly. Its purpose is to review the Southern Nevada Trauma system by evaluating trauma care, monitoring trends, and making system improvements recommendations.

- For 2023, TMAC has reviewed trauma cases as an evaluation of trauma care. In a review of those cases, TMAC has not found any significant trauma protocols or regulations variance.
- For 2023, TMAC did not observe any delays in care in trauma services.
- For 2023, TMAC has not identified any notable change in trends in system performance.
- For 2023, TMAC did not observe any aberrations in out of hospital deaths, patients treated in non-trauma center hospitals, or prehospital services.

As part of the TMAC's purpose to implement improvement activities to ensure quality care throughout the trauma system, it reports that the current trauma system is functioning efficiently. TMAC recognizes the importance of controlled and appropriate growth of the trauma system for future sustainability.

Lisa Rogge, RN

TMAC Chair

Appendix

Appendix A: Trauma Field Triage Criteria

Trauma Field Triage Criteria

A licensee providing emergency medical care to a patient at the scene of an injury shall use the following procedures to identify and care for patients with traumas:

1. Step 1 – Measure vital signs and level of consciousness. If the patient's:
   A. Glasgow Coma Scale is 13 or less;
   B. Systolic blood pressure is less than 90 mm Hg; or
   C. Respiratory rate is less than 10 or greater than 29 breaths per minute (less than 20 in infant aged less than 1 year), or is in need of ventilatory support

   the adult patient *MUST* be transported to a Level 1 or 2 center for the treatment of trauma in accordance with the catchment area designated. The pediatric patient MUST be transported to a pediatric center for the treatment of trauma.
2. Step 2 – Assess anatomy of injury. If the patient has:
   A. Penetrating injuries to head, neck, torso, or extremities proximal to elbow or knee;
   B. Chest wall instability or deformity (e.g. flail chest);
   C. Two or more proximal long-bone fractures;
   D. Crushed, degloved, mangled, or pulseless extremity;
   E. Amputation proximal to wrist or ankle;
   F. Pelvis fractures;
   G. Open or depressed skull fractures; or
   H. Paralysis

   the adult patient *MUST* be transported to a Level 1 or 2 center for the treatment of trauma in accordance with the catchment area designated. The pediatric patient *MUST* be transported to a pediatric center for the treatment of trauma.
3. Step 3 – Assess mechanism of injury and evidence of high-energy impact, which may include:
   A. Falls
      1) Adults: greater than 20 feet (one story is equal to 10 feet)
      2) Children: greater than 10 feet or two times the height of the child
   B. High-risk auto crash
      1) Motor vehicle was traveling at a speed of at least 40 miles per hour immediately before the collision occurred;
      2) Intrusion, including roof: greater than 12 inches occupant site; greater than 18 inches any site;
      3) Ejection (partial or complete) from automobile;
      4) Motor vehicle rolled over with unrestrained occupant(s);
      5) Death in same passenger compartment
   C. Motorcycle crash greater than 20 mph
   D. Auto vs pedestrian/bicyclist thrown, run over, or with significant (greater than 20 mph) impact

   The patient *MUST* be transported to a Level 1, 2, or 3 center for the treatment of trauma in accordance with the catchment area designated. For patients who are injured outside a 50-mile radius from a trauma center, the licensee providing emergency medical care shall call and consider transport to the nearest receiving facility.

Trauma Field Triage Criteria (Cont.)

4. Step 4 – Assess special patients
   A. Older adults
      1) Risk of injury/death increases after age 55 years
      2) SBP less than 110 mm Hg might represent shock after age 65 years
      3) Low impact mechanisms (e.g. ground level falls) might result in severe injury
   B. Children should be triaged preferentially to a trauma center.
   C. Anticoagulants and bleeding disorders: Patients with head injury are at high risk for rapid deterioration.
   D. Burns
      1) Without other trauma mechanisms: transport in accordance with the Burns protocol
      2) With trauma mechanism: follow appropriate catchment guidelines for trauma. Trauma patients with burns falling into St Rose Siena catchment area will be transported to Sunrise Hospital, and those falling in the Mike O'Callaghan catchment area will be transported to UMC Hospital.
   E. Pregnancy greater than 20 weeks
   F. EMS provider judgment

The patient *MUST* be transported to a Level 1, 2, or 3 center for the treatment of trauma in accordance with the catchment area designated. For patients who are injured outside a 50-mile radius from a trauma center, the licensee providing emergency medical care shall call and consider transport to the nearest receiving facility.

The person licensed to provide emergency medical care at the scene of an injury shall transport a patient to a designated center for the treatment of trauma based on the following guidelines:

St. Rose Dominican Hospital - Siena Campus (Level 3 Trauma Center) Catchment Area

All trauma calls that meet Step 3 or in the provider's judgment meet Step 4 of the Trauma Field Triage Criteria Protocol or pediatric Step 4 and occur within the City of Henderson or the geographical area bordered by Interstate 15 to the west and Sunset road to the north, and the county line to the east, are to be transported to St. Rose Hospital – Siena Campus and the medical directions for the treatment of the patient must originate at that center;

Mike O'Callaghan Military Medical Center (Level 3 Trauma Center) Catchment Area

All trauma calls that meet Step 3 or in the provider's judgment meet Step 4 of the Trauma Field Triage Criteria Protocol or pediatric Step 4 and occur within the geographical area bordered by Pecos Road to the west, Interstate 15 to the west/northwest and Lake Mead Blvd to the south, and the county line to the east, are to be transported to Mike O' Callaghan Military Medical Center and the medical directions for the treatment of the patient must originate at that center;

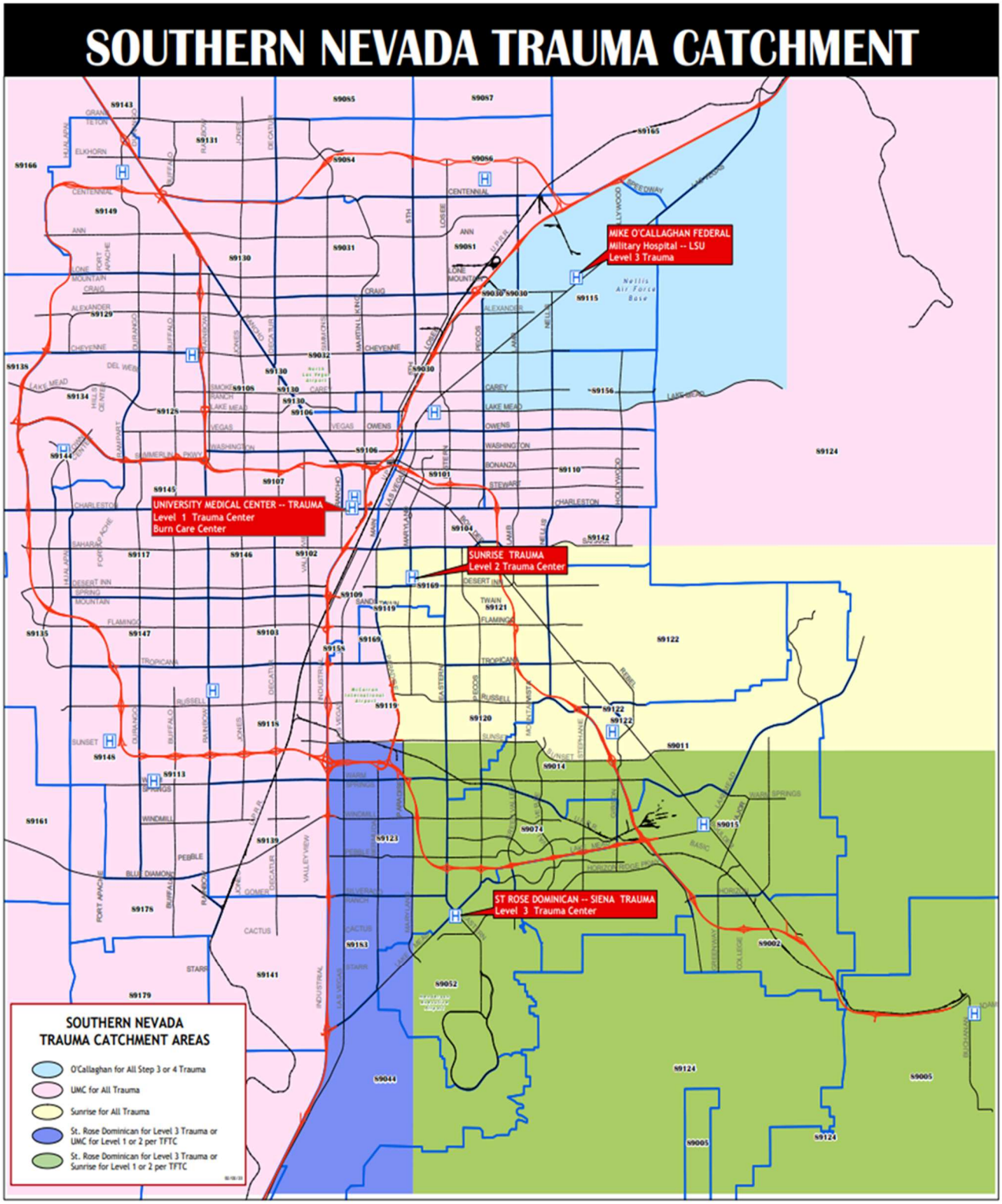
Sunrise Hospital & Medical Center (Level 2 Trauma Center) Catchment Area

All adult trauma calls and pediatric Step 3or 4 trauma calls that meet the Trauma Field Triage Criteria Protocol and occur within the geographical area bordered by Paradise Road to the west, Sahara Avenue to the north, Sunset Road to the south, and the county line to the east, are to be transported to Sunrise Hospital & Medical Center and the medical directions for the treatment of the patient must originate at that center;

In addition, adult trauma calls that meet Step 1 or 2 of the Trauma Field Triage Criteria Protocol and occur within the St. Rose Dominican Hospital – Siena Campus Catchment Area, City of Henderson, or the geographical area bordered by Paradise Road to the west continuing along that portion where it becomes Maryland Parkway, Sunset Road to the north, and the county line to the east, are to be transported to Sunrise Hospital & Medical Center and the medical directions for the treatment of the patient must originate at that center.

Trauma Field Triage Criteria (Cont.)(Revised and approved by District Health Officer 03/02/2022)

Appendix B: Southern Nevada Trauma Catchment Areas



https://www.southernnevadahealthdistrict.org/programs/emergency-medical-services-trauma-system/southern-nevada-trauma-system/

NEVADA DIVISION of PUBLIC and BEHAVIORAL HEALTH

STATE OF NEVADA

BUREAU OF HEALTH PROTECTION AND PREPAREDNESS

ANNUAL TRAUMA REGISTRY REPORT 2023

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State of Nevada

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Edition 1.0
Color

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DIVISION OF PUBLIC AND BEHAVIORAL HEALTH
Helping People. It's Who We Are and What We Do.

Table of Contents

TABLES

Figures

ACKNOWLEDGEMENTS

Thank you to Tabatha Hart, Tyson Dayton, Sandra Atkinson, Zachary Rees, and Donielle Allen for their contributions to this publication.

PURPOSE OF REPORT

This report aims to provide a picture of trauma occurrences within the state of Nevada based on data submitted by hospitals to the Nevada Trauma Registry (NTR). This report presents data in a usable format for local health authorities, healthcare providers, the media, and the public. Nevada regulations require the Nevada Division of Public and Behavioral Health (DPBH) to prepare an Annual Trauma Report in accordance with Nevada Administrative Code (NAC) 450B.768. This annual report's data is based on the calendar year and summarizes data submitted by Nevada hospitals regarding reported traumas handled by each facility.

It should be noted that the data depicted in this report reflects only data entered and reported to the NTR. Therefore, if a facility fails to report trauma data to the registry, it is not reflected in this report. In addition, ongoing staffing challenges during the pandemic contributed to challenges in reporting.

The information included in this report is accurate to the best knowledge of all reporting facilities and the State of Nevada Trauma Registry.

INTRODUCTION

What is the Nevada Trauma Registry (NTR)?

Per Nevada Revised Statutes (NRS) 450B.238 and Nevada Administrative Code (NAC) 450B.768 the NTR was established in 1987 to collect data on persons who sustain a physical (blunt or penetrating) injury caused by an accident or violence. The NTR data is collected from all licensed acute care hospitals and trauma centers in Nevada.

The NTR currently collects required data points from the National Trauma Data Bank (NTDB) established by the *American College of Surgeons* and data points identified in NAC 450B.766 and NAC 450B.768. Included (but not limited to) are data on the event causing the injury, severity of the injury, place of the injury, length of hospital stays, diagnosis(es) of the patient, discharge destination of the patient, and payer source.

Information on the frequency, occurrence, morbidity, and mortality of injuries reported in Nevada is available from the NTR. Data can be filtered by county, hospital, race, or age range. To measure the effects of trauma in Nevada and launch health education initiatives, grant applicants can use this data, which is available to state, private, or federal entities. Additionally, the Local Health Authorities are given access to data for data analysis, surveillance, and improving outcomes for public health.

The 2023 Annual Trauma Report is based upon data submitted to the NTR by Nevada's five designated trauma centers and 42 non-trauma center hospitals, for a total of 47 facilities that operated during calendar 2023. To comply with NAC 450B.768, a hospital must enter all trauma records into the NTR or notify the State NTR Manager that no records meet the criteria to be submitted by the quarterly due date.

The percentage of facilities that comply with submitting data to the NTR each year is summarized in the table below.

YEAR	% of Non-Trauma Centers Compliant	% of Trauma Centers Compliant
2019	89%	75%
2020	88%	94%
2021	88%	100%
2022	94%	100%
2023	99%	100%

In 2023, all trauma centers provided the NTR with the required information. There was one noncompliance incident involving a facility that isn't a designated trauma center in the past year.

To ensure that the NTR software is used correctly, and that the data is of the highest quality and accuracy, regular training is conducted for hospital personnel. In addition, hospital personnel have open access to the NTR help desk for questions or concerns. It is the state's NTR staff's priority to continue training hospital staff to increase accuracy.

Preparation → Analysis (Mapping) → Development (Conversion) → Testing → Deployment

It is not recommended to compare year-over-year data due to multiple reporting changes over the years. These changes include transitions to modified ICD codes, the addition or removal of facilities, and the submission of trauma data during a global pandemic that affected the overall prevalence of trauma.

Throughout the state, collaborations have continued with trauma personnel in a variety of disciplines. To date, these efforts have included:

- Participating in local healthcare coalitions.
- Quarterly NTR user group meetings.
- Hosting quarterly conference calls with trauma center staff.
- Meeting hospital staff who enter NTR data in person, if possible.

Educating hospitals about trauma data requirements, creating relationships across the state, and communicating regularly have all contributed to improving hospital data entry compliance. The data from hospitals is both of higher quality and reliability enhancing the overall understanding of trauma in the state.

Nevada Trauma Registry Background

The definition of a traumatic incident and the requirements for trauma reporting are outlined in the Nevada Revised Statutes and Nevada Administrative Code.

NEVADA REVISED STATUTE (NRS)

NRS 450B.105 "Trauma" defined. "Trauma" means any acute injury which, per standardized criteria for triage in the field, involves a significant risk of death or the precipitation of complications or disabilities.

NRS 450B.238 Regulations requiring a hospital to record and maintain information. The State Board of Health shall adopt regulations which require each hospital to record and

maintain information concerning the treatment of trauma in the hospital. The Board shall consider the guidelines adopted by the American College of Surgeons, which concern the information which must be recorded.

NEVADA ADMINISTRATIVE CODE (NAC)

The NAC regarding trauma treatment in Nevada and the corresponding Trauma Registry reporting requirements, guidelines, and procedures can be found at NAC 450B.760 through NAC 450B.774, inclusive.

To summarize, the regulations require that the Public and Behavioral Health Division develop a standardized system for collecting trauma treatment information. It is necessary to maintain records regarding treatment both before and after admission to a hospital. This requirement is fulfilled by the Nevada Trauma Registry (NTR).

Each hospital must submit quarterly trauma data to the Division, which meets the criteria prescribed by the Division and contains the minimum data set required by the National Trauma Data Bank (NTDB) established by the American College of Surgeons, as well as any other information required by the Division or State Board.

Data submitted by hospitals on trauma patients shall be compiled into an annual report by the Division for the preceding calendar year.

METHODOLOGY

The NTR is a depository of trauma incident data from across the state. All hospitals within Nevada are required to submit data quarterly to the NTR. Each year the data within the NTR will be statistically analyzed to evaluate incident traumas in Nevada. It should be noted that the data presented in this report is a reflection based solely on data points recorded within the NTR. It does not include patient history or examination. This evaluation is presented in the Annual Trauma Report, prepared by the state, per NAC 450B.768.

A series of criteria identified by the American College of Surgeons must be met to be classified as a trauma. For an incident to be classified as a trauma, the patient must have:

- At least one diagnosis code for injury:
    - ICD-10 code from the following ranges: S00 -S99 (7th Character Modifier A, B, or C), T07, T14, T20-T28 (7th Character modifier A), T30-32, and T79.A1-T79.A9 (7th character modifier A) and the patient must have either:
- At least one of the following criteria:
    - The patient was hospitalized for at least 24 hours due to injuries, or
    - The injury resulted in death; or
    - The patient was transferred between hospitals using a ground or air ambulance.

In 2023, the NTR captured 16,421 trauma cases. This report includes cases for patients with an Emergency Department/Hospital Arrival Date between January 1, 2023, and December 31, 2023. All data were analyzed using Statistical Analysis System (SAS) Version 9.4 (SAS Institute, Cary, NC).

RESULTS

From January 1, 2023, to December 31, 2023, a total of 16,421 traumas were recorded in the NTR from the 47 facilities in Nevada. The following pages include data analysis on trauma cases, risk factors, demographics, injury characteristics, injury location and mechanism, patient discharge and transfer, patient transport, safety equipment, and fall data breakdown.

TRAUMA CENTER LEVELS

Outlined below are standard criteria for Trauma Centers verified by the ACS and designated by states and municipalities. Facilities are set/confirmed as adult and/or Pediatric Trauma Centers. It is not uncommon for facilities to have different designations for each group (i.e., a Trauma Center may be a Level 1 Adult facility and a Level II Pediatric Facility).

Level I

A Level I Trauma Center is a comprehensive regional resource, a tertiary care facility central to the trauma system. A Level I Trauma Center can provide total care for every aspect of injury – from prevention to rehabilitation.

Elements of Level I Trauma Centers Include:

- 24-hour in-house coverage by general surgeons and prompt availability of care in specialties such as orthopedic surgery, neurosurgery, anesthesiology, emergency medicine, radiology, internal medicine, plastic surgery, oral and maxillofacial, pediatric, and critical care.
- Referral resources for communities in nearby regions.
- Provides leadership in the prevention and public education to surrounding communities.
- Provides continuing education to the trauma team members.
- Incorporates a comprehensive quality assessment program.
- Operates an organized teaching and research effort to help direct innovations in trauma care.
- Program for substance abuse screening and patient intervention.
- Meets minimum requirement for annual volume of severely injured patients.

Level II

A Level II Trauma Center can initiate definitive care for all injured patients.
Elements of Level II Trauma Centers Include:

- 24-hour immediate coverage by general surgeons and by the specialties of orthopedic surgery, neurosurgery, anesthesiology, emergency medicine, radiology, and critical care.
- Tertiary care needs such as cardiac surgery, hemodialysis, and microvascular surgery may be referred to as a Level 1 Trauma Center.
- Provides trauma prevention and continuing education programs for staff.
- Incorporates a comprehensive quality assessment program.

Level III

A Level III Trauma Center has demonstrated an ability to provide prompt assessment, resuscitation, surgery, intensive care, and stabilization of injured patients and emergency operations.

Elements of Level III Trauma Centers Include:

- 24-hour immediate coverage by emergency medicine physicians and prompt availability of general surgeons and anesthesiologists.
- Incorporates a comprehensive quality assessment program.
- Has developed transfer agreements for patients requiring more comprehensive care at a Level I or Level II Trauma Center.
- Provides backup care for rural and community hospitals.
- Offers continued education of the nursing and allied health personnel or the trauma team.
- Involved with prevention efforts and must have an active outreach program for its referring communities.

Level IV

A Level IV Trauma Center has demonstrated the ability to provide advanced trauma life support (ATLS) before transferring patients to a higher-level trauma center. In addition, it provides evaluation, stabilization, and diagnostic capabilities for injured patients.

Elements of Level IV Trauma Centers Include:

- Basic emergency department facilities to implement ATLS protocols and 24-hour laboratory coverage. Available trauma nurse(s) and physicians are available upon patient arrival.
- May provide surgery and critical-care services if available.
- Has developed transfer agreements for patients requiring more comprehensive care at a Level I or Level II Trauma Center.
- Incorporates a comprehensive quality assessment program.
- Involved with prevention efforts and must have an active outreach program for its referring communities.

Level V

A Level five Trauma Center provides initial evaluation, stabilization, and diagnostic capabilities and prepares patients for transfer to higher levels of care.

Elements of Level V Trauma Centers Include:

- Basic emergency department facilities to implement ATLS protocols.
- Available trauma nurse(s) and physicians are available upon patient arrival.
- After-hours activation protocols if the facility is not open 24 hours a day.
- May provide surgery and critical-care services if available.
- Has developed transfer agreements for patients requiring more comprehensive care at Level 1 through III Trauma Centers.

TECHNICAL NOTES

There are three ways in which the Nevada Trauma Registry presents traumas. Each category found in the report is explained below.

- Total Trauma Cases include all cases reported to the Nevada Trauma Registry, including transfers between facilities. Therefore, if a trauma patient is presented initially to one facility and is transferred to another facility, that case is represented twice.
- Unique Trauma Cases are calculated by matching trauma records based on birth date, injury date, patient zip code, and discharge/arrival date. Unique trauma cases include only the first presentation to a facility and not transfers between facilities, except in Tables 3, 8, 10, 15, 16, 17, and Figure 11, where traumas are assigned to the last transfer facility. This logic to include the previous transfer facility was used to account for the following situations:
  - When considering traumas that resulted in deaths, it is important to analyze based on the facility at the time of death. Therefore, throughout this report, when a table lists Mortality Proportion and 16,421 in Unique Traumas, the table is based upon the last facility.
  - There were some instances where the mechanism of injury differed between the facility of the first presentation and the facility at the time of death. In this case, the mechanism was assigned based on the facility at the time of death.
    - Please note that the state of Nevada does not attempt to change/correct patient records at the first facility if it does not match information at the last facility.
- Patient Transfer Trauma Cases are determined by the following question reported by the facilities, "if transferred, to which facility?" This question is self-reported by hospital staff and does not always align with the results of the Division's match to calculate unique trauma cases.

TRAUMA CASES BY FACILITY

Out of all facilities listed in Table 1, the designated trauma centers had the highest number of trauma cases treated. There were five designated trauma centers in the State of Nevada during 2023.

Table 1: Trauma Cases by Facility, 2023 (includes Nevada Residents and Non-Residents)

County	Facility	Unique Trauma Patients^		Total Trauma Cases*	
Clark County	Boulder City Hospital	53	0.3%	53	0.3%
	Centennial Hills Hospital	348	2.1%	374	2.1%
	Desert Springs Hospital Center	69	0.4%	69	0.4%
	Henderson ER at Green Valley Ranch	32	0.2%	32	0.2%
	Henderson Hospital	429	2.6%	432	2.4%
	Mesa View Regional Hospital	54	0.3%	54	0.3%
	Mike O'Callaghan Federal Medical Center	129	0.8%	129	0.7%
	Mountain View ER at Aliante	21	0.1%	21	0.1%
	Mountain View - ER at Skye Canyon	10	0.1%	10	0.1%
	Mountain View Hospital	790	4.8%	805	4.5%
	North Vista Hospital	143	0.9%	143	0.8%

	Southern Hills ER at South Las Vegas Blvd	25	0.2%	25	0.1%
	Southern Hills ER at the Lakes	33	0.2%	33	0.2%
	Southern Hills Hospital Medical Center	345	2.1%	375	2.1%
	Spring Valley ER at Blue Diamond	69	0.4%	69	0.4%
	Spring Valley Hospital Medical Center	746	4.5%	807	4.5%
	St. Rose Dominican Hospital Blue Diamond	46	0.3%	46	0.3%
	St. Rose Dominican Hospital De Lima Campus	105	0.6%	105	0.6%
	St. Rose Dominican Hospital North Las Vegas	80	0.5%	80	0.4%
	St. Rose Dominican Hospital San Martin Campus	164	1.0%	170	0.9%
	St. Rose Dominican Hospital Siena Campus	1300	7.9%	1316	7.3%
	St. Rose Dominican Hospital West Flamingo	26	0.2%	26	0.1%
	St. Rose Dominican Hospital West Sahara	55	0.3%	55	0.3%
	Summerlin Hospital Medical Center	466	2.8%	525	2.9%
	Sunrise Hospital Medical Center	3473	21.1%	4370	24.2%
	University Medical Center	3533	21.5%	3778	20.9%
	Valley Hospital Medical Center	22	0.1%	22	0.1%
Washoe County	Northern Nevada Medical Center	173	1.1%	174	1.0%
	NNMC - ER at McCarran	32	0.2%	32	0.2%
	NNMC - ER at Spanish Springs	58	0.4%	58	0.3%
	Northern Nevada Sierra Medical Center	56	0.3%	56	0.3%
	Renown Regional Medical Center	1718	10.5%	1978	11.0%
	Renown South Meadows Medical Center	145	0.9%	145	0.8%
	St. Mary's Regional Medical Center	273	1.7%	276	1.5%
All Other Counties	Banner Churchill Community Hospital	89	0.5%	89	0.5%
	Battle Mountain General Hospital	27	0.2%	27	0.1%
	Carson Tahoe Regional Medical Center	445	2.7%	448	2.5%
	Carson Valley Medical Center	170	1.0%	170	0.9%
	Desert View Hospital	271	1.7%	271	1.5%
	Grover C. Dils Medical Center	32	0.2%	32	0.2%
	Humboldt General Hospital	70	0.4%	70	0.4%
	Mt. Grant General Hospital	36	0.2%	36	0.2%
	Northeastern Nevada Regional Hospital	135	0.8%	135	0.7%
	Pershing General Hospital	23	0.1%	23	0.1%
	South Lyon Medical Center	42	0.3%	42	0.2%
	Williams Bee Ririe Hospital	60	0.4%	60	0.3%
Nevada (Total)		**16,421**	**100.0%**	**18,046**	**100.0%**

**Unique trauma patients are calculated by matching transferred patient based on birthdate, injury date, patient zip code, and discharge/arrival date and only counted once by the facility where they first presented with the trauma (excepted when mortality data is analyzed), which is represented as Unique Trauma.*

** Total trauma cases are all cases reported to the Nevada Trauma Registry, for 2023.*

Table 2: Trauma Incidence and Mortality Ratio for Levels 1-3 by Trauma Center Designation

Trauma Center designation	Count	Column Percent	Deaths	Mortality Proportion (Row Percent)
Trauma Center Level 1	3778	34.0%	208	5.5%
Trauma Center Level 2	6347	57.2%	264	4.2%
Trauma Center Level 3	974	8.8%	14	1.4%
Total	**11099**	**100.0%**	**486**	**4.4%**

**There were 10 unknown discharge status (dead/alive) cases.*

DEMOGRAPHICS

Of 16,421 unique traumas recorded in the NTR between January 1, 2023, and December 31, 2023, 55.2% of all trauma cases among males, and 44.8% were in females. (Table 3)

Table 3: Nevada Trauma Cases by Sex (Unique Traumas)

Sex	Count	Percent	Rate per 100,000 (95% CI)
Male	9067	55.2%	555.8 (544.4-567.2)
Female	7353	44.8%	448.2 (438.0-458.4)
Sex Not Reported	1	0.0%	-
Total	**16,421**	**100%**	**501.9 (494.2-509.6)**

Table 4: Nevada Trauma Cases by Race/Ethnicity (Unique Traumas)

Race/Ethnicity	Count	Percent	Rate per 100,000 (95% CI)
White	10,034	61.1%	632.9 (620.5-645.3)
Black	1,533	9.3%	507.7 (482.3-533.1)
American Indian, Alaskan Native	69	0.4%	195.2 (149.1-241.2)
Asian	722	4.4%	216.1 (200.3-231.9)
Hispanic	2,017	12.3%	198.7 (190.0-207.4)
Other	966	5.9%	0.0 (0.0-0.0)
Unknown	1,080	6.6%	0.0 (0.0-0.0)
Total	**16,421**	**100.0%**	**501.9 (494.2-509.6)**

White individuals had significantly more traumas than any other racial/ethnic groups in the state due to the high concentration of white residents. Figure 4 shows the frequencies and percentages among the racial/ethnic of trauma injuries in the Nevada in 2023.

Figure 1: Percentage of Unique Trauma Cases by Race/Ethnicity

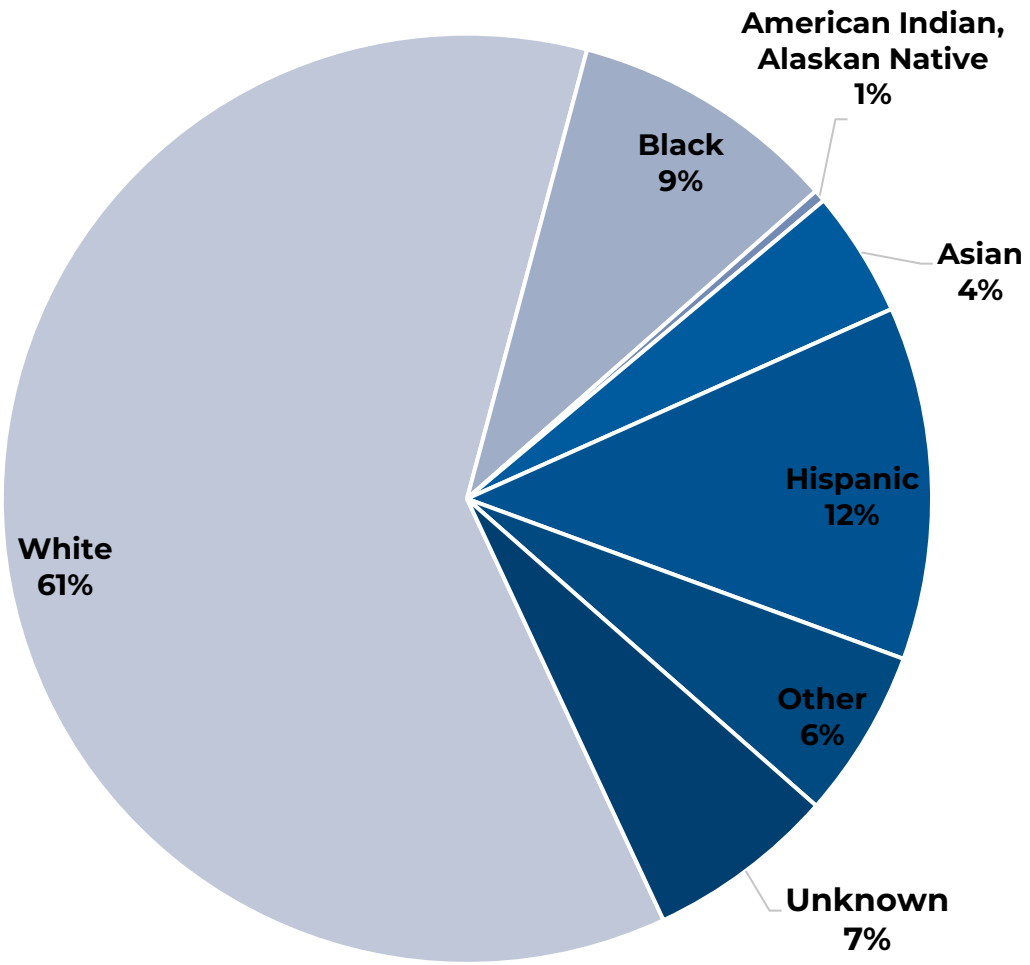


Table 5: Age-Specific Trauma Cases by Race/Ethnicity (Unique Traumas)

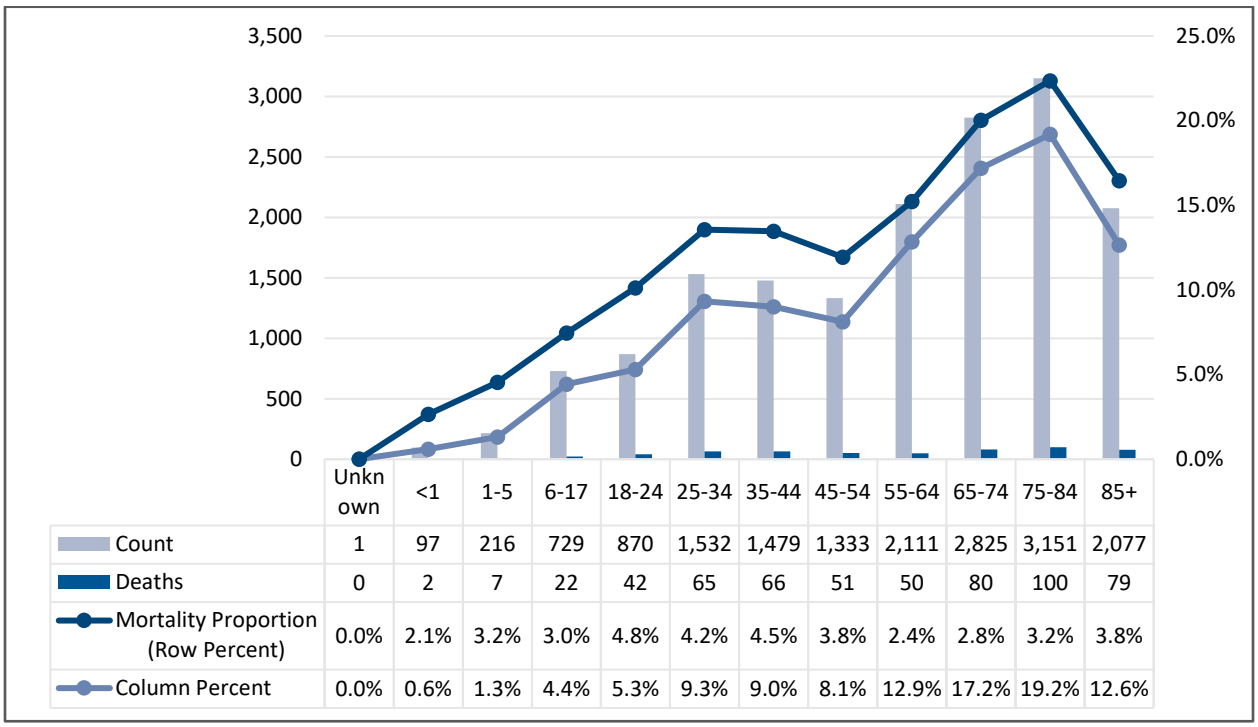
Age Groups	White	Black	American Indian, Alaskan Native	Asian	Hispanic	Other	Unknown	Total
<1	32	17	2	5	17	13	11	97
1-5	78	36	0	8	50	22	22	216
6-17	277	118	4	40	164	58	68	729
18-24	299	157	7	32	212	61	102	870
25-34	560	278	4	39	359	157	135	1,532
35-44	663	237	9	46	286	112	126	1,479
45-54	732	165	13	48	199	72	104	1,333
55-64	1,342	193	10	66	222	125	153	2,111
65-74	2,054	155	10	150	205	119	132	2,825
75-84	2,393	116	4	182	190	125	141	3,151
85+	1,604	61	6	106	113	102	85	2,077
Unknown	0	0	0	0	0	0	1	1
Total	**10,034**	**1,533**	**69**	**722**	**2,017**	**966**	**1,080**	**16,421**

Table 6: Age-Specific Trauma Cases and Mortality Proportion (Unique Traumas)

Age Groups	Count	Percentage of Cases	Deaths among Cases	Mortality Proportion (Row Percent)
Unknown	1	0.0%	0	0.0%
<1	97	0.6%	2	2.1%
1-5	216	1.3%	7	3.2%
6-17	729	4.4%	22	3.0%
18-24	870	5.3%	42	4.8%
25-34	1,532	9.3%	65	4.2%
35-44	1,479	9.0%	66	4.5%
45-54	1,333	8.1%	51	3.8%
55-64	2,111	12.9%	50	2.4%
65-74	2,825	17.2%	80	2.8%
75-84	3,151	19.2%	100	3.2%
85+	2,077	12.6%	79	3.8%
Total	**16,421**	**100.0%**	**565**	**3.4%**

In Tables 5 and 6, trauma cases are presented by age groups and death rate among cases. During 2023, Nevada experienced 16,421 unique trauma cases. Of those, 2,825 were in the 65-74 age group, 3,151 in the 75-84 age group, and 2,111 in the 55-64 age group. In Figure 2, the 18-24 age group has the highest percentage of deaths from trauma, with 4.8%, followed by the 35-44 age group with 4.5%, and the 25-34 age group with 4.2%. There is a mortality rate of 3.82% in both the 45-54 and 85+ age ranges.

Figure 2: Age-Specific Trauma Cases and Mortality Proportion (Unique Traumas)



	Unknown	<1	1-5	6-17	18-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Count	1	97	216	729	870	1,532	1,479	1,333	2,111	2,825	3,151	2,077
Deaths	0	2	7	22	42	65	66	51	50	80	100	79
Mortality Proportion (Row Percent)	0.0%	2.1%	3.2%	3.0%	4.8%	4.2%	4.5%	3.8%	2.4%	2.8%	3.2%	3.8%
Column Percent	0.0%	0.6%	1.3%	4.4%	5.3%	9.3%	9.0%	8.1%	12.9%	17.2%	19.2%	12.6%

Table 7: Age and Sex-Specific Trauma Rate per 100,000 Nevada Residents (Unique Traumas)

Age Group	Male		Female		Unknown	Total	
	Residents	Rate per 100,000 (95% CI)	Residents	Rate per 100,000 (95% CI)	Residents	Residents	Rate per 100,000 (95% CI)
Pediatric <18	565	154.0 (141.3-166.7)	316	90.1 (80.1-100.0)	0	881	122.7 (114.6-130.9)
Adult 18-64	3,986	387.7 (375.7-399.8)	1,874	186.2 (177.8-194.7)	1	5,861	288.1 (280.7-295.5)
Geriatric >64	2,895	1224.9 (1180.2-1269.5)	4,113	1450.7 (1406.4-1495.1)	0	7,008	1348.0 (1316.5-1379.6)
Total	7,446	456.4 (446.1-466.8)	6,303	384.2 (374.7-393.7)	1	13,750	420.2 (413.2-427.3)

Figure 3: Age and Sex-Specific Trauma Rates per 100,000 Nevada Residents

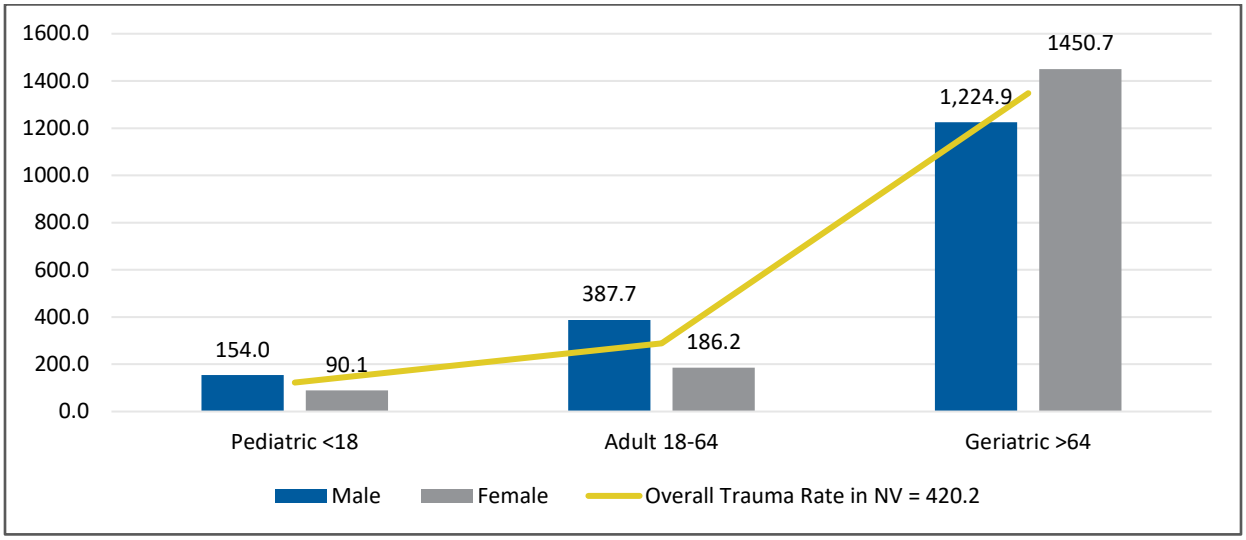
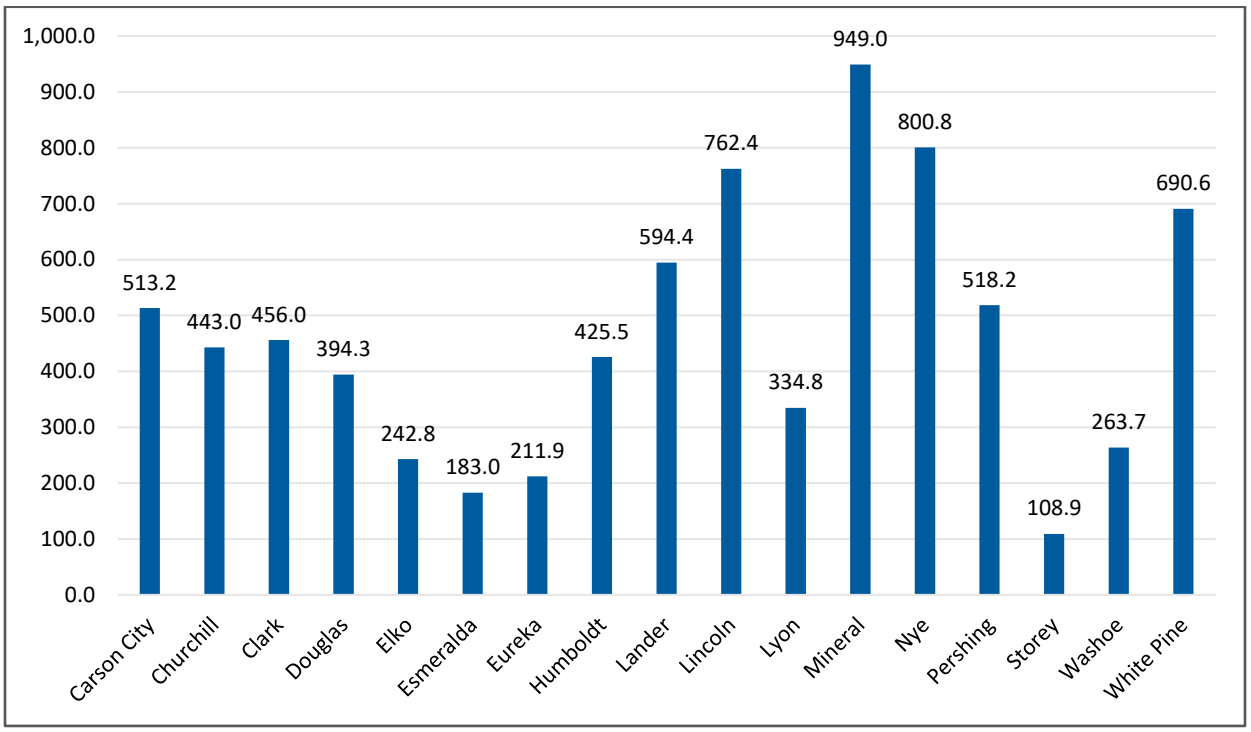


Table 8: Nevada Trauma Cases by County of Injury (non-duplicated)

County	Count	Rate per 100,000 (95% CI)
Carson City	303	513.2 (455.4-571.0)
Churchill	118	443.0 (363.1-523.0)
Clark	10,908	456.0 (447.4-464.5)
Douglas	211	394.3 (341.1-447.5)
Elko	137	242.8 (202.1-283.5)
Esmeralda	2	183.0 (0.0-436.6)
Eureka	4	211.9 (4.2-419.5)
Humboldt	76	425.5 (329.8-521.1)
Lander	37	594.4 (402.9-785.9)
Lincoln	38	762.4 (520.0-1004.9)
Lyon	206	334.8 (289.1-380.6)
Mineral	46	949.0 (674.8-1223.3)
Nye	417	800.8 (723.9-877.6)
Pershing	38	518.2 (353.4-683.0)
Storey	5	108.9 (13.4-204.3)
Washoe	1,349	263.7 (249.6-277.8)
White Pine	70	690.6 (528.8-852.4)
Out of State	1,100	-
Unknown	1,356	-

Figure 4: County-Specific Trauma Rates per 100,000 County Residents



This analysis found that Mineral County, with 949.0, had the highest rate of trauma cases per 100,000 residents. Nye County came in second with 800.8, followed by Lincoln County with 762.4.

According to the Federal Information Processing Standard (FIPS) code for trauma cases, Trauma Rates per county are calculated exclusively based on ICD-10 diagnosis coding recorded by treating facilities, without regard for backgrounds, patient histories, or examinations.

Highest Trauma Cases (Figure 5)

Utilizing FIPS codes of where an injury occurred:

#1) Clark County recorded the highest number of Trauma Cases at 10,908 Cases.

#2) Washoe with 1,349 Trauma Cases.

#3) Carson City with 303 Trauma Cases.

1,100 Trauma Cases occurred out-of-state.

Figure 5: NV Trauma Cases by Zip Code of Injury (Unique Traumas)

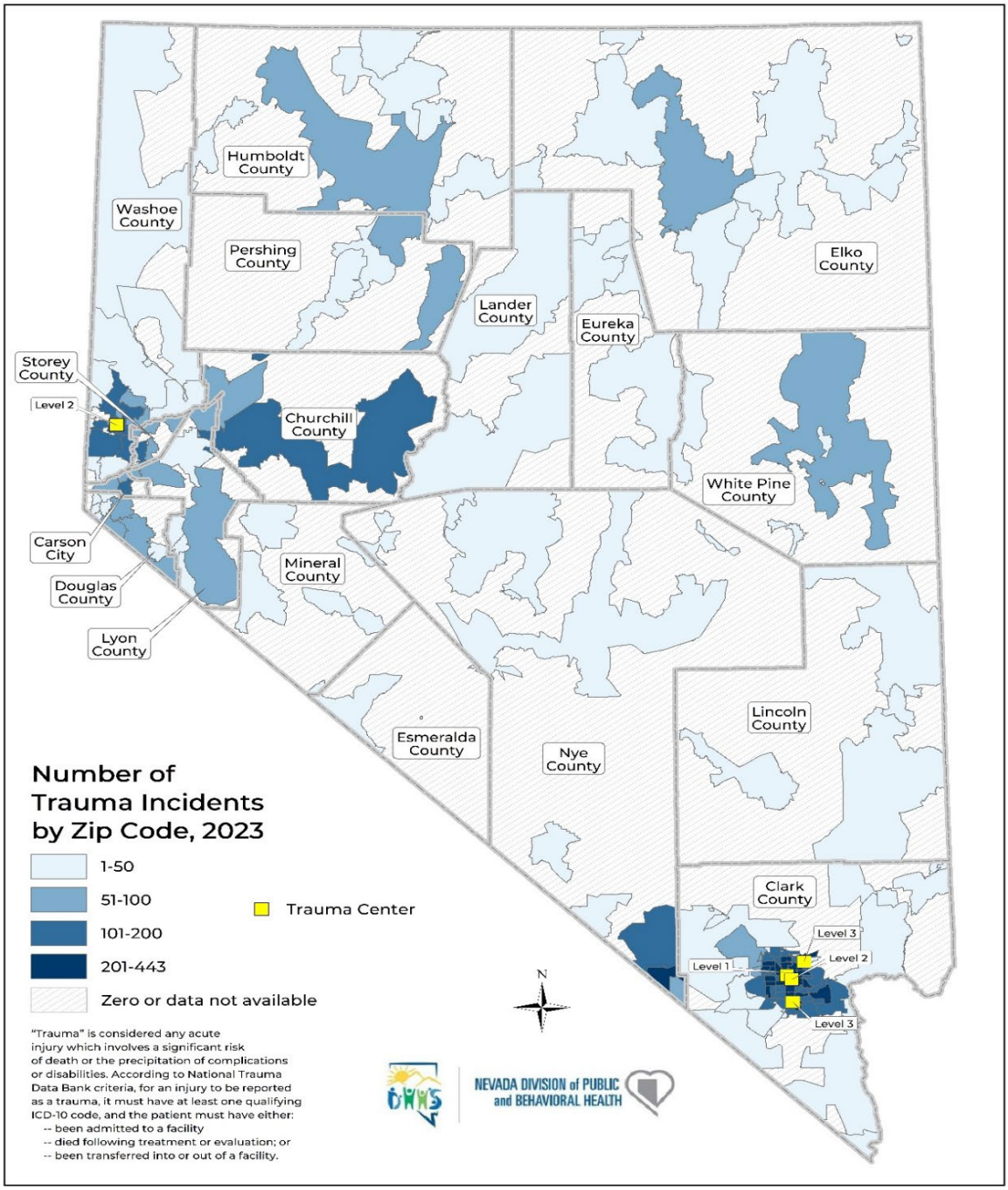


Figure 6: NV Trauma Cases by County of Injury (Unique Traumas)

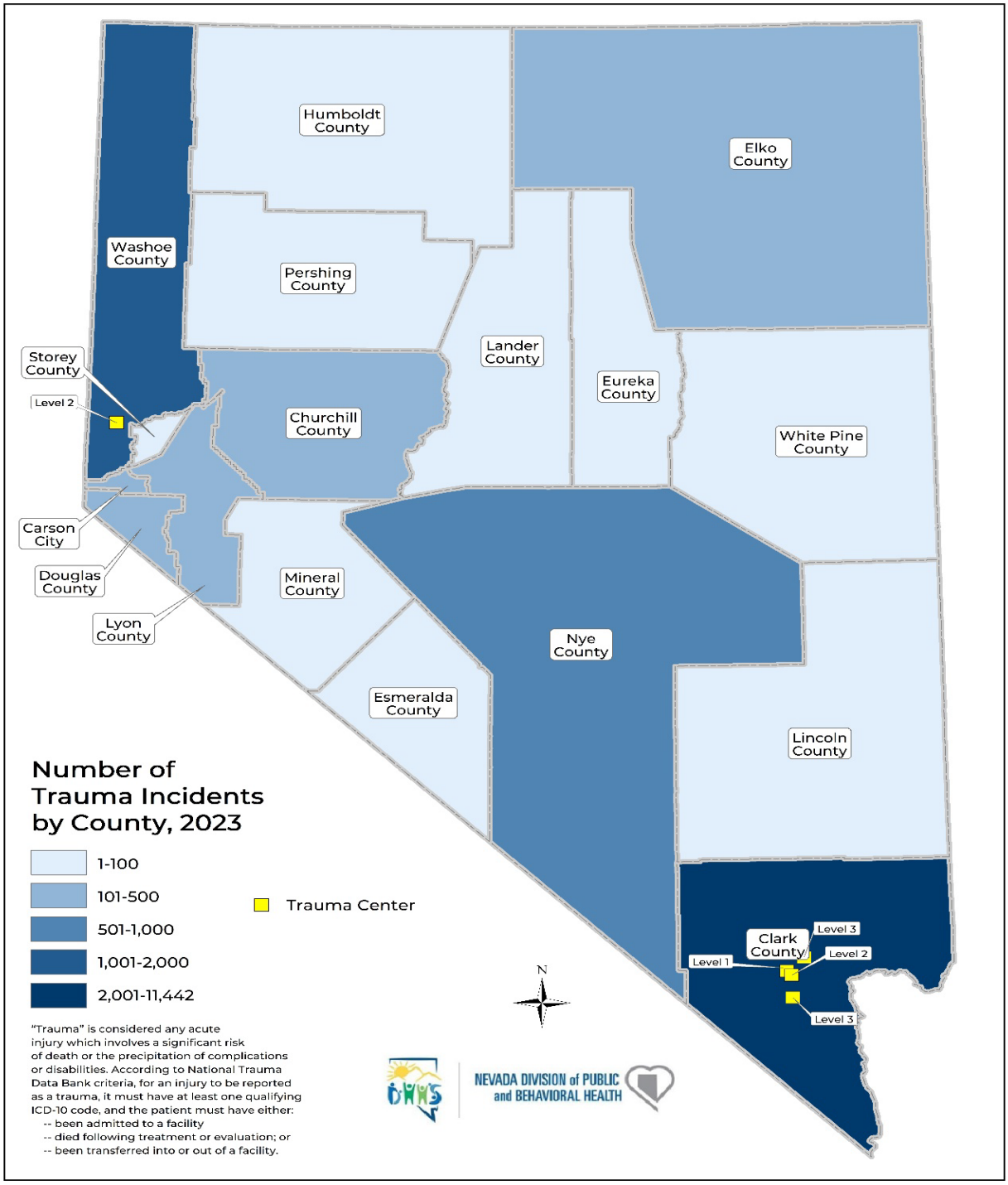


Figure 7: NV Trauma Cases by County of Injury (Unique Traumas)

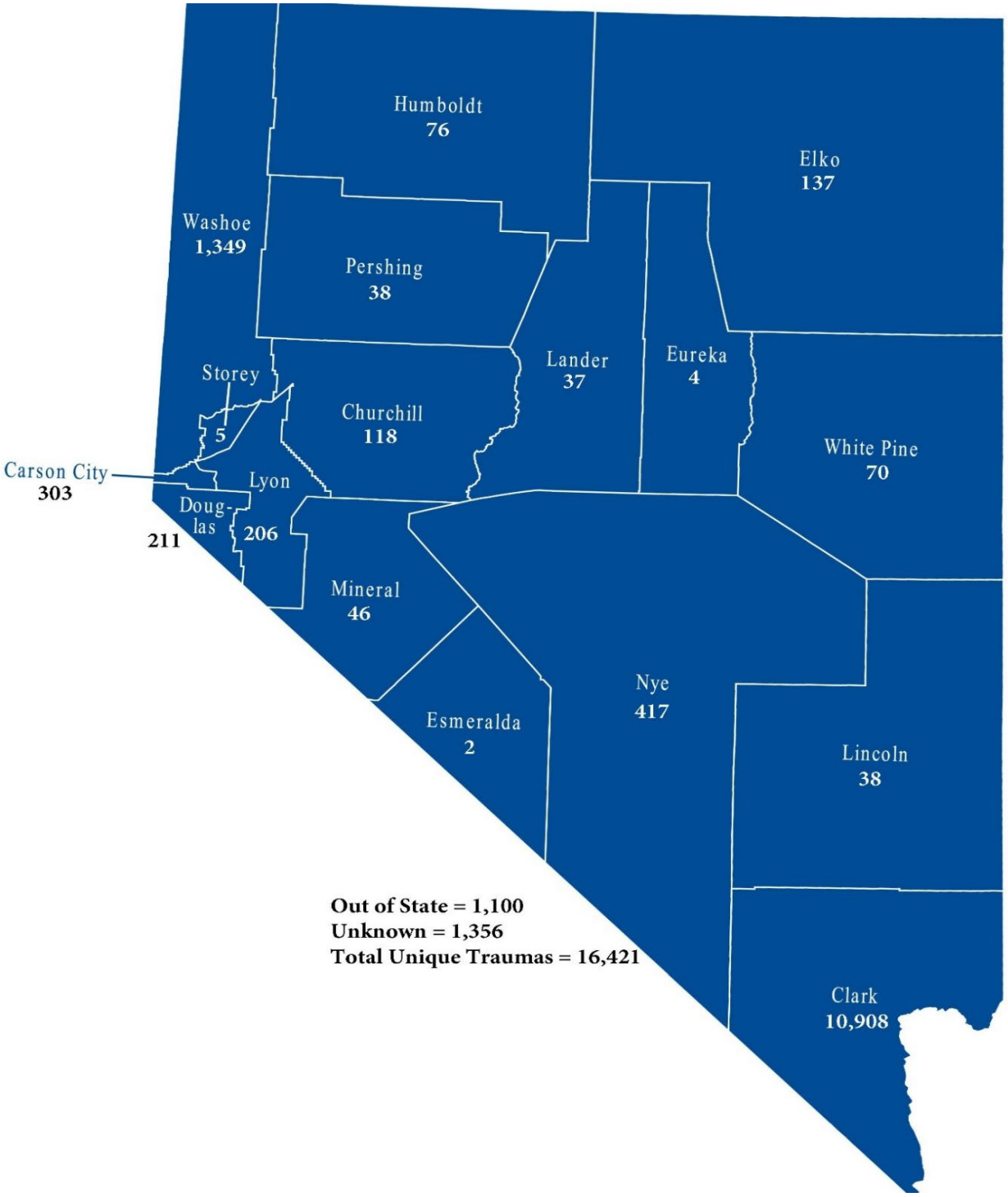


Table 9: Age-Specific Traumatic Brain Injury Incidence and Mortality Proportion (Unique Traumas)

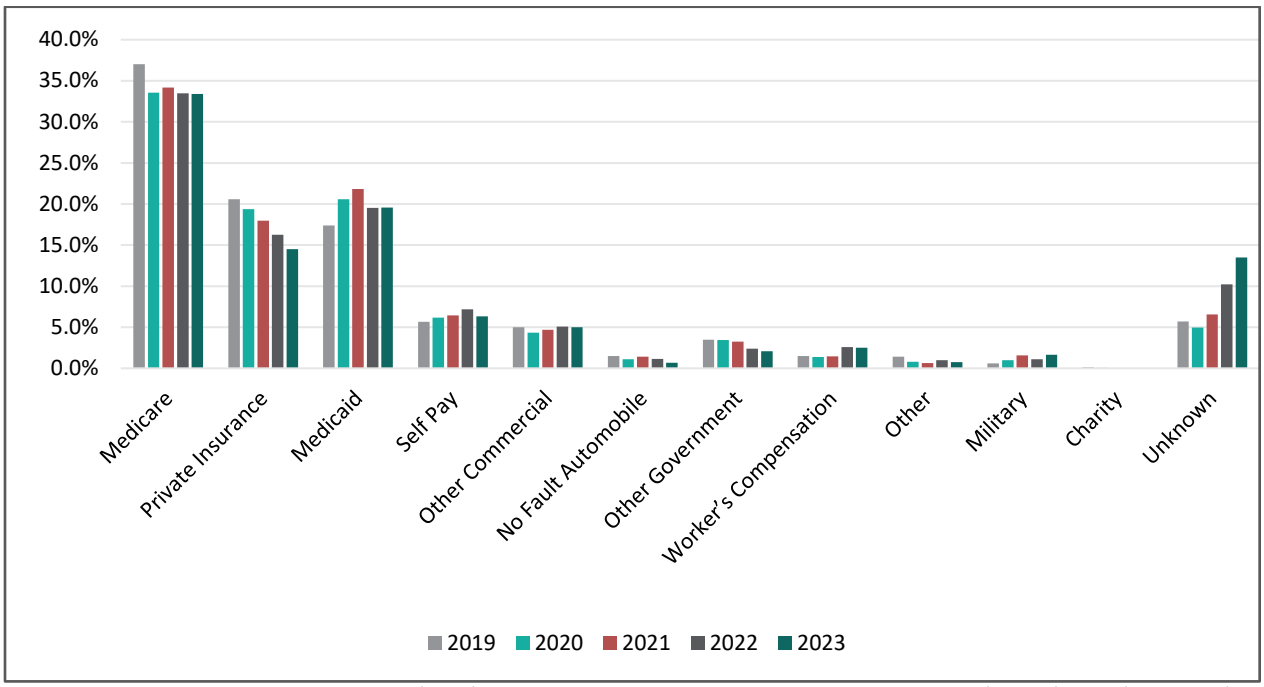
Age Group	Count	Column Percent	Deaths	Mortality Proportion (Row Percent)
Pediatric <18	228	7.9%	15	6.6%
Adult 18-64	1328	46.1%	114	8.6%
Geriatric >64	1326	46.0%	113	8.5%
Total	**2882**	**100.0%**	**242**	**8.4%**

*Throughout the report Unique Traumas are analyzed by where the patient first originated, but mortality data is analyzed based on their final facility. ** 6 unknown dead/alive status **

Table 10: Age-Specific Traumatic Brain Injury Incidence and Mortality Proportion (Unique Traumas)

Age Groups	Count	Column Percent	Deaths	Mortality Proportion (Row Percent)
<1	50	1.7%	1	2.0%
1-5	34	1.2%	4	11.8%
6-17	148	5.1%	10	6.8%
18-24	156	5.4%	17	10.9%
25-34	262	9.1%	27	10.3%
35-44	250	8.7%	26	10.4%
45-54	262	9.1%	20	7.6%
55-64	394	13.7%	24	6.1%
65-74	487	16.9%	42	8.6%
75-84	548	19.0%	46	8.4%
85+	291	10.1%	25	8.6%
Total	**2,882**	**100.0%**	**242**	**8.4%**

Figure 8: Proportion of Trauma Primary Payment Sources in Nevada, 2019-2023



**Year over year trauma data comparison is not recommended due to the changes mentioned in the introduction section of this report. However, the data from previous years in Figure 6 were included as it was derived from proportional data.*

Table 11: Proportion of Trauma Primary Payment Sources in Nevada, 2019-2023

Primary Source of Payment	2019	2020	2021	2022	2023
Medicare	37.0%	33.5%	34.2%	33.5%	33.4%
Private Insurance	20.6%	19.4%	18.0%	16.3%	14.5%
Medicaid	17.4%	20.6%	21.8%	19.5%	19.6%
Self-Pay	5.7%	6.2%	6.4%	7.2%	6.3%
Other Commercial	5.0%	4.3%	4.7%	5.1%	5.0%
No Fault Automobile	1.5%	1.1%	1.4%	1.2%	0.7%
Other Government	3.5%	3.4%	3.2%	2.4%	2.1%
Worker's Compensation	1.5%	1.4%	1.5%	2.6%	2.5%
Other	1.4%	0.8%	0.6%	1.0%	0.8%
Military	0.6%	1.0%	1.6%	1.1%	1.7%
Charity	0.1%	0.1%	0.0%	0.0%	0.0%
Unknown	5.7%	5.0%	6.6%	10.2%	13.5%

PLACE AND MECHANISM OF INJURY

Table 12: Trauma Incidence by Place of Injury (Unique Traumas)

Place of Injury	Trauma Count	Percent
Residence	8,053	49.04%
Street	4,032	24.55%
Trade and Service Area	960	5.85%
Recreation Area	328	2.00%
Wilderness Area	279	1.70%
Sports Area	225	1.37%
School or Public Area	222	1.35%
Other Specified	199	1.21%
Industrial and Construction	120	0.73%
Transport vehicle	79	0.48%
Farm	22	0.13%
Military Training Ground	11	0.07%
Railroad Track	7	0.04%
Unknown/Unspecified	1,884	11.47%
Total	**16,421**	**100%**

Table 13: Trauma Incidence and Mortality by Mechanism of Injury (Unique Traumas)

Mechanism	Count	Column Percent	Deaths	Mortality Proportion (Row Percent)
Falls	9,635	58.7%	234	2.4%
Motor Vehicle Traffic	2,670	16.3%	153	5.7%
Struck by/Against	890	5.4%	6	0.7%
Cut/Pierce	645	3.9%	18	2.8%
Firearm	590	3.6%	105	17.8%
Other Specified	265	1.6%	5	1.9%
Natural/Environmental	260	1.6%	3	1.2%
Suffocation	246	1.5%	10	4.1%
Motor Vehicle Non-Traffic	235	1.4%	2	0.9%
Pedal Cyclist, Other	197	1.2%	1	0.5%
Unknown	181	1.1%	4	2.2%
Other Transport (Land, Sea, Sky)	160	1.0%	4	2.5%
Pedestrian, Other	131	0.8%	17	13.0%
Overexertion	96	0.6%	0	0.0%
Unspecified	85	0.5%	1	1.2%
Machinery	68	0.4%	1	1.5%
Fire/Burn	62	0.4%	0	0.0%
Drowning	5	0.0%	1	20.0%
Total	**16,421**	**100.0%**	**565**	**3.4%**

In 2023, the state of Nevada saw the highest incidence of traumatic injury caused by Falls (58.7%), Traffic-Related Accidents (16.3%), and Being Struck by/Against (5.4%). In total trauma cases, the highest proportion of deaths came from Drowning incidents (20.0%), Firearm incidents (17.8%), and Pedestrian incidents (13.0%).

ICD-10 codes are currently used by the NTR to collect trauma data. Some trauma mechanisms are not coded in the ICD-10 system. If the cause of trauma cannot be identified using an ICD-10 code, there are still ICD-10 codes available: Pedestrian, Other, Other Specified, Unspecified, and Unknown.

Table 14: Trauma Rates for Top Three Mechanisms of Injury by Age (Unique Traumas)

Age Group	Falls		Struck by/Against		Motor Vehicle Traffic	
	n	Rate per 100,000 (95% CI)	n	Rate per 100,000 (95% CI)	n	Rate per 100,000 (95% CI)
Pediatric <18	344	47.9 (42.9-53.0)	111	15.5 (12.6-18.3)	179	24.9 (21.3-28.6)
Adult 18-64	2,443	120.1 (115.3-124.9)	622	30.6 (28.2-33.0)	1,887	92.8 (88.6-96.9)
Geriatric >64	6,854	1318.4 (1287.2-1349.6)	162	31.2 (26.4-36.0)	556	107.0 (98.1-115.8)
Total	**9,641**	**294.7 (288.8-300.5)**	**895**	**27.4 (25.6-29.1)**	**2,622**	**80.1 (77.1-83.2)**

Table 14 outlines the top three mechanisms for injury by age. The number one trauma injury per all age groups in 2023 was Falls.

Figure 9: Top Five Mechanisms of Unintentional Trauma

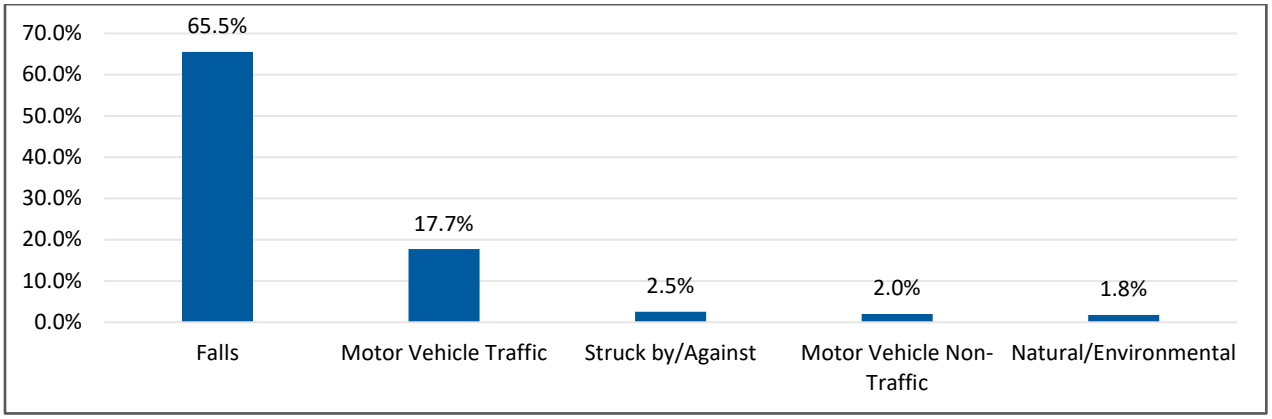


Figure 10: Top Five Mechanisms of Homicide/Assault-Related Trauma

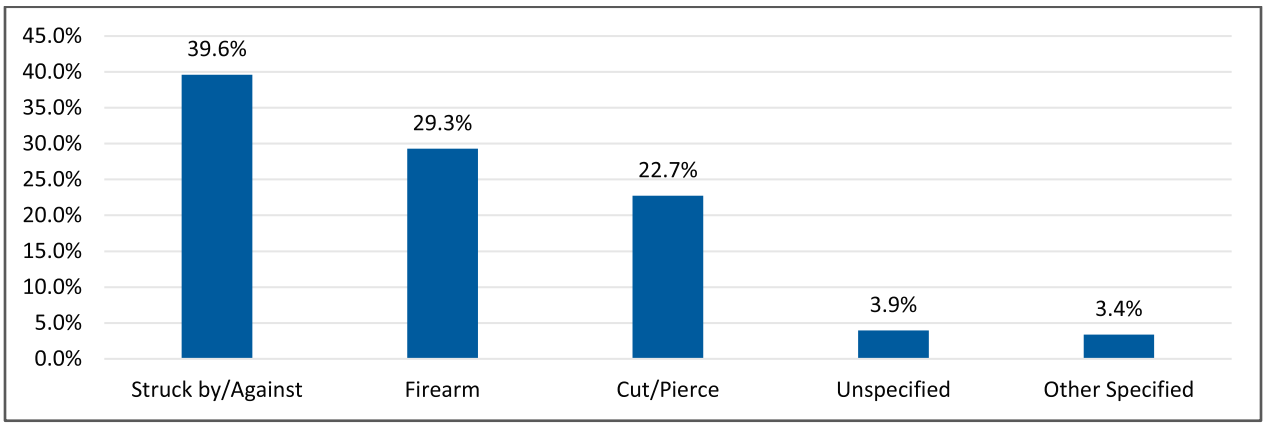


Figure 11: Top Five Mechanisms of Suicide/Self-Inflicted Trauma

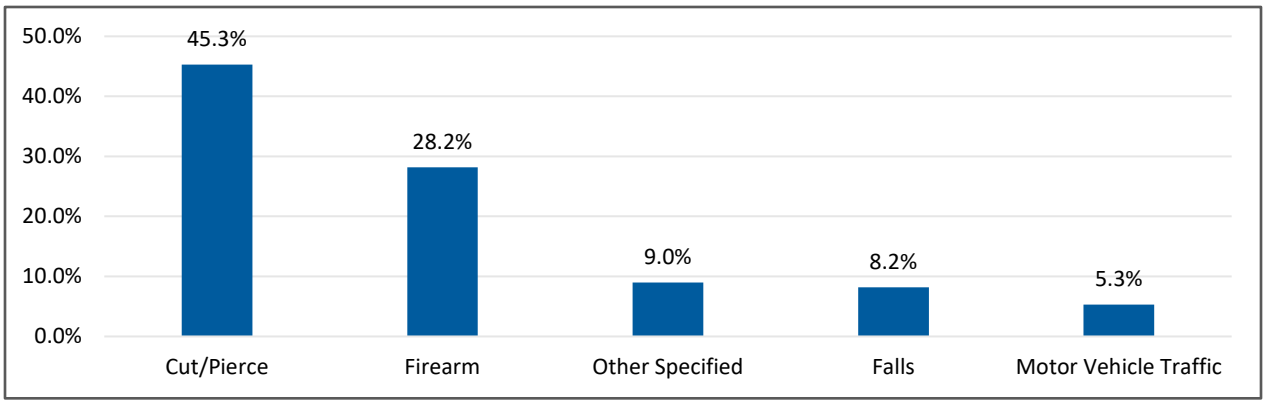
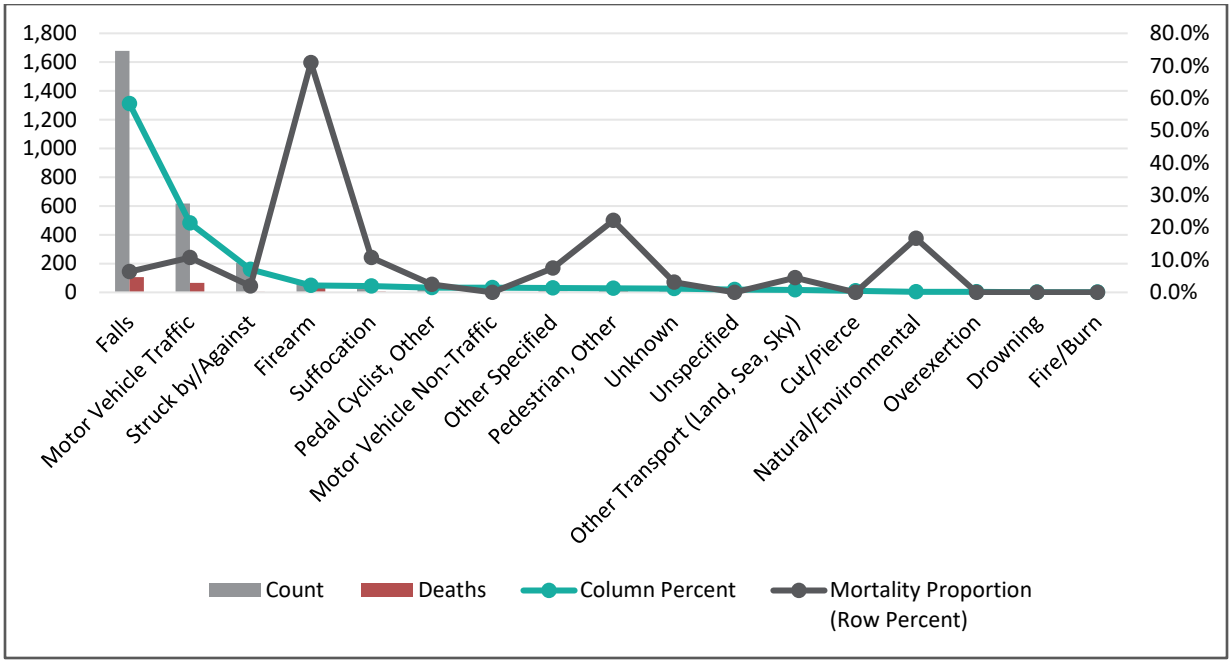


Table 15: Traumatic Brain Injury Incidence and Mortality by Mechanism of Injury

Mechanism	Count	Column Percent	Deaths	Mortality Proportion (Row Percent)
Falls	1,679	58.3%	107	6.4%
Motor Vehicle Traffic	617	21.4%	66	10.7%
Struck by/Against	205	7.1%	4	2.0%
Firearm	62	2.2%	44	71.0%
Suffocation	56	1.9%	6	10.7%
Pedal Cyclist, Other	41	1.4%	1	2.4%
Motor Vehicle Non-Traffic	41	1.4%	0	0.0%
Other Specified	40	1.4%	3	7.5%
Pedestrian, Other	36	1.2%	8	22.2%
Unknown	32	1.1%	1	3.1%
Unspecified	26	0.9%	0	0.0%
Other Transport (Land, Sea, Sky)	22	0.8%	1	4.5%
Cut/Pierce	12	0.4%	0	0.0%
Natural/Environmental	6	0.2%	1	16.7%

Overexertion	5	0.2%	0	0.0%
Drowning	1	0.0%	0	0.0%
Fire/Burn	1	0.0%	0	0.0%
Total	**2,882**	**100.0%**	**242**	**8.4%**

Figure 12: Mortality Proportion of Traumatic Brain Injury Incidence by Mechanism of Injury (Unique Traumas)



INJURY CHARACTERISTICS: INJURY SEVERITY SCORE (ISS)

Injury Severity Score (ISS) is an anatomical scoring system that provides an overall score for patients with multiple injuries. The ISS has values from 1 to 75:

ISS score of 1-8 = Minor
ISS score of 9-15 = Moderate
ISS score of 16-24 = Serious
ISS score of 25-75 = Severe

Table 16: Trauma Incidence and Mortality Proportion by Injury Severity Score (ISS) (Unique Traumas)

Injury Severity Score	Count	Column Percent	Deaths	Mortality Proportion (Row Percent)
Minor, 1-8	7,440	44.3%	85	1.1%
Moderate, 9-15	6,776	40.6%	122	1.8%
Serious, 16-24	1,292	8.1%	79	6.1%
Severe, 25-75	905	7.0%	279	30.8%
Missing/NA/ND	8	0.0%	0	0.0%
Total	16,421	100.0%	565	3.4%

Throughout the report Unique Traumas are analyzed by where the patient first originated, but mortality data is analyzed based on their final facility.

Table 17: Traumatic Brain Injury Incidence and Mortality Proportion (Unique Traumas) by Injury Severity

Injury Severity Score	Count	Column Percent	Deaths	Mortality Proportion (Row Percent)
Minor, 1-8	585	20.3%	6	1.0%
Moderate, 9-15	1,204	41.8%	33	2.7%
Serious, 16-24	582	20.2%	34	5.8%
Severe, 25-75	511	17.7%	169	33.1%
Total	**2,882**	**100.0%**	**242**	**8.4%**

Table 18: Injury to ED arrival time for a patient with a score of >15 for their injury, broken down by their location (Rural, Urban, or Statewide).

County	<1hour	1-3 hours	3-6 hours	6-9 hours	9-12 hours	>12 hours
Carson City	20	0	0	0	0	0
Churchill	13	2	0	1	0	0
Clark	1,177	135	33	19	13	48
Douglas	12	4	1	1	0	0
Elko	1	4	0	0	0	0
Esmeralda	0	0	0	0	1	0
Eureka	1	0	0	0	0	0
Humboldt	16	3	0	0	1	0
Lander	2	2	0	0	0	0
Lincoln	9	6	0	0	0	0
Lyon	21	3	1	0	0	0
Mineral	15	1	0	0	0	0
Nye	26	4	5	2	1	0
Pershing	5	0	0	0	0	0
Storey	0	1	0	0	0	0
Unknown	153	9	14	3	8	3
Washoe	171	4	2	2	0	1
White Pine	6	7	0	1	5	0
Out of State	176	23	30	13	1	10
Total	**1,824**	**208**	**86**	**42**	**30**	**62**

PATIENT TRANSPORTATION

In Nevada, ground ambulances outnumbered private cars and walk-ins when transporting trauma patients to hospitals in 2023 (Table 19)

Table 19: Trauma Incidence by Mode of Arrival (Unique Traumas)

Mode of Arrival	Trauma Count	Percent
Ground Ambulance	11,536	70.25%
Private Vehicle or Walk-in	3,755	22.87%
Helicopter Ambulance	948	5.77%
Fixed-Wing Ambulance	64	0.39%
Police	35	0.21%
Other	72	0.44%
Public Safety	2	0.01%
Missing	9	0.05%
Total	**16,421**	**100%**

It is useful to look at patient methods of arrival based on their Injury Severity Score (ISS) ranges in addition to reviewing the data by mode of patient arrival (Table 20). As demonstrated in Table 20, individuals with the greatest ISS were also the ones who were frequently transported to hospitals by ground ambulance.

Table 20: Mode of arrival by Injury Severity Score

Mode of Arrival	Injury Severity Score Range				
	Minor 1-8	Moderate 9-15	Serious 16-24	Severe 25-75	Missing/NA ISS Scores
Ground Ambulance	4,838	5,130	911	652	5
Private Vehicle or Walk-in	2,192	1,254	231	74	4
Helicopter Ambulance	237	345	175	191	0
Fixed-Wing Ambulance	26	28	6	4	0
Water Ambulance	0	0	0	0	0
Police	19	8	4	4	0
Other	68	4	0	0	0
Public Safety	2	0	0	0	0
Missing	2	7	0	0	0
Total	**7,384**	**6,776**	**1,327**	**925**	**9**

PATIENT DISCHARGE AND TRANSFER

Of the 16,421 trauma cases that occurred in Nevada in 2023, 1,903 were sent to trauma centers. The most trauma patients were transferred to Sunrise Hospital Medical Center from other facilities. The trauma center with the lowest average ISS was located at St. Rose Dominican Hospital – Siena Campus. (See Table 21)

Table 21: Patient Transfer to Nevada Trauma Centers by Injury Severity Score

Facility Patient Transferred To	Injury Severity Score Range			
	Trauma Cases	Mean ISS	Standard Deviation	ISS Range
Renown Regional Medical Center	452	8.9	8.0	1 - 75
St. Rose Dominican Hospital Siena Campus	33	5.5	3.3	1 - 14
Sunrise Hospital Medical Center	1095	8.8	6.9	1 - 48
University Medical Center	323	10.2	9.9	1 - 75
Total	1903	9.0	7.7	1 - 75

"Patient Transfer to" is determined by the question, "Was Patient Transferred to Facility?" and not through the matching process that creates the Unique Traumas

RISK FACTORS: DRUG/ALCOHOL USE

Table 22: Injury Intent and Drug/Alcohol Use (Unique Traumas)

Injury Intent	Trauma Cases	Drug/Alcohol Use	Percent Drug/Alcohol Use (Row Percent)
Unintentional	14,671	1,948	13%
Suicide	245	105	43%
Homicide/Assault	1,267	367	29%
Legal Intervention	25	6	24%
Undetermined (accidental/intentional)	123	28	23%
Unknown	90	7	8%
Total	**16,421**	**2,461**	**15%**

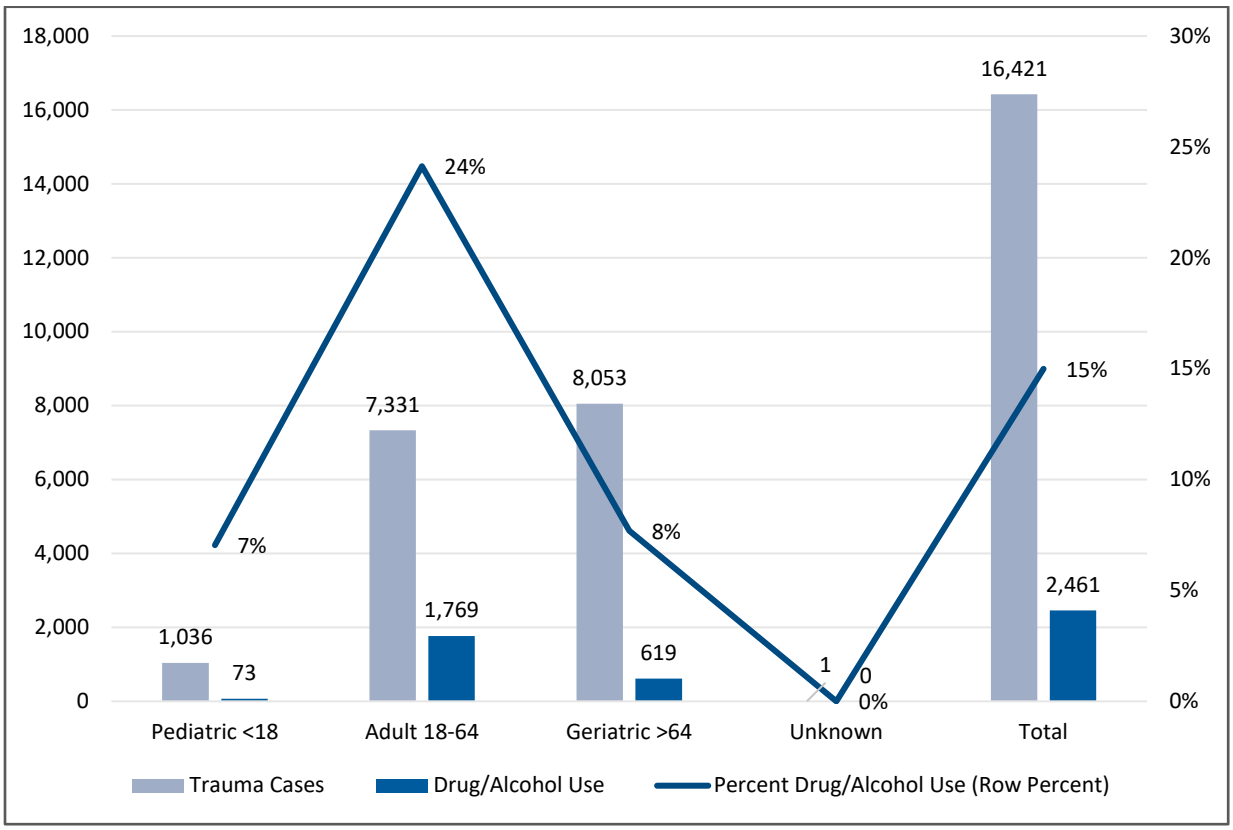
2,461 (15%) of the 16,421 distinct traumas listed in the NTR for 2023 involved drug or alcohol use. Additionally, drug or alcohol use was present in 43% of suicides and 29% of Homicide or Assault related trauma incidents.

Table 23: Age-Specific Prevalence of Restraint Use Among Passengers in Moving Vehicles (Positive Blood Alcohol Content [BAC])

Protective Device Restraint	Pediatric <18	Adult 18-64	Geriatric >64	Total
None	7	68	6	81
Seatbelt – Lap & Shoulder	2	93	12	107
Seatbelt – Lap Only	0	3	1	4
Seatbelt – Shoulder Only	0	1	0	1
Seatbelt – NFS	0	13	3	16
Unknown	0	34	3	37
Total	**9**	**212**	**25**	**246**

There was no restraint or safety measure used in 81 of the 246 unique trauma cases with reports of drug or alcohol use.

Figure 13: Age-Specific Trauma and Drug/Alcohol Use (Unique Traumas)



There was a high prevalence of adults between the ages of 18 and 64 with positive or high Blood Alcohol Content (BAC) at the time of the reported trauma incident. Among the 7,331 traumas recorded in this age range, 1,769 (24%) had positive BAC results.

Table 24: Age-Specific Ratio of Restraint Use Among Drivers and Passengers in Motor Vehicles (Use of Drugs and Alcohol)

Protective Device Restraint	Pediatric <18	Adult 18-64	Geriatric >64	Total
None	10	100	13	123
Seatbelt – Lap & Shoulder	6	136	26	168
Seatbelt – Lap Only	1	20	7	28
Seatbelt – NFS	0	17	10	27
Unknown	1	44	7	52
Total	**19**	**318**	**63**	**400**

Table 25: Trauma Incidence by Mechanism of Injury (Unique Traumas) and Drug/Alcohol Use

Mechanism	Trauma Cases	Drug/Alcohol Use	Percent Drug/Alcohol Use (Row Percent)
Falls	9,641	966	10%
Motor Vehicle Traffic	2,622	706	27%
Struck by/Against	895	174	19%
Cut/Pierce	641	177	28%
Firearm	589	147	25%
Motor Vehicle Non-Traffic	296	53	18%
Natural/Environmental	263	11	4%
Other Specified	253	34	13%
Suffocation	226	51	23%
Pedal Cyclist, Other	202	17	8%
Unknown	185	18	10%
Other Transport (Land, Sea, Sky)	154	25	16%
Pedestrian, Other	134	43	32%
Overexertion	96	6	6%
Unspecified	90	29	32%
Machinery	65	1	2%
Fire/Burn	64	2	3%
Drowning	5	1	20%
Total	**16,421**	**2,461**	**15%**

The following specific traumas were linked to the highest reported rates of drug and alcohol use: 32% of pedestrian cases and 28% of cases were related to cut/pierce incidents. These are followed by motor vehicle traffic injuries at 27% and firearm injuries at 25%. No injury mechanism was found in 32% of incidents.

Table 26: Trauma Incidence by Mechanism of Injury (Unique Traumas) and BAC Levels (Interval)

Mechanism	<0.08	0.08 to 1	2 to 20	21 to 50	51 to 100	101 to 200	More than 200	Unknown	Total
Falls	38	26	28	39	66	142	232	9,070	9,641
Motor Vehicle Traffic	1	1	25	28	46	122	187	2,212	2,622
Struck by/Against	2	3	8	2	12	29	49	790	895
Cut/Pierce	6	3	5	7	14	34	45	527	641
Firearm	2	0	5	16	13	29	23	501	589
Motor Vehicle Non-Traffic	0	1	1	2	3	13	10	266	296
Natural/Environmental	0	0	0	0	1	1	3	258	263
Other Specified	2	1	4	1	3	6	3	233	253

Suffocation	0	0	0	0	7	15	6	198	226
Pedal Cyclist, Other	0	0	0	2	1	0	3	196	202
Unknown	0	0	2	2	2	6	3	170	185
Other Transport (Land, Sea, Sky)	1	0	2	2	3	7	1	138	154
Pedestrian, Other	0	1	1	0	4	10	10	108	134
Overexertion	0	0	0	0	0	1	2	93	96
Unspecified	0	0	2	1	1	6	7	73	90
Machinery	0	0	0	0	0	0	0	65	65
Fire/Burn	0	0	1	0	0	0	0	63	64
Drowning	0	0	0	0	1	0	0	4	5
Total	**52**	**36**	**84**	**102**	**177**	**421**	**584**	**14,965**	**16,421**

Table 27: Trauma Incidence by County and BAC (Unique Traumas)

County	<0.08	0.08 to 1	2 to 20	21 to 50	51 to 100	101 to 200	more than 200	Unknown	Total
Out of State	1	1	11	13	17	35	22	1,000	1,100
Carson City	0	0	3	4	1	5	13	277	303
Churchill	0	0	0	0	2	6	6	104	118
Clark	45	26	38	50	102	241	383	10,023	10,908
Douglas	0	0	0	0	2	12	9	188	211
Elko	0	0	0	1	2	4	5	125	137
Esmeralda	0	0	0	0	0	0	0	2	2
Eureka	0	0	0	0	0	0	0	4	4
Humboldt	0	0	1	1	1	4	2	67	76
Lander	0	0	1	1	0	0	2	33	37
Lincoln	0	0	0	0	0	0	0	38	38
Lyon	0	0	1	4	2	5	10	184	206
Mineral	0	0	1	0	0	1	1	43	46
Nye	0	1	5	2	4	3	4	398	417
Pershing	0	0	0	0	0	2	3	33	38
Storey	0	0	0	0	0	1	0	4	5
Washoe	0	0	11	12	20	57	83	1,166	1,349
White Pine	0	0	0	0	0	1	3	66	70
Unknown	6	8	12	14	24	44	38	1,210	1,356
Total	**52**	**36**	**84**	**102**	**177**	**421**	**584**	**14,965**	**16,421**

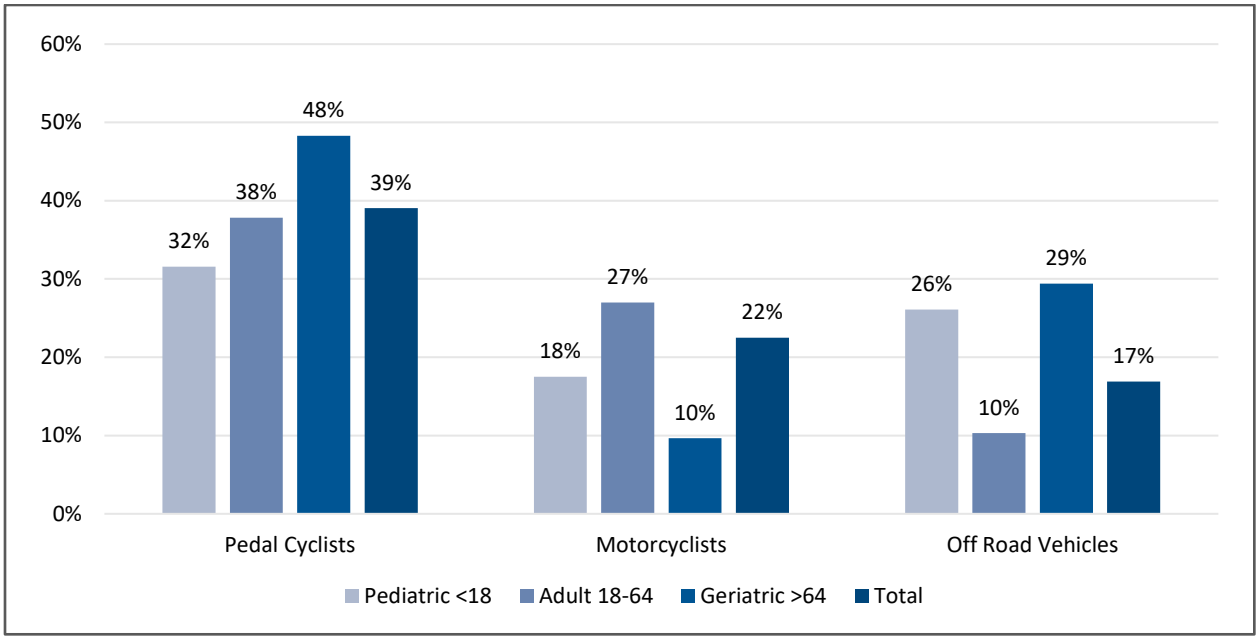
Table 28: Trauma Incidence by County and Drug/Alcohol Use (Unique Trauma)

County	Trauma Cases	Drug/Alcohol Use	Percent Drug/Alcohol Use (Row Percent)
Out of State	1,100	215	20%
Carson City	303	35	12%
Churchill	118	15	13%
Clark	10,908	1,640	15%
Douglas	211	25	12%
Elko	137	18	13%
Esmeralda	2	1	50%
Eureka	4	1	25%
Humboldt	76	11	14%
Lander	37	4	11%
Lincoln	38	0	0%
Lyon	206	23	11%
Mineral	46	4	9%
Nye	417	35	8%
Pershing	38	5	13%
Storey	5	1	20%
Washoe	1,349	213	16%
White Pine	70	5	7%
Unknown	1,356	210	15%
Total	**16,421**	**2,461**	**15%**

SAFETY EQUIPMENT

Wearing a helmet is crucial for safety, particularly when operating an off-road vehicle, motorcycle, or bicycle. —Figure 12.

Figure 14: Proportion of Helmet Use Among Pedal Cyclists, Motor Cyclists, and Off-Road Users (Unique Trauma)



In Nevada, 1,571 of the 2,670 people injured in motor vehicle accidents reported wearing age-appropriate restraints at the time of the accident. According to the National Highway Traffic Safety Administration (NHTSA), in 2023, 91.9 percent of Americans wore seat belts, showing that they are aware of the importance of doing so for their own safety. According to the NHTSA, using a seatbelt can reduce your risk of suffering a fatal injury by 45% and a moderate to critical injury by 50%.

Table 29: Age-Specific Restraint Use Among Motor-Vehicle Traffic Occupants

Age Group	Pediatric <18	Adult 18-64	Geriatric >64	Total
Seatbelt	48	678	317	1,043
Child or Infant booster/car seat	9	0	0	9
None	45	264	67	376
Unknown	6	89	48	143
Total	**108**	**1,031**	**432**	**1,571**

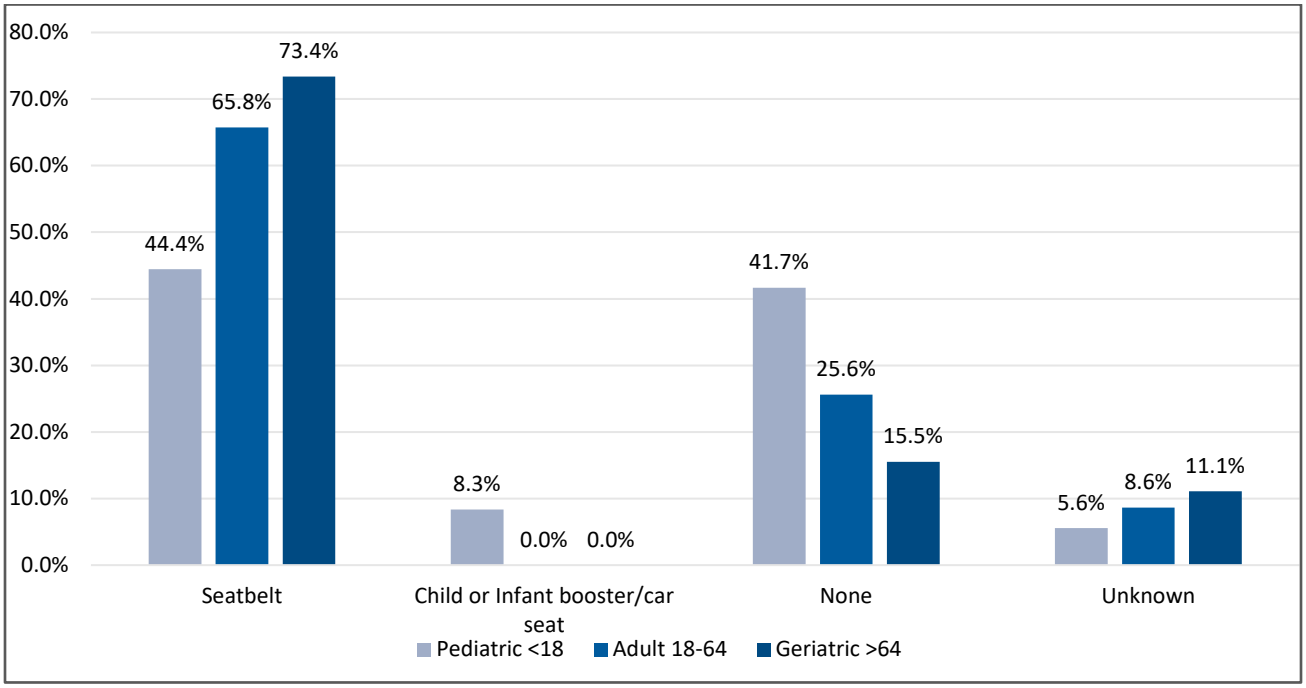
Table 30: Age-Specific Proportion of Restraint Use Among Motor-Vehicle Traffic Occupants

Age Group	Pediatric <18	Adult 18-64	Geriatric >64	Total (column percent)
Seatbelt	44.4%	65.8%	73.4%	66.4%
Child or Infant booster/car seat	8.3%	0.0%	0.0%	0.6%
None	41.7%	25.6%	15.5%	23.9%
Unknown	5.6%	8.6%	11.1%	9.1%
Total Age-Specific Proportion	**6.9%**	**65.6%**	**27.5%**	**100.0%**

- *Among Motor vehicle occupants: 6.9% are <18, 65.6% are 18-64 and 27.5% are >64years.*
- *Among Motor vehicle occupants 66.4% use seatbelt, 0.6% used Child booster/car seat, 23.9% used no restraint. 9.1% of motor vehicle occupants have unknown restraint information.*
- *Among all motor vehicle traffic occupants < 18 years, 44.4% used seatbelts.*

Table 30 and Figure 13 demonstrate that 44.4% of pediatric passengers involved in motor vehicle related traumas were properly restrained by a seat belt. While only 65.8% of adult drivers reported wearing a seatbelt, the elderly population over the age of 64 reported wearing one at a rate of 73.4%. As individuals' self-reported use of restraints at the time of incidents there is potential for some data inaccuracies. It is important to note Figure 13 refers to the populations in shown age range that reported being properly restrained using the correct type of safety restraint.

Figure 15: Age-Specific Proportion of Restraint Use Among Motor-Vehicle Traffic Occupants



FALLS – BY LAST TRANSFER FACILITY

Slipping, tripping, and stumbling were considered the main contributors to the types of falls that resulted in trauma injuries, accounting for 66.6%. This was also the most frequent types of falls that resulted in death.

In 2023, falls were Nevada's leading cause of trauma. In line with this, most traumas occur at home (Table 12). In analyzing the falls by sex, females experienced more trauma than males by 968 cases. (Table 31). A breakdown of the types of falls is provided in Table 32.

Table 31: Trauma Rate for Falls by Sex (Unique Traumas)

Sex	n	Rate per 100,000 (95% CI)
Female	5,418	330.3 (321.5-339.0)
Male	4,450	272.8 (264.8-280.8)
Total	**9,868**	**301.6 (295.6-307.5)**

Table 32: Incidence and Mortality Proportion by Type of Fall (Unique Traumas)

Type of Falls	Count	Percent of Falls (Column Percent)	Deaths	Mortality Proportion (Row Percent)
Same level (Slipping/Tripping/Stumbling)	6,577	66.6%	139	2.1%
Unspecified	911	9.2%	39	4.3%
From Furniture	669	6.8%	28	4.2%
Steps	546	5.5%	13	2.4%
Fall Due to Environmental Factors	267	2.7%	6	2.2%
Pedestrian Conveyance Accident	267	2.7%	4	1.5%
On or From Ladder/Scaffolding	236	2.4%	2	0.8%
Out of Building/Structure	117	1.2%	2	1.7%
Multi-Level: Cliff, Tree, Water, etc.	111	1.1%	0	0.0%
Collision/Push/Shove By/Oth. Person	63	0.6%	0	0.0%
Playground Equipment	62	0.6%	0	0.0%
Suicide Related	31	0.3%	5	16.1%
Undetermined Fall High Place	7	0.1%	0	0.0%
Assault Related	4	0.0%	0	0.0%
Total	**9,868**	**100.0%**	**238**	**2.4%**

Table 33: Trauma Rate by Age and Type of Fall (Unique Traumas)

Age Group	Type of Fall					
	Steps		From Same Level (tripping, slipping, stumbling)		From Furniture (bed, chair, etc.)	
	n	Rate per 100,000 (95% CI)	n	Rate per 100,000 (95% CI)	n	Rate per 100,000 (95% CI)
Pediatric <18	11	1.5 (0.6-2.4)	92	12.8 (10.2-15.4)	58	8.1 (6.0-10.2)
Adult 18-64	187	9.2 (7.9-10.5)	1,407	69.2 (65.6-72.8)	111	5.5 (4.4-6.5)
Geriatric >64	348	66.9 (59.9-74.0)	5,078	976.8 (949.9-1003.7)	500	96.2 (87.7-104.6)
Total	546	16.7 (15.3-18.1)	6,577	201.0 (196.2-205.9)	669	20.4 (18.9-22.0)

FINAL NOTE

Trauma Registry (NTR) continues to improve due to increased data entry compliance and accuracy. The NTR Manager and Coordinator thank all NTR users for their perseverance in mastering accurate data entry into the NTR at the various trauma and non-trauma centers throughout Nevada. We appreciate and are aware of your commitment.

We are working to compile and maintain complete historical data for Nevada's trauma centers as collaboration among the facilities and the Nevada Trauma Registry continues to grow. Additionally, these data and subsequent reports become more valuable to the various NTR community stakeholders through ongoing partnerships to improve the quantity and quality of the information in the NTR.

ADDITIONAL INFORMATION

For additional information regarding this publication, contact:

Rachel Marchetti

Division of Public and Behavioral Health
Public Health Preparedness Program
Rmarchetti@health.nv.gov
(775) 684-3244

Should any county or facility need specific trauma data for their hospital facilities and zip codes, please contact the contact listed above. As a reminder, all data from the Nevada State Trauma Registry is self-reported by treating facilities. Information requestors and readers should be aware that there may be minor inconsistencies if facilities do not capture trauma data correctly.

CITATIONS

American College of Surgeons. National Trauma Data Bank 2016 Annual Report. Available at: https://www.facs.org/media/ez1hpdcu/ntdb-annual-report-2016.pdf

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FUNDING SOURCE

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RECOMMENDATIONS

Division of Public and Behavioral Health. *2022 Annual Trauma Registry Report*. Carson City, Nevada. e 1.0, June 2023. (Division of Public and Behavioral Health, 2022)

Southern Nevada Trauma System

Application for Trauma Level Upgrade: Sunrise Hospital

Southern Nevada Trauma System Regulation: 300.300

First Steps

Process for accepting applications for provisional authorization as a trauma center **with a change of level,** the requesting hospital must:

- Complete an application through the Office of EMS and Trauma
- The hospital must agree to comply with roles and responsibilities as outlined in the Trauma System and PI Plan appropriate to level requested
- Pay the appropriate fees

- These steps were completed in February 2024

Application for Trauma Upgrade

(Full application is available in the meeting packets)

SNHD

APPLICATION FOR RENEWAL OF AUTHORIZATION AS A CENTER FOR THE TREATMENT OF TRAUMA

Name of Institution: Sunrise Hospital and Medical Center

Street Address: 3186 S Maryland Parkway

City: Las Vegas State: NV Zip Code: 89109

Telephone: 702-961-9011 FAX: 866-499-3591 E-Mail: todd.sklamberg@hcahealthcare.com

Owner of Facility: HCA, Inc

Street Address: One Park Plaza

City: Nashville State: TN Zip Code: 37203

Telephone: 615-344-9551 FAX: E-Mail:

Hospital Administrator/Director: Todd P. Sklamberg, CEO

Contact Person for Application Processing: Cheryl Malone, Trauma Services Director

Telephone: 702-961-7821 FAX: 702-961-7829 E-Mail: cheryl.malone@hcahealthcare.com

Level of Center for the Treatment of Trauma renewal being sought:

☑ Level I ☐ Level II ☐ Level III
☐ Pediatric Level I ☐ Pediatric Level II

Date of original designation: October 1989 Level III; August 2005 Level II

Date of last renewal of designation: February 2023

Briefly describe any changes in the hospital's capacity to provide trauma services in the community during the past designation period:

Sunrise Hospital and Medical Center (SHMC) is seeking Level I American College of Surgeons (ACS) Trauma Verification July 9 – July 10, 2024. SHMC is currently verified as a Level II Trauma Center through July 11, 2024 with ACS. Recent capacity upgrades include: new trauma bays (four trauma resuscitation bays), upgraded Trauma Surgical ICU which is located in a new tower just above the Emergency Department, adding 36 inpatient rooms. Additionally, SHMC continues to provide TNCC, TCAR nursing education, ATLS for physician education and trauma emergency medical services outreach and education.

Briefly describe any changes in the hospital's capabilities to provide trauma services in the community during the past designation period:

SHMC has qualified personnel to deliver care for patients sustaining traumatic injuries arriving to the hospital via EMS, private vehicle and /or transfer-in for higher level of care. The hospital provides staffing to meet the needs of the Level I Trauma Center injured patient and has all the necessary capacity, equipment, supplies and Medical Staff Providers to provide treatment, monitoring and resuscitation meeting ACS Level I Trauma Verification 2022 Standards. SHMC has the appropriate surgical specialists availability, soft tissue coverage and cranial facial expertise, replant and microvascular services, ENT, and medical specialists (including, but not limited to Emergency Medicine, Anesthesiology, Interventional Radiology, and Radiology).

Briefly describe any changes in the hospital's longitudinal commitment (expected to be greater than five years) to provide trauma services in the community during the past designation period:

SHMC has longitudinal commitment by SHMC's Board of Trustees and Medical Executive Committee to ensure continued adherence to the required standards. They affirm the provision of essential personnel, facilities and equipment are made available to treat and care for the communities critically injured patients, including research and scholarly activities. Additionally, there is dedicated commitment to post-graduate education requirements within the collaborative trauma care system in Clark County, Nevada, ensuring compliance with ACS Level I Trauma Standards.

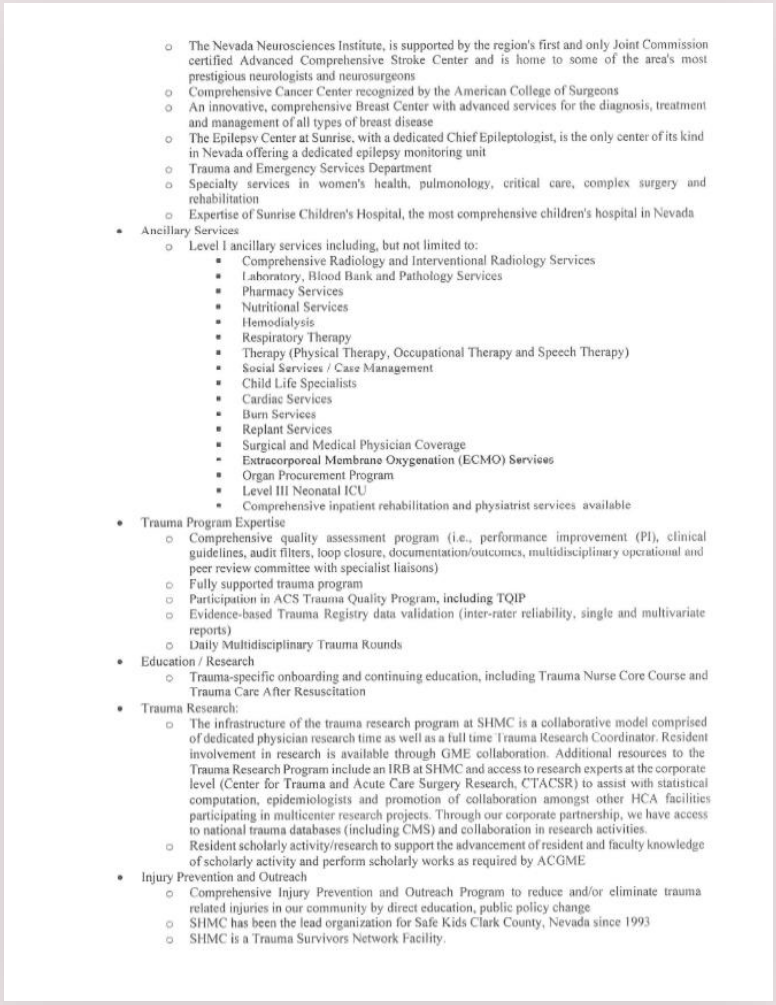
Additional information the applicant would like to provide in support of their request:

SHMC continues to serve the community by providing trauma care and ancillary personnel that are dedicated to setting the standard of excellence in care. SHMC collaborates with the community and national partners to provide outreach education and injury prevention.
Additional Information:

1. Population Served: SHMC service is defined by the Southern Nevada Health District, Office of Emergency Medical Services & Trauma System regulations. The Southern Nevada Health District, Office of Emergency Medical Services & Trauma System is responsible to establish, review, and adjust catchment areas for Trauma or Pediatric Trauma Centers to facilitate timely transportation of trauma patients from the scene of an emergency and not for the purposes of restricting referral of patients requiring transfer to a higher level of care.
2. Hospital Capacity to Provide Level I ACS Trauma Services in the Community:
   - 834 licensed hospital beds (144 bed capacity increase since 2019)
   - 3,855 employees and 1,543 physicians and advanced practice providers
   - 2 helipads
   - 4 trauma resuscitation rooms
   - 100 Emergency Department beds
   - 5 CT Scanners (2- 256 slice and 3-64 slice)
   - 3 MRIs (1- 1.5T and 2- 3T)
   - 2 Focus Assessment with Sonography in Trauma (FAST)
   - 23 Operating Rooms
   - 2 IR Suites (1 additional IR Suite build planned)
   - 110 Intensive Care Beds (46 dedicated Trauma Surgical ICU)
   - 391 Med-Surg Beds (36 Trauma Bed Unit)
   - 206 Children's Beds (Med-Surge, MBU, PICU, CICU, NICU, and L&D)
   - 42 Inpatient Rehabilitation Bed Unit
   - SHMC has the inpatient and operating room capacity to support Level I Trauma Center Verification and Designation. Additionally, it has an inpatient rehabilitation unit, which has the resources to help trauma patients recover from their injuries.
3. Hospital Capabilities to Provide Level I ACS Trauma Services in the Community: SHMC treats more than 177,569 patients per year and admits nearly 40,000 (39,914) patients. Additionally, SHMC cares for 698 patients meeting National Trauma Data Standards with Injury Severity Scores greater than 15. Current capabilities include:
   - Trauma Staff:
     - Trauma Medical Director, Board Certified in General Surgery and Surgical Critical Care
     - Trauma Surgeon expertise to manage critically injured patients
     - Trauma Program Director
     - Trauma Program Staff; 11 full time employees to support Trauma Program's performance improvement and patient safety program, injury prevention, education and outreach activities, research and 10 full time Trauma Registrars, including support from a Trauma Registry Operations Manager and two Trauma Registry Leads, including a Certified Abbreviated Injury Scale Specialist
   - Physician Staffing and Training
     - Level I Surgical Specialists, Ophthalmology Services, Soft Tissue Coverage Expertise, Craniofacial Expertise, Replant Services, Medical Specialist services, including Burn Services.
     - Advanced Trauma Life Support (ATLS) Program; Course Director and two Program Coordinators
     - Graduate medical education (i.e., residency) programs
   - Leading Services: As the healthcare leader in Southern Nevada, Sunrise Hospital offers a full range of specialized services including:

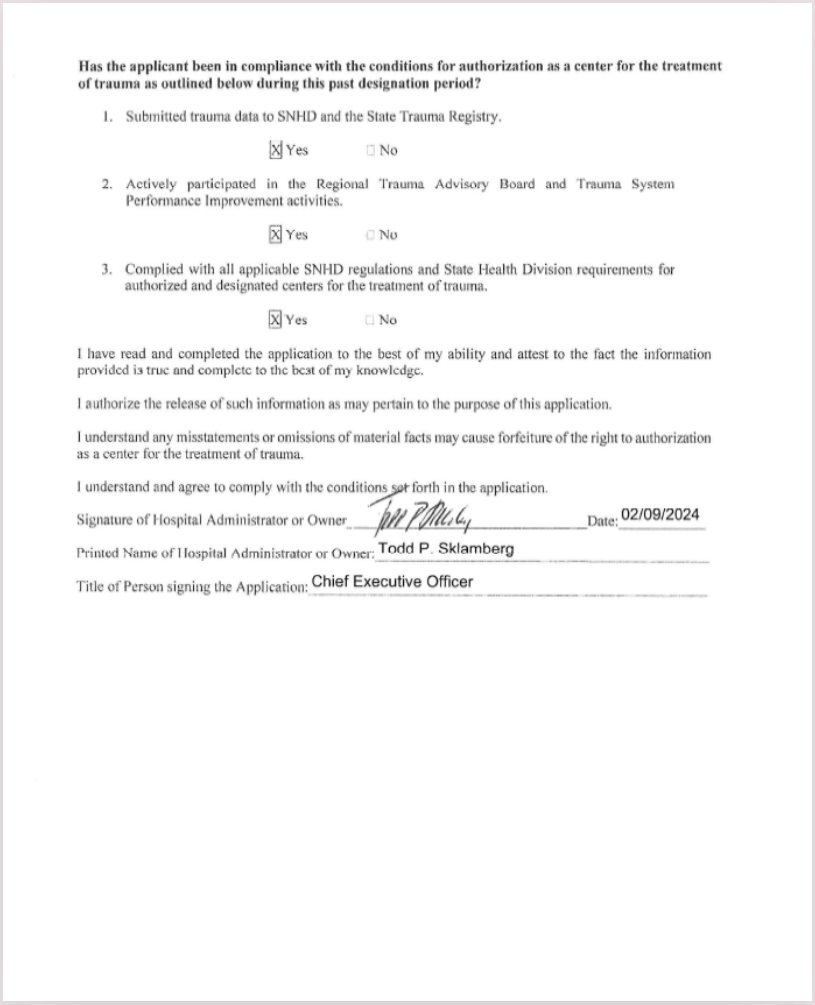
Application for Trauma Upgrade Cont.

(Full application is available in the meeting packets)



- The Nevada Neurosciences Institute, is supported by the region's first and only Joint Commission certified Advanced Comprehensive Stroke Center and is home to some of the area's most prestigious neurologists and neurosurgeons
- Comprehensive Cancer Center recognized by the American College of Surgeons
- An innovative, comprehensive Breast Center with advanced services for the diagnosis, treatment and management of all types of breast disease
- The Epilepsy Center at Sunrise, with a dedicated Chief Epileptologist, is the only center of its kind in Nevada offering a dedicated epilepsy monitoring unit
- Trauma and Emergency Services Department
- Specialty services in women's health, pulmonology, critical care, complex surgery and rehabilitation
- Expertise of Sunrise Children's Hospital, the most comprehensive children's hospital in Nevada

- Ancillary Services
  - Level I ancillary services including, but not limited to:
    - Comprehensive Radiology and Interventional Radiology Services
    - Laboratory, Blood Bank and Pathology Services
    - Pharmacy Services
    - Nutritional Services
    - Hemodialysis
    - Respiratory Therapy
    - Therapy (Physical Therapy, Occupational Therapy and Speech Therapy)
    - Social Services / Case Management
    - Child Life Specialists
    - Cardiac Services
    - Burn Services
    - Replant Services
    - Surgical and Medical Physician Coverage
    - Extracorporeal Membrane Oxygenation (ECMO) Services
    - Organ Procurement Program
    - Level III Neonatal ICU
    - Comprehensive inpatient rehabilitation and physiatrist services available
- Trauma Program Expertise
  - Comprehensive quality assessment program (i.e., performance improvement (PI), clinical guidelines, audit filters, loop closure, documentation/outcomes, multidisciplinary operational and peer review committee with specialist liaisons)
  - Fully supported trauma program
  - Participation in ACS Trauma Quality Program, including TQIP
  - Evidence-based Trauma Registry data validation (inter-rater reliability, single and multivariate reports)
  - Daily Multidisciplinary Trauma Rounds
- Education / Research
  - Trauma-specific onboarding and continuing education, including Trauma Nurse Core Course and Trauma Care After Resuscitation
- Trauma Research:
  - The infrastructure of the trauma research program at SHMC is a collaborative model comprised of dedicated physician research time as well as a full time Trauma Research Coordinator. Resident involvement in research is available through GME collaboration. Additional resources to the Trauma Research Program include an IRB at SHMC and access to research experts at the corporate level (Center for Trauma and Acute Care Surgery Research, CTACSR) to assist with statistical computation, epidemiologists and promotion of collaboration amongst other HCA facilities participating in multicenter research projects. Through our corporate partnership, we have access to national trauma databases (including CMS) and collaboration in research activities.
  - Resident scholarly activity/research to support the advancement of resident and faculty knowledge of scholarly activity and perform scholarly works as required by ACGME
- Injury Prevention and Outreach
  - Comprehensive Injury Prevention and Outreach Program to reduce and/or eliminate trauma related injuries in our community by direct education, public policy change
  - SHMC has been the lead organization for Safe Kids Clark County, Nevada since 1993
  - SHMC is a Trauma Survivors Network Facility.



Has the applicant been in compliance with the conditions for authorization as a center for the treatment of trauma as outlined below during this past designation period?

1. Submitted trauma data to SNHD and the State Trauma Registry.

   [X] Yes [ ] No

2. Actively participated in the Regional Trauma Advisory Board and Trauma System Performance Improvement activities.

   [X] Yes [ ] No

3. Complied with all applicable SNHD regulations and State Health Division requirements for authorized and designated centers for the treatment of trauma.

   [X] Yes [ ] No

I have read and completed the application to the best of my ability and attest to the fact the information provided is true and complete to the best of my knowledge.

I authorize the release of such information as may pertain to the purpose of this application.

I understand any misstatements or omissions of material facts may cause forfeiture of the right to authorization as a center for the treatment of trauma.

I understand and agree to comply with the conditions set forth in the application.

Signature of Hospital Administrator or Owner: _____ Date: 02/09/2024

Printed Name of Hospital Administrator or Owner: Todd P. Sklamberg

Title of Person signing the Application: Chief Executive Officer

Southern Nevada Trauma System Regulation: 300.300

The Office of Emergency Medical Services and Trauma Services (OEMSTS) will present the Board the following:

- An Impact Report
- An advisory position of Regional Trauma Advisory Board (RTAB) and Trauma Medical Advisory Committee (TMAC)
- A review of the most current Trauma System Report and Nevada Annual Trauma Registry Report
- A statement by the OEMSTS to approve or deny the application

https://media.southernnevadahealthdistrict.org/download/ems/2022/20220825-Trauma-System-Regulations.pdf

Impact Report

(The full report, which outlines the differences between a Level I and a Level II, is available in the meeting packets)

What impact (positive, negative, or none) would upgrading from a Level II Trauma Center to a Level I?

- The patient acuity distribution should not be affected
- Transport volumes should not be affected
- Catchment areas would not change
- Interfacility transfers are not controlled by OEMSTS
- EMS transport times should not change due to no changes to catchment
- Addition of trauma research and education could lead to community benefits in addressing local healthcare needs
- Addition of specialty physicians could lead to a lessened need to transfer some patients out to another hospital
- Trauma activation fees and payor sources are outside of the control of OEMSTS. It is unknown if the data would be affected

RTAB

Advisory Statement from July 2024 Meeting

Deny the application based on the information presented not establishing need

Yes – 13

No -4

Abstain - 2

https://media.southernnevadahealthdistrict.org/download/meetings/rtab/2024/20240725-meeting/video.mp4

TMAC

Statement from October 2024 Meeting

The Committee does not support the application for an upgrade from Level II to Level I

Yes – 4

No – 3

Abstain -1

https://media.southernnevadahealthdistrict.org/download/meetings/tmac/2024/20241003/video.mp4

Annual Trauma System Report
(OEMSTS Annual Report)

The full report is available in your packets

Also available online at:
https://www.southernnevadahealthdistrict.org/programs/emergency-medical-services-trauma-system/southern-nevada-trauma-system/

Nevada Annual Trauma Registry Report
(Nevada State Annual Report)

- Available online: https://dpbh.nv.gov/Programs/NVTrauma/NVTrauma_-_Home/

Survey Results: Impact of Sunrise Hospital Becoming a Level I Trauma Center

Sent to all hospital administrators and all members of RTAB

- 37% of RTAB members and 38% of Hospital Administrators completed the survey

Survey Results: Impact of Sunrise Hospital Becoming a Level I Trauma Center

Overview:

- **Support for Level I Upgrade**: The majority of respondents (62%) agree that upgrading Sunrise from Level II to Level I will positively enhance the trauma system, and 54% support the increase in trauma designation.

Key Findings:

- **System Needs**: 62% agree that the Southern Nevada Trauma System needs more trauma resources.
- **Patient Outcomes**: 62% agree that trauma patients will have better outcomes with specialized care at a Level I trauma center.
- **Physician Supply**: 62% agree that the upgrade will help alleviate the physician shortage in Southern Nevada.

Concerns:

- **Patient Volume**: 54% disagree that the upgrade will decrease patient volume at their hospitals.
- **Financial Impact**: 54% disagree that the upgrade will have a negative financial impact on their hospitals.

Conclusion:

- **General Support**: While a minority express concerns, the overall results show support for the Level I upgrade, particularly regarding enhanced care and resource availability.

OEMSTS RECOMMENDATION

SUPPORT THE UPGRADE

Advantages of Approval:

- Physician training
- Expanded research capabilities
- Vital specialties such as microvascular and craniofacial surgery

Points to Note:

- Volume, acuity, and transport times do not demonstrate a pressing need
- Minimal, if any, negative impact on existing trauma centers
  - Unknown Financial Impact: Grant Opportunities

Possible Outcomes if Denied:

- Loss of resources already being provided

Frequently Asked Questions (FAQ)

- Will this upgrade lead to a change in level of care available for patients?
  - No, upgrading from a Level II to a Level I trauma center does not significantly change the clinical capabilities, as both levels offer similar treatment and manage all steps of trauma field triage patients
- Should a patient with an injury severity score (ISS) below 15 be treated in an emergency room instead of a trauma center?
  - No, non-trauma-designated emergency rooms may lack critical resources like 24-hour trauma physicians, trauma-trained nurses, quick response times for general surgeons, and interfacility transfer agreements for faster patient transfers if necessary
- Why hasn't a full needs assessment been completed and presented?
  - A needs assessment is only required for the initial designation of a trauma center, as specified in regulation 300.100. However, this is not a requirement for an upgrade of an already designated trauma center, as per regulation 300.300

FAQ continued

- Would an approved upgrade from a Level II to a Level I require or lead to a change in catchment areas?
  - No
- Where does Nevada rank in number of general surgeons available for 100,000 residents?
  - According to a 2023 article titled "Nevada's Healthcare Crisis: A Severe Shortage of Physicians and Residency Positions," Nevada ranks 49th in the number of general surgeons available per 100,000 residents
- How could Sunrise becoming a Level I trauma center benefit the community?
  - While Level II trauma centers may take on some of the requirements of a Level I center, they are not obligated to do so. By becoming a Level I trauma center, Sunrise would fulfill additional requirements such as specialized expertise in soft tissue and craniofacial surgery, commitment to postgraduate education, and conducting research. These factors could significantly improve the quality of care and attract more physicians to the community. Without the Level I designation, they would not be required to maintain these enhanced standards

FAQ continued

- Would Sunrise's residency program conflict with UMC's program?
  - No, there would be no conflict. Sunrise's residents are primarily from MountainView and Valley Hospitals, while UMC partners with UNLV, the military, and other residency programs
- Has OEMSTS reviewed other trauma systems to compare the number of trauma centers at each level?
  - Yes, this data was requested and presented to the RTAB. However, it was noted that every city has unique needs, and trauma center distributions vary significantly. As a result, this data was not considered useful for making comparisons
- The ACS recommends geospacial modeling when evaluating applications for new or higher-level trauma centers, has OEMSTS done this?
  - No, geospatial modeling wasn't conducted because our catchment areas are already defined and will not change with this upgrade. Therefore, geospatial modeling wouldn't provide additional insights in this case

FAQ continued

- Has OEMSTS communicated with UMC regarding the impact of this level change?
  - UMC gave a presentation on September 5, 2024, at a joint meeting of the Clark County Board of Commissioners and the Southern Nevada District Board of Health. The presentation included a series of slides outlining their perspectives on the level change
- Is there a sufficient number of trauma patients in Southern Nevada to support two Level I trauma centers?
  - Yes, according to ACS standards, a Level I trauma center should handle 1,200+ trauma patients or at least 240+ patients with ISS >15 annually. The 2023 data for Southern Nevada shows the following:
    - Total EMS trauma patients meeting TFTC criteria: 14,664
    - Total patients meeting National Trauma Databank criteria: 12,566
    - Total patients with an ISS >15: 1,425

    These figures exceed the minimum requirements, indicating there is enough volume to support two Level I trauma centers

Southern Nevada Trauma System Regulation: 300.300

Final Step

- The Board's approval for a change in Level will be determined by a demonstration of needs on the criteria outlined in Regulation 300.300

What Determines a *NEED*?

Opinions Vary

Lack of Access to Care?	Increasing Mortality Rates?	Population Growth?
Increasing Acuity?	Rising Volume and Capacity Demands?	Longer Transport Times?
Improving Quality of Care?	Attracting more healthcare professionals?	Injury Prevention?

Discussion/Questions