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

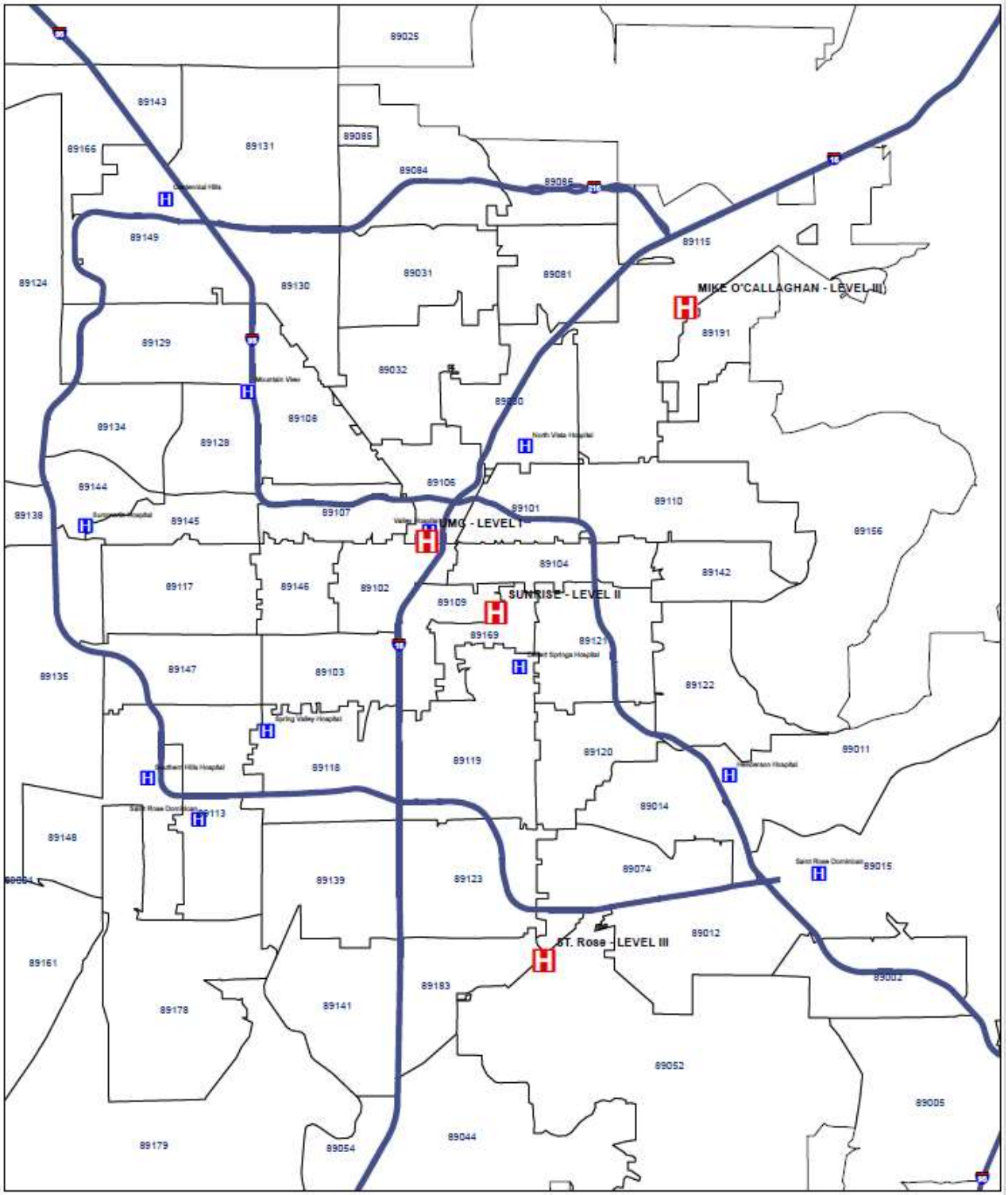
The Office of Emergency Medical System & Trauma System appreciates our community partners' contributions and support in maintaining the Southern Nevada Trauma System and have committed to building on the achievements to date.

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

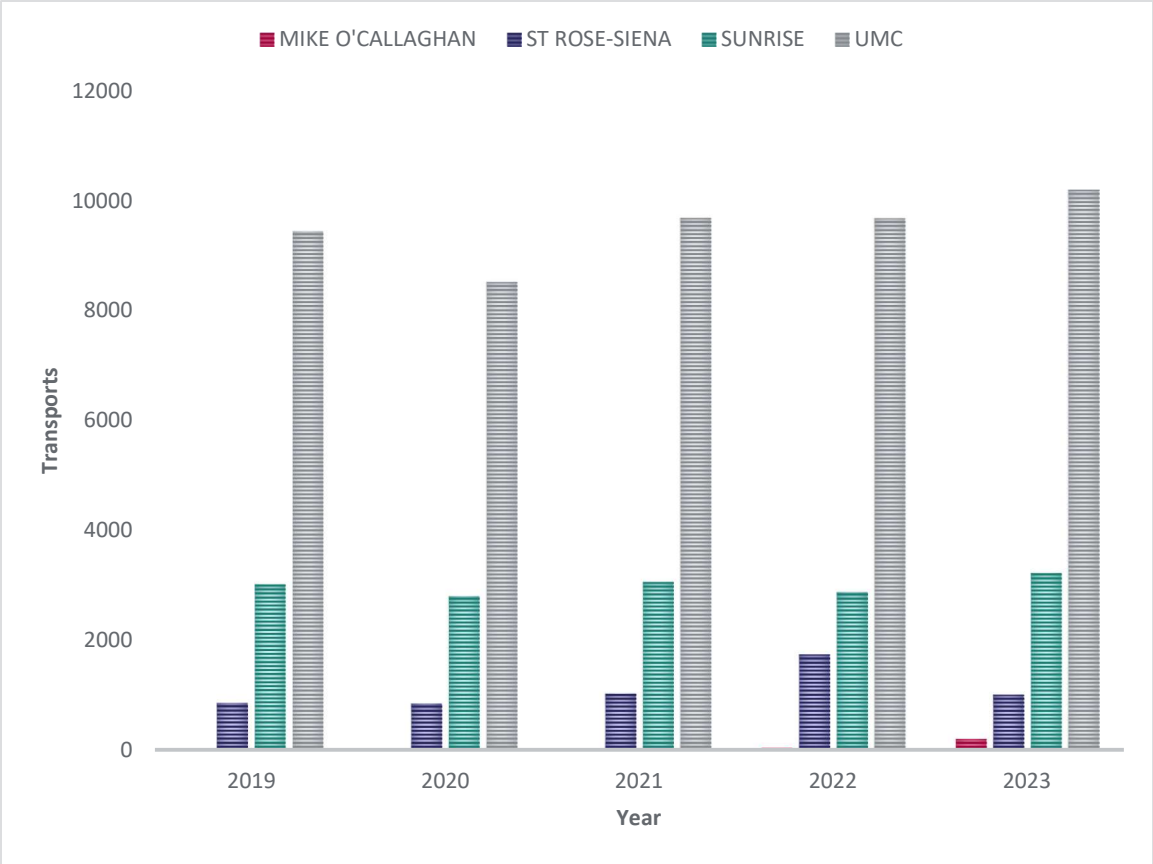
The intent of including TFTC data is to examine and determine the number of reported trauma cases at all designated Trauma Centers in Southern Nevada. This data can then be used to analyze capacity, determine unmet needs, identify negative outcomes, and recognize barriers to access healthcare. TFTC data 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

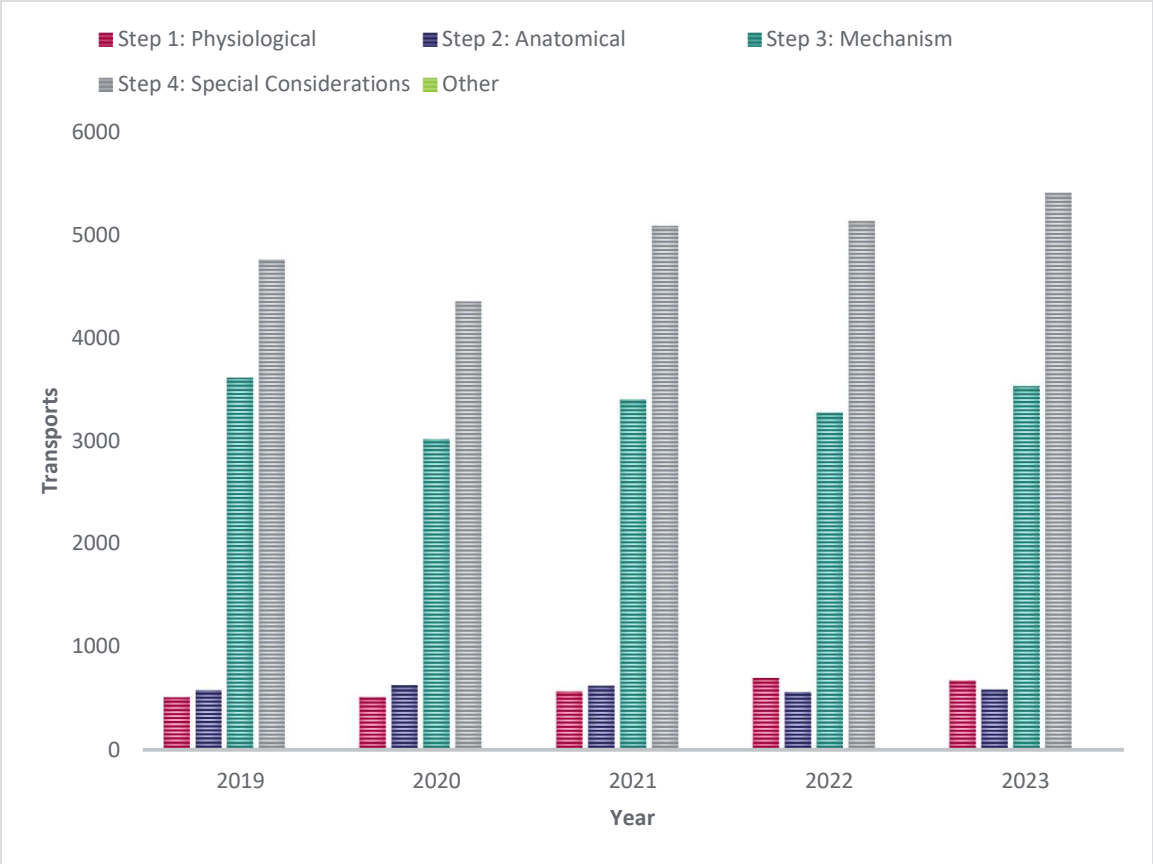
TFTC Transports by Trauma Center, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiological	655	750	818	964	896
Step 2: Anatomical	779	904	947	836	857
Step 3: Mechanism	4921	4103	4696	4495	4660
Step 4: Special Considerations	6946	6383	7289	8025	8231
Other	0	32	26	19	30
All	13301	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



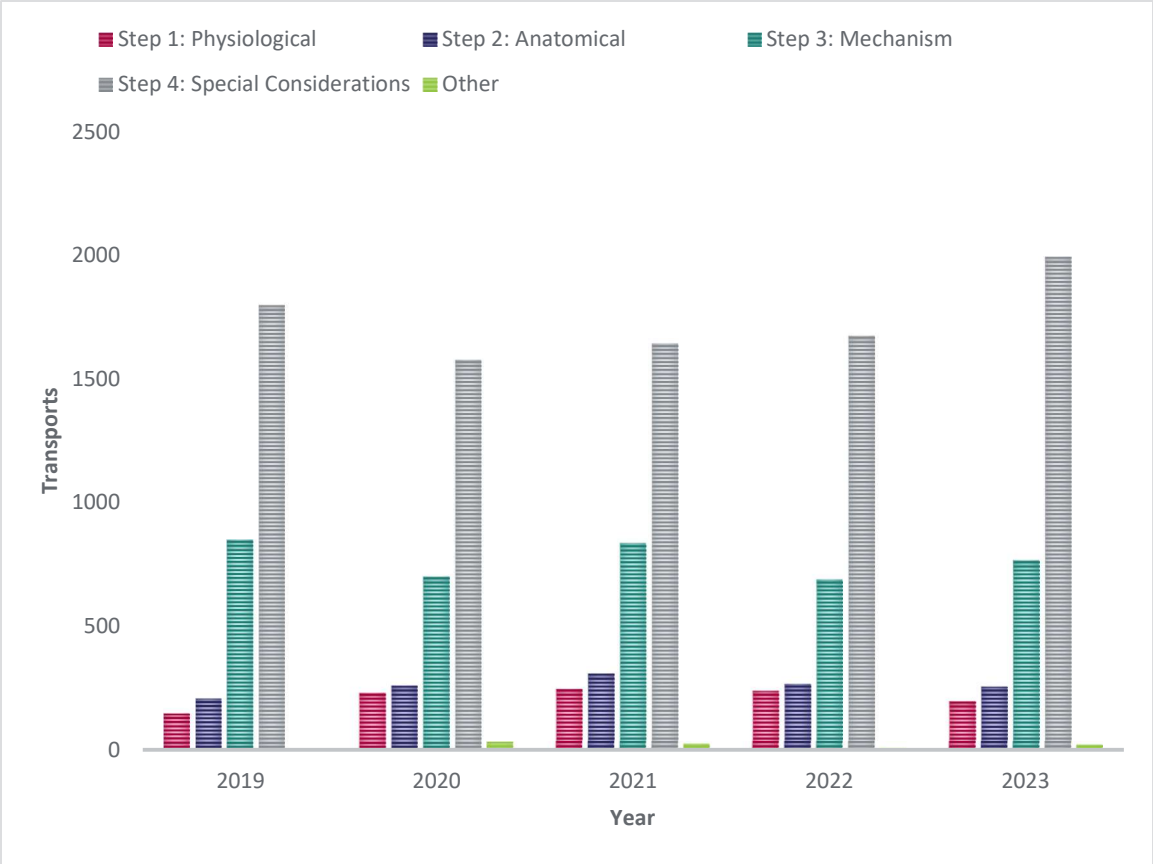
TFTC Transports by Trauma Center, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Mike O'Callaghan	0	0	0	35	208
St. Rose-Siena	853	847	1028	1748	1013
Sunrise	3003	2803	3062	2875	3234
UMC	9445	8522	9686	9681	10209
All	13301	12172	13776	14339	14664
Source: SNHD TFTC Data					
Note: Includes all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

UMC TFTC Transports by Step, 2019-2023



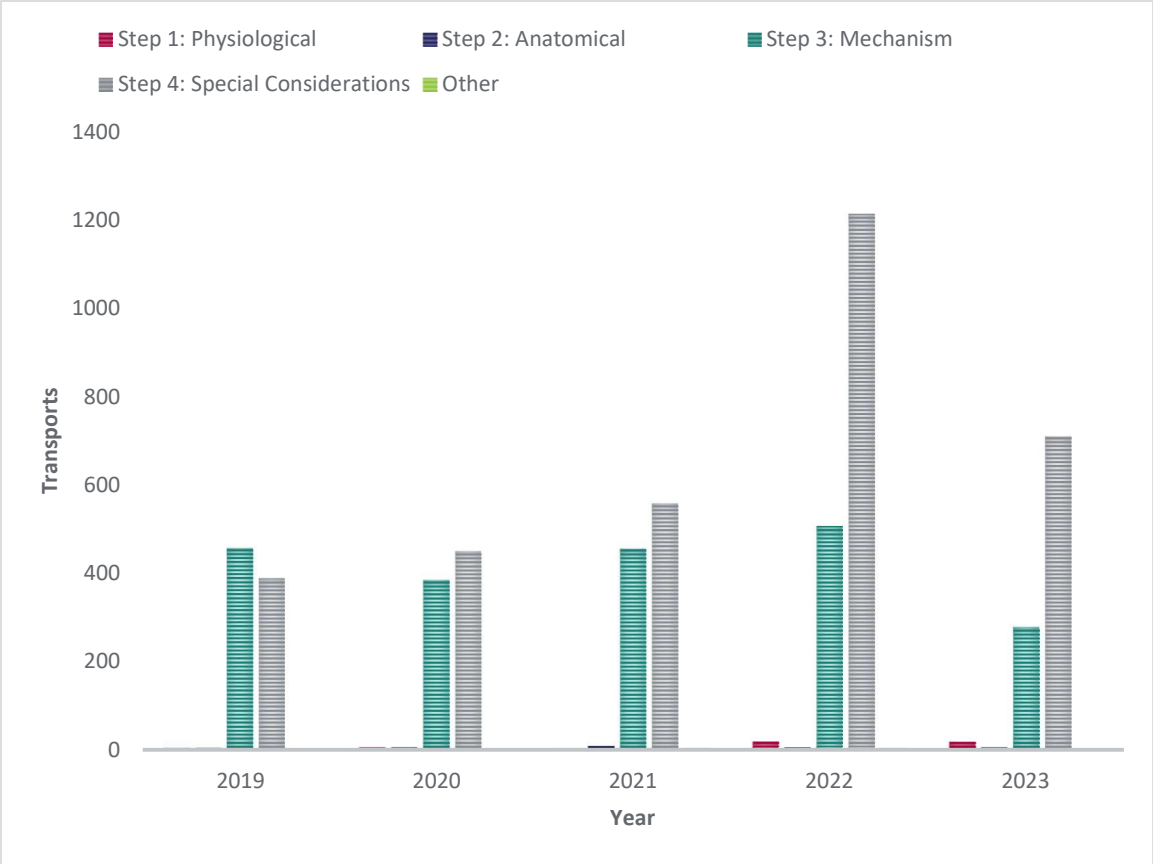
UMC TFTC Transports by Step, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiologic	505	513	569	703	676
Step 2: Anatomic	569	637	627	564	590
Step 3: Mechanism	3613	3016	3403	3277	3533
Step 4: Special Considerations	4758	4356	5087	5134	5409
Other	0	0	0	3	1
Total	9445	8522	9686	9681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

Sunrise TFTC Transports by Step 2019-2023



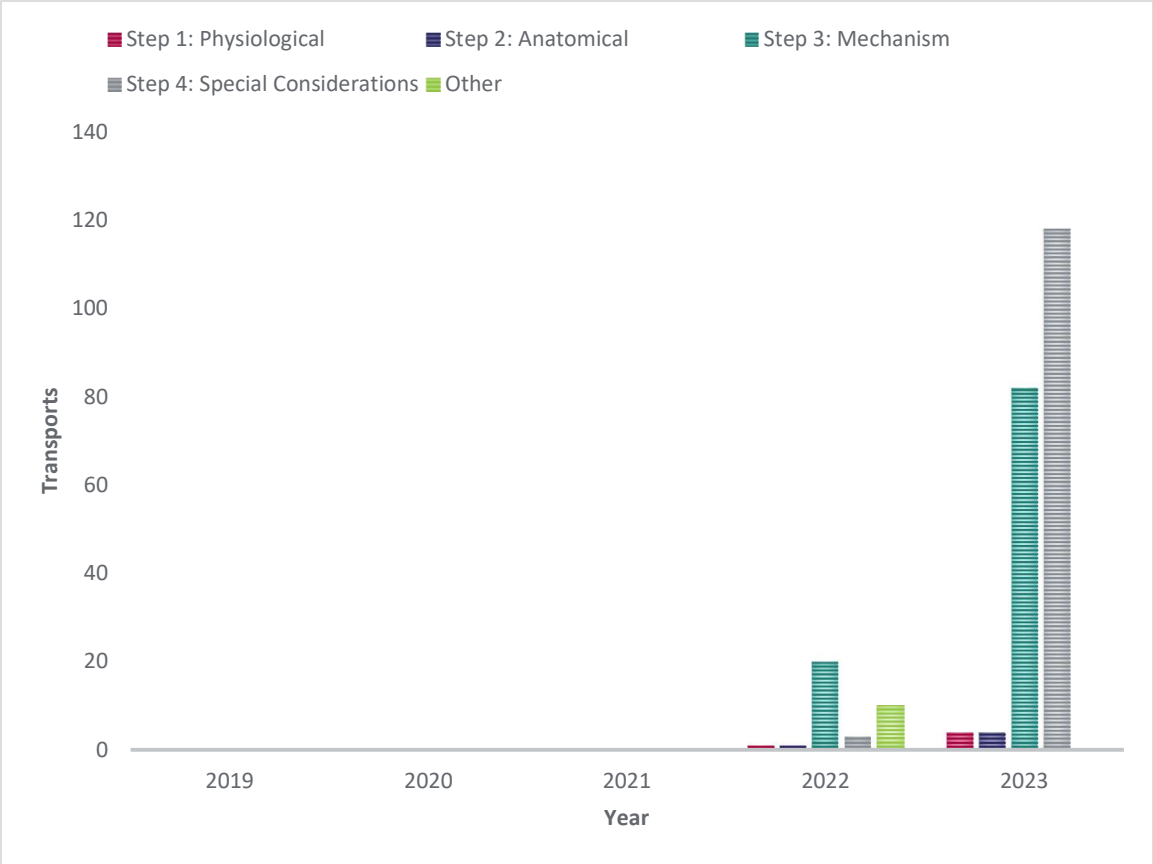
Sunrise TFTC Transports by Step, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiologic	146	231	248	240	197
Step 2: Anatomic	207	261	310	268	257
Step 3: Mechanism	851	702	837	690	767
Step 4: Special Considerations	1799	1577	1644	1674	1994
Other	0	32	23	3	19
Total	3003	2803	3062	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



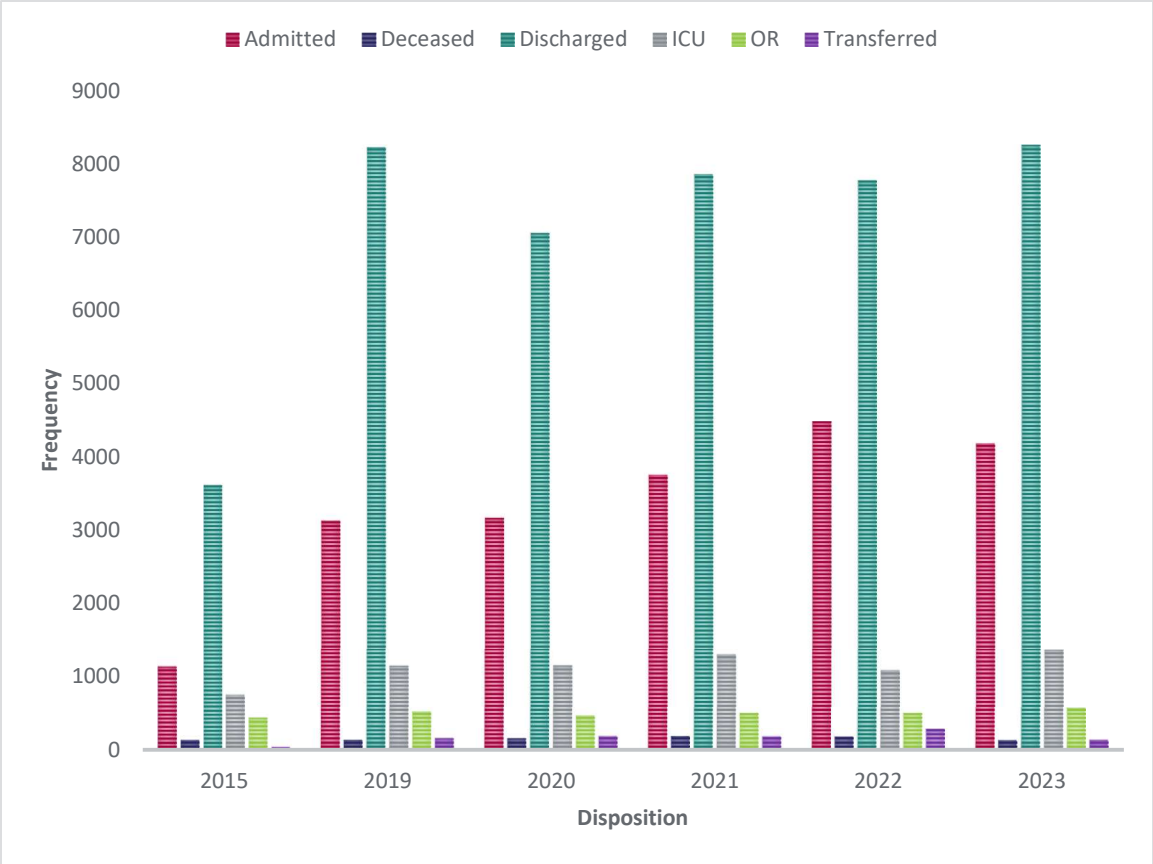
St Rose – Siena TFTC Transports by Step, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Step 1: Physiologic	4	6	1	20	19
Step 2: Anatomic	3	6	10	3	6
Step 3: Mechanism	457	385	456	508	278
Step 4: Special Considerations	389	450	558	1214	710
Other	0	0	3	3	0
Total	853	847	1028	1748	1013
Source: 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

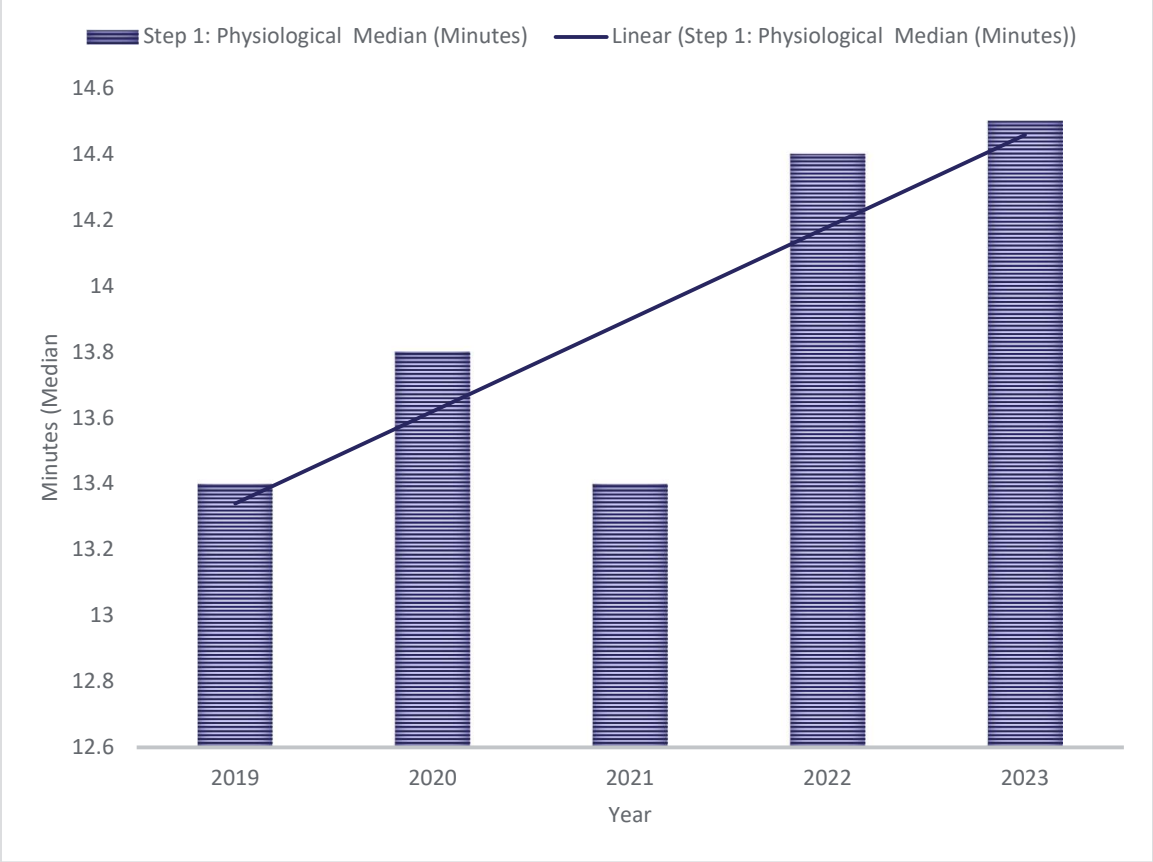
Southern Nevada Median Transport Time in Minutes (Steps 1-4), 2019-2023

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

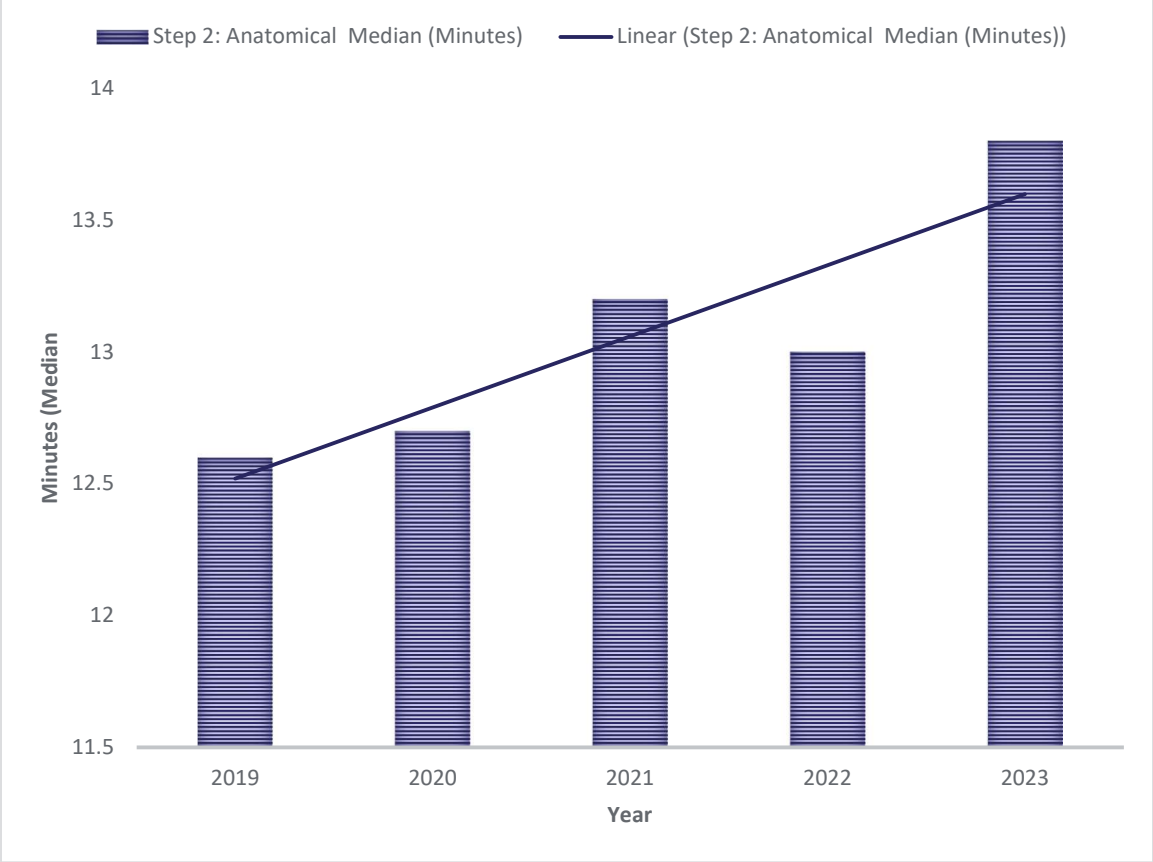
Note: Data not listed if out of state or if zip code is unavailable. Service area for Southern Nevada includes the following zip codes where the injury took place: 89002, 89004, 89005, 89007, 89011, 89012, 89014, 89015, 89018, 89019, 89021, 89027, 89029, 89030, 89031, 89032, 89034, 89039, 89040, 89044, 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

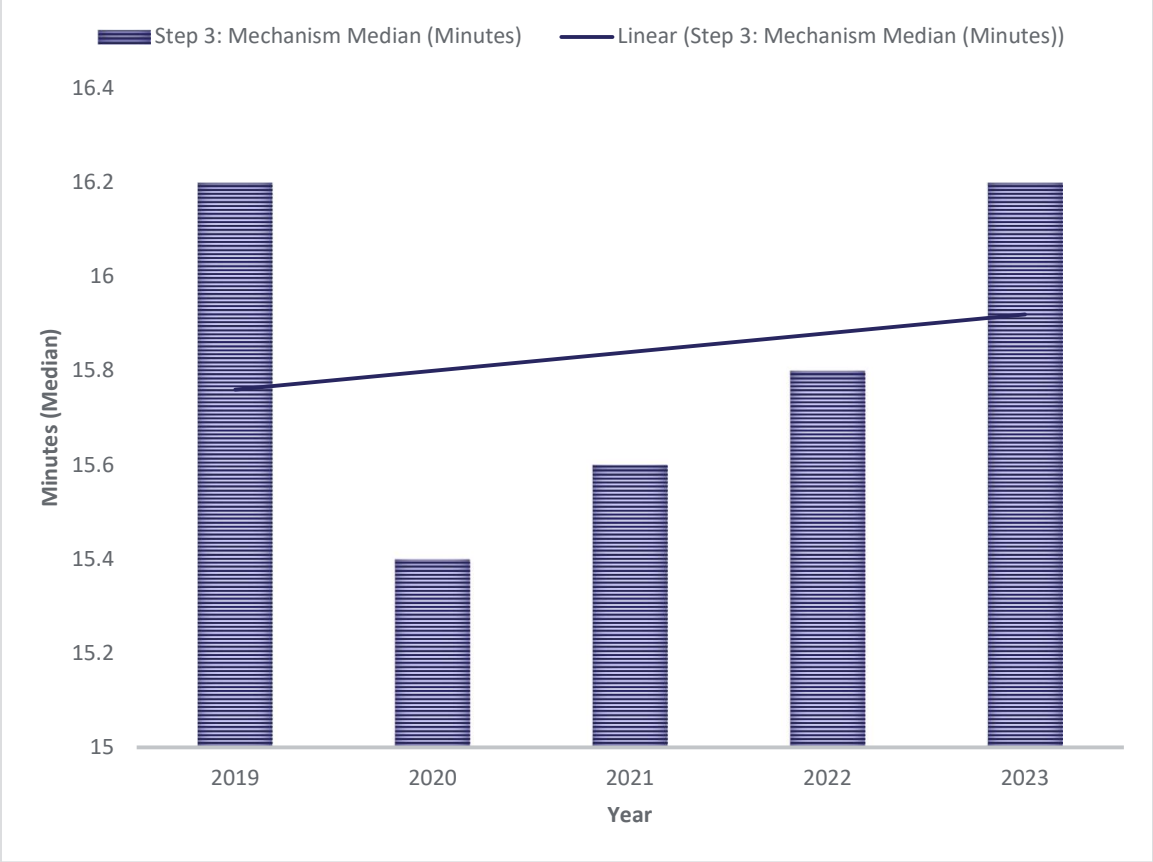


Southern Nevada Step 2 Median Transport Time, 2019-2023						
		Year				
		2019	2020	2021	2022	2023
Step 2: Anatomic	N	631	718	768	663	666
	Median (Minutes)	12m 36s	12m 42s	13m 12s	13m 0s	13m 48s

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

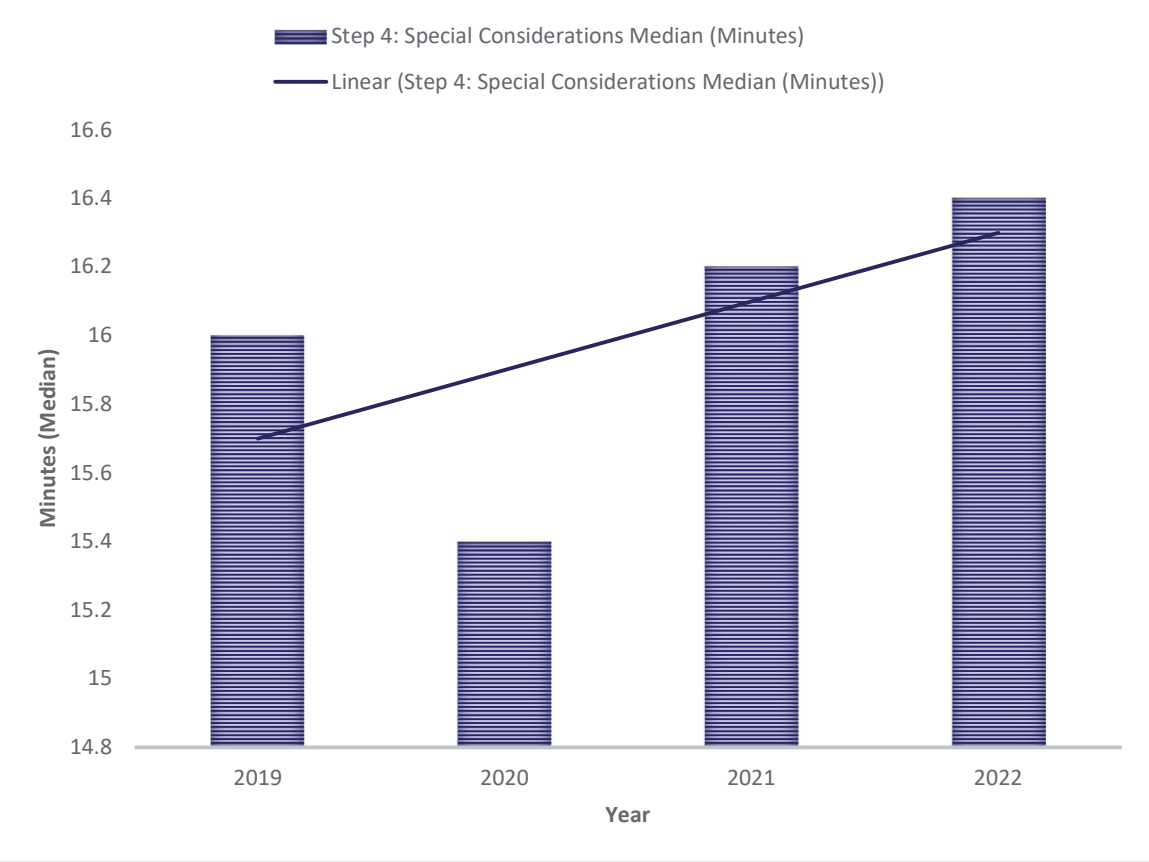


Southern Nevada Step 3 Median Transport Time, 2019-2023						
		Year				
		2019	2020	2021	2022	2023
Step 3: Mechanism	N	4065	3507	3968	3687	3778
	Median (Minutes)	16m 12s	15m 24s	15m 36s	15m 48s	16m 12s

Source: SNHD TFTC Data

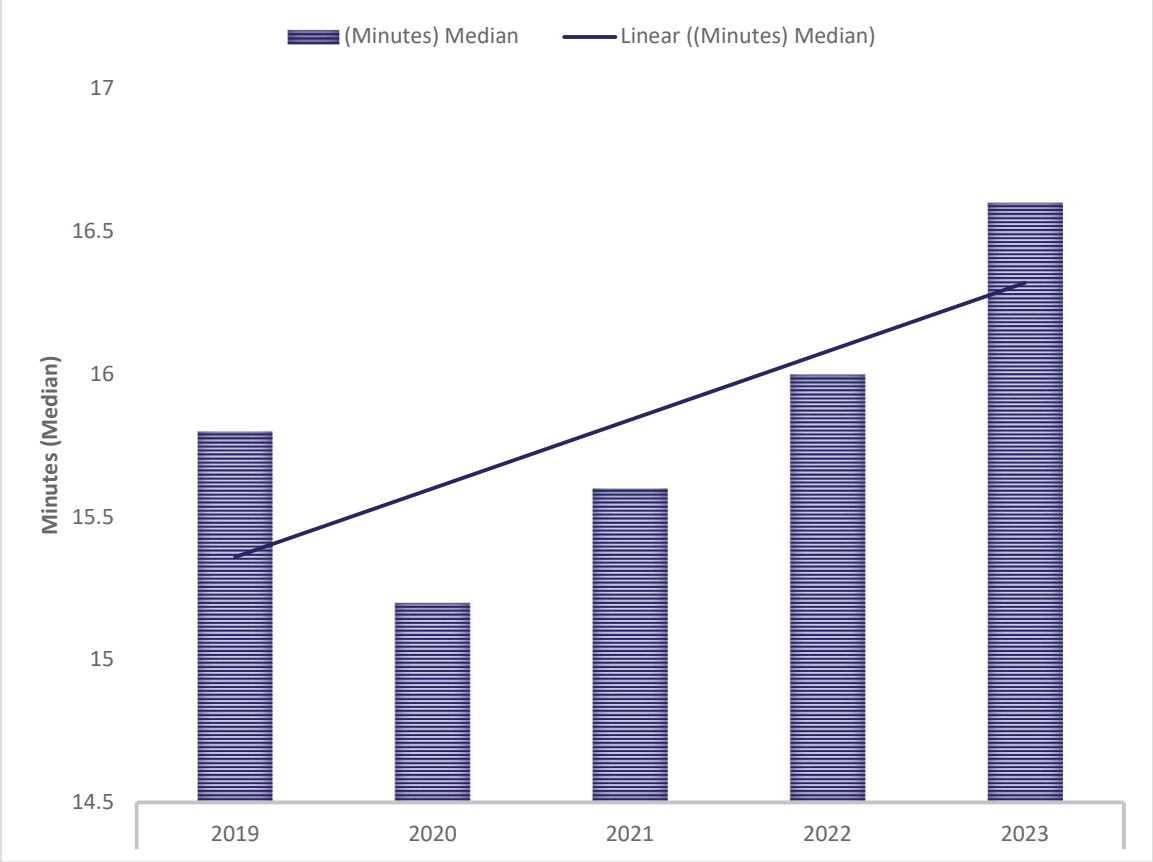
Note: Data not listed if out of state or if zip code is unavailable. Service area for Southern Nevada includes the following zip codes where the injury took place: 89002, 89004, 89005, 89007, 89011, 89012, 89014, 89015, 89018, 89019, 89021, 89027, 89029, 89030, 89031, 89032, 89034, 89039, 89040, 89044, 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

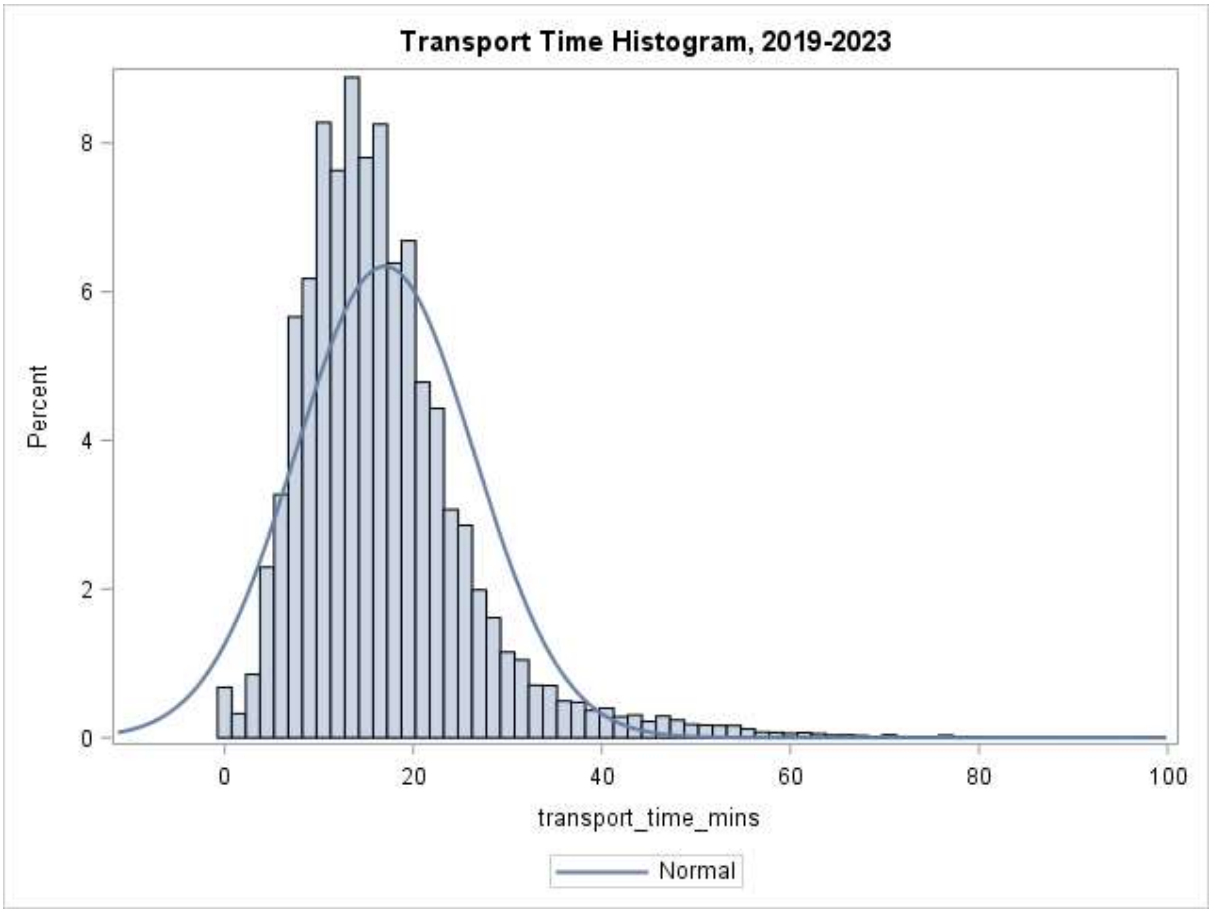


Southern Nevada Median Transport Time (Step 1-4), 2019-2023						
		Year				
		2019	2020	2021	2022	2023
Transport Time (Minutes)	N	10930	10255	11625	11827	11527
	Median	15m 48s	15m 12s	15m 36s	16m 0s	16m 36s

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

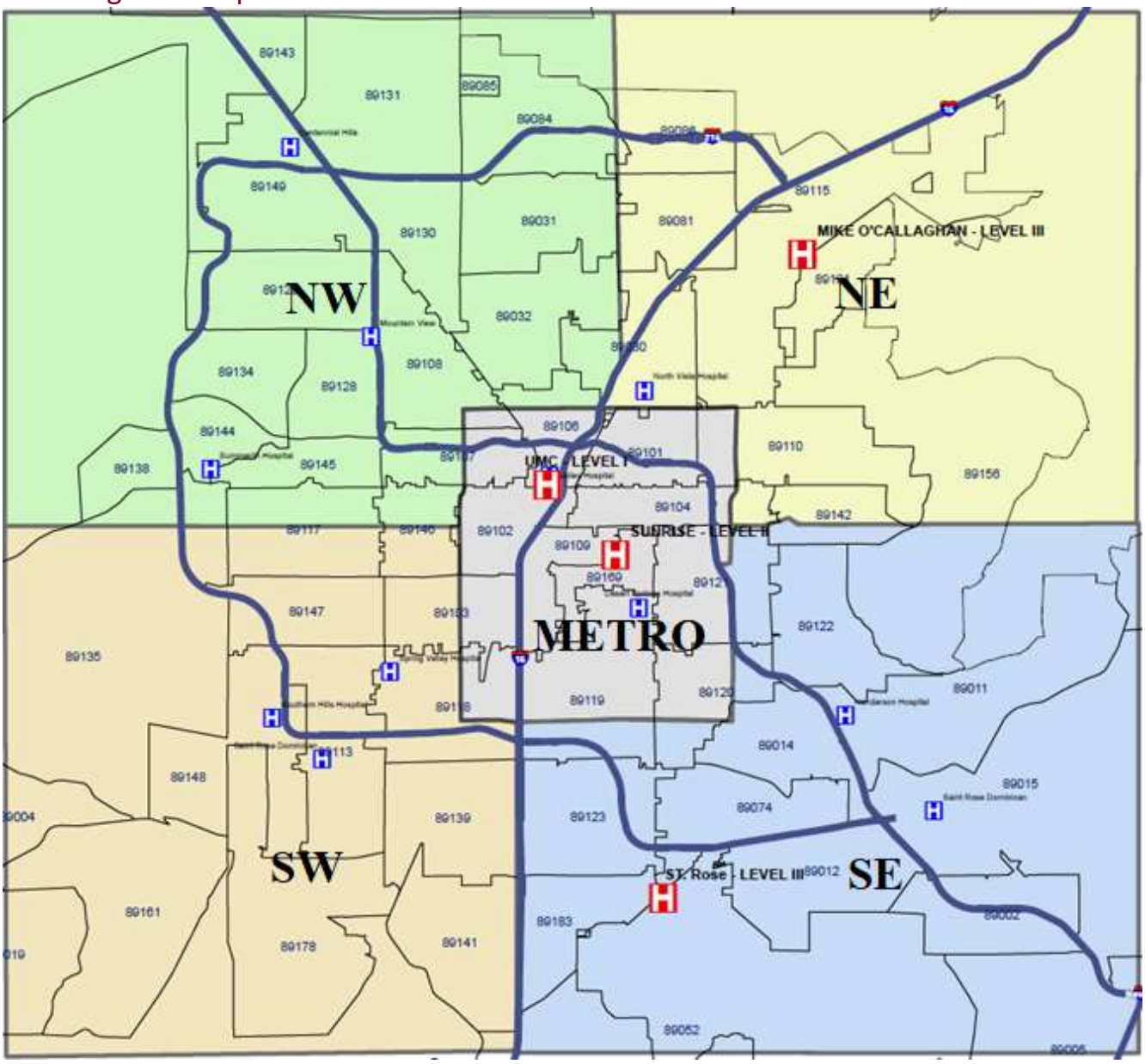
Percentage of TFTC Incidents with Transport Time ≤15 Minutes, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
≤15 Minutes					
Step 1	382	433	494	508	426
Total	606	687	764	877	776
%	63.04%	63.03%	64.66%	57.92%	54.90%
Step 2	479	608	598	518	452
Total	732	863	919	796	752
%	65.44%	70.45%	65.07%	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

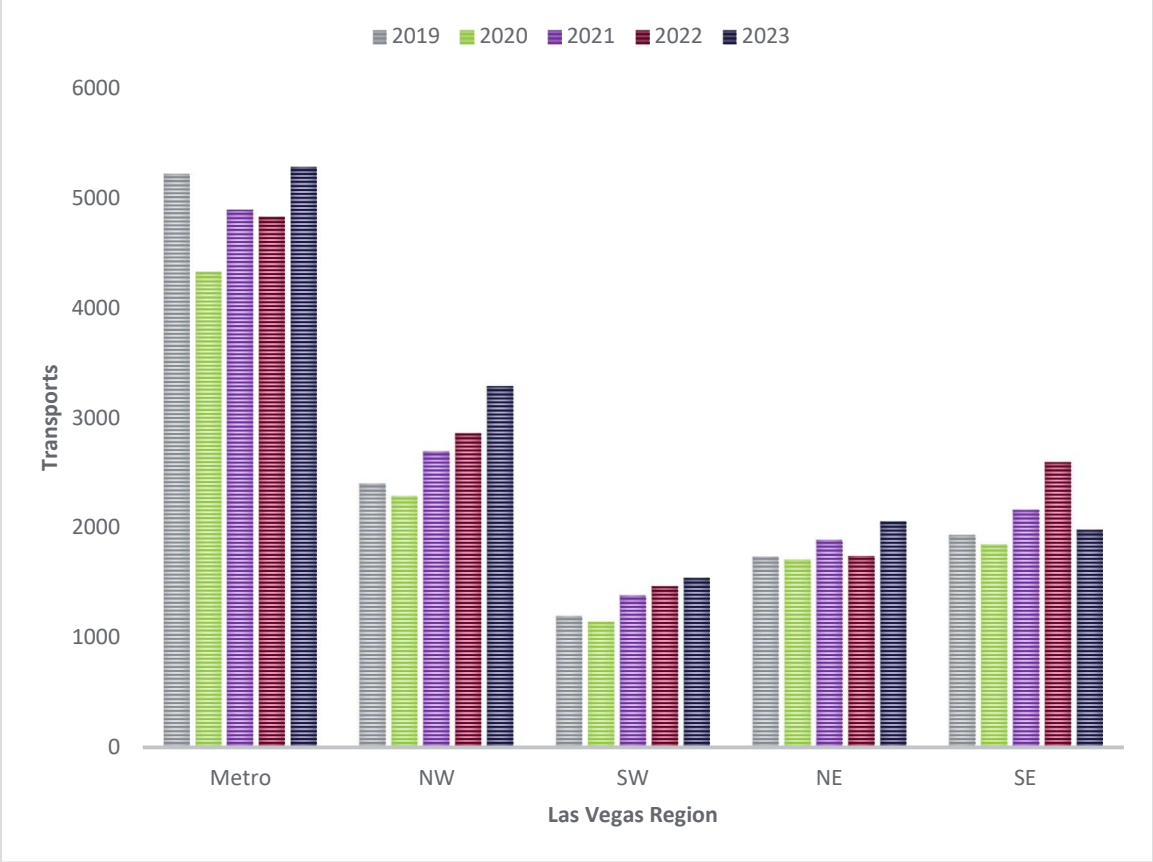
Intent

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.					

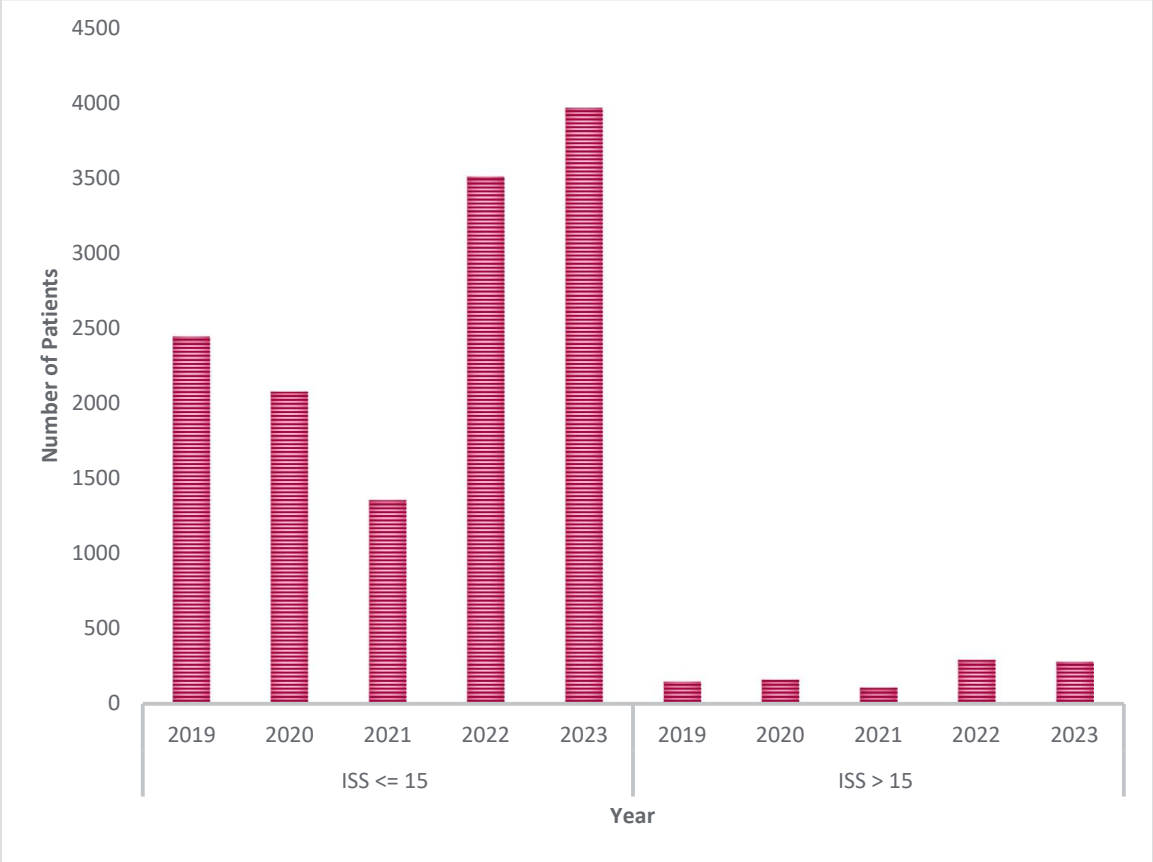
Non-Trauma Center Hospital Data

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*					

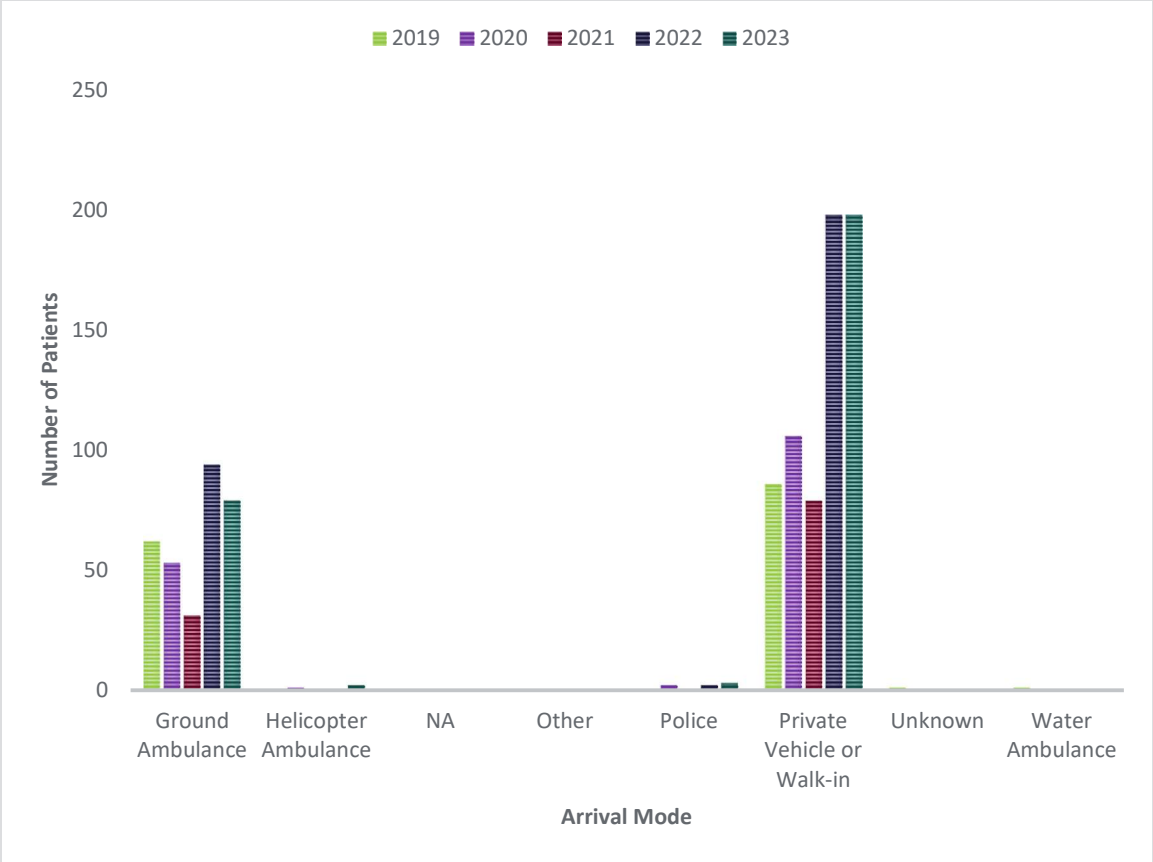
Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital who were Transferred to a Trauma Hospital with an Injury Severity (ISS) >15 by Facility in Southern Nevada, 2019-2023

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

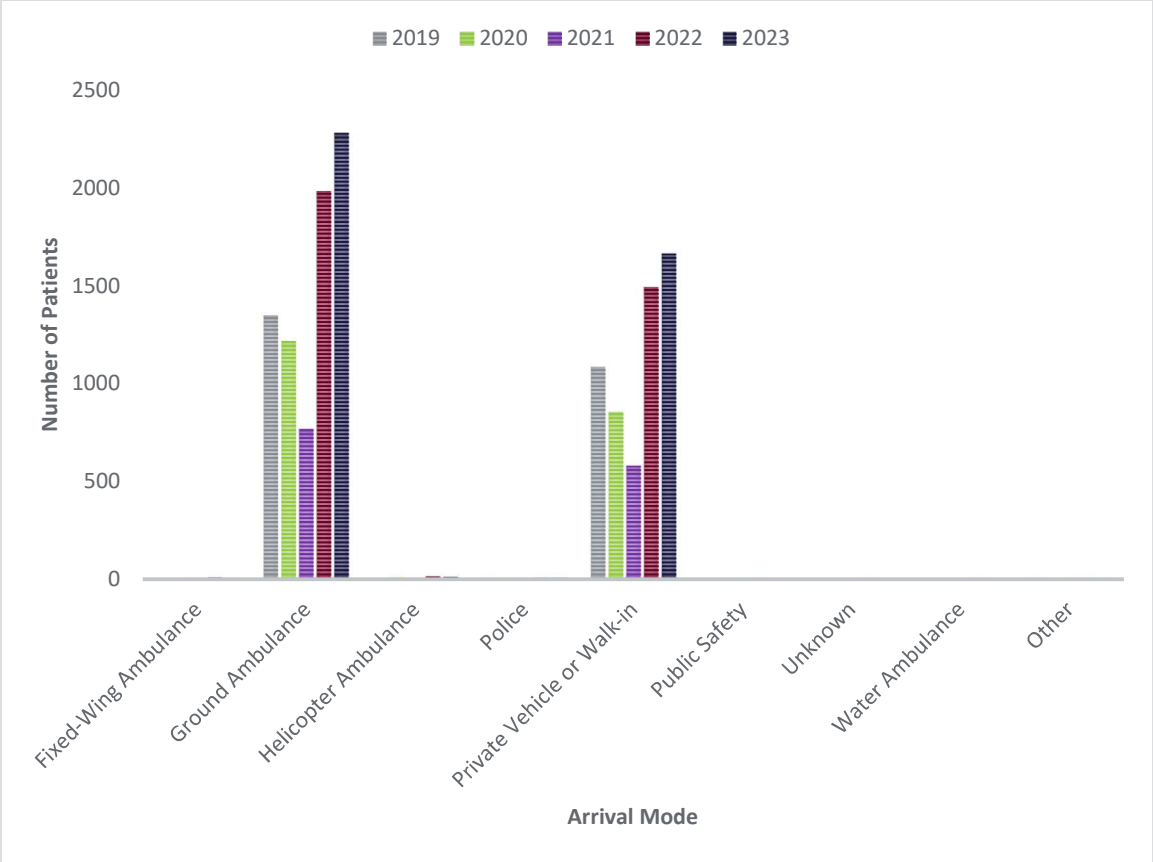
Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital who were Transferred to a Trauma Hospital with an Injury Severity Score (ISS) ≤ 15 by Facility in Southern Nevada, 2019-2023					
	2019	2020	2021	2022	2023
Boulder City Hospital	11	25	11	43	31
Centennial Hills Hospital	27	27	29	57	57
*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



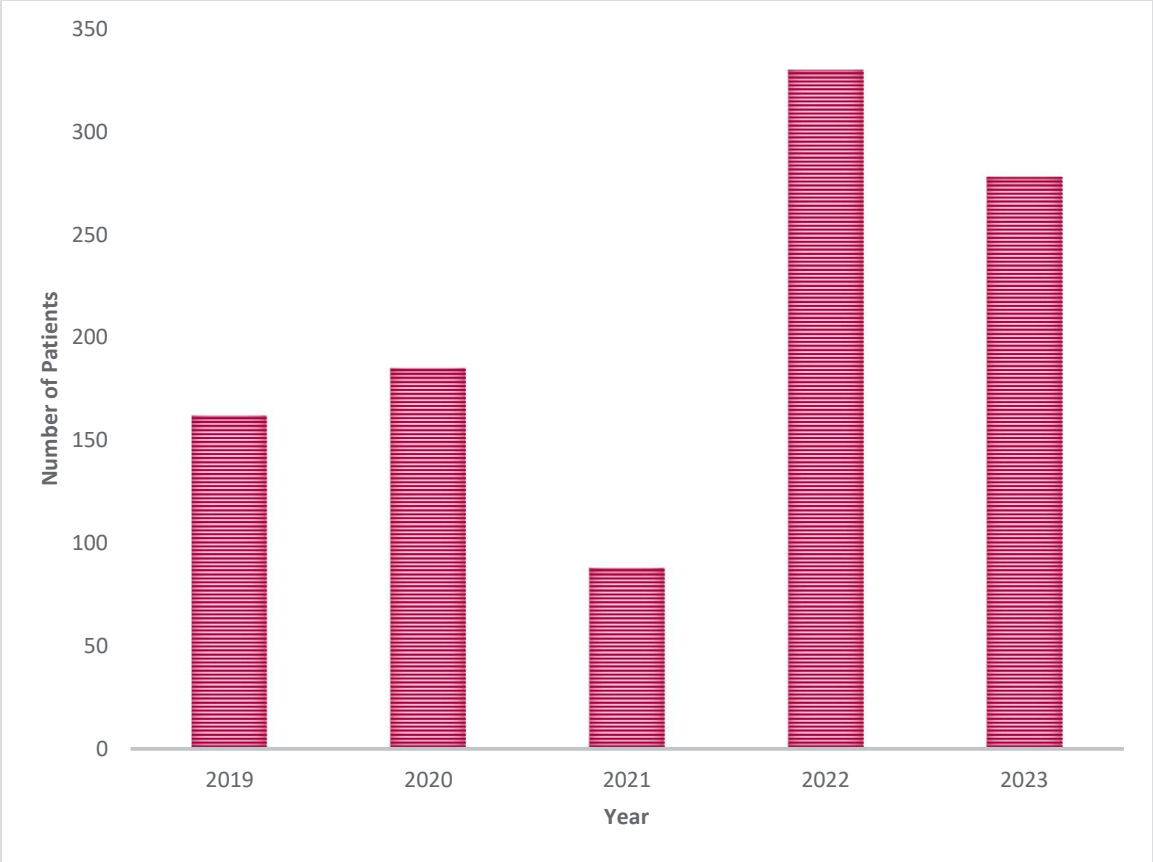
Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) > 15 by Arrival Mode in Southern Nevada, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Ground Ambulance	62	53	31	94	79
Helicopter Ambulance	0	1	0	0	2
Police	0	2	0	2	3
Private Vehicle or 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



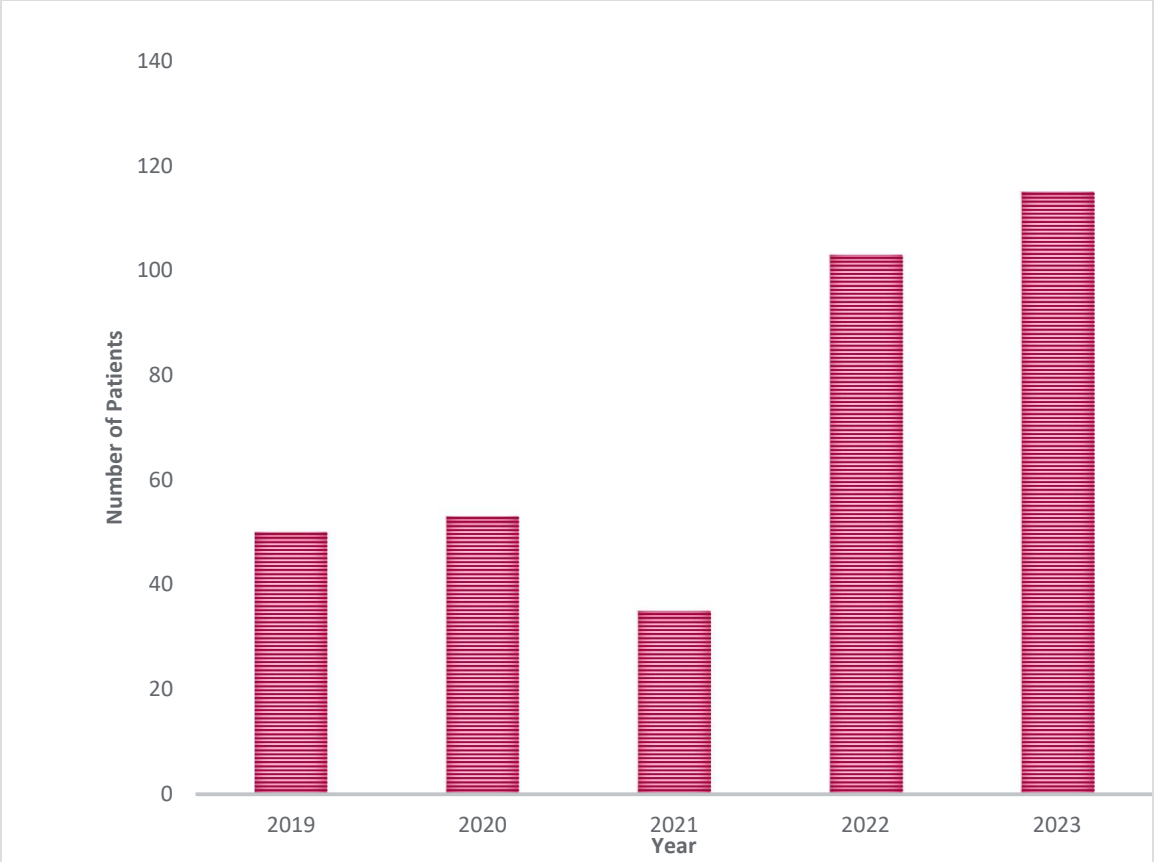
Number of Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) <= 15 by Arrival Mode in Southern Nevada, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
Fixed-Wing Ambulance	0	0	1	7	1
Ground Ambulance	1348	1219	768	1982	2281
Helicopter Ambulance	1	4	3	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



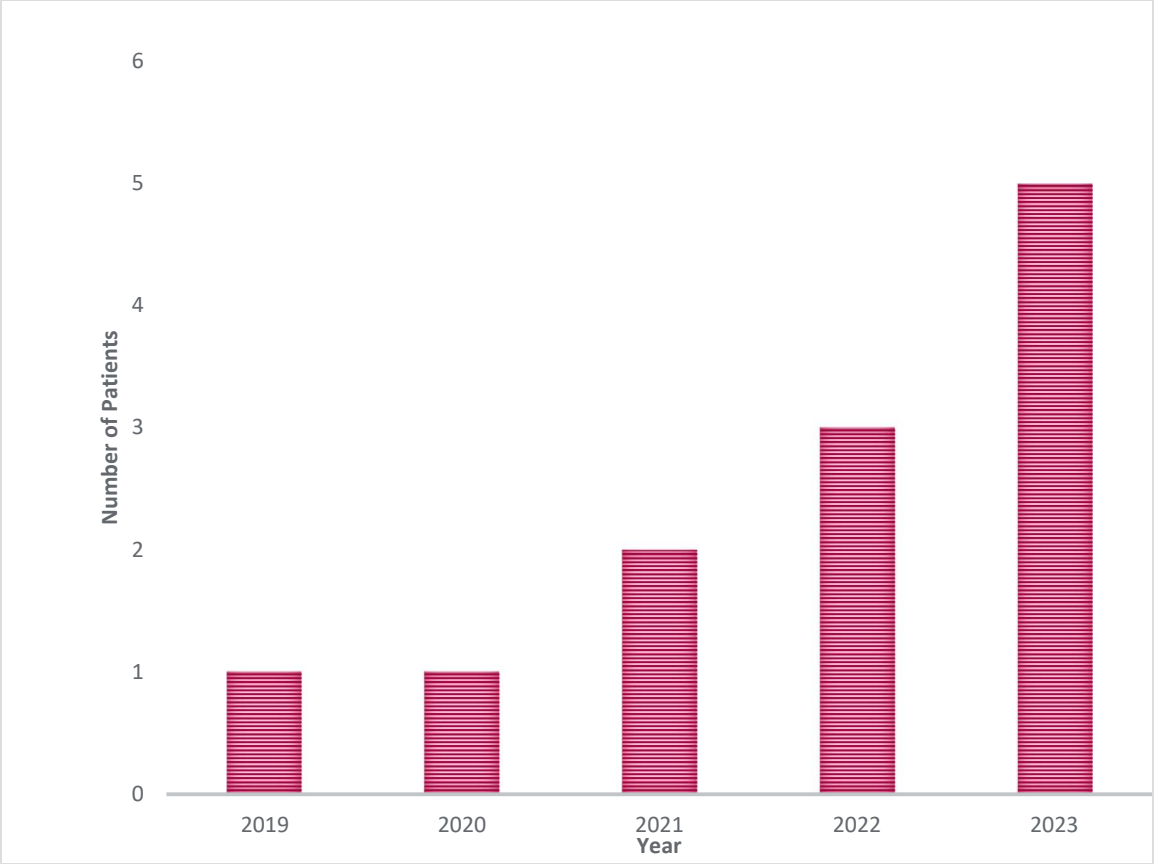
Number of Deceased Patients Meeting Trauma Criteria at a Trauma Hospital with an Injury Severity Score (ISS) >15 in Southern Nevada, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
All	162	185	88	330	278
Source: State Trauma Registry data					

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



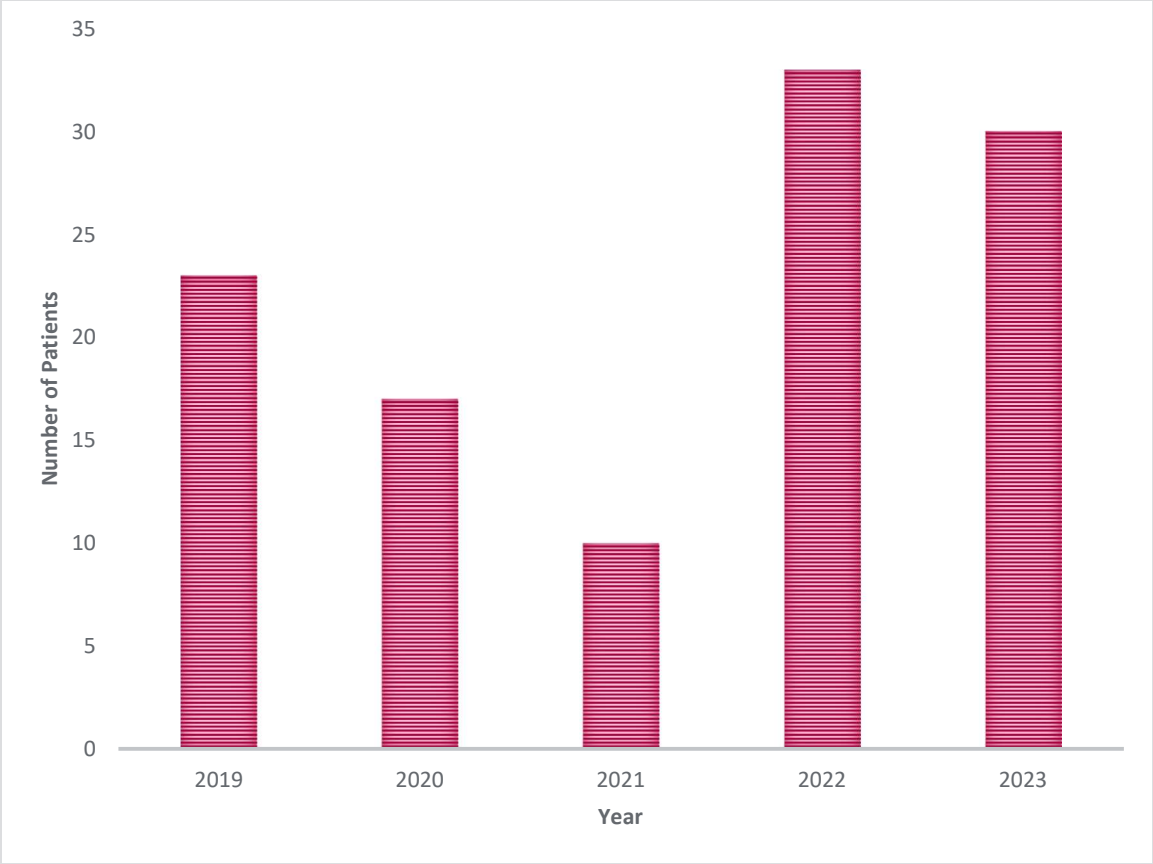
Number of Deceased Patients Meeting Trauma Criteria at a Trauma Hospital with an Injury Severity Score (ISS) <=15 in Southern Nevada, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
All	50	53	35	103	115
Source: State Trauma Registry data					

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



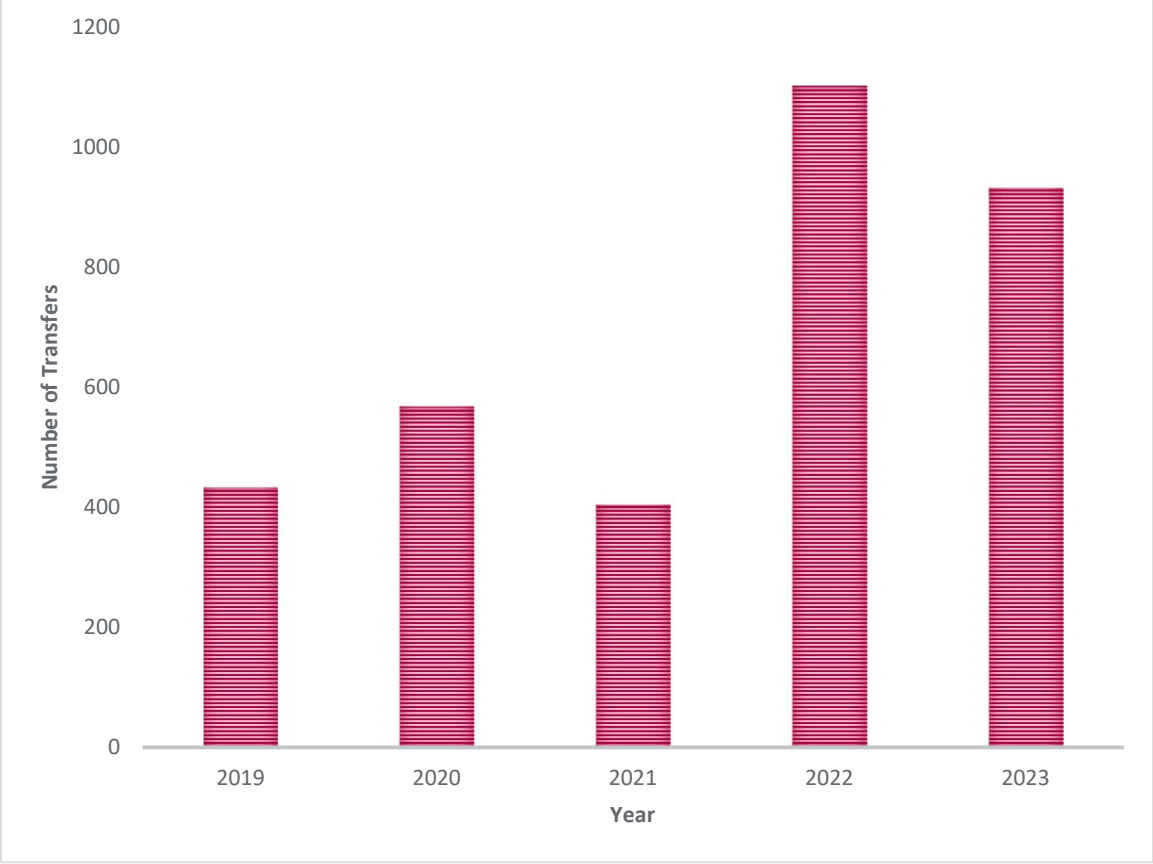
Number of Deceased Patients Meeting Trauma Criteria at a Non-Trauma Hospital with an Injury Severity Score (ISS) >15 in Southern Nevada, 2019-2023					
	2019	**2020**	**2021**	**2022**	**2023**
All	1	1	2	3	5
Source: State Trauma Registry data					

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;

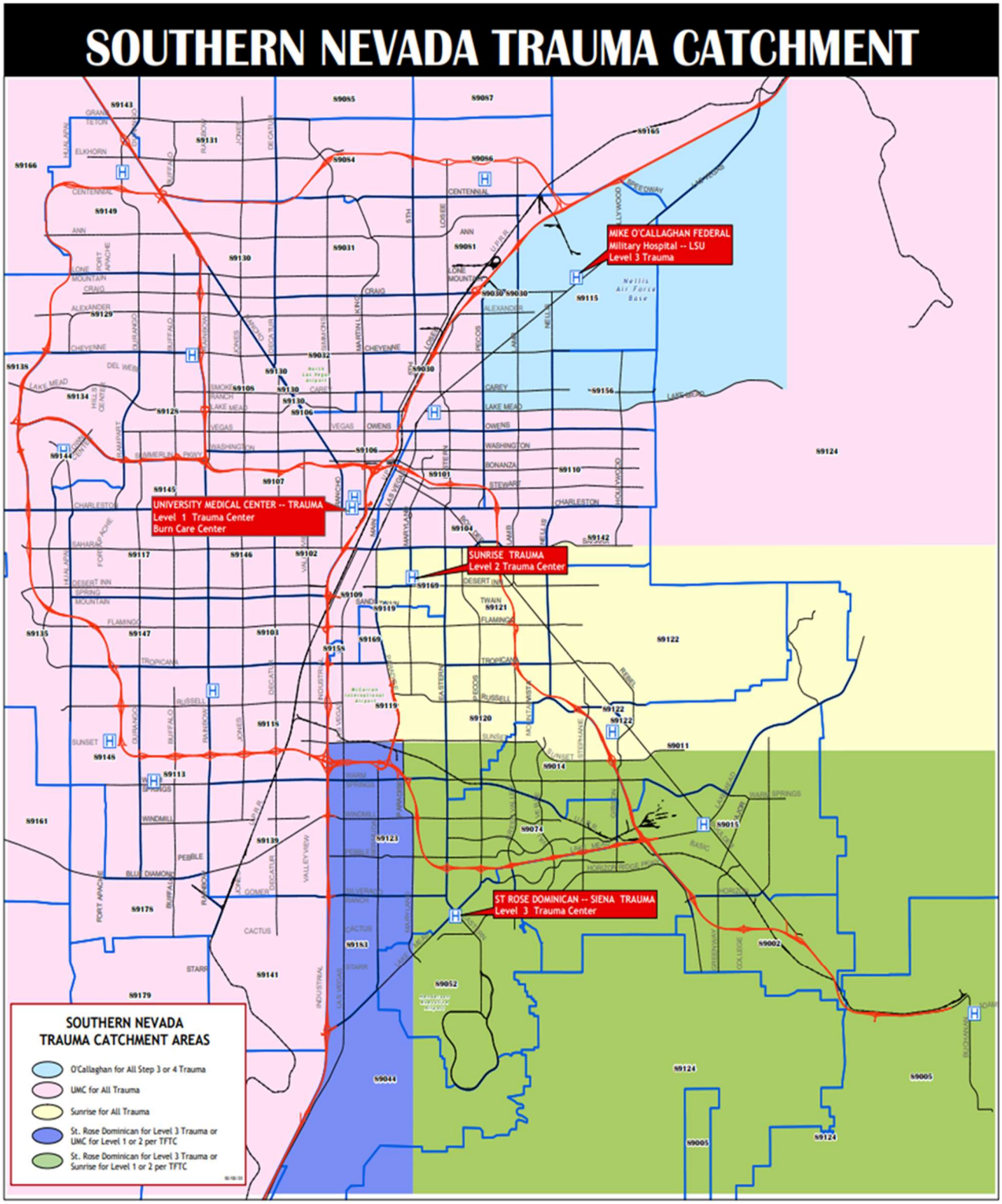
Sunrise Hospital & Medical Center (Level 2 Trauma Center) Catchment Area

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/