Trauma System of Southern Nevada

TRAUMA – the forgotten pandemic

There are approximately **six million deaths** per year as a result of trauma, which is more than all the contagious diseases added together including HIV/AIDS, TB, malaria and COVID-19. There are some **40 million people permanently injured** per year, and up to **100 million temporarily injured**

WHAT IS TRAUMATIC INJURY?

Trauma refers to people who have sustained **severe** injuries, requiring **rapid** evaluation and transport to **specific** hospitals with trauma care capabilities, staffed and equipped to provide the comprehensive care needed.

Traumatic injuries are the result of a wide variety of blunt or penetrating mechanisms. They include motor vehicle collisions, gunshot and stab wounds, sports injuries, serious falls, natural disasters and a multitude of other physical injuries which can occur at home, on the street, or while at work and require immediate care.

EMERGENCY ROOMS ARE NOT TRAUMA CENTERS

Level III Trauma Centers must have the following that emergency rooms may not:

- 24-hour **immediate coverage by emergency medicine physicians** and **30-minute availability of general surgeons, orthopedic surgeons, and anesthesiologists**
- 30-minute availability of an operating room and full OR team
- Availability of imaging services with radiologist access
  - Conventional radiology – 30 minutes
  - CT – 30 minutes
  - Point-of-care ultrasound – 15 minutes
- ICU provider coverage within 30 minutes
- Supply of blood products for rapid transfusion
- Rapid reversal protocol in place for patients on anticoagulants
- **Transfer agreements** for patients requiring more comprehensive care at a Level I or Level II Trauma Center
- Trauma specific **education** for nursing and allied health personnel
- **Prevention efforts** and must have an active outreach program for its referring communities
- Trauma registry is quality improvement metrics

THE COMMITTEE ON TRAUMA

LEVEL II TRAUMA CENTER

THE **COMMITTEE** ON **TRAUMA**

All components of a Level III in addition to:

- 24-hour **in-house coverage by trauma surgeons**
- Anesthesia services available within 15 minute of request, present within 30 minutes for operations
- ICU physician continuously available within 15 minutes and whose primary responsibility is the ICU
- The following specialty physicians continuously available: Neurotrauma, Orthopaedic trauma, cardiothoracic, vascular, hand, plastics, OBGYN, otolaryngology, ophthalmology, and urology
- Care protocols for the injured older adult
- Cardiopulmonary Bypass Equipment
- Interventional radiology procedure can begin within 60 minutes of request

LEVEL I TRAUMA CENTER

All components of a Level II in addition to:

- 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
- Support a research program
- Have an orthopedic surgeon on the hospital's disaster committee
- Capability for comprehensive soft tissue coverage of wounds, including microvascular expertise for free flaps
- Capability to diagnose and manage acute facial fractures of the entire craniomaxillofacial skeleton
- A trauma surgeon on the disaster committee who has specific disaster management training
- Demonstrate commitment to postgraduate training with a defined trauma curriculum and trauma-specific objectives. There must be sufficient volume and breadth of cases to meet competency requirements
- Publish research and participate in scholarly activities

NAVITGATING THE TRAUMA SYSTEM – TRAUMA TRANSPORT DESTINATIONS

Southern Nevada follows the 2021 National Guidelines for the Field Triage of Injured Patients

If a patient meets any of the criteria, he/she is to be transported to a trauma center based on level of TFTC criteria and predetermined catchment areas

Southern Nevada has **4** hospitals designated as trauma centers:

UMC: Level I Adult/Level II Pediatrics

Sunrise: Level II Adult

Siena: Level III Adult

MOMMC: Level III Adult

WHY A TRAUMA SYSTEM ?

"Right patient to the right place at the right time"

The ultimate goal of this unified, integrated, strengthened trauma system is to achieve maximum survival and maximal return to normal function following injury.
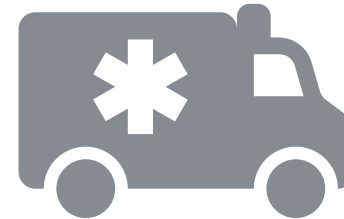
Studies have shown that regionalized trauma systems are associated with reductions in mortality.

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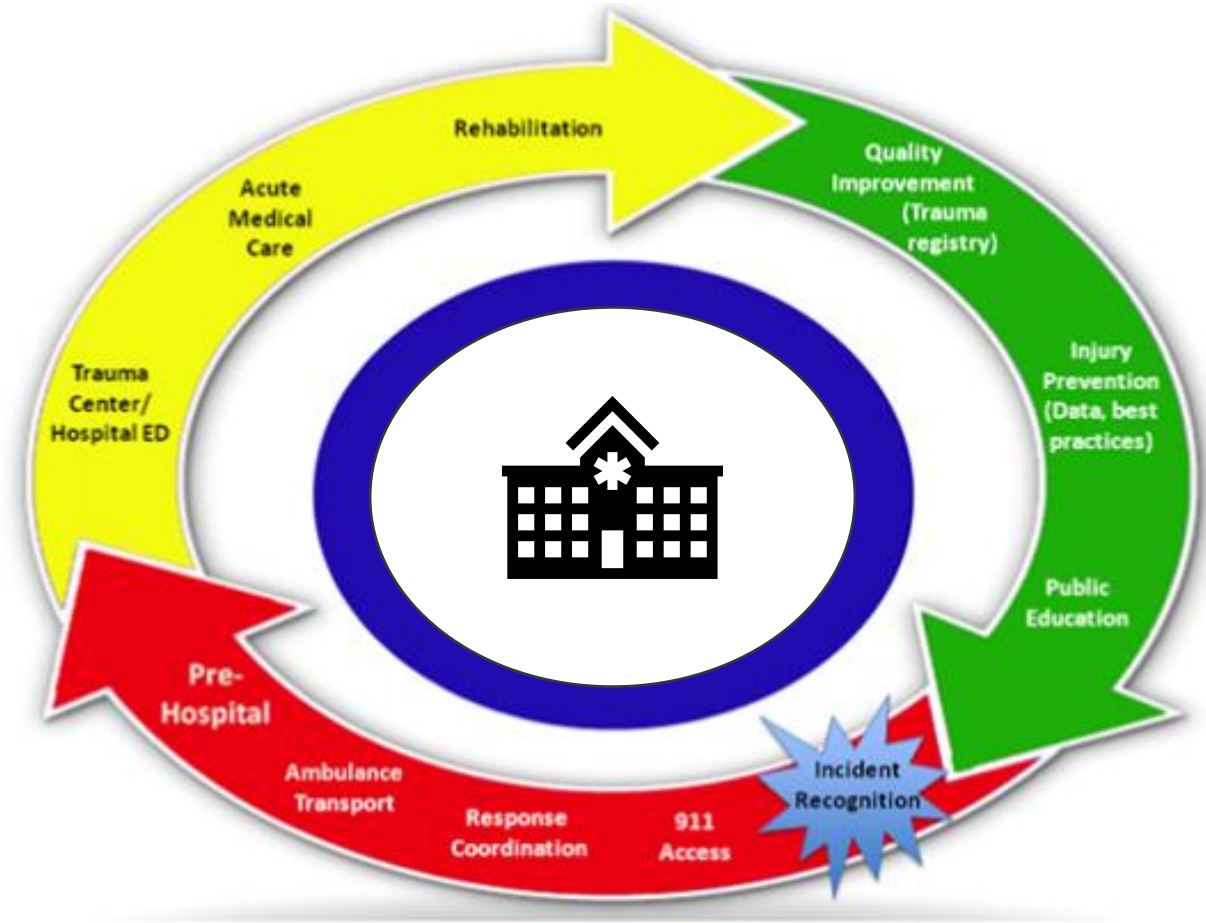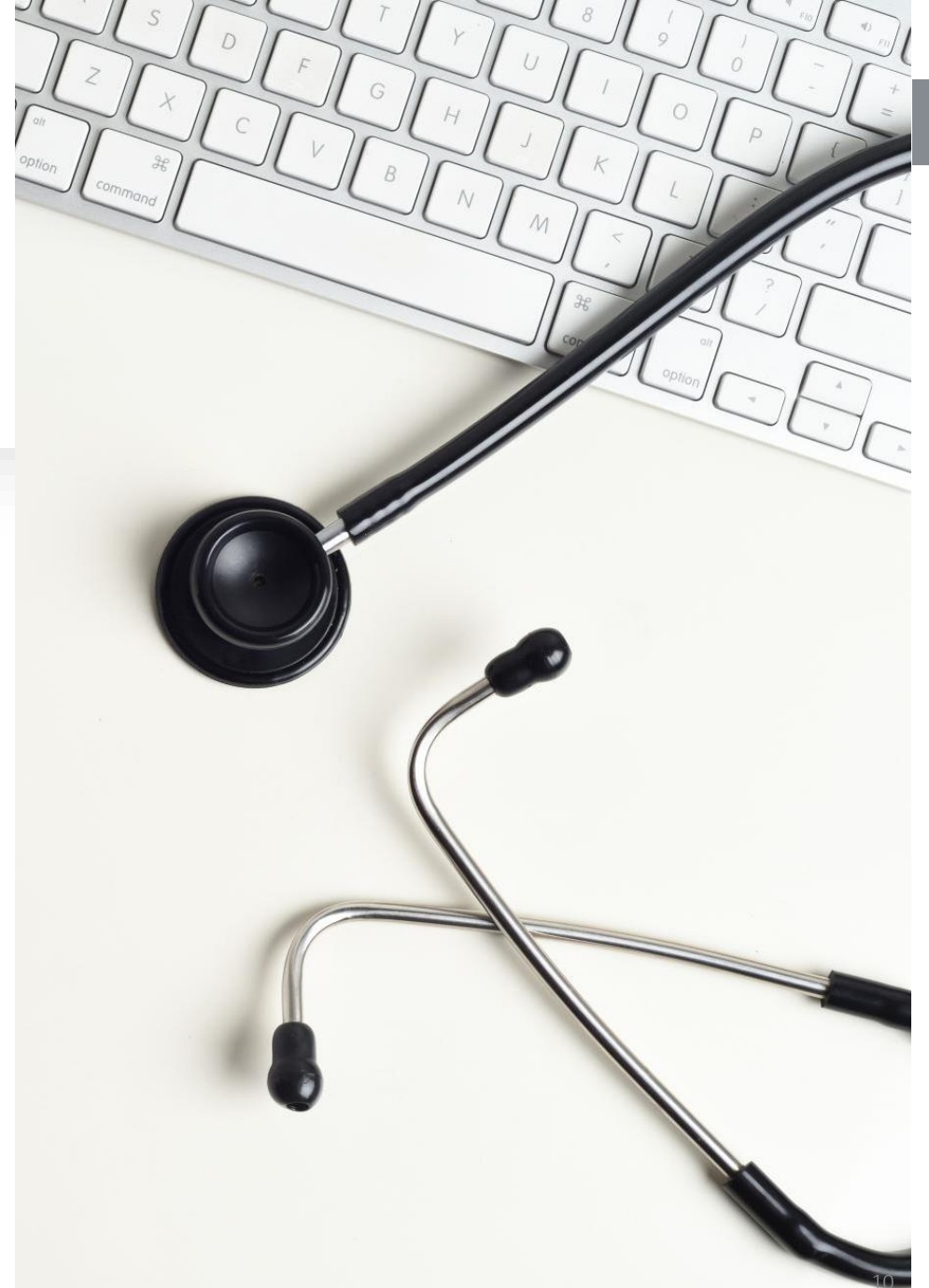UMC · SUNRISE · ST. ROSE SIENA · O'CALLAGHAN

WHAT MAKES A TRAUMA SYSTEM

• Components: Education/Injury Prevention, Advocacy, Data collection, Research, Funding, Disaster Preparedness and Response

• Until 2004, Southern Nevada had no laws or regulations granting oversight authority for trauma care. Proper oversight is a necessary element of any trauma system.

COMMUNITY BENEFITS
HIGH FUNCTIONING TRAUMA SYSTEM

- Improves Mortality

- Reduces Complications

- Comprehensive Healthcare Team: Navigating Injury, Rehabilitation, and Prevention

- Utilization of Reliable Data for Effective Injury Prevention Strategies, Minimizing Injury Rates

- Enhances Hospital Networking for Seamless Patient Transfers

- Optimizes Patient Allocation

- Facilitates Advanced Training Opportunities for Healthcare Providers and Nurses

TRAUMA CENTER CARE COST

- Although treatment at a trauma center is more expensive, the benefits of this approach in terms of lives saved and quality of life-years gained outweigh the costs

- Taking the less severely injured to a lower level of trauma care will yield lower overall costs and increased efficiency in the system

Johns Hopkins Bloomberg School of Public Health's
Center for Injury Research and Policy

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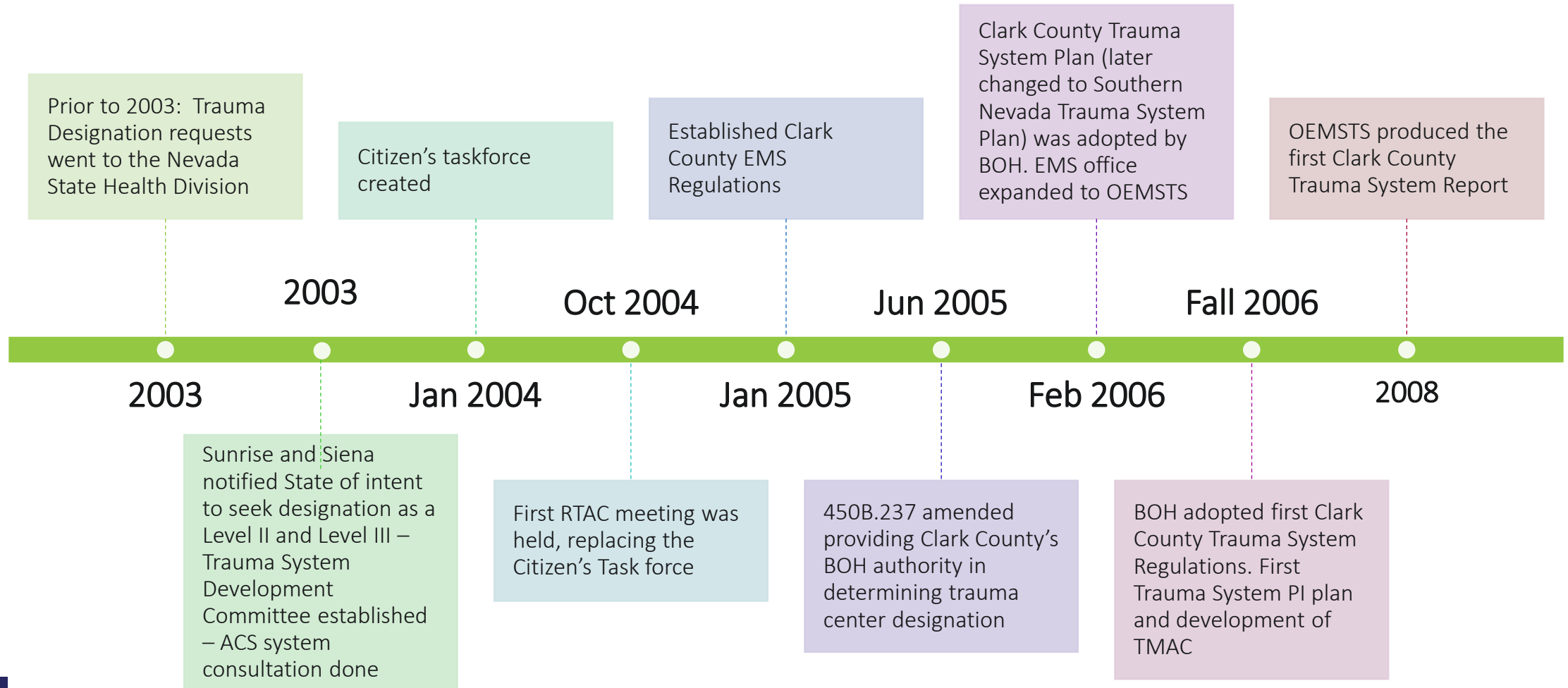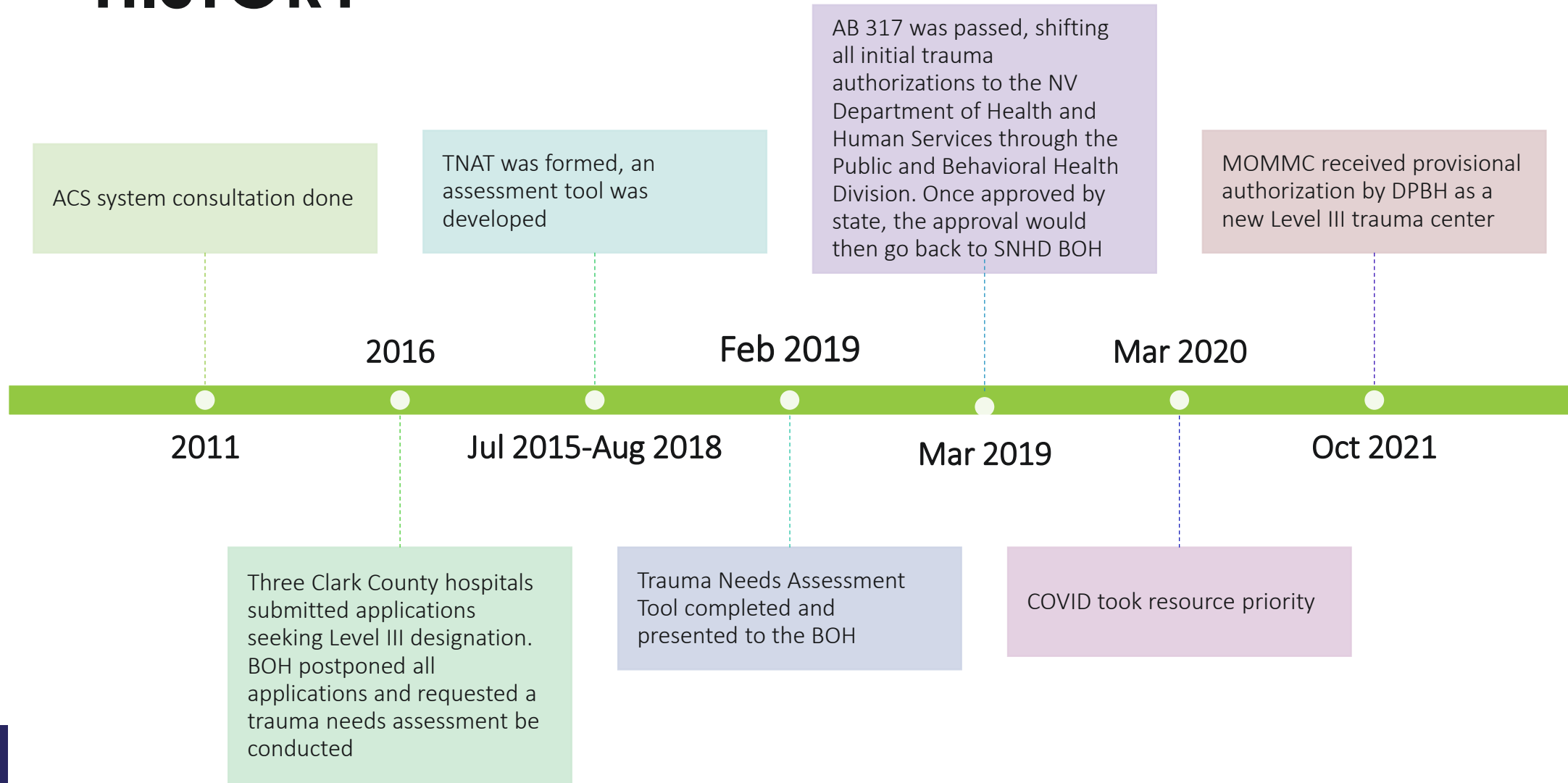# SOUTHERN NEVADA TRAUMA SYSTEM

GOALS:

- Reduce the incidence and severity of injuries
- Improve the health outcome of those who are injured by ensuring prompt, equitable access to the most appropriate health care resources
- Implement performance improvement activities to ensure quality care throughout the system
- Advocate for sufficient resources to meet the needs of the injured in the community

SOUTHERN NEVADA TRAUMA SYSTEM HISTORY

Prior to 2003: Trauma Designation requests went to the Nevada State Health Division

Citizen's taskforce created

Established Clark County EMS Regulations

Clark County Trauma System Plan (later changed to Southern Nevada Trauma System Plan) was adopted by BOH. EMS office expanded to OEMSTS

OEMSTS produced the first Clark County Trauma System Report

2003

Oct 2004

Jun 2005

Fall 2006

2003

Jan 2004

Jan 2005

Feb 2006

2008

Sunrise and Siena notified State of intent to seek designation as a Level II and Level III – Trauma System Development Committee established – ACS system consultation done

First RTAC meeting was held, replacing the Citizen's Task force

450B.237 amended providing Clark County's BOH authority in determining trauma center designation

BOH adopted first Clark County Trauma System Regulations. First Trauma System PI plan and development of TMAC

SOUTHERN NEVADA TRAUMA SYSTEM HISTORY

ACS system consultation done

TNAT was formed, an assessment tool was developed

AB 317 was passed, shifting all initial trauma authorizations to the NV Department of Health and Human Services through the Public and Behavioral Health Division. Once approved by state, the approval would then go back to SNHD BOH

MOMMC received provisional authorization by DPBH as a new Level III trauma center

2016

Feb 2019

Mar 2020

2011

Jul 2015-Aug 2018

Mar 2019

Oct 2021

Three Clark County hospitals submitted applications seeking Level III designation. BOH postponed all applications and requested a trauma needs assessment be conducted

Trauma Needs Assessment Tool completed and presented to the BOH

COVID took resource priority

TODAY:
SOUTHERN NEVADA'S DESIGNATED TRAUMA CENTERS

UMC
- 1988: Level II
- 1999: Level I
- 2007: Level II pediatric

Sunrise
- 1989: Level III
- 2005: Level II

St Rose Siena
- 2005: Level III

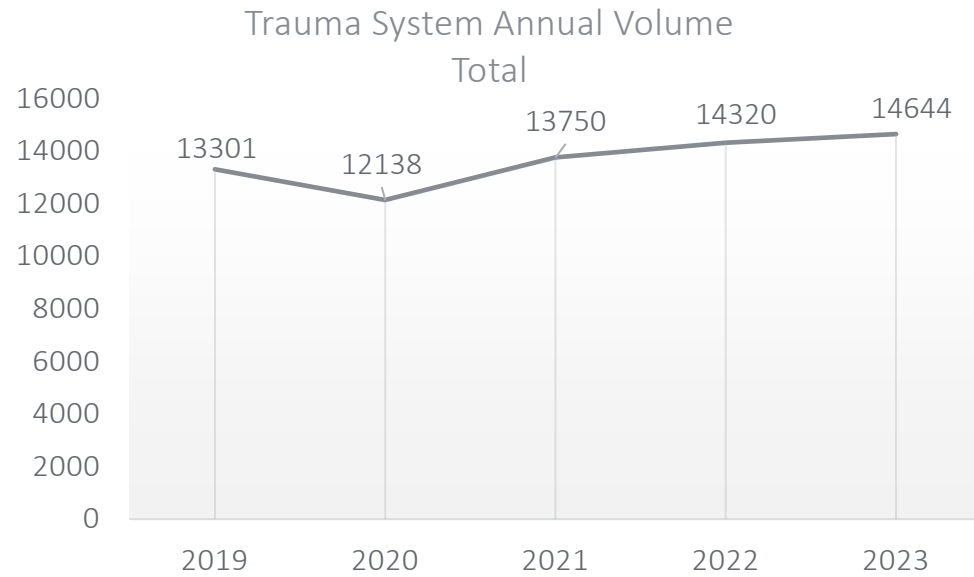**MOMMC**
- 2021: Level III

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

SYSTEM STATUS UPDATE

2023 TRAUMA SYSTEM REPORT
TRAUMA FIELD TRIAGE CRITERIA: VOLUME

Trauma System Annual Volume
Total

13301	2019
12138	2020
13750	2021
14320	2022
14644	2023

10%

Trauma System Annual Volume
Red Criteria

1434	2019
1654	2020
1765	2021
1800	2022
1753	2023
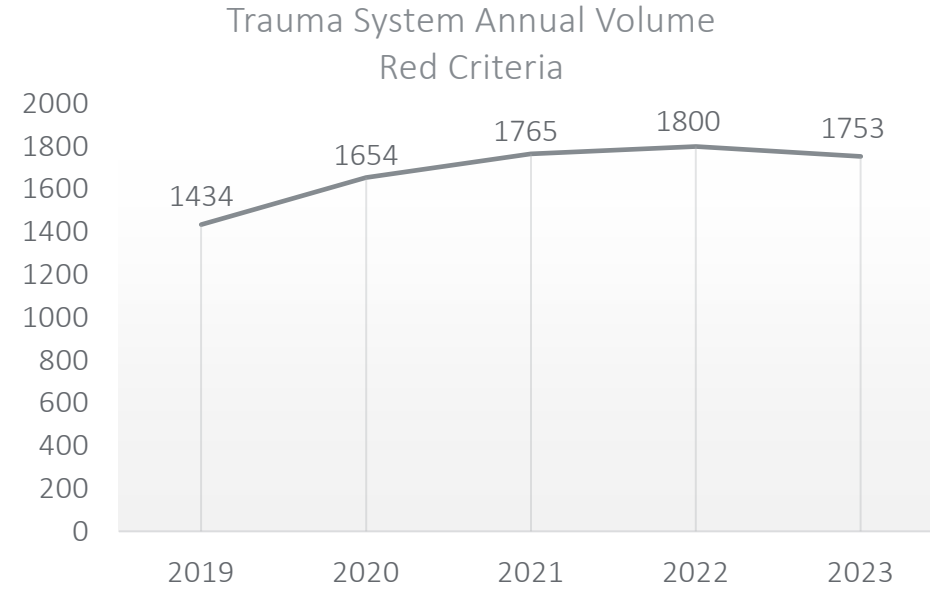
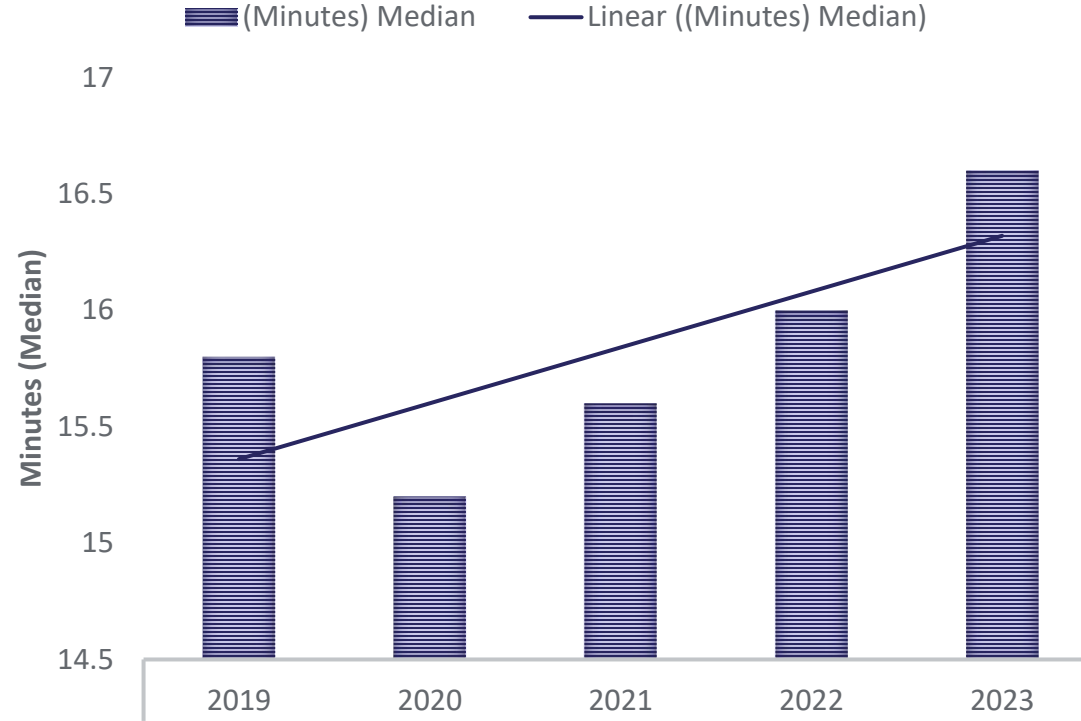**22%**

2023 TRAUMA SYSTEM REPORT
TRAUMA TRANSPORT TIMES

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						

2023 TRAUMA SYSTEM REPORT
PATIENTS MEETING NTDB INJURY CRITERIA AT NON-TRAUMA HOSPITAL BY ISS SCORE
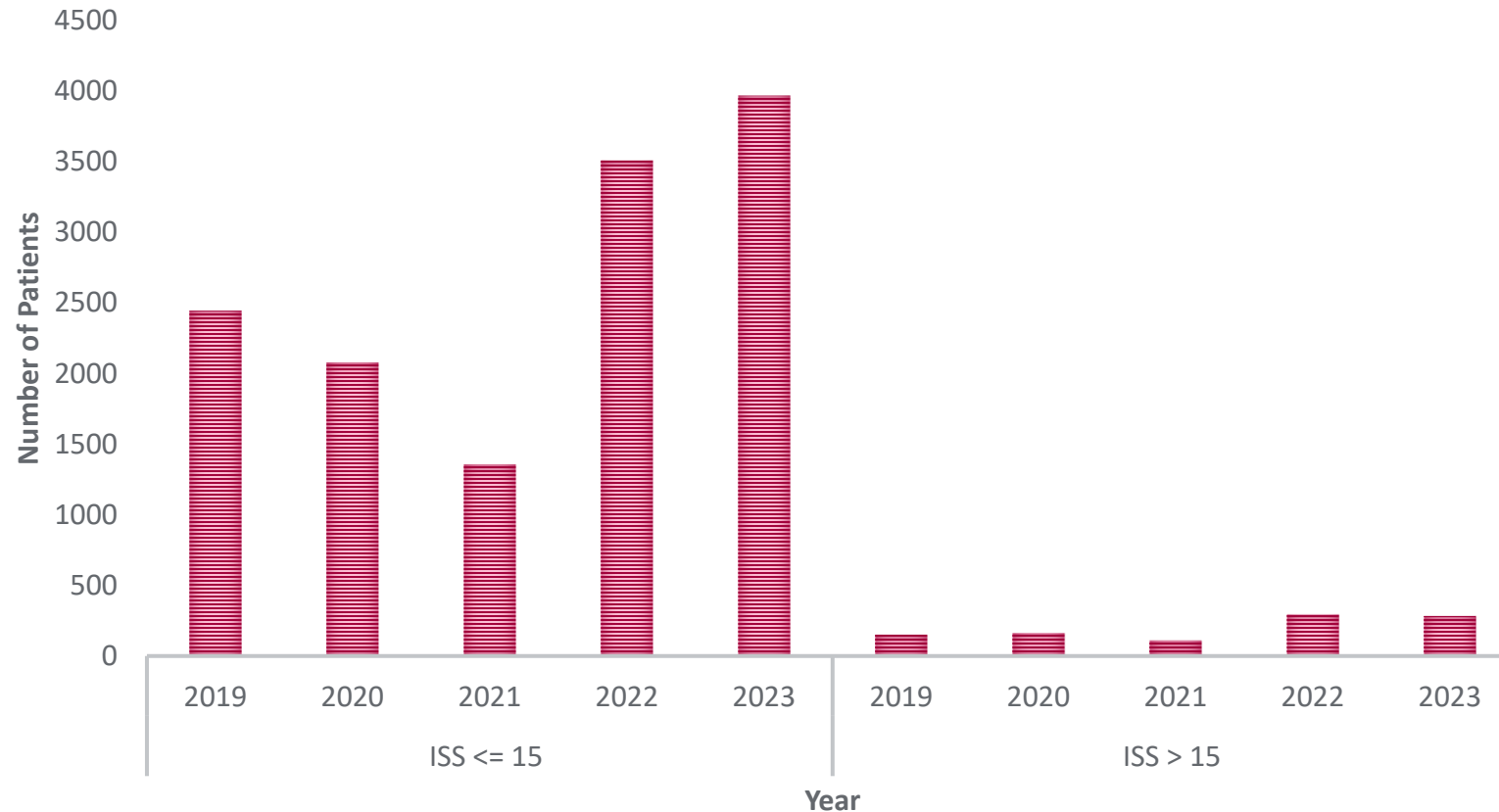
At least one diagnostic code for injury:
- ICD-10 code from the following ranges: S00-S99 (7th Character Modifier A, B, or C), T07, T14, T20-T28 (7th Character modifier A), T30-32, and T79.A1-T79.A9 (7th character modifier A) and the patient must have:
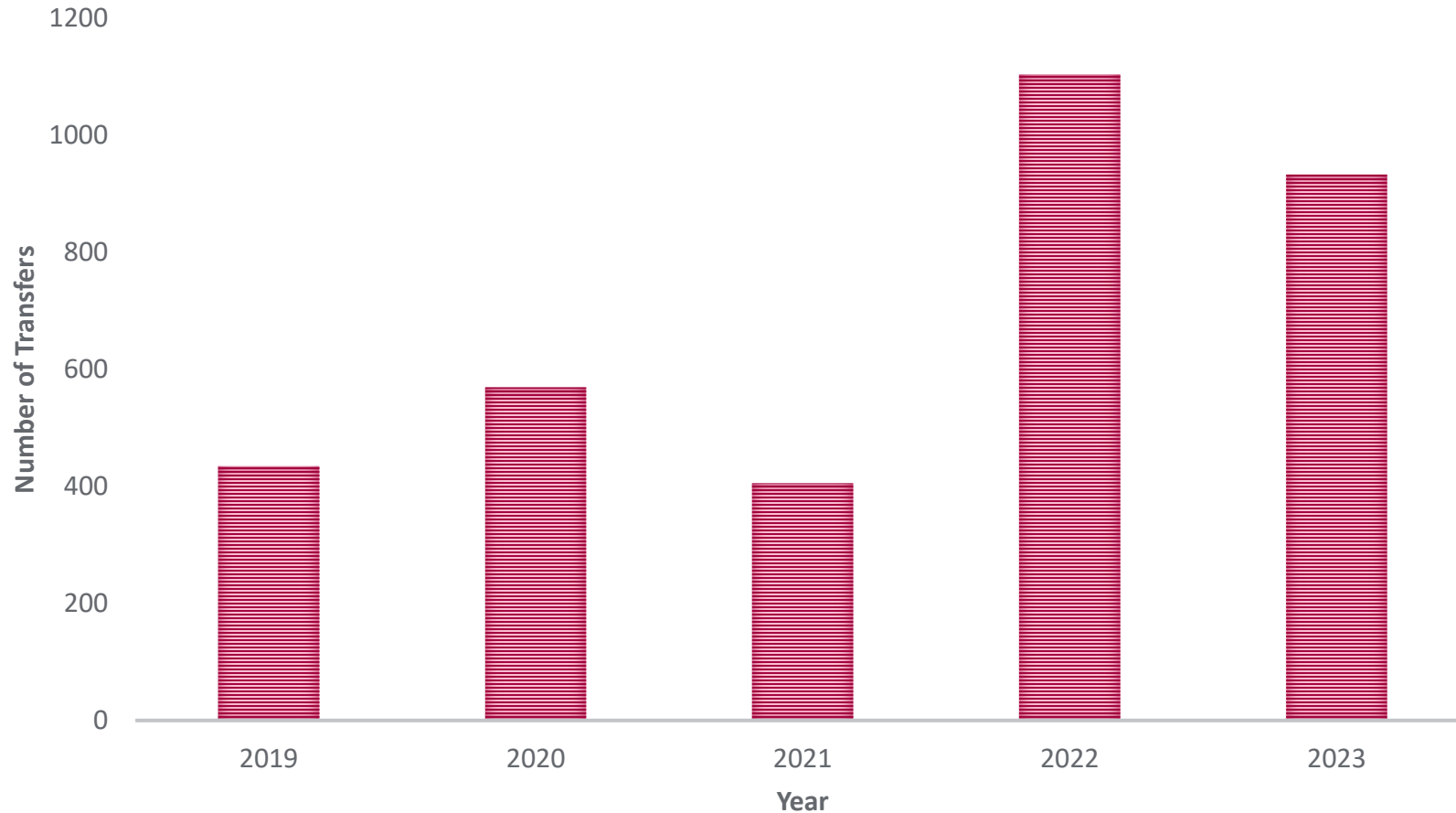
At least one of the following criteria:
- Patient was in the hospital for at least 24 hours due to injuries;
- Injury resulted in death; or
- Patient was transferred between hospitals using EMS or air ambulance.

Source: State Trauma Registry data

2023 TRAUMA SYSTEM REPORT
TRANSFERS TO SOUTHERN NEVADA TRAUMA CENTERS FROM NON-TRAUMA CENTERS

	2019	2020	2021	2022	2023
All	434	569	405	1104	933

Source: State Trauma Registry data

POPULATION CLARK COUNTY
UNITED STATES CENSUS BUREAU
2020 Census: Nevada ranked #5 for growth rate with 15%

YEAR	POPULATION FORCAST	GROWTH IN POPULATION (%)
2015	2,147,641*	2.2%
2016	2,205,207*	2.7%
2017	2,248,390*	2.0%
2018	2,284,616*	1.6%
2019	2,325,798*	1.8%
2020	2,376,683*	2.2%
2021	2,333,092*	-1.8%
2022	2,331,934*	-0.05%
2023	2,374,000**	1.8%
2024	2,407,000**	1.4%

POPULATION:
10-Year Growth

12%

*SNRPC consensus population estimate
**CBER 2023 Economic Outlook forecast, April 2023

TRAUMA SYSTEMS WITH SIMILAR POPULATION

ADULT TRAUMA CENTERS

	# Level I	# Level II	# Level III	POPULATION
San Diego County	4	2	0	3.3 million
Chicago	5	0	0	2.67 million
San Bernadino County	2	1	0	2.2 million
Houston	3	1	4	1.08 million
Southern Nevada Currently	1	1	2	2.37 million

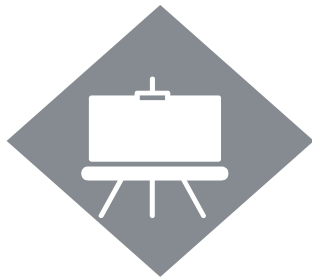# TRAUMA REPORTS
Updated/Released Annually

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

NEVADA DPBH: Nevada Annual Trauma System Report
https://dpbh.nv.gov/uploadedFiles/dpbhnvgov/content/Programs/EBV/2022%20Nevada%20Trauma%20Registry%20Annual%20Report%207.2023.pdf

THANK YOU