NORTHERN NEVADA

Public Health

Serving Reno, Sparks & Washoe County

Washoe County Trauma Data Report 2023

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NORTHERN NEVADA
Public Health
Serving Reno, Sparks & Washoe County

MISSION

To improve and protect our community's quality of life and increase equitable opportunities for better health.

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INTRODUCTION

In the context of public health framework, understanding injury trends is crucial for effective prevention and intervention strategies. Fatal and non-fatal injuries have significant implications for individual well-being, healthcare, and public expenditures. The purpose of this report is to highlight prevalence, morbidity, and mortality associated with patterns of fatal and non-fatal injuries due to trauma in 2023, as defined by The American College of Surgeons (ACS), in Washoe County. Assessment of trauma and injuries presented in this report utilizes the Nevada Trauma Registry (NTR) standardized dataset established under NRS 450B.238, and NAC 450B.768. This report provides characteristics and trends for specific trauma and injury data submitted in calendar year 2023 in Washoe County.

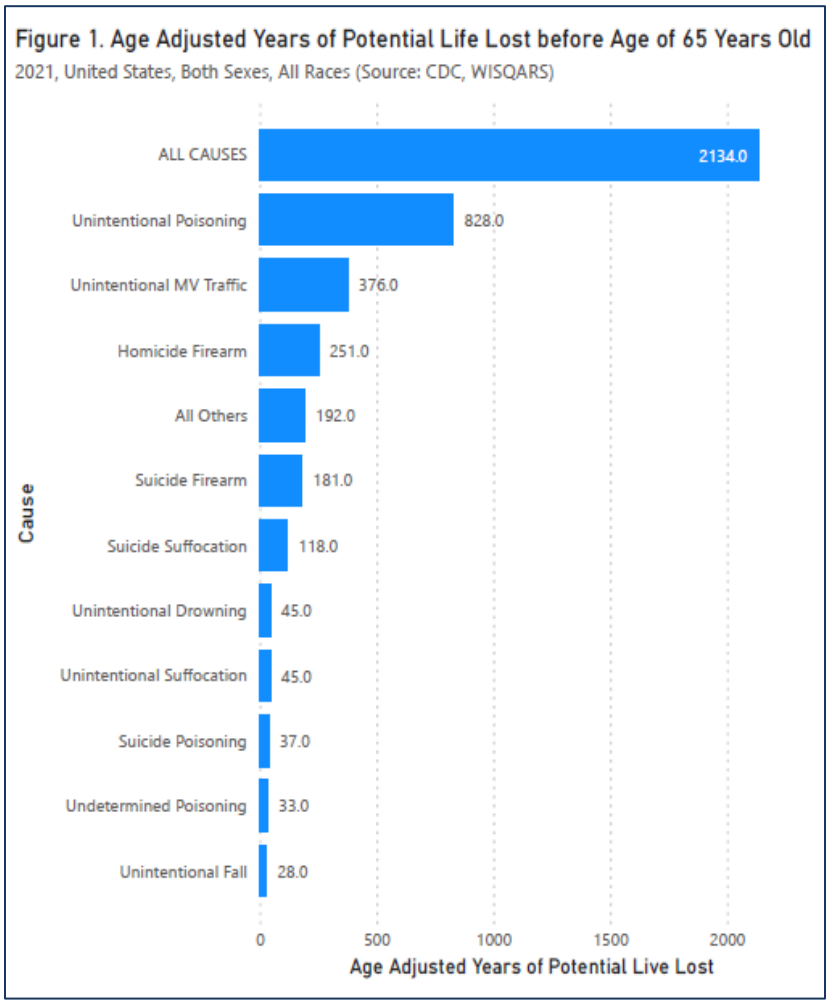
This report is divided into sections describing the current burden and magnitude of injuries and hospitalization trends for patient trauma care in Washoe County with accompanying information on:

a) demographic distribution of traumatic injuries;
b) specific mechanisms causing the injury;
c) severity of the injury;
d) place of injury; and
e) length of hospital stay in the intensive care unit (ICU).

These sections were curated to augment the Northern Nevada Public Health strategic priority to promote impactful partnership with stakeholders in the community and mission to protect and enhance the well-being and quality of life for all in Washoe County. In this annual report, 2018-2021 trends on non-adjudicated traffic citations leading to motor vehicle crashes in Washoe County are also available. The non-adjudicated citation report and analysis was completed by University of Nevada Las Vegas Traffic Safety team in cooperation with a research grant from Nevada Office of Traffic Safety #TS-2023-UNLV-000777 (Appendix B and C).

TRAUMATIC INJURY IN UNITED STATES

Unintentional and violence-related injuries, for example, motor vehicle crashes (MVC), drug overdoses, falls, assaults and suicides are among the most frequent causes of deaths for all age groups (Figure 1), accounting for nearly 23 million non-fatal emergency department ED visits in the US. The combined economic cost of fatal and non-fatal preventable injury-related to employee uninsured costs, vehicle damage, fire costs, medical costs, work productivity, live lost, and quality of life in the United States was $6.2 trillion in 2020, which is 47.% increase in costs compared to 2019 ($4.2 trillion). For every injury related premature mortality (early death), Years of Potential Life Lost (YPLL) helps quantify the impact of premature mortality due to injury on society compared to other leading causes of death. According to the Centers for Disease Control and Prevention, unintentional injuries are the leading cause of deaths among persons 1 to 44 years of age, accounting for half of deaths in that age group in the United States (Graphic A). In addition to those that survive, millions of people still suffer from injuries each year[1].



[1] "FASTSTATS - Injuries." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 12 May 2016, https://www.cdc.gov/nchs/fastats/injuries.htm.

Top 10 Leading Causes of Death, 2021, All Age Groups

	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
1	Congenital Anomalies 3,963	Unintentional Injury 1,299	Unintentional Injury 827	Unintentional Injury 915	Unintentional Injury 15,792	Unintentional Injury 34,452	Unintentional Injury 36,444	Covid-19 36,881	Malignant Neoplasms 108,023	Heart Disease 553,214	Heart Disease 695,547
2	Short Gestation 2,946	Congenital Anomalies 412	Malignant Neoplasms 347	Suicide 598	Homicide 6,635	Suicide 8,862	Covid-19 16,006	Heart Disease 34,535	Heart Disease 89,342	Malignant Neoplasms 446,354	Malignant Neoplasms 605,213
3	Sids 1,459	Homicide 309	Homicide 188	Malignant Neoplasms 449	Suicide 6,528	Homicide 7,571	Heart Disease 12,754	Malignant Neoplasms 33,567	Covid-19 73,725	Covid-19 282,457	Covid-19 416,893
4	Unintentional Injury 1,306	Malignant Neoplasms 282	Congenital Anomalies 171	Homicide 298	Covid-19 1,401	Covid-19 6,133	Malignant Neoplasms 11,194	Unintentional Injury 31,407	Unintentional Injury 33,471	Cerebrovascular 139,257	Unintentional Injury 224,935
5	Maternal Pregnancy Comp. 1,113	Heart Disease 116	Heart Disease 66	Congenital Anomalies 179	Malignant Neoplasms 1,323	Heart Disease 4,155	Suicide 7,862	Liver Disease 10,501	Diabetes Mellitus 18,603	Chronic Low. Respiratory Disease 120,152	Cerebrovascular 162,890
6	Placenta Cord Membranes 672	Perinatal Period 68	Covid-19 63	Heart Disease 132	Heart Disease 944	Malignant Neoplasms 3,615	Liver Disease 5,833	Diabetes Mellitus 7,597	Liver Disease 17,664	Alzheimer's Disease 117,922	Chronic Low. Respiratory Disease 142,342
7	Bacterial Sepsis 557	Cerebrovascular 55	Chronic Low. Respiratory Disease 54	Covid-19 79	Congenital Anomalies 419	Liver Disease 1,833	Homicide 4,863	Suicide 7,401	Chronic Low. Respiratory Disease 17,620	Diabetes Mellitus 72,451	Alzheimer's Disease 119,399
8	Respiratory Distress 414	Covid-19 54	Cerebrovascular 35	Cerebrovascular 53	Diabetes Mellitus 345	Diabetes Mellitus 1,285	Diabetes Mellitus 2,961	Cerebrovascular 5,755	Cerebrovascular 14,634	Unintentional Injury 69,003	Diabetes Mellitus 103,294
9	Circulatory System Disease 402	Influenza & Pneumonia 47	Septicemia 28	Chronic Low. Respiratory Disease 45	Complicated Pregnancy 214	Complicated Pregnancy 797	Cerebrovascular 2,189	Chronic Low. Respiratory Disease 3,174	Suicide 7,267	Nephritis 44,013	Liver Disease 56,585
10	Intrauterine Hypoxia 358	Benign Neoplasms 37	Influenza & Pneumonia 27	Diabetes Mellitus 39	Cerebrovascular 190	Cerebrovascular 624	Septicemia 1,108	Homicide 2,768	Septicemia 6,477	Parkinson's Disease 37,568	Nephritis 54,358

Graphic A. Ten Leading Causes of Death, United States. 2021. Source: WISQARS Centers for Disease Control and Prevention.

TRAUMA CENTERS IN THE UNITED STATES

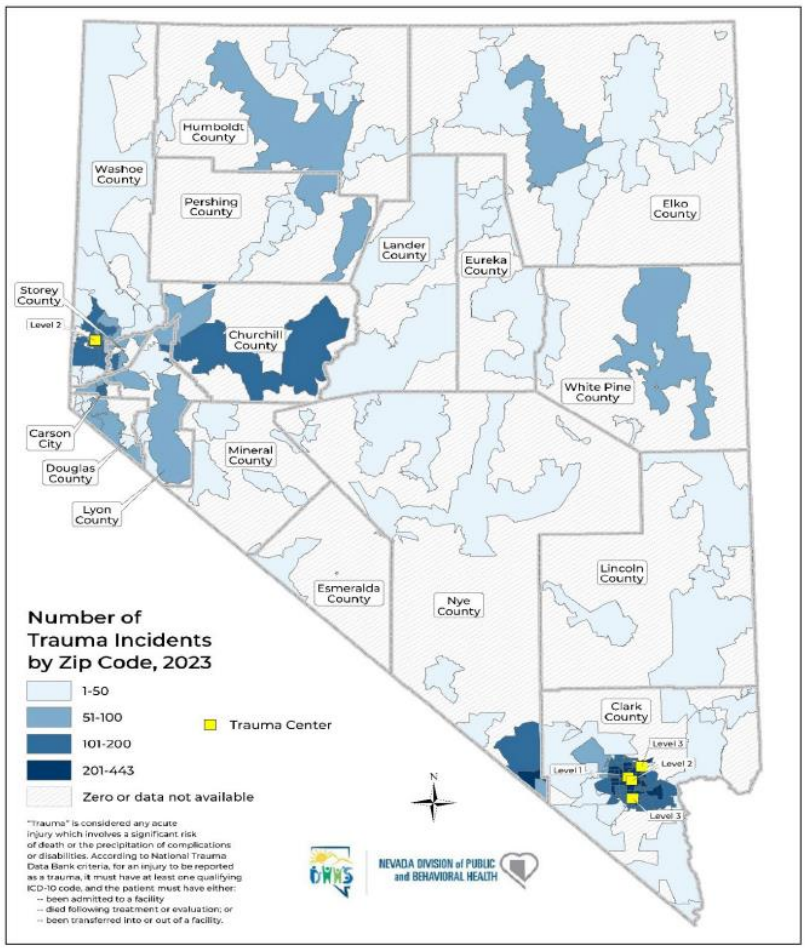
Designation and verification of trauma centers are two separate independent activities directed to assist hospitals to enhance and optimize trauma care. The designation of trauma facilities in the U.S. is a geopolitical process by which empowered entities, government or otherwise, are authorized to designate[2]. Although the American College of Surgeons (ACS) does not designate trauma centers, the ACS conducts consultation and verification activities through ACS Verification, Review, and Consultation (VRC) programs. Designated trauma centers may receive certification through voluntary review of essential elements such as trained and capable personnel, adequate facilities, and performance improvement to confirm resource capability readiness as a Trauma Center[3]. Trauma Centers are classified into various Levels (Level I, II, III, IV, or V), based on the kinds of resources available in the facility and the number of patients admitted annually[4].

[2] American College of Surgeons. Verification, Review and Consultation (VRC) Program. Source: https://www.facs.org/quality-programs/trauma/tqp/center-programs/vrc/about

[3] American College of Surgeons. Resource for Optimal Care of the Injured Patient 6th edition. Source: https://www.facs.org/Quality-Programs/Trauma/TQP/center-programs/VRC/resources

[4] Trauma Center Levels and Capabilities. Washoe County 2017 Trauma Data Report. Source: https://www.washoecounty.us/health/files/ephp/emergency-medical-services/

TRAUMA CENTERS IN NEVADA



Graphic B. Trauma Centers in Nevada. Source: https://dpbh.nv.gov/Programs/NVTrauma/NVTrauma_-_Home/

Nevada Trauma Centers are located in the most populated counties in Nevada: Clark County and Washoe County (Graphic B). Trauma centers and EMS services collaborate closely to ensure effective care for trauma patients. Patients with traumatic injury may arrive at a facility which is not a designated Trauma Center. Medical personnel make an informed decision as to whether a patient should be transferred to a designated Trauma Center in the region[5].

Washoe County:

- Renown Regional Medical Center, (Level II Adult Trauma Center)

Clark County:

- University Medical Center of Southern Nevada, (Level I Adult Trauma Center)
- Sunrise Hospital & Medical Center (Trauma Level II Center)
- St. Rose Dominican Hospitals Siena Campus (Trauma Level III Center).

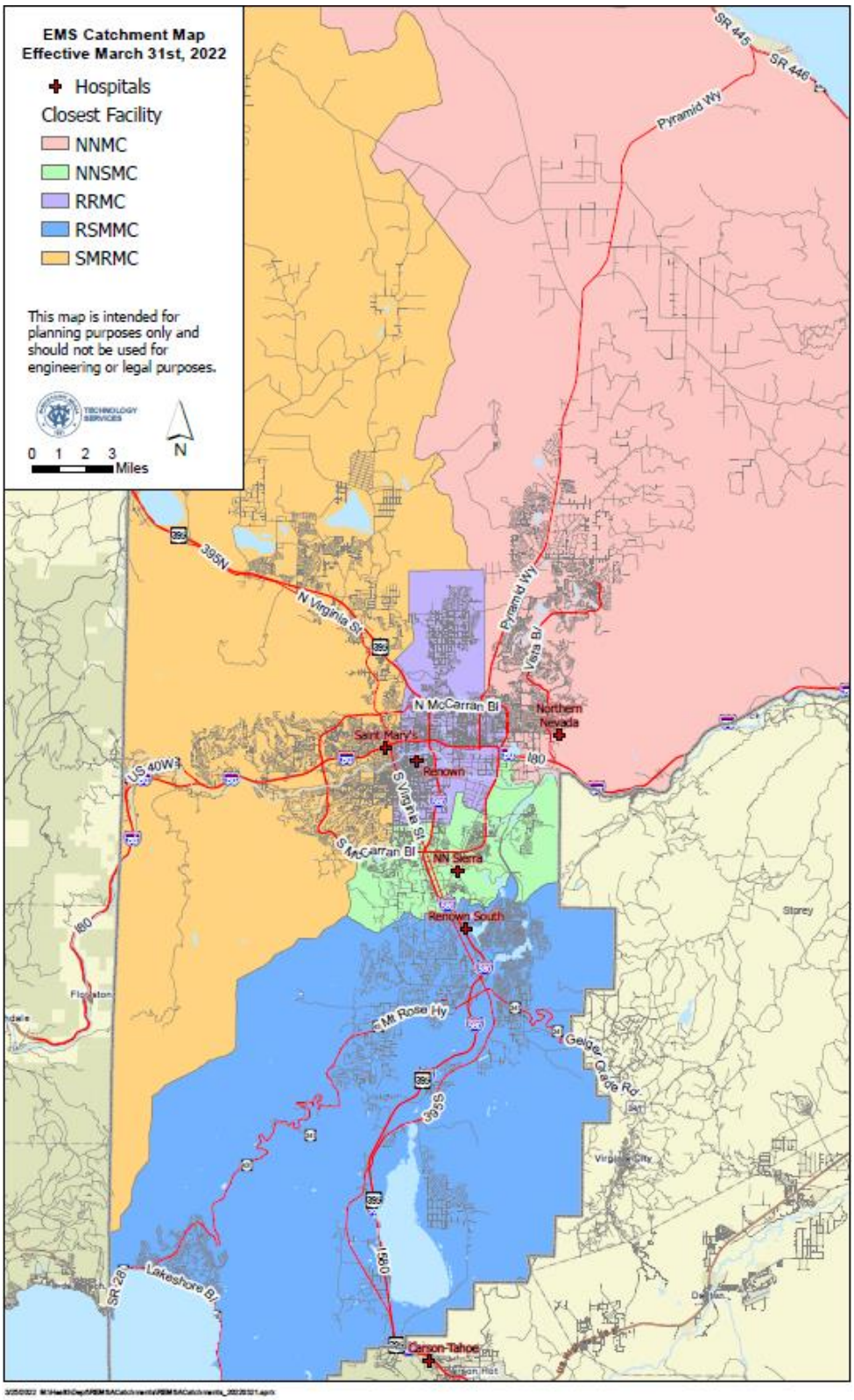
[5] Annual Trauma Registry Report 2023. State of Nevada Bureau of Health Protection and Preparedness. Source: https://dpbh.nv.gov/Programs/NVTrauma/NVTrauma_-_Home/

CATCHMENT ZONE MAP IN WASHOE COUNTY

Adult and pediatric patients identified as trauma candidates sustaining minor to very severe injuries in Washoe County will be transported to the most appropriate adult trauma center assigned per the Washoe County EMS Catchment Zone Map (Graphic C). EMS Catchment Zone(s) in Washoe County is a geographic area with defined boundaries assigned to designated facilities and trauma centers for the purposes of care of identified adult and pediatric trauma candidates. Designated EMS Catchment Zone facilities in Washoe County includes:

- Northern Nevada Medical Center
- Northern Nevada Sierra Medical Center
- Renown Regional Medical Center
- Renown South Meadows Medical Center
- Saint Mary's Regional Medical Center

For trauma incident reporting, all facilities listed in the Catchment Zone are actively submitting trauma data into the Nevada Trauma Registry (NTR). The NTR data quality and assurance is operated and maintained by the Nevada Department of Health and Human Services.

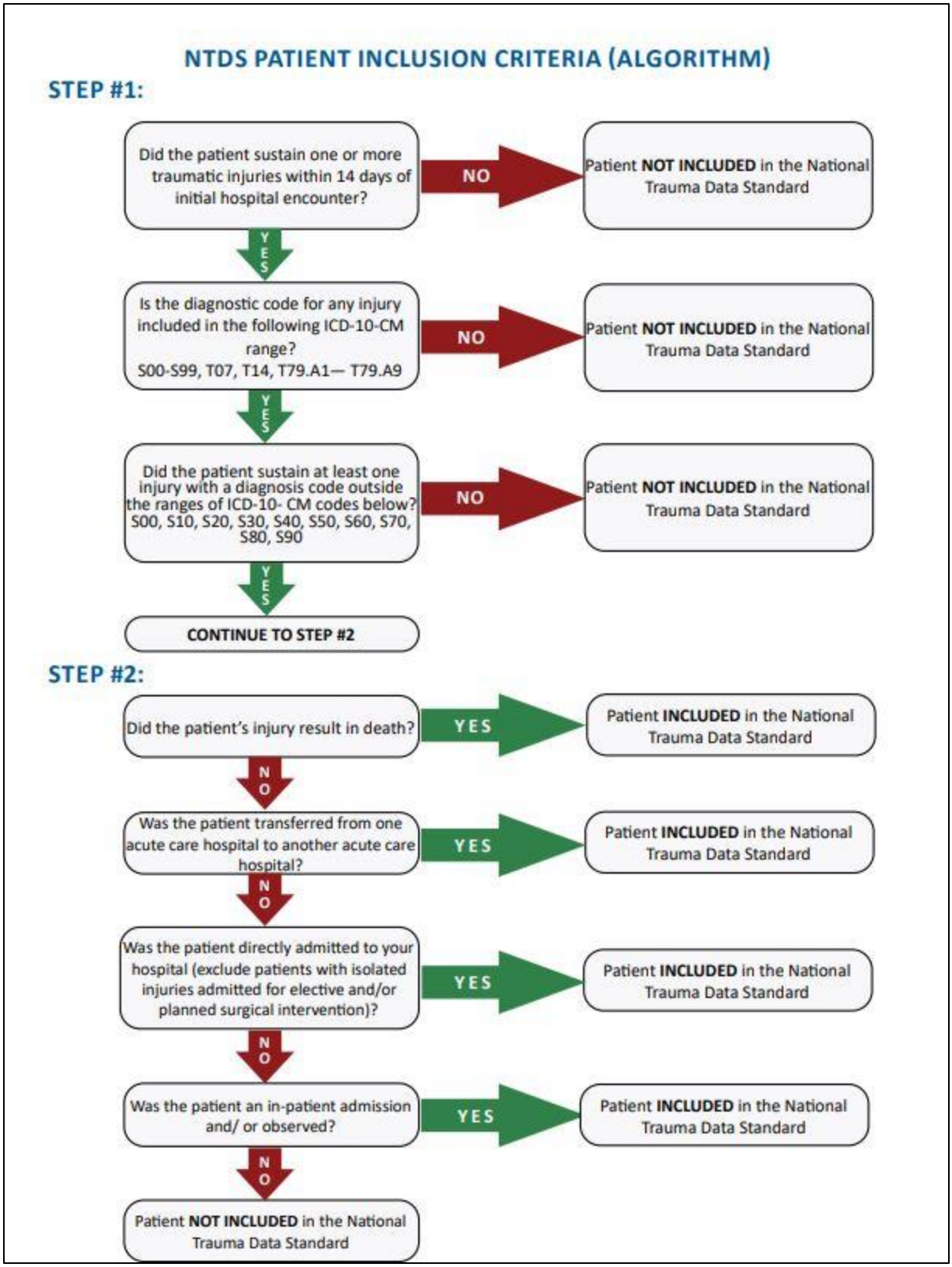


Graphic C. Washoe County EMS Catchment Zone Map 2022

TRAUMA REPORTING IN WASHOE COUNTY

The National Trauma Data Bank (NTDB) is the largest combined trauma registry in the United States. Healthcare facilities across the nation report patient level trauma information to the NTDB that ranges from basic demographics to quantitative, and qualitative data describing the nature of the injury, level of care received, and the outcome of the injury. The National Trauma Data Standard defines a standardized set of data variables to capture and report to Nevada Trauma Registry (Graphic D). A facility does not have to be designated or a verified Trauma Center to report data on a patient experiencing traumatic injury to the Nevada Trauma Registry.

Patient level trauma data is reported to Nevada Trauma Registry (NTR) by facilities in the Catchment Zone. Reporting facilities also admit trauma patients who sustained injuries in location(s) outside Washoe County. The NTR does capture patient level information for trauma patients transported from Northern California region(s) to healthcare facilities in Washoe County. Graphic D illustrates inclusion criteria that a patient must meet to be reported to the NTR. For consistency in data reporting, the Washoe County Trauma 2023 report does not exclude out-of-state patients injured in Washoe County treated in Washoe County facilities. We intend to continue to report incidences based on injury location, and the utilization and demand of resources (EMS and hospital) in the region regardless of residency.



Graphic D. National Trauma Data Standard Data Dictionary 2023 Admissions. Source: https://www.facs.org/quality-programs/trauma/quality/national-trauma-data-bank/national-trauma-data-standard/

OVERVIEW OF INJURY IN WASHOE COUNTY

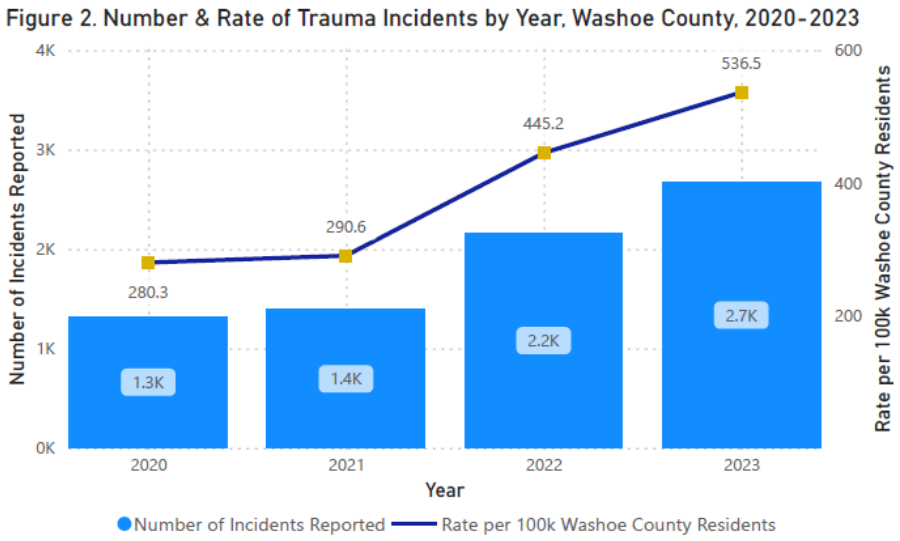


Figure 2 depicts the trend of trauma cases reported in Washoe County to the Nevada Trauma Registry from 2020 to 2023. The rate of injury classified as traumatic that were reported by Washoe County facilities ***increased by 20.5% in 2023*** (536.5 per 100,000 population) compared to the previous year in 2022 (445.2 per 100,000 population). The increase in the number of incidents was partly due to free standing emergency room added to NTR, and more incidents reported by designated trauma hospitals due to a growing population trend in Washoe County. Nevada Trauma Registry does not mandate compliance tracking by facilities pursuant to NRS 450B.238, and NAC 450B.768. Facilities that do report trauma cases to the registry are encouraged by the state to conduct internal data checks independently.

In 2023, nearly 3/4 (74.6%) of trauma patients reported to NTR were white, non-Hispanic. Hispanics of any race accounted for 9.5%, 2.5% were Asian/Pacific Islander, non-Hispanic, 2.4% were African American, non-Hispanic, and 1.3% were American Indian, non-Hispanic (Figure 3). Race-specific rate calculated for trauma incidents affecting American Indian population. disproportionately compared to African American and Hispanic patients (Table 1). ***Racial and ethnic disparities*** span the entire continuum of trauma care among insured and uninsured patients' population in Washoe County. Race adjusted injury rates for Hispanics and Asian/PI patients were among the lowest in Washoe County (Figure 4).

DEMOGRAPHIC CHARACTERISTICS

Race/Ethnicity

Figure 3. Percent of Trauma Patients by Race and Ethnicity, Washoe County, 2023

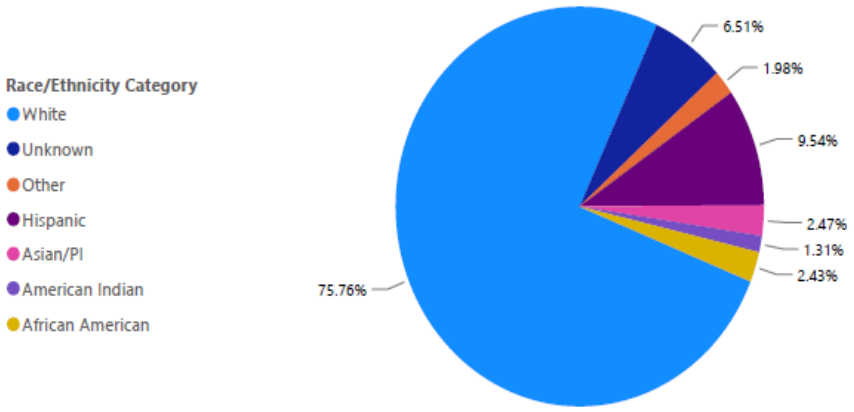
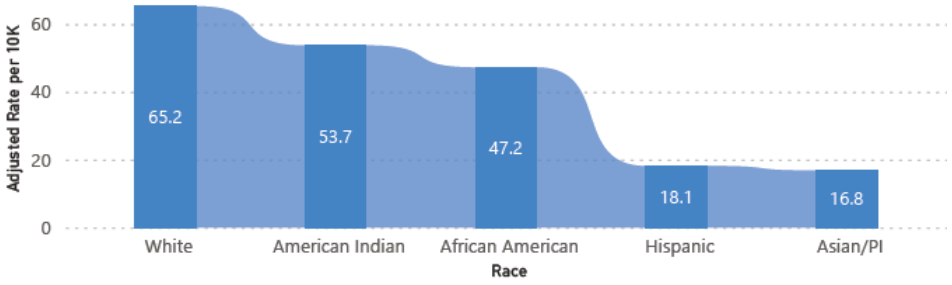


Table 1. Race Adjusted Traumatic Injuries per 10,000 residents, Washoe County, 2023

Race	Adjusted Rate per 10K	Frequency
White	65.2	2024
Hispanic	18.1	255
Asian/PI	16.8	66
African American	47.2	65
American Indian	53.7	35
Total		**2445**

Figure 4. Race Adjusted Traumatic Injuries per 10,000 residents, Washoe County, 2023



Gender and Age Group

Figure 5 depicts demographic characteristics of trauma patients by age, and gender. Almost half (48%) of the trauma incidents reported in 2023 captured trauma patients between the age of 25 to 64 years old age group. Case Fatality Rate (CFR) per 100 trauma patients in Washoe County varies across age groups in 2023 (Figure 6). The largest decrease in case fatality rate was observed among trauma patients in the 65-74 years age group; CFR: 5.5 per 100 trauma patients in 2023 compared to 3.20 per 100 trauma patients in 2021. Table 2 summarizes case fatality rates among injuries reported. *The highest case fatality rate reported among patients aged 85+ years old, 10 - 14 years old (6 deaths per 100 trauma patients), and 0-4 years old patients (4 deaths per 100 trauma patients).*

Figure 5. Trauma Incidents by Gender and Age Group, Washoe County, 2023

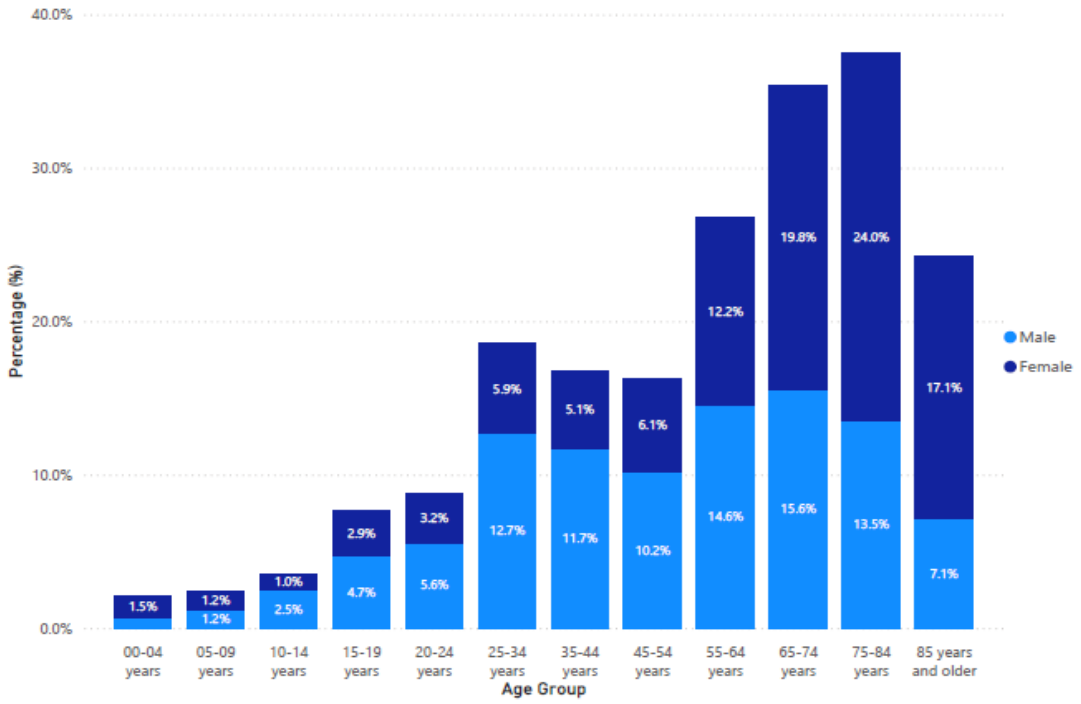
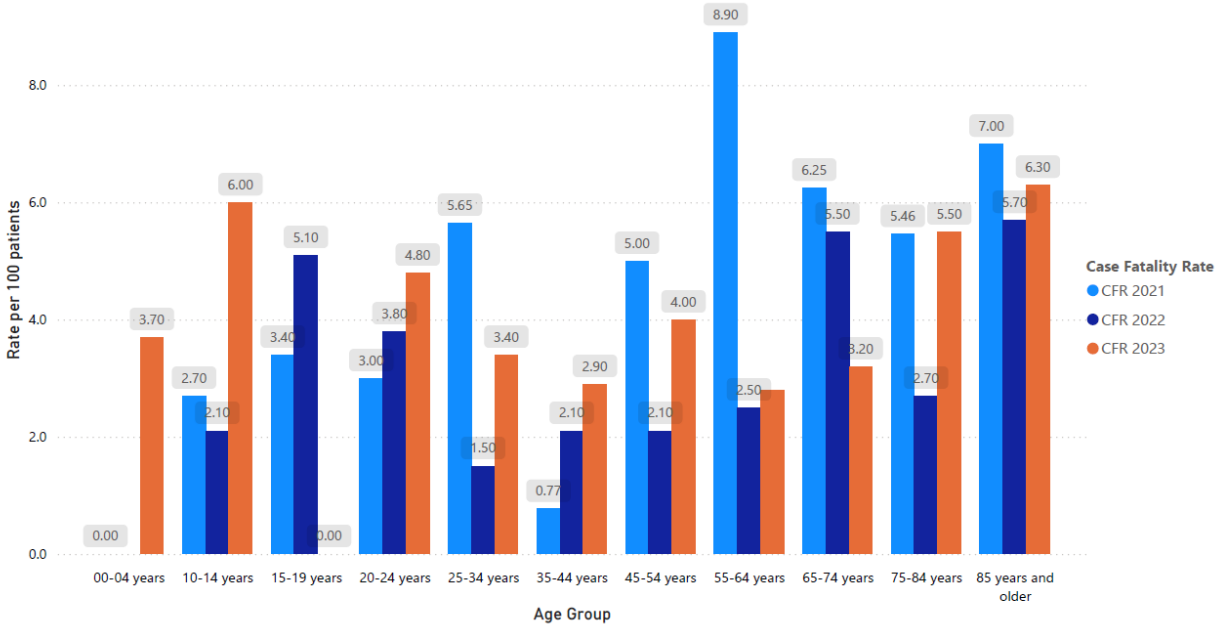


Figure 6. Case Fatality Rate per 100 Trauma Patient in Washoe County 2021 - 2023



INJURY CHARACTERISTICS

Intent of Injury

Unintentional injuries accounted for 92% of trauma, with reported case fatality rate of 3.6 per 100 trauma patients. Intentional injury accounted for 7.6% of overall trauma reported, with a case fatality rate of 7.8 per 100 trauma patients. The intent of injury reported over the span of four years from 2020 – 2023 has consistently predominantly captured unintentional injuries (Figure 7). Among injuries sustained from all intent, self-inflicted injuries are the deadliest (Figure 8). A quarter of patients with self-inflicted injuries die at the hospital with the highest mortality when compared to other injury patterns such as assault, unintentional and undetermined intent in Washoe County. Efforts to prevent both intentional and unintentional injuries remain critical for public health and well-being.

Figure 7. Percent Distribution of Injury by Intent and Year, Washoe County, 2020-2023

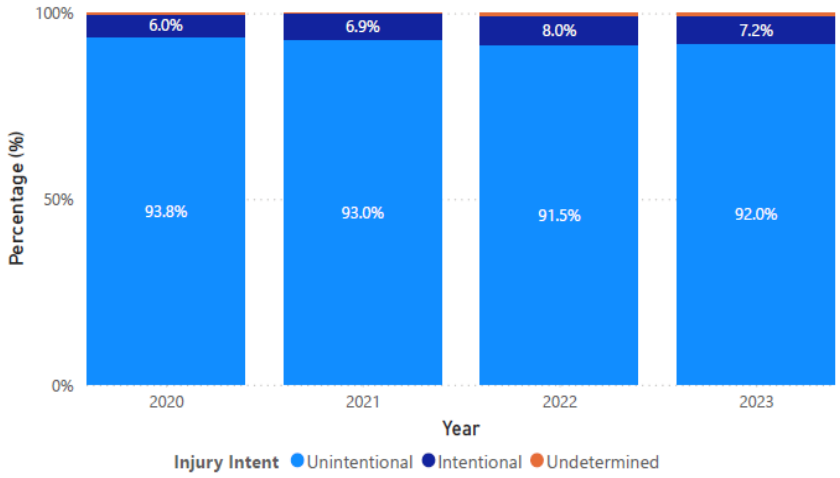
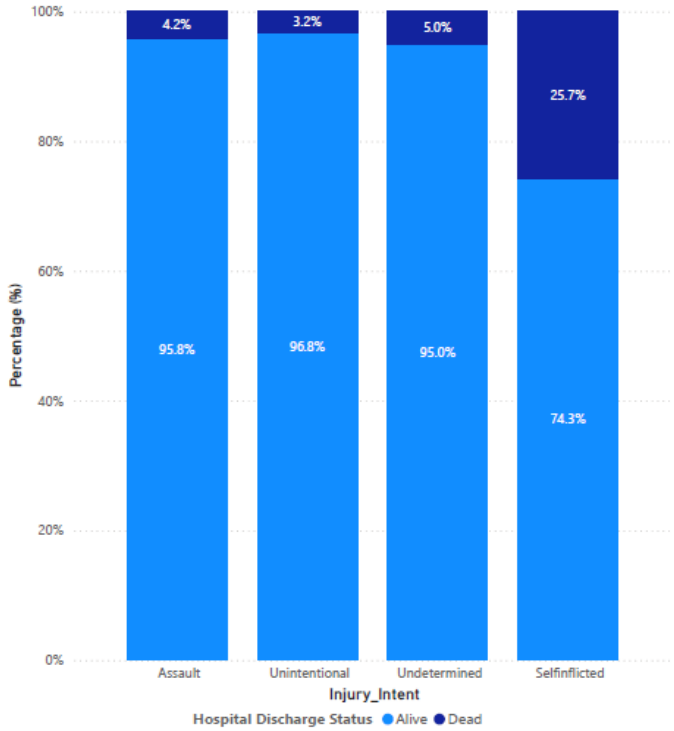


Figure 8. Percent Discharge Status Based on Injury Intent, Washoe County, 2023



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Mechanism of Injury (MOI)

The Mechanism of Injury (MOI) was determined by the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD10-CM) primary external cause code (e-code) reported as the main cause of the injury. ICD10-CM is a standardized classification system of diagnosis in medical reporting for healthcare systems in the United States. The percentage of reported unintentional injuries make up most injuries reported to the registry (Table 2).

Table 2. Fatality Rate Among Trauma Patient Due to Unintentional Injuries, Washoe County, 2023

Unintentional Classification	Total	Deaths	Case Fatality Rate
Cut/Pierce	17	0	0.00
Drowning/Submersion	2	0	0.00
Fall	1394	56	4.02
Fire/Flame	3	0	0.00
Firearm	25	0	0.00
Hot Object/Substance	2	0	0.00
Machinery	10	0	0.00
MVT Motorcyclist	119	3	2.52
MVT Occupant	321	16	4.98
MVT Other	43	0	0.00
MVT Pedal Cyclist	26	1	3.85
MVT Pedestrian	82	8	9.76
MVT Unspecified	1	0	0.00
Natural/Environmental Bites and Stings	13	0	0.00
Natural/Environmental Other	18	0	0.00
Other Specified and Classifiable	48	0	0.00
Other Specified Not Elsewhere Classifia	14	0	0.00
Overexertion	11	0	0.00
Pedal Cyclist Other	67	0	0.00
Pedestrian Other	25	3	12.00
Struck by or Against	62	0	0.00
Transport Other	129	1	0.78
Total	**2432**	**88**	

Case Fatality Rate are per 100 trauma patients.

The highest number of unintentional injuries reported in Washoe County is due to falls. There are approximately 1,394 incidents that resulted in 56 deaths due to fall in 2023 (CFR 4.0 per 100 trauma patients). Out of all pedestrian accidents (MVT or Other) reported, combined pedestrian accidents have the highest case fatality rate in 2023 (CFR 12 per 100) (Table 2).

Based on the analysis of ICD10-CM, the deadliest injuries are sustained from motor vehicle traffic related accidents (combined), suffocation, and firearm (Table 2 and Table 3). Given the large number of unintentional and intentional injuries, death may be prevented with the appropriate timely 911 medical response and care for injuries sustained during intentional incidents.

Table 3. Fatality Rate Among Trauma Patient Due to Unintentional Injuries, Washoe County, 2023

Intentional Classification	Total	Deaths	Case Fatality Rate
Unspecified	11	0	0.00
Suffocation	5	3	60.00
Struck by or Against	57	2	3.51
Other Specified Not Elsewhere Classifia	2	0	0.00
Other Specified and Classifiable	5	0	0.00
MVT Pedestrian	1	0	0.00
MVT Other	1	1	100.00
MVT Occupant	2	0	0.00
Firearm	46	9	19.57
Fall	2	0	0.00
Cut/Pierce	71	1	1.41
Total	**203**	**16**	

Case Fatality Rate are per 100 trauma patients.

Mechanism of Injury by Age Group

Figure 9. Percent of Traumatic Injuries by Intent and Age Groups, Washoe County, 2020-2023

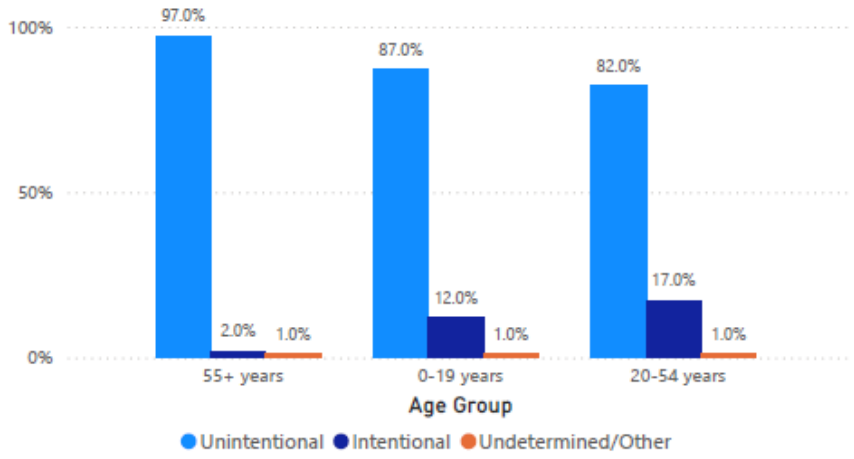


Table 4. Injury due to Selected Mechanism of Injuries by Age Group, Washoe County, 2023

Classification	0 to 19 years old	20 to 54 years old	55 years and older
Cut/Pierce	7.69%	76.92%	15.38%
Drowning/Submersion	50.00%	50.00%	
Fall	3.65%	13.47%	82.88%
Fire/Flame		66.67%	33.33%
Firearm	19.23%	67.95%	12.82%
Hot Object/Substance	100.00%		
Machinery		59.99%	40.01%
MVT Motorcyclist	10.08%	57.14%	32.78%
MVT Occupant	10.22%	49.23%	40.56%
MVT Other	34.09%	38.64%	27.27%
MVT Pedal Cyclist	3.84%	53.85%	42.31%
MVT Pedestrian	14.46%	51.81%	33.74%
MVT Unspecified			100.00%
Natural/Environmental Bites and Stings	61.56%	15.38%	23.06%
Natural/Environmental Other	5.55%	50.00%	44.45%
Other Specified and Classifiable	11.32%	35.85%	52.83%
Other Specified Not Elsewhere Classifia	3.57%	32.14%	64.29%
Overexertion			100.00%
Pedal Cyclist Other	11.94%	35.82%	52.24%
Pedestrian Other	15.99%	44.01%	40.00%
Struck by or Against	19.33%	55.46%	25.21%
Suffocation	19.99%	80.01%	
Transport Other	9.30%	62.02%	28.68%
Unspecified		81.82%	18.18%

Blank cells are indicative of no reporting for specified injuries in the selected age groups.

The largest intentional injuries occurred among those in the 20-54 years old age group in Washoe County and common unintentional injuries occurred among those 55 years and older (Figure 9). Table 4 indicates top mechanisms of intentional and unintentional traumatic injury by selection of age groups: 0-19 years, 20-54 years old, and 55 years and older. Motor vehicle traffic (MVT) accidents were among the top mechanisms of injury across all age groups. The most common type of injury in MVT accidents is MVT passengers' injury. Following previous' years trends, fall injuries are common among individuals 55+ years and older with 82.8% of fall hospitalization attributed to this age group in Washoe County (Table 4) Firearm and assault injuries reported were more common among individuals 0-19 years, and 20-54-years old age group. The statistics within age groups analysis reveal that *firearm injuries are more common among individuals in 20-54 years old age group (57.7%) compared to 0-19 years old age groups (42.3%).* The trend with firearm is very similar to pattern of injuries due to assault or struck by/against, with far more injuries occurring among 20-54 years old compared to 0 -19 years old and 55 years and older age groups. The data shows that mechanism of injuries differ across age groups, and they can be likely due to combination of physiological, behavioral, and environmental factors.

Place of Injury

The Nevada Trauma Registry database captures data on traumatic injuries to improve patient care and outcomes. The place of injury is a crucial aspect, influencing the nature of both prevention and treatment of injuries. The place of injury (POI) collected and identified through ICD-10-CM codes, which allows for detailed classification of the place of injury. ***There were approximately 258 or roughly 10% of total injuries that occurred in Washoe County took place in a local residence.*** Among the top three places of common injuries are interstate highway, recreational places, bedroom, and bathroom (Figure 11 and Figure 10). A significant portion of traumatic injuries reported to the Nevada Trauma Registry occur in the home, especially among the elderly and children such as falls, burns, cuts and poisoning. Road traffic injuries are prevalent because MVT accidents are leading causes of traumatic injuries across all age groups. Sports and recreational injuries are common among children, adolescents, and young adults. By understanding where and how injuries occur, interventions can be more effective to reduce both incidence and severity of traumatic injuries.

Figure 10. Detailed Place of Injury, Washoe County, 2023

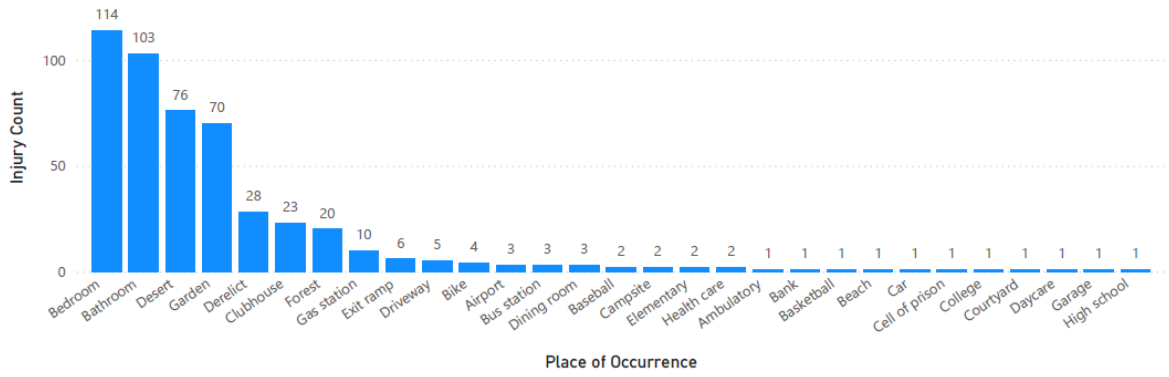
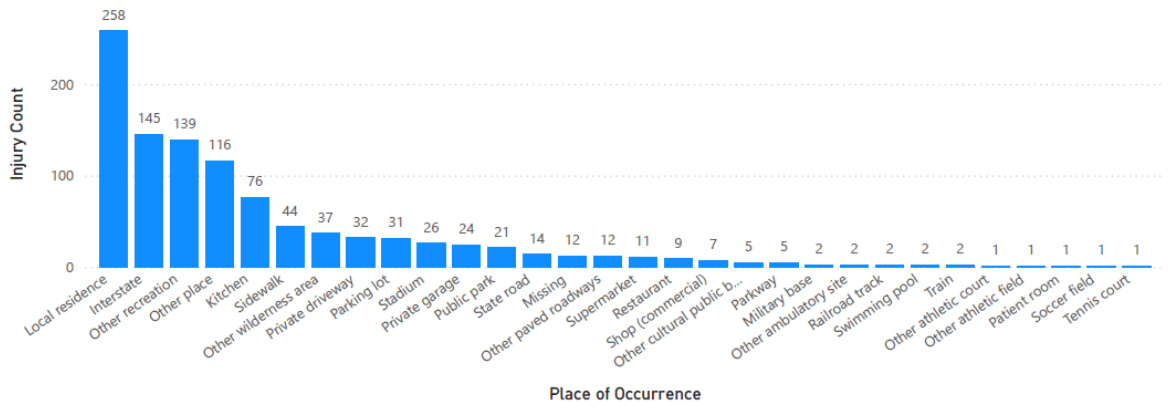


Figure 11. Detailed Place of Injury, Washoe County, 2023



Injury Severity

The Injury Severity Score (ISS) is an ordinal anatomical scoring system that provides an overall score for patients with multiple injuries. It's a valuable tool in trauma medicine for standardized measure of injury severity that often guides treatment decisions and improves trauma outcomes. The score may range from 1-75. The ISS score is calculated as the sum of the squares of the highest Abbreviated Injury Score (AIS) for the three most severely injured region out of six AIS grouped regions: head or neck, face, chest, abdominal or pelvic contents, extremities, or pelvic girdle, and external[6]. The categories of the injury severity are minor, moderate, severe, or very severe. Categories were derived based on the 2016 National Trauma Data Bank Annual Report which assigns ISS into the groups[6].

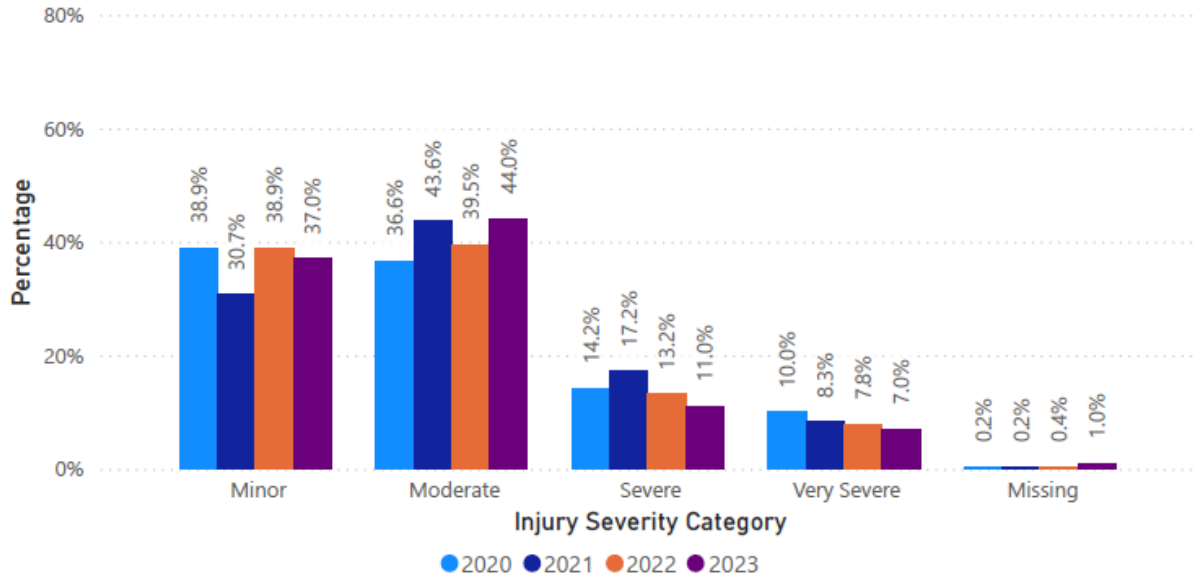
Approximately 81% of all injuries in Washoe County in 2023 were categorized as minor or moderate injuries (Table 5). *While severe and very severe injuries make up only 18% of all traumatic injuries, risk fatality increases with higher ISS*. In 2023, trauma cases with very severe injuries accounted for 55 deaths or 29 deaths per 100 patients vs. 12 deaths or 1 death per 100 patients. Over the span of 2020 – 2023, minor injuries based on ISS decreased from 38.9% to 37.0% *and the percentage decrease seen for very severe injuries from 10% to 7% in Washoe County (Figure 12)*.

Table 5. Rate of Fatality by Injury Severity Category, Washoe County, 2023

Injury Severity	Number of Injuries	Injury Percent	Number of Deaths	Case Fatality Rate
01_Minor	997	37.0%	12	1.20
02_Moderate	1177	44.0%	22	1.90
03_Severe	306	11.0%	16	5.20
04_Very Severe	192	7.0%	55	28.60
Total	**2672**	**99.0%**	**105**	**36.90**

[6] An overview of the injury severity score and the new injury severity score. BMJ Injury Prevention.

Figure 12. Injury Severity Trends for All Traumatic Injury, Washoe County, 2020-2023



PREHOSPITAL CHARACTERISTICS

Figure 13. Mode of Transportation for All Traumatic Injury, Washoe County, 2020-2023

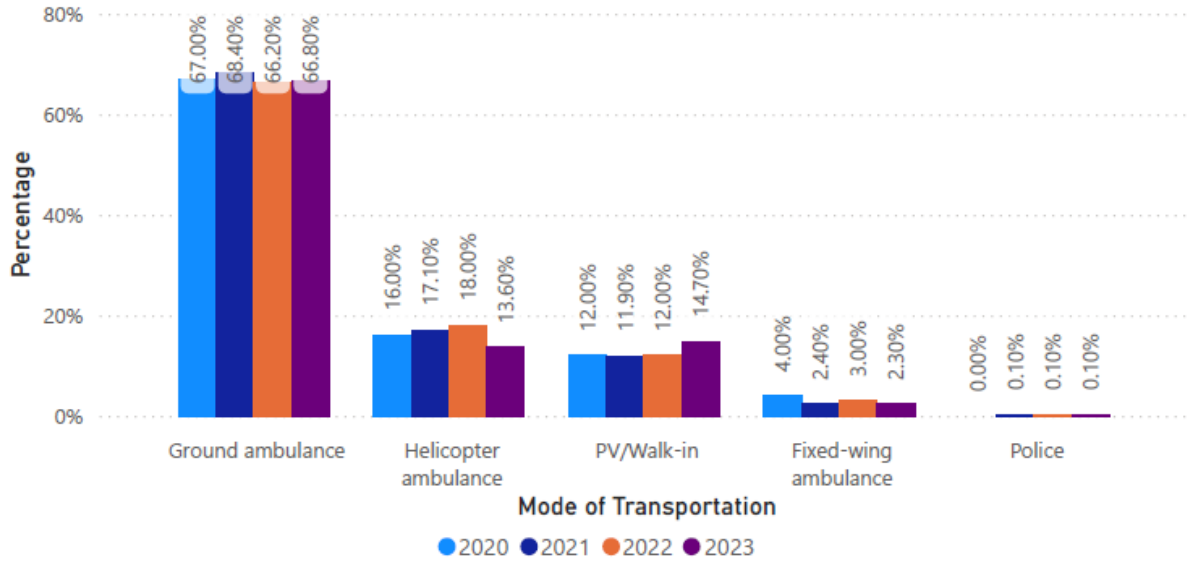


Figure 13 summarizes the distribution of transport by mode of arrival from 2020 – 2023. ***More than 2/3 of trauma patients captured by the Nevada Trauma Registry in Washoe County were transported by ground ambulance (66.8%),*** followed by private vehicle/walk in (14.7%), and by helicopter ambulance (13.6%). The trend for medical transport by helicopter ambulance declined in 2023 (13.6%) compared to 2020 (16%). The majority of transport via helicopter or a fixed-wing ambulance dispatched to injury location outside of the city center. In 2023, injuries occurring in rural areas such as Susanville, Austin, Dayton, Fallon, Hawthrone, and Incline Village did require air transport. In contrast, ***walk in or private vehicles as a means for medical transport increased to 14.7% from 12%,*** from 2023 to 2020, respectively.

SUBSTANCE USE

Trends for the number of patients that were tested for substance use increased year to year (Figure 14). ***Alcohol was confirmed to be present in a large percentage of patients with intentional injuries like assault and/or self-inflicted wounds***. As summarized in Table 19, approximately 34.5% assault patients with traumatic injury in Washoe County had test-confirmed alcohol use above legal limits and Approximately 25.7% of reported self-inflicted wounds reported in 2023 had test-confirmed alcohol use above legal limits. Trace alcohol level present in 6.5% of assault patients and 11.4% of self-inflicted patients. Among patients with unintentional injuries, only 9.7% had test-confirmed alcohol use above legal limits and 3% had test-confirmed trace level alcohol use (Figure 15).

Figure 14. Detected Substance Use Among Trauma Patients, Washoe County, 2020-2023

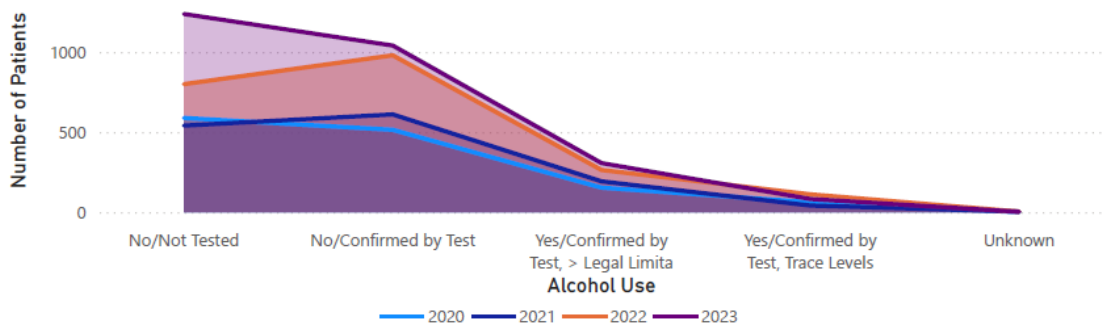


Figure 15. Detected Substance Use Among Trauma Patient by Mechanism of Injury. Washoe County, 2023

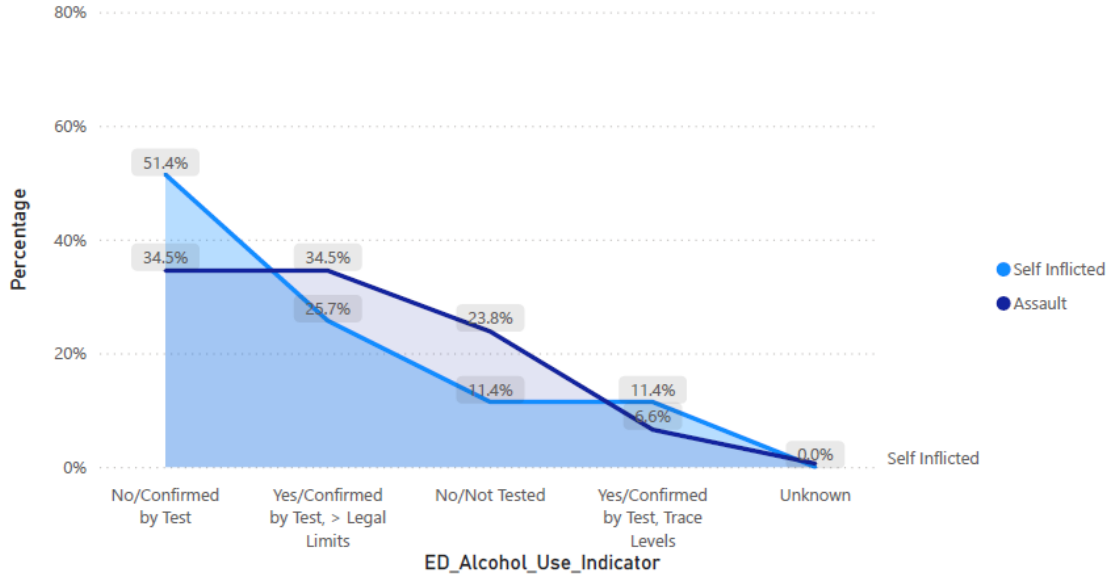
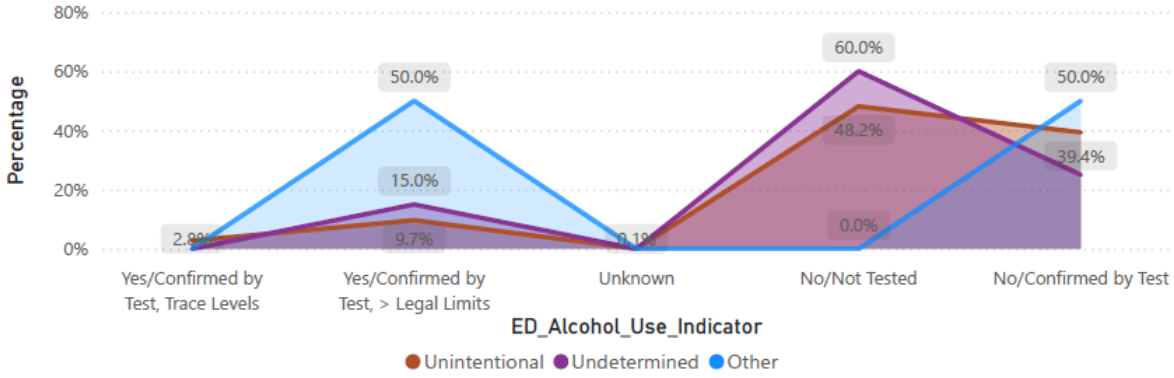


Figure 16. Detected Substance Use Among Trauma Patients by Intent, Washoe County, 2023



PATIENT OUTCOMES

Patient outcomes highlighted in this section include median length of stay spent in an intensive care unit, total length of stay (LOS) by ISS category and top ten highest median length of stay by MOI. Fifteen percent (15%) of patients with traumatic injury classified as minor were discharged within a week. The length of stay increases as the severity of the injury increases, as demonstrated by nearly 27.6% of patients with severe traumatic injury, and 32.0% of patients with very severe traumatic injuries being hospitalized for more than four weeks (Figure 17). With increasing injury score, hospital LOS increases. Median length of stay spent in Intensive Care Unit (ICU) also shares a similar pattern (Table 6). Median LOS for ICU stay for all injuries doubles for severe and very severe category, 3 and 6 days, respectively. The top three highest ICU length of stay are reported due to injuries involving drowning/submersion (9 days), suffocation (5 days), and motor vehicle traffic pedestrian accidents (4 days).

Figure 17. Incidents by Length of Stay and Severity, Washoe County, 2023

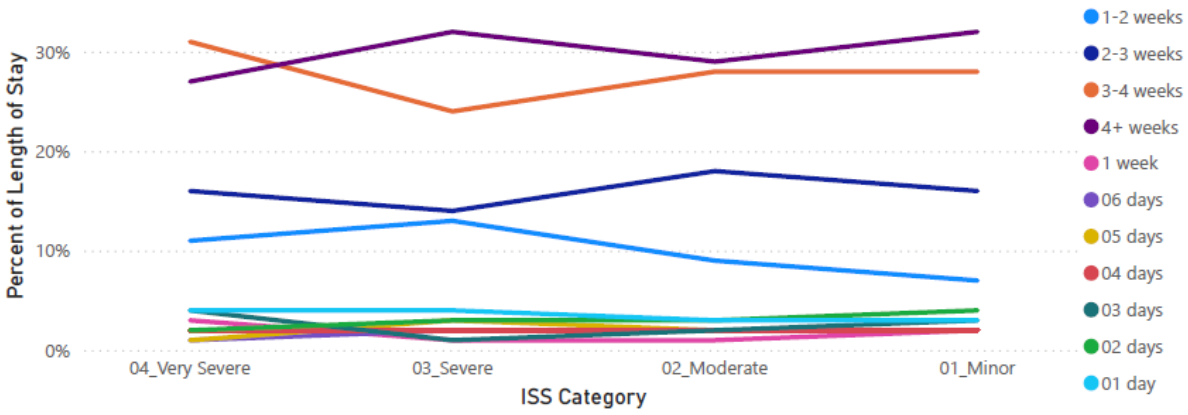


Table 6. ICU Median Length of Stay, Washoe County, 2020-2023

ISS Category	2020	2021	2022	2023
Minor	0	0	0	0
Moderate	2	2	2	2
Severe	4	4	4	3
Very Severe	6	5	6	6

CONCLUSION

The burden of trauma injuries is rising in Washoe County as the region's population increases. Trauma registries play a crucial role in documenting and analyzing injuries to address disparities and improving trauma care accessibility. In 2023, hospitalized trauma patients aged 10-14 years old and 85+years old had the highest case fatality rate compared to case fatalities in all other age groups. Motor vehicle and transport related accidents continue to be a common preventable unintentional injury. Local residential and business streets, recreational areas and interstate highways are among the most common places of injury reported in Washoe County. In addition to motor vehicle injuries, falls are the second most common unintentional injury reported. Falls also account for a large proportion of reported trauma injuries to the registry. Intentional injuries are more commonly reported among patients aged 20-54 years old, and injuries from this category are likely to test positive for alcohol use (trace level or above legal limit). Roughly 18% of traumatic injuries are severe and very severe with median ICU length of stay for more than 3 days.

Due to the nature of registries and extensive inclusion criteria, this data report highlights a subset of patient population that utilize 911 system and trauma centers. However, many high-risk trauma patients receive initial care in non-trauma facilities. Those cases often are unrepresented in registry statistics, as a result, the true burden of injuries Washoe County are likely to be more extensive than described in this report.

Suggested Citation

Northern Nevada Public Health, Division of Epidemiology and Public Health Preparedness. (June 2024). Washoe County Trauma Data Report 2023. Reno, NV.

Additional Information

For additional information regarding the Washoe County Trauma Data Report contact:

Anastasia Gunawan, MPH
Division of Epidemiology and Public Health Preparedness
Northern Nevada Public Health
agunawan@nnph.org

APPENDIX A – MECHANISM OF INJURY DESCRIPTION(S)

Cut/Pierce
Assault by sharp object
Contact with other sharp objects
Contact with sharp glass
Intentional self-harm by sharp object
Fall
Fall due to ice and snow
Fall from bed
Fall from chair
Fall from cliff
Fall from non-moving wheelchair, nonmotorized scooter and motorized mobility scooter
Fall from other furniture
Fall from, out of or through building or structure
Fall on and from ladder
Fall on and from playground equipment
Fall on and from scaffolding
Fall on and from stairs and steps
Fall on same level from slipping, tripping and stumbling
Fall while being carried or supported by other persons
Fall, jump or diving into water
Other fall from one level to another
Other fall on same level due to collision with another person
Other slipping, tripping, and stumbling and falls
Pedestrian conveyance accident
Fire/Flame
Exposure to ignition of highly flammable material
Firearm
Accidental discharge and malfunction from other and unspecified firearms and guns
Accidental handgun discharge and malfunction
Accidental rifle, shotgun and larger firearm discharge and malfunction
Assault by handgun discharge
Assault by other and unspecified firearm and gun discharge
Intentional self-harm by handgun discharge
Intentional self-harm by other and unspecified firearm and gun discharge
Legal intervention
Hot Object/Substance
MVT Motorcyclist
Motorcycle rider injured in collision with car, pick-up truck or van
Motorcycle rider injured in collision with fixed or stationary object
Motorcycle rider injured in collision with heavy transport vehicle or bus

APPENDIX A CONTINUED – MECHANISM OF INJURY DESCRIPTION(S)

Motorcycle rider injured in collision with two- or three-wheeled motor vehicle
Motorcycle rider injured in non-collision transport accident
Motorcycle rider injured in other and unspecified transport accidents
MVT Occupant
Car occupant injured in collision with car, pick-up truck or van
Car occupant injured in collision with fixed or stationary object
Car occupant injured in collision with heavy transport vehicle or bus
Car occupant injured in collision with pedestrian or animal
Car occupant injured in non-collision transport accident
Car occupant injured in other and unspecified transport accidents
Occupant of heavy transport vehicle injured in non-collision transport accident
Occupant of pick-up truck or van injured in collision with car, pick-up truck, or van
Occupant of pick-up truck or van injured in collision with fixed or stationary object
Occupant of pick-up truck or van injured in collision with heavy transport vehicle or bus
Occupant of pick-up truck or van injured in non-collision transport accident
Occupant of special all-terrain or other off-road motor vehicle, injured in transport accident
MVT Pedal Cyclist
Pedal cycle rider injured in collision with car, pick-up truck or van
Pedal cycle rider injured in other and unspecified transport accidents
MVT Pedestrian
Pedestrian injured in collision with car, pick-up truck or van
Machinery
Contact with other and unspecified machinery
Natural/Environmental Other
Contact with dog
Contact with other mammals
Toxic effect of contact with venomous animals and plants
Other Specified and Classifiable
Caught, crushed, jammed or pinched in or between objects
Discharge of firework
Legal intervention
Overexertion
Other slipping, tripping and stumbling and falls
Pedal Cyclist
Pedal cycle rider injured in collision with car, pick-up truck or van
Pedal cycle rider injured in collision with fixed or stationary object
Pedal cycle rider injured in collision with other pedal cycle
Pedal cycle rider injured in collision with pedestrian or animal
Pedal cycle rider injured in non-collision transport accident
Pedal cycle rider injured in other and unspecified transport accidents

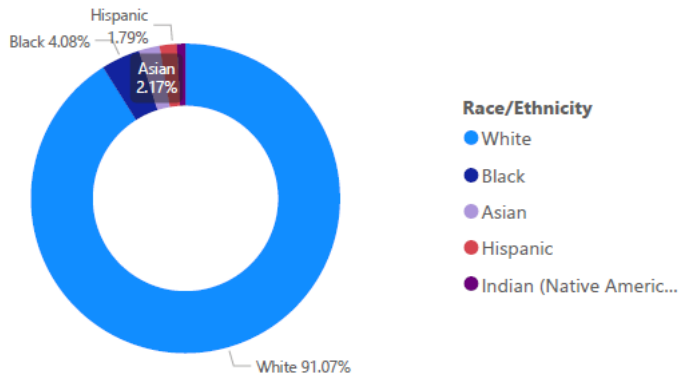
APPENDIX A CONTINUED – MECHANISM OF INJURY DESCRIPTION(S)

Pedestrian Other
Pedestrian injured in collision with car, pick-up truck or van
Pedestrian injured in other and unspecified transport accidents
Struck by or Against
Accidental hit, strike, kick, twist, bite or scratch by another person
Accidental striking against or bumped into by another person
Assault by blunt object
Assault by bodily force
Other slipping, tripping and stumbling and falls
Striking against or struck by other objects
Striking against or struck by sports equipment
Struck by thrown, projected or falling object
Accidental hit, strike, kick, twist, bite or scratch by another person
Transport
Accident to nonpowered aircraft causing injury to occupant
Animal-rider or occupant of animal-drawn vehicle injured in transport accident
Occupant of special all-terrain or other off-road motor vehicle, injured in transport accident
Unspecified
Assault by unspecified means

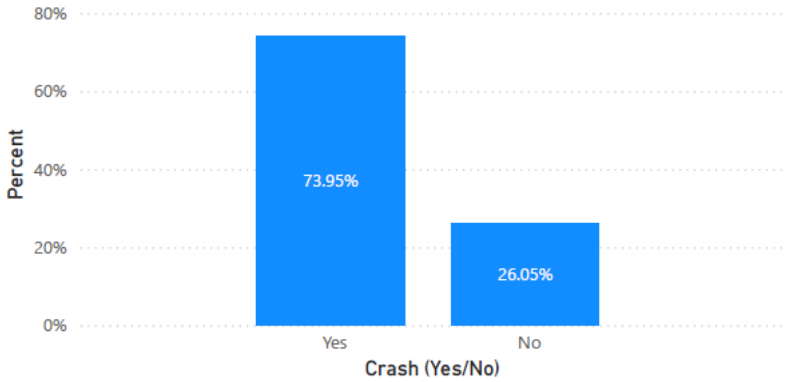
APPENDIX B: Motor Vehicle Non-Adjudicated Citation Statistics, Washoe County, 2018-2021

Data adopted from ***Washoe County, Nevada Non-Adjudicated Citations 2018-2021: Failure to Use Due Care*** NV Law Enforcement Non-Adjudicated Traffic Citation Data obtained from the Nevada Office of Traffic Safety #TS-2023-UNLV-00077.

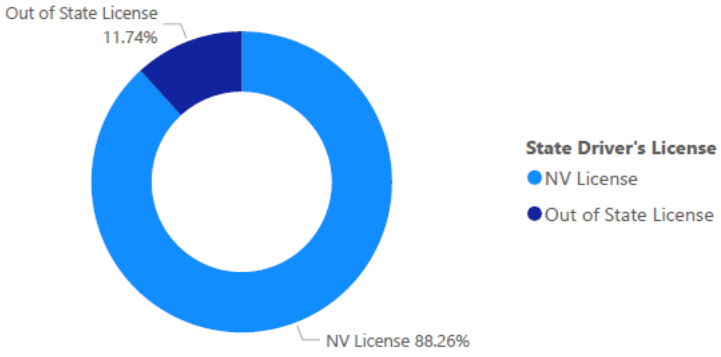
Percentage of Non-Adjudicated Citation based on Race, Washoe County, 2018-2021



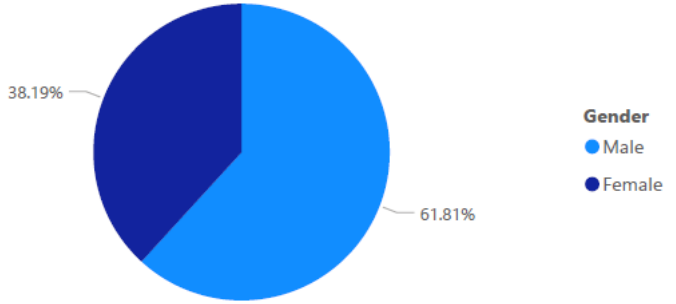
Percentage of Failure to Use Due Care, Impede Traffic, Careless Driving, Aggressive Driving, and Reckless Driving Citations based on the Crash Outcome, Washoe County, 2018 -2021



Percentage of Non-Adjudicated Citation based on Motor Residency, Washoe County, 2018-2021



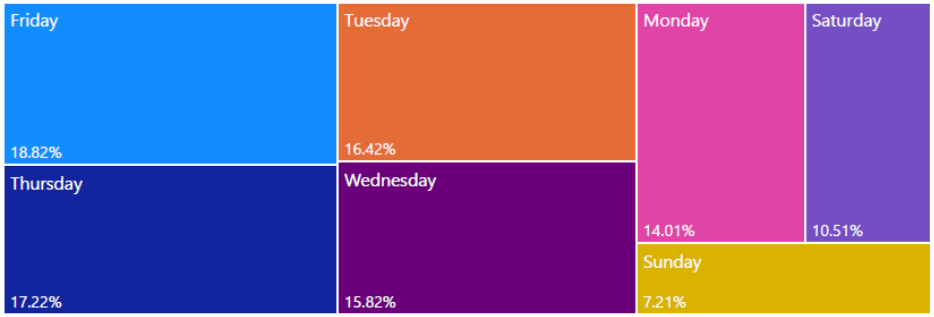
Percentage of Failure to Use Due Care, Impede Traffic, Careless Driving, Aggressive Driving, and Reckless Driving Citations based on the Driver's Birth Assigned Gender, Washoe County, 2018 - 2021



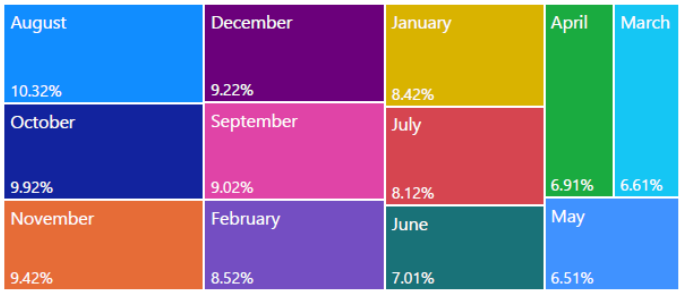
APPENDIX C: Motor Vehicle Non-Adjudicated Citation Statistics, by Month, Day and Time, All Age Group, Washoe County, 2018-2021

Data adopted from ***Washoe County, Nevada Non-Adjudicated Citations 2018-2021: Failure to Use Due Care*** NV Law Enforcement Non-Adjudicated Traffic Citation Data obtained from the Nevada Office of Traffic Safety #TS-2023-UNLV-00077.

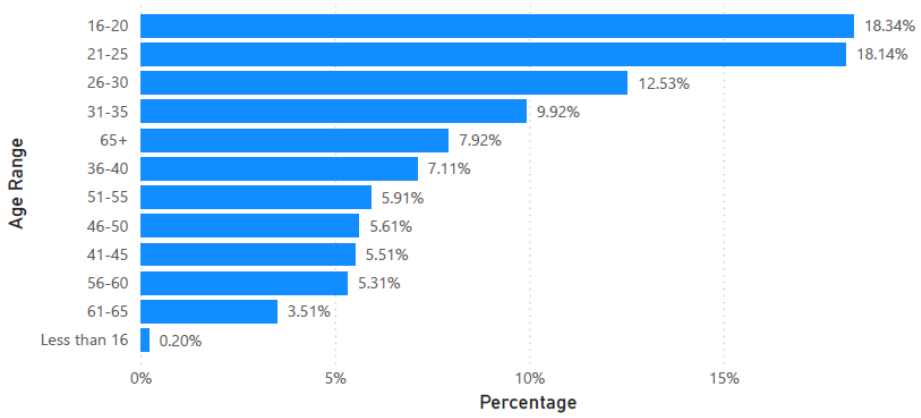
Percentage of Failure to Use Due Care, Impede Traffic, Careless Driving, Aggressive Driving, and Reckless Driving Citations based on Days of the Week



Percentage of Failure to Use Due Care, Impede Traffic, Careless Driving, Aggressive Driving, and Reckless Driving Citations based on Days of the Week



Percentage of Failure to Use Due Care by Age Range



Percentage of Failure to Use Due Care, Impede Traffic, Careless Driving, Aggressive Driving, and Reckless Driving Citations based on the Time of Day

Time Block	Percent
12:00am -3:59am	1.80%
8:00pm -11:59pm	7.91%
4:00am -7:59am	11.61%
8:00am -11:59am	17.42%
12:00pm -3:59pm	28.43%
4:00pm -7:59pm	32.83%
Total	**100.00%**

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