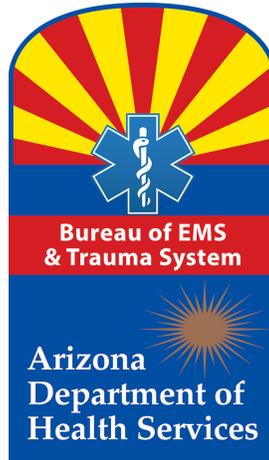


**ARIZONA DEPARTMENT OF HEALTH SERVICES  
BUREAU OF EMERGENCY MEDICAL SERVICES AND TRAUMA SYSTEM**



**COUNTY TRAUMA REPORTS:  
NAVAJO COUNTY  
ASTR 2012**

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**Data and Quality Assurance**

**Purpose:**

The purpose of this report is to describe the incidence of trauma in your county using the Arizona State Trauma Registry (ASTR). This information can develop and strengthen injury prevention programs at the county level.

**Methods:**

In 2012, the Arizona State Trauma Registry (ASTR) received data from 31 state-designated trauma centers. Three additional healthcare institutions participated in the registry but were not designated. The Arizona trauma system had eight Level I trauma centers - six were located in the central county of Maricopa with 60 percent of the state's population; the remaining two Level I trauma centers were located in the northern-most county of Coconino and the southern county of Pima. For the 2012 reporting year, there were twenty designated Level IV and three Level III trauma centers dispersed primarily in the rural areas of the state. There are a total of 32,602 records in the ASTR for 2012.

**Limitations:**

Data is limited to participating hospitals in the state. Information on patients that were treated at out of state and non-participating hospitals will be missed. Injuries included in this registry are those which fit the ASTR inclusion criteria (Appendix 1). As such, injuries reported are reflective of severe injuries, and may not be a complete picture of injury in your county.

**Geo-Population:**

Arizona is 400 miles long and 310 miles wide for a total area of 114,006 square miles. The topography of the state is 364 square miles of water and a blend of deserts, mountains, and plateaus. Arizona shares contiguous borders with the states of California, Colorado, Nevada, New Mexico, and Utah. Internationally, the Mexican states of Sonora, Chihuahua, and Baja California Norte share a border with Arizona.

The total reported population in 2012 was 6,498,570; this was up from the 2011 reported number of 6,438,178 residents.<sup>1</sup> In 2012, 84.2 percent of the population lived in urban counties (Maricopa, Pima, Pinal, and Yuma). The remaining counties (Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Mohave, Navajo, Santa Cruz, and Yavapai) were home to 15.8 percent of the population.

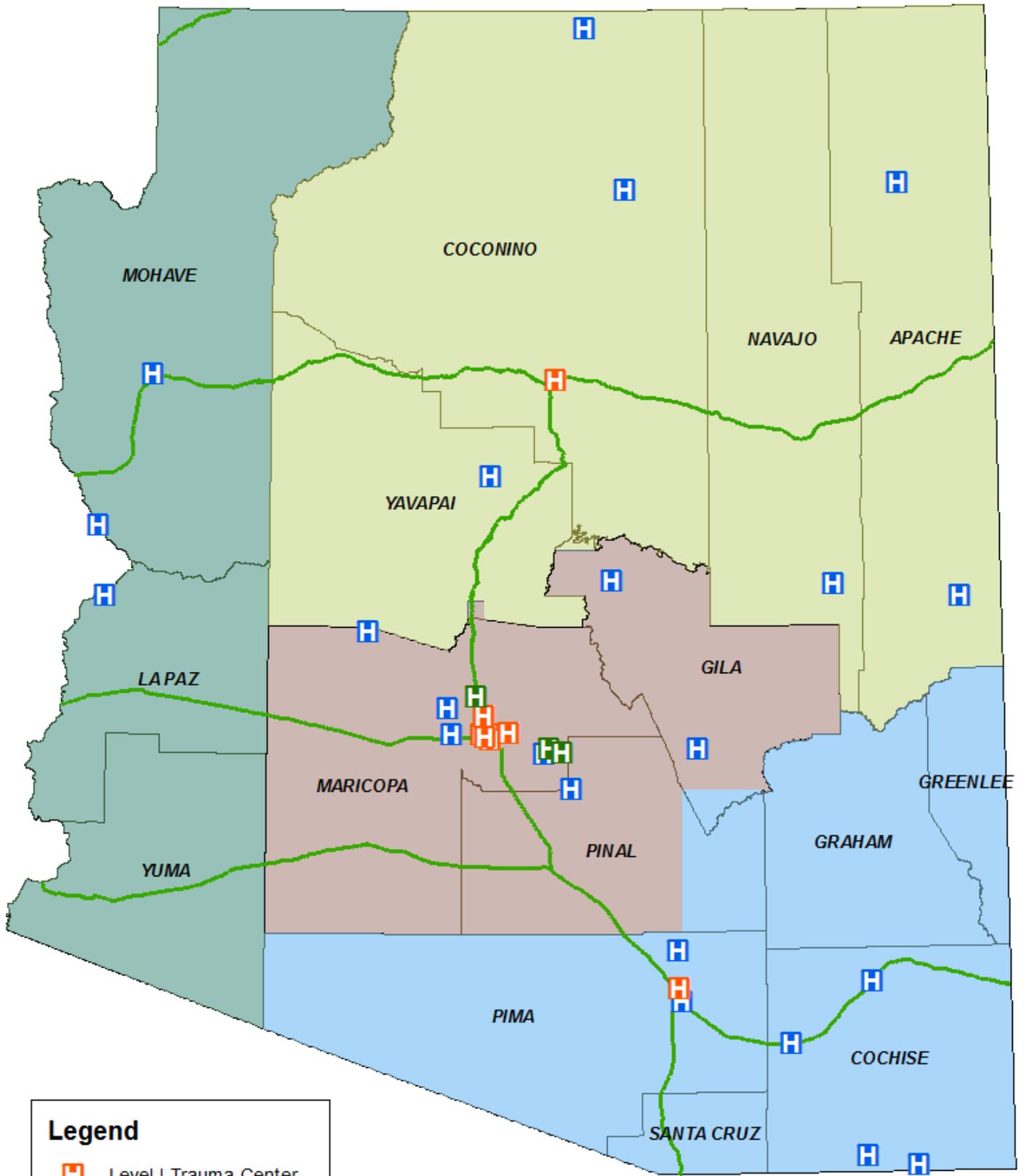
Additionally, Arizona has within its borders twenty-two (22) federally recognized American Indian tribes, comprising a 2012 collective population of 305,029.

<sup>1</sup> <http://www.azdhs.gov/plan/menu/info/pop/index.php?pg=2012>

Health Care Institution	Address	Effective Date	Expiration Date
<b>Level I Trauma Centers</b>			
Banner Good Samaritan Medical Center	925 E. McDowell Rd., Phoenix, AZ 85006	11/19/11	11/19/14
Dignity Health, dba Chandler Regional Medical Center (Provisional Designation)	1955 W. Frye Rd., Chandler, AZ 85224	3/24/14	9/24/15
Flagstaff Medical Center	1200 N. Beaver St., Flagstaff, AZ 86001	05/27/14	05/27/17
John C. Lincoln - North Mountain	250 E. Dunlap Ave., Phoenix, AZ 85020	04/24/14	04/24/15
Maricopa Medical Center	2601 E. Roosevelt, Phoenix, AZ 85008	12/20/11	12/20/14
Phoenix Children's Hospital	1919 E. Thomas Rd., Phoenix, AZ 85016	08/31/12	08/31/15
St. Joseph's Hospital & Medical Center	350 W. Thomas Rd., Phoenix, AZ 85013	11/20/13	11/20/16
Scottsdale Healthcare – Osborn	7400 E. Osborn, Scottsdale, AZ 85251	10/25/11	10/25/14
The University of Arizona Medical Center	1501 N. Campbell Ave., Tucson, AZ 85724	11/12/11	11/12/14
West Valley Hospital (Provisional Designation)	13677 W. McDowell Road, Goodyear, AZ 85395	7/21/14	1/21/16
<b>Level III Trauma Centers</b>			
Banner Baywood Medical Center	6644 E. Baywood Ave., Mesa, AZ 85206	05/12/14	02/25/15
John C. Lincoln Deer Valley Hospital	19829 N. 27 <sup>th</sup> Ave., Phoenix, AZ 85027	06/09/14	4/08/17
Mountain Vista Medical Center	1301 S. Crismon Rd., Mesa, AZ 85209	7/23/14	7/26/16
<b>Level IV Trauma Centers</b>			
Banner Boswell Medical Center	10401 W. Thunderbird Blvd., Sun City, AZ 85351	12/17/12	12/17/15
Banner Del E. Webb Medical Center	14502 W. Meeker Blvd, Sun City West, AZ 85375	01/09/14	01/09/17
Banner Estrella Medical Center	9201 W. Thomas Road, Phoenix, AZ 85037	08/30/12	08/30/15
Banner Gateway Medical Center	1900 N. Higley Road, Gilbert, AZ 85234	01/02/13	01/02/16
Banner Ironwood Medical Center	37000 N. Gantzel Rd., San Tan Valley, AZ 85140	10/11/12	10/11/15
Banner Page Hospital	501 N. Navajo, Page, AZ 86040	11/05/11	11/05/14
Benson Hospital	450 S. Ocotillo Ave., Benson, AZ 85602	03/03/14	03/03/17
Chinle Comprehensive Health Care Facility	P.O. Drawer PH, Chinle, AZ 86503	09/09/13	09/09/16
Cobre Valley Regional Medical Center	5880 S. Hospital Dr., Globe, AZ 85501	11/26/12	11/26/15
Copper Queen Community Hospital	101 Cole Ave., Bisbee, AZ 85603	12/01/12	12/01/15
Havasu Regional Medical Center	101 Civic Center Ln., Lake Havasu City, AZ 86403	01/20/14	01/20/17
Kingman Regional Medical Center	3269 Stockton Hill Rd., Kingman, AZ 86409	10/15/12	10/15/15

Health Care Institution	Address	Effective Date	Expiration Date
La Paz Regional Hospital	1200 W. Mohave Rd., Parker, AZ 85344	06/02/12	06/02/15
Mt. Graham Regional Medical Center	1600 S. 20 <sup>th</sup> Ave., Safford, AZ 85546	03/20/14	03/20/17
Northern Cochise Community Hospital	901 W. Rex Allen Dr., Willcox, AZ 85643	12/04/11	12/04/14
Oro Valley Hospital	1551 East Tangerine Road, Oro Valley, AZ 85755	4/18/13	4/18/16
Payson Regional Medical Center	807 S. Ponderosa Street, Payson, AZ 85541	11/22/13	11/22/16
Summit Healthcare Regional Medical Cen-	2200 Show Low Lake Rd., Show Low, AZ 85901	08/12/14	08/12/17
The University of Arizona Medical Center	2800 E. Ajo Way, Tucson, AZ 85713	08/13/13	08/13/16
Tuba City Regional Health Care Corp.	P.O. Box 600, Tuba City, AZ 86045	05/06/12	05/06/15
Verde Valley Medical Center	269 S. Candy Ln., Cottonwood, AZ 86326	08/18/11	08/18/14
White Mountain Regional Medical Center	118 S. Mountain Ave., Springerville, AZ 85938	06/18/12	06/18/15
Wickenburg Community Hospital	520 Rose Ln., Wickenburg, AZ 85390	08/08/14	08/08/17
Yavapai Regional Medical Center – West Campus	1003 Willow Creek Road, Prescott, AZ 86301	01/10/14	01/10/17
Yavapai Regional Medical Center – East	7700 E. Florentine, Prescott Valley, AZ 86314	6/24/14	6/24/17

Updated as of October 1, 2014



**Legend**

-  Level I Trauma Center
-  Level III Trauma Center
-  Level IV Trauma Center

**FIGURE 1: Navajo County population by age, gender, and race/ethnicity, AZ Health & Vital Statistics**

<b>Group</b>		<b>Count</b>	<b>Percent</b>
<b>Age</b>	<1	1,677	1.6%
	1-4	6,869	6.4%
	5-9	8,735	8.1%
	10-14	8,853	8.2%
	15-19	8,659	8.0%
	20-24	6,681	6.2%
	25-34	11,898	11.0%
	35-44	11,694	10.8%
	45-54	14,090	13.1%
	55-64	13,483	12.5%
	65-74	9,569	8.9%
	75-84	4,422	4.1%
85+	1,292	1.2%	
<b>Gender</b>	Female	54,048	50.1%
	Male	53,874	49.9%
<b>Race/Ethnicity</b>	Hispanic	10,511	9.7%
	White	48,235	44.7%
	American Indian/Alaska Native	47,654	44.2%
	Black/African American	895	0.8%
	Asian or Pacific Islander	626	0.6%
<b>Total</b>		<b>107,922</b>	<b>100.0%</b>

**FIGURE 2: Trauma frequency and rate per 100,000 by county**

County of Injury	Total Population	Percent of Population	Trauma Count	Percent of All Traumas	Trauma Rate per 100,000
Apache	72,310	1.1%	742	2.3%	1,026
Cochise	130,753	2.0%	1,127	3.5%	862
Coconino	134,313	2.1%	1,853	5.7%	1,380
Gila	53,627	0.8%	551	1.7%	1,027
Graham	37,313	0.6%	119	0.4%	319
Greenlee	8,599	0.1%	41	0.1%	477
La Paz	20,902	0.3%	156	0.5%	746
Maricopa	3,884,706	59.8%	14,873	45.6%	383
Mohave	203,072	3.1%	970	3.0%	478
Navajo	107,922	1.7%	873	2.7%	809
Pima	990,380	15.2%	4,925	15.1%	497
Pinal	389,192	6.0%	1,738	5.3%	447
Santa Cruz	48,725	0.7%	180	0.6%	369
Yavapai	211,582	3.3%	1,037	3.2%	490
Yuma	205,174	3.2%	2,062	6.3%	1,005
Other	-	-	552	1.7%	-
<b>Total</b>	<b>6,498,570</b>	<b>100%</b>	<b>32,602</b>	<b>97.5%</b>	<b>502</b>

*Missing = 803*

Statewide, there were 32,602 traumatic injuries seen at state designated trauma centers– a rate of 502 per 100,000 Arizona residents.

Navajo County makes up about 1.7 percent of the total population of Arizona. Injuries occurring in the county make up about 2.7 percent of the trauma cases from state designated trauma centers. The county-specific trauma rate, 809 per 100,000 county residents, is higher than the state average (Figure 3).

**FIGURE 3: County-specific trauma rates per 100,000 residents**

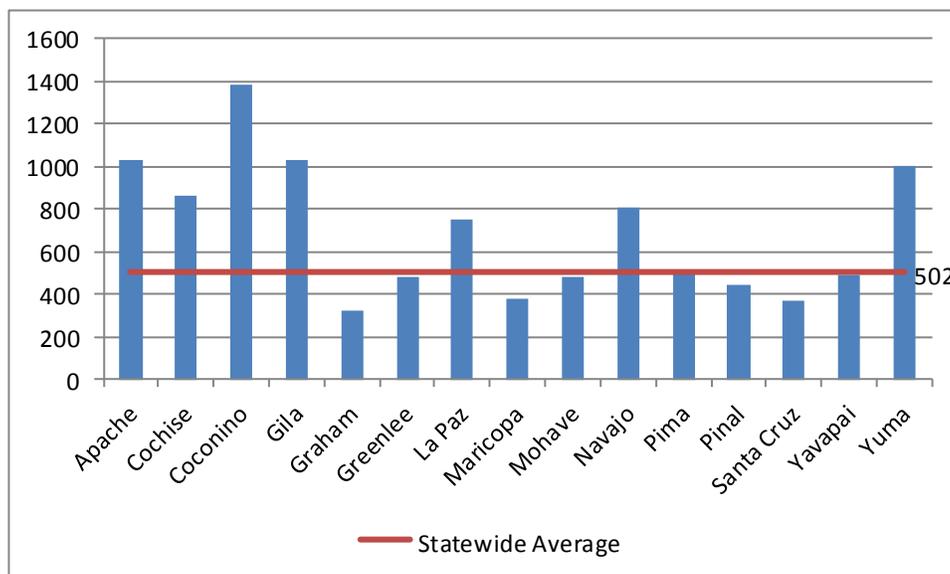


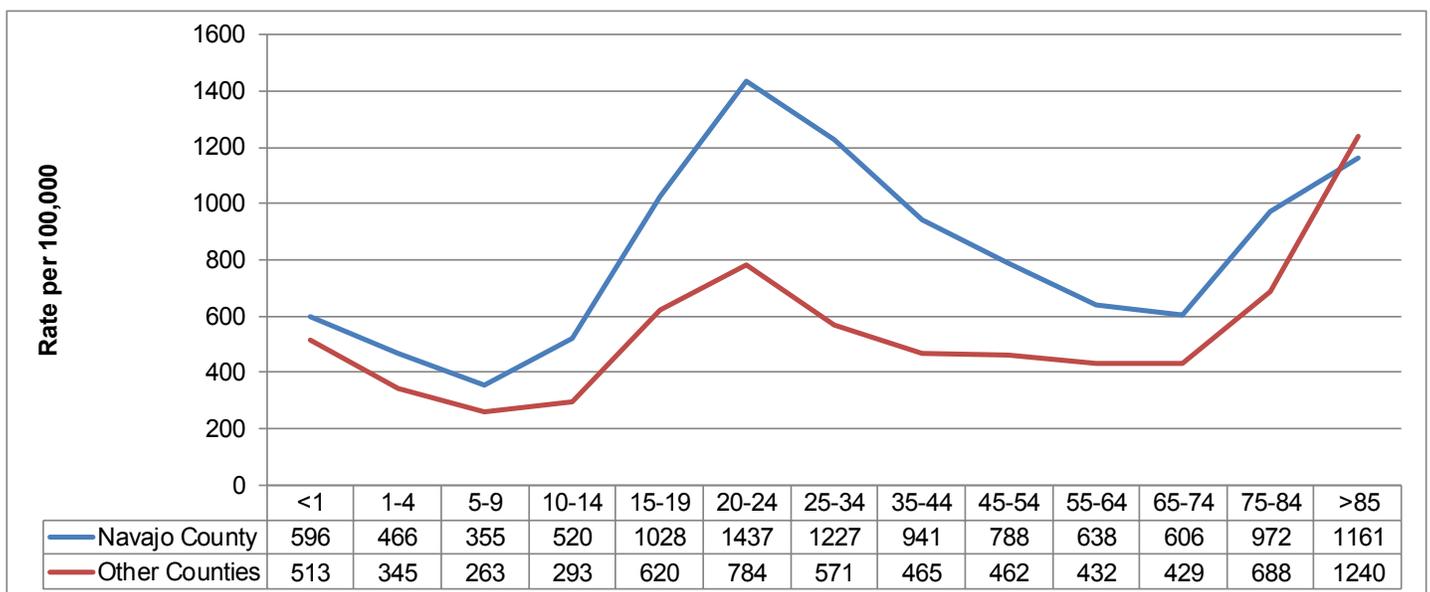
FIGURE 4: Frequency and rate of trauma by age, race/ethnicity, and gender in Navajo County

Group	Count	Percent	Rate per 100,000
Age	<1	*	*
	1-4	32	3.7%
	5-9	31	3.6%
	10-14	46	5.3%
	15-19	89	10.2%
	20-24	96	11.0%
	25-34	146	16.7%
	35-44	110	12.6%
	45-54	111	12.7%
	55-64	86	9.9%
	65-74	58	6.6%
	75-84	43	4.9%
	85+	15	1.7%
Gender	Female	306	35.1%
	Male	567	64.9%
Race/Ethnicity	White	368	42.2%
	American Indian/Alaska Native	449	51.4%
	Other	42	4.8%
<b>Total</b>	<b>873</b>	<b>100.0%</b>	<b>809</b>

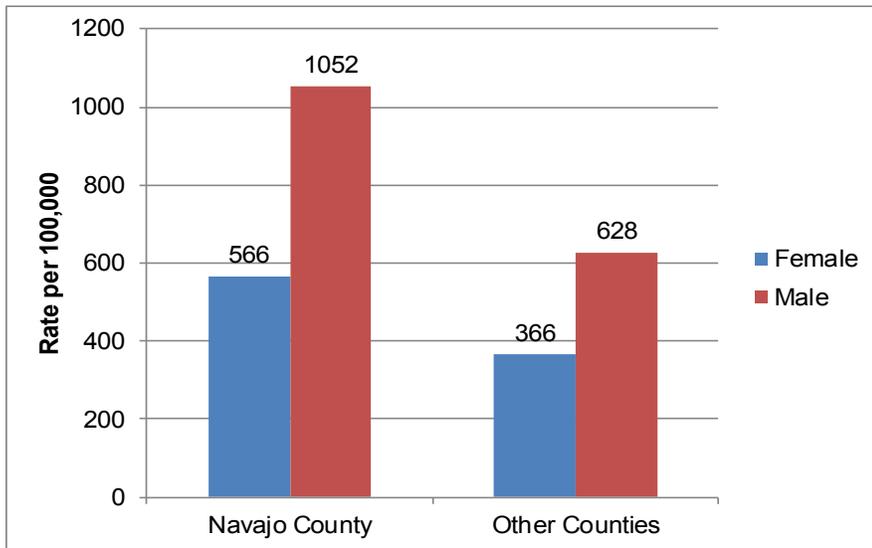
\*10 or fewer observations

The trauma rate is higher in Navajo County as compared to the rest of the state for all age groups except the >85 age group (Figure 4). The highest trauma rate is among the 20-24 age group (1,437 traumatic injuries per 100,000 county residents).

FIGURE 5: Trauma rate per 100,000 residents by age



**FIGURE 6: Trauma rate per 100,000 residents by gender**



Both males and females in Navajo County have higher trauma rates than their counterparts in other counties (Figure 6).

Due to the low trauma frequencies in some race/ethnicity groups, those categories have been combined for analysis.

The trauma rate for White non-Hispanic race/ethnicities is higher in Navajo County than in other counties (Figure 7).

**FIGURE 7: Trauma rate per 100,000 residents by race/ethnicity**

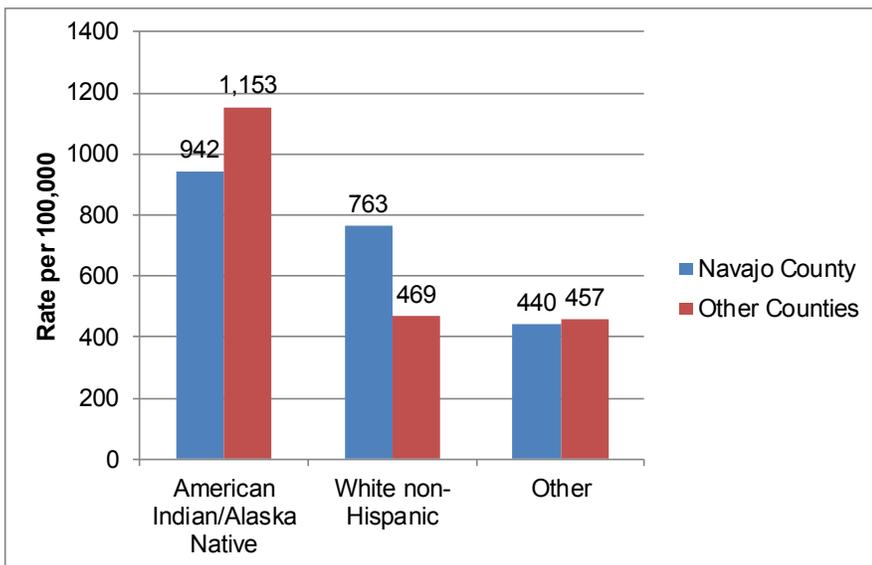
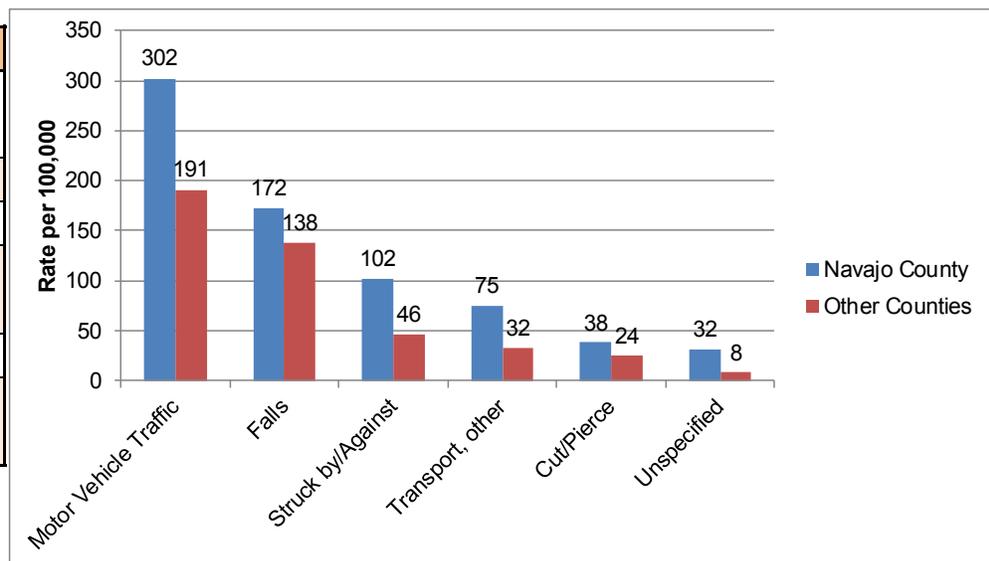


Figure 9 shows the top causes of traumatic injury in Navajo County, as compared with other counties (rates per 100,000).

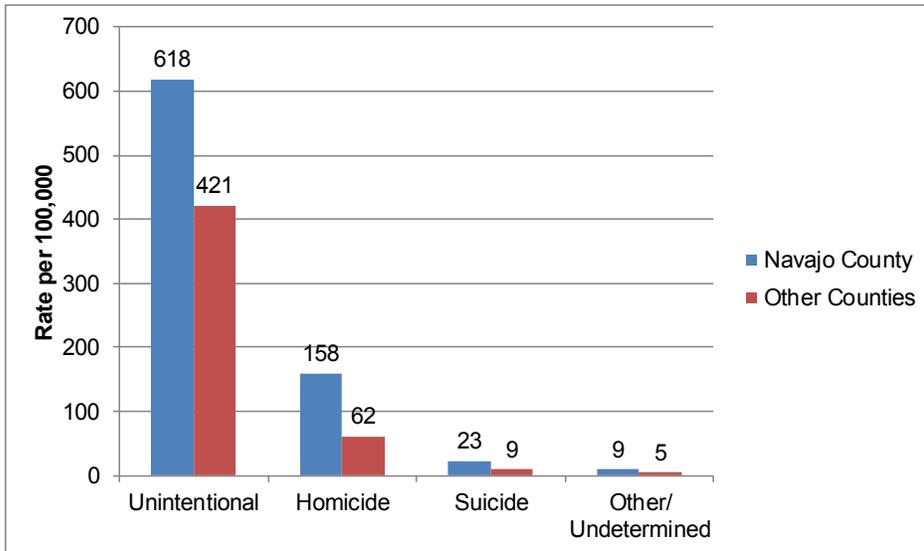
**FIGURE 8: Frequency of top causes of trauma in Navajo County**

Cause	Count	Percent
Motor Vehicle Traffic	326	37.3%
Falls	186	21.3%
Struck by/Against	110	12.6%
Transport, other	81	9.3%
Cut/Pierce	41	4.7%
Unspecified	34	3.9%

**FIGURE 9: Top causes of trauma, rates per 100,000 residents**



**FIGURE 10: Intention of trauma, rate per 100,000 residents**

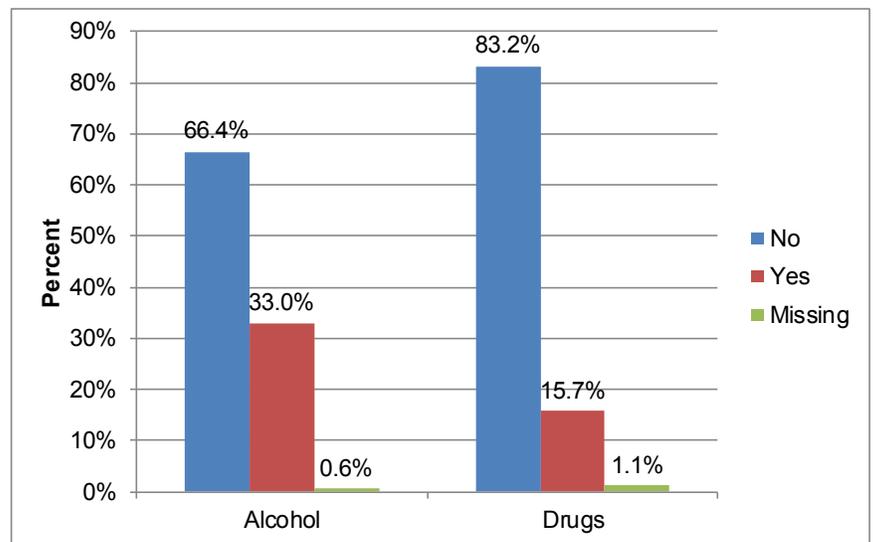


The rate of all trauma intents is higher in Navajo County than in other Arizona counties (Figure 10).

Documented alcohol and drug use was present in 33% and 16.7% of traumatic injuries in Navajo County, respectively (Figure 11).

Alcohol and drug use is defined as any indication of use through testing or self-report, regardless of level of impairment.

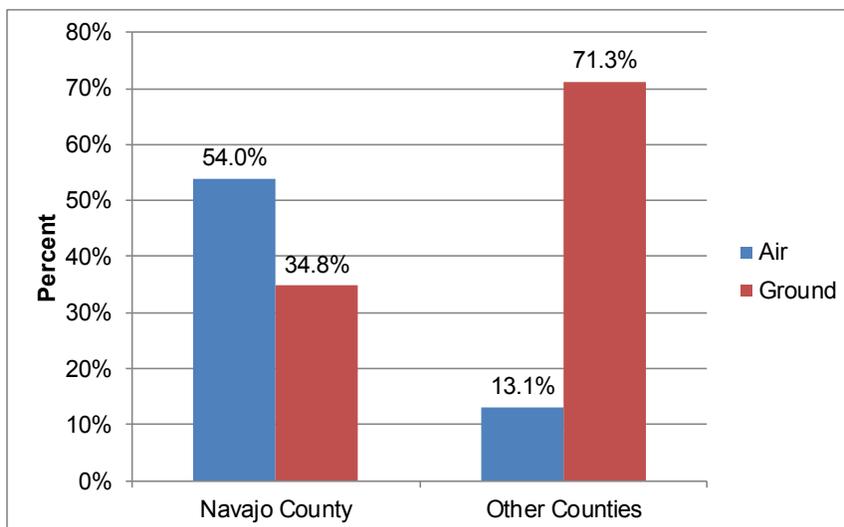
**FIGURE 11: Substance use in traumatic injuries in Navajo County**



**FIGURE 12: Frequency of substance use in traumatic injuries in Navajo County**

Substance Use		Frequency	Percent
Alcohol	No	580	66.4%
	Yes	288	33.0%
	Missing	5	0.6%
	Total	873	100%
Drugs	No	726	83.2%
	Yes	137	15.7%
	Missing	10	1.1%
	Total	873	100%

**FIGURE 13: Proportion of ground and air ambulance transports in Navajo County**



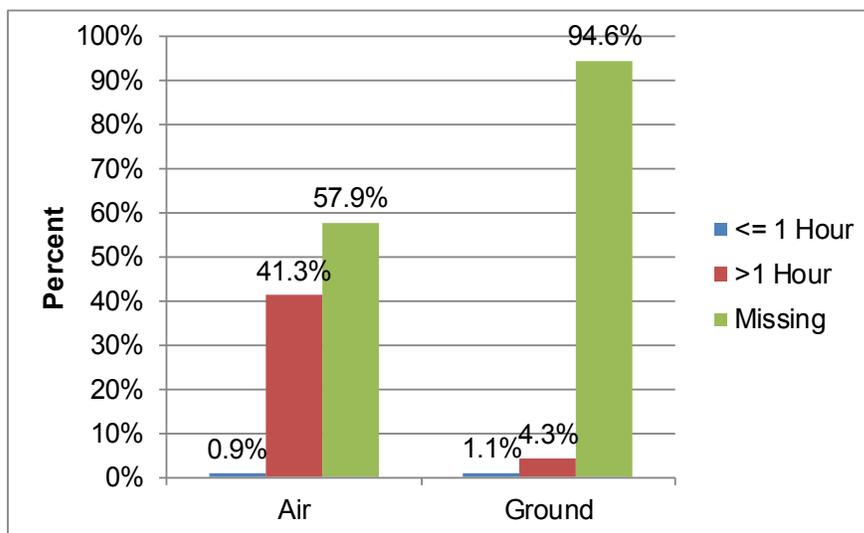
**FIGURE 14: Count of ground and air ambulance transports**

	Air	Ground	Other	Missing
Navajo County	471	304	90	8
Other Counties	4,153	22,623	4,853	100

**FIGURE 15: Golden hour by transport type**

The term “golden hour” refers to the hour immediately following traumatic injury. Theoretically, the chance of survival is highest when medical treatment to prevent irreversible internal damage is obtained within this time period.

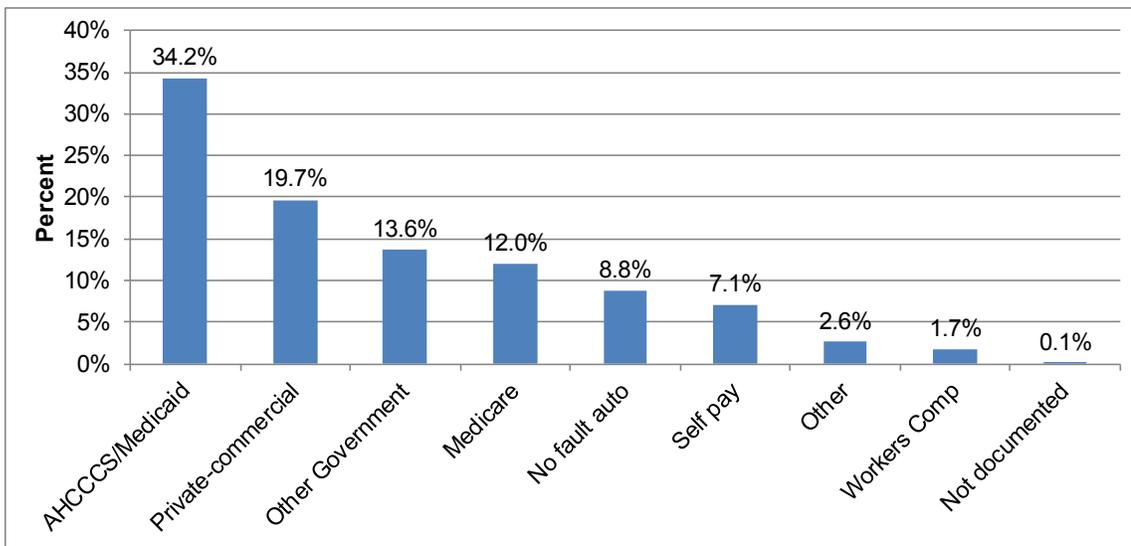
Due to the large amount of missing data on golden hour, results on the proportion of patients arriving at the hospital within one hour are not conclusive.



**FIGURE 16: Count of golden hour by transport type to trauma center**

Golden Hour	Air Ambulance		Ground Ambulance		Total	
	Count	Percent	Count	Percent	Count	Percent
<= 1 Hour	2	0.9%	1	1.1%	3	0.9%
> 1 Hour	97	41.3%	4	4.3%	101	30.8%
Missing	136	57.9%	88	94.6%	224	68.3%
Total	235	100%	93	100%	328	100%

**FIGURE 17: Primary payer in Navajo County**



**FIGURE 18: Count of primary payer in Navajo County**

Primary Payer	Frequency	Percent
AHCCCS/Medicaid	299	34.2%
Private-commercial	172	19.7%
Other Government	119	13.6%
Medicare	105	12.0%
No fault auto	77	8.8%
Self pay	62	7.1%
Other	23	2.6%
Workers Comp	15	1.7%
Not documented	1	0.1%

AHCCCS/Medicaid is the primary payment source for trauma-related hospital visits in Navajo County (Figures 17 & 18).

Due to the large amount of missing data on primary payer, results are not conclusive.

The median charge in Navajo County in 2012 was \$17,959 (Figure 19).

**FIGURE 19: Charges & reimbursement by primary payer in Navajo County**

Primary Payer	Total Charges	Median Charges	Total Reimbursement
AHCCCS/Medicaid	\$12,087,630	\$19,120	\$1,835,145
Private-commercial	\$7,984,088	\$14,305	\$2,376,315
Other Government	\$7,148,637	\$26,868	\$911,277
Medicare	\$5,715,689	\$27,345	\$1,650,238
No fault auto	\$821,186	\$8,663	\$135,201
Self pay	\$3,149,052	\$21,057	\$146,066
Other	\$98,447	\$0	\$9,035
Workers Comp	\$577,967	\$21,249	\$275,864
Not documented	\$57,661	\$57,661	\$0
<b>Total</b>	<b>\$37,640,356</b>	<b>\$17,959</b>	<b>\$7,339,141</b>