

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



**JUNE 2013  
GREENLEE COUNTY REPORT  
ASTR 2011**

**Prepared by:**

**Maureen Brophy, MPH**

**Vatsal Chikani, MPH**

**Rogelio Martinez, MPH**

**Data and Quality Assurance**

**Purpose:**

The purpose of this report is to describe the incidence of trauma in Greenlee County using the Arizona State Trauma Registry (ASTR). This information can be used to assist in the development and strengthening of injury prevention programs at the county level.

**Methods:**

In 2011, the Arizona State Trauma Registry (ASTR) received data from 23 state-designated trauma centers. Four additional healthcare institutions participated in the registry but were not designated. The Arizona EMS and Trauma System has eight Level I trauma centers - six located in the central county of Maricopa with 60 percent of the state's population; the remaining two Level I trauma centers are respectively located in the northern-most county of Coconino and the southern county of Pima. For the 2011 reporting year, there were 15 designated Level IV trauma centers dispersed primarily in the rural areas of the state. There are a total of 29,877 records in the ASTR for 2011.

**Limitations:**

Data is limited to participating agencies in the state. Information on patients that are transported out of Arizona will be missed as well as those seen at hospitals that are not participating. Injuries included in this registry are those which fit the [ASTR inclusion criteria](#). As such, injuries reported are more severe injuries, and therefore not a complete picture of injury in Greenlee 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 2011 was 6,438,178; this was up from the 2010 reported number of 6,392,017 residents <sup>1</sup>. In 2011, 84.1 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 15.9 percent of the population.

Additionally, Arizona has within its borders twenty-two (22) federally recognized American Indian tribes, comprising a 2011 collective population of 296,529, of which 162,119 (55 percent) reside on reservations and tribal lands.

<sup>1</sup> <http://www.azdhs.gov/plan/menu/info/pop/pop11/pd11.htm>

## Arizona State Designated Trauma Centers

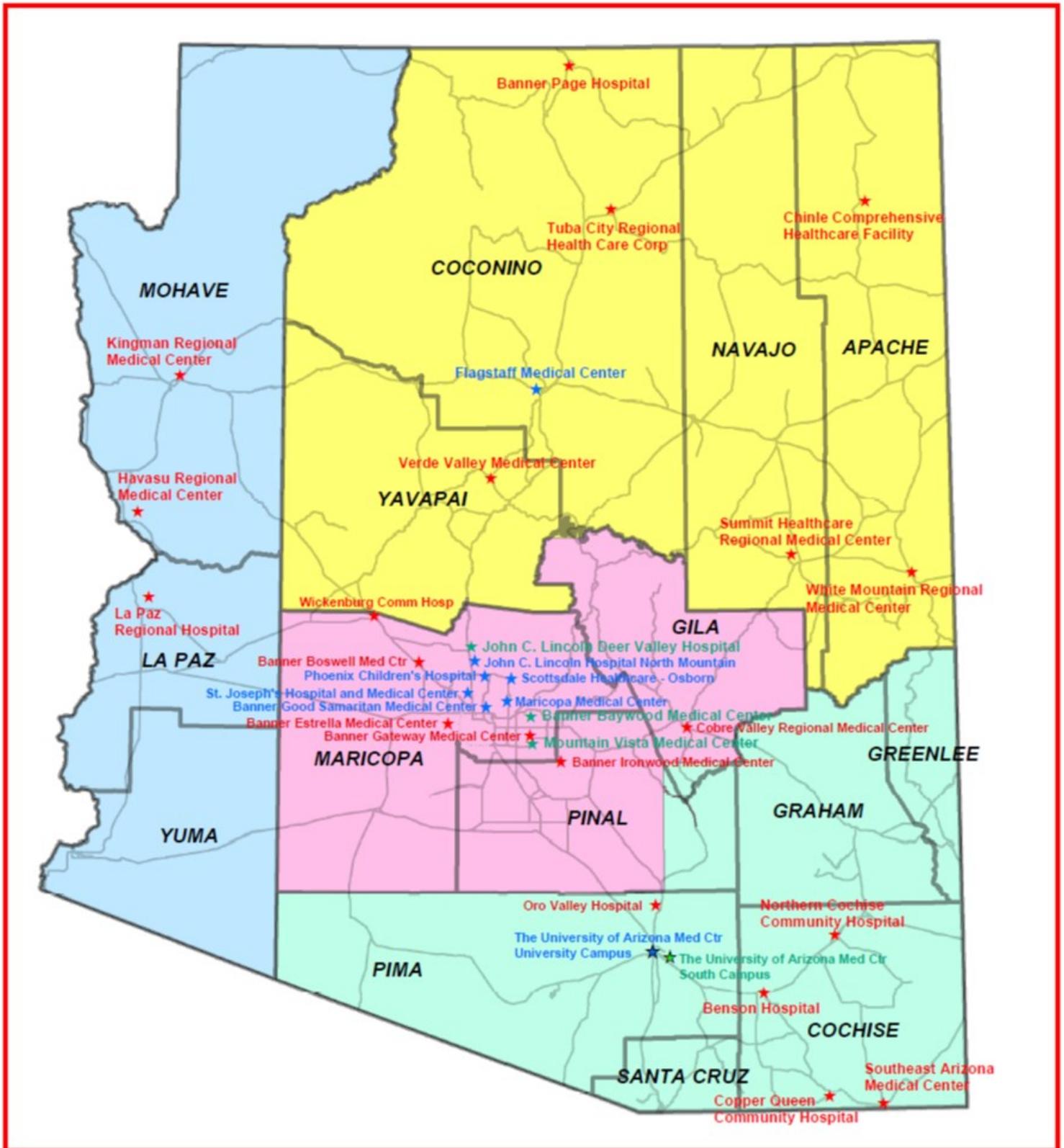
Health Care Institution	Address	Effective Date	Expiration Date
<b>Level I Trauma Centers</b>			
Banner Good Samaritan Medical Center	925 E. McDowell Rd., Phoenix, AZ 85006	11/19/11	11/19/14
Flagstaff Medical Center	1200 N. Beaver St., Flagstaff, AZ 86001	05/27/11	05/27/14
John C. Lincoln - North Mountain	250 E. Dunlap Ave., Phoenix, AZ 85020	04/23/11	04/23/14
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	11/20/10	11/20/13
Scottsdale Healthcare – Osborn	7400 E. Osborn, Scottsdale, AZ 85251	10/25/11	10/25/14
The University of Arizona Medical Center – University Campus	1501 N. Campbell Ave., Tucson, AZ 85724	11/12/11	11/12/14
<b>Level III Trauma Centers</b>			
Banner Baywood Medical Center <i>(Provisional Designation)</i>	6644 E. Baywood Ave., Mesa, AZ 85206	07/30/12	01/30/14
John C. Lincoln Deer Valley Hospital <i>(Provisional Designation)</i>	19829 N. 27 <sup>th</sup> Ave., Phoenix, AZ 85027	02/04/13	10/04/14
Mountain Vista Medical Center <i>(Provisional Designation)</i>	1301 S. Crismon Rd., Mesa, AZ 85209	02/24/12	08/24/13
The University of Arizona Medical Center South Campus <i>(Provisional Designation)</i>	2800 E. Ajo Way, Tucson, AZ 85713	02/13/12	08/13/13
<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 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	03/03/11	03/03/14
Chinle Comprehensive Health Care Facility	P.O. Drawer PH, Chinle, AZ 86503	09/09/10	09/09/13
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	01/20/11	01/20/14
Kingman Regional Medical Center	3269 Stockton Hill Rd., Kingman, AZ 86409	10/15/12	10/15/15
La Paz Regional Hospital	1200 W. Mohave Rd., Parker, AZ 85344	06/02/12	06/02/15

Health Care Institution	Address	Effective Date	Expiration Date
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
Southeast Arizona Medical Center	2174 W. Oak Ave., Douglas, AZ 85607	08/18/11	08/18/14
Summit Healthcare Regional Medical Center	2200 Show Low Lake Rd., Show Low, AZ 85901	08/12/11	08/12/14
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	08/08/11	08/08/14

Updated as of May 1, 2013

# EMS REGIONS AND TRAUMA CENTERS

May 1, 2013



Level I Trauma Center

Level III Trauma Center (Provisional)

Level IV Trauma Center

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

Group		Population	Percent
Age	<1	117	1.4%
	1-4	538	6.4%
	5-9	634	7.6%
	10-14	742	8.9%
	15-19	640	7.6%
	20-24	493	5.9%
	25-29	567	6.8%
	30-34	506	6.0%
	35-39	482	5.8%
	40-44	522	6.2%
	45-49	533	6.4%
	50-54	611	7.3%
	55-59	557	6.6%
	60-64	422	5.0%
	65-69	320	3.8%
	70-74	207	2.5%
	75-79	247	2.9%
80-84	136	1.6%	
85+	106	1.3%	
Gender	Female	4,039	48.2%
	Male	4,341	51.8%
Race/Ethnicity	White non-Hispanic	4,055	48.4%
	Hispanic or Latino	3,882	46.3%
	Black or African American	89	1.1%
	American Indian or Alaska Native	303	3.6%
	Asian or Pacific Islander	52	0.6%
<b>Total</b>		<b>8,380</b>	<b>100%</b>

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

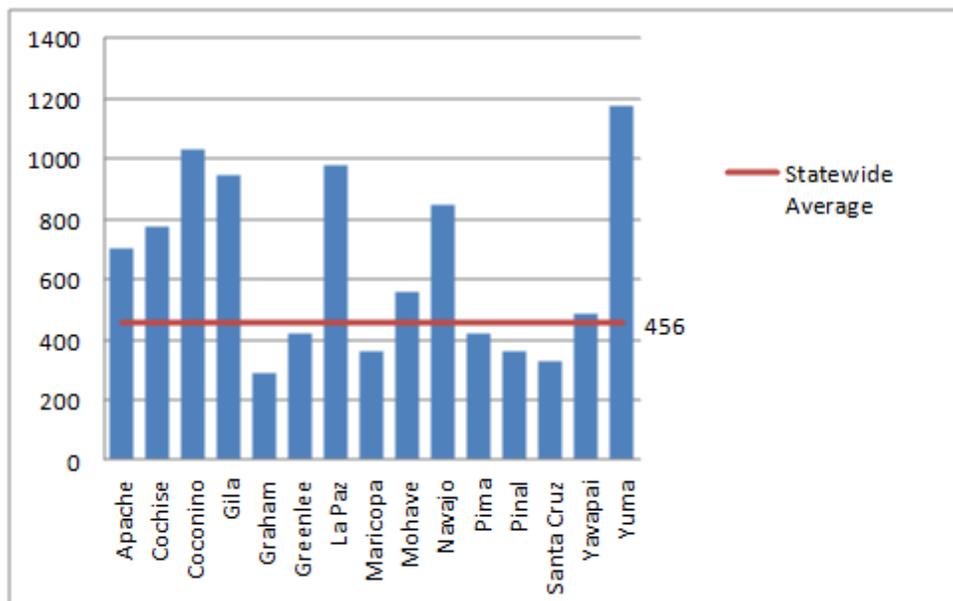
County of Injury	Total Population	Percent of Population	Trauma Count	Percent of All Traumas	Trauma Rate per 100,000
Apache	71,991	1.1%	507	1.7%	704
Cochise	130,537	2.0%	1,009	3.4%	773
Coconino	134,162	2.1%	1,383	4.7%	1,031
Gila	53,577	0.8%	506	1.7%	944
Graham	37,710	0.6%	109	0.4%	289
Greenlee	8,380	0.1%	35	0.1%	418
La Paz	20,730	0.3%	203	0.7%	979
Maricopa	3,843,370	59.7%	13,846	47.2%	360
Mohave	200,417	3.1%	1,124	3.8%	561
Navajo	107,226	1.7%	910	3.1%	849
Pima	986,081	15.3%	4,164	14.2%	422
Pinal	384,231	6.0%	1,387	4.7%	361
Santa Cruz	48,088	0.7%	159	0.5%	331
Yavapai	211,247	3.3%	1,029	3.5%	487
Yuma	200,431	3.1%	2,350	8.0%	1,172
Other	.	.	627	2.1%	.
Total	6,438,178	100.0%	29,348	98.2%	456

*Missing = 529*

Statewide, there were 29,877 traumatic injuries seen at state designated trauma centers– a rate of 456 per 100,000 Arizona residents.

Greenlee County makes up 0.1 percent of the total population of Arizona. Injuries occurring in the county also make up 0.1 percent of the trauma cases from state designated trauma centers. The county-specific trauma rate, 418 per 100,000 county residents, is lower 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 Greenlee County**

Group		Count	Percent	Rate per 100,000
Age	<= 14	6	17.1%	295
	>14	29	82.9%	457
Gender	Female	9	25.7%	223
	Male	26	74.3%	599
Race/Ethnicity	Hispanic	13	37.1%	335
	Non-Hispanic	22	62.9%	489
<b>Total</b>		<b>35</b>	<b>100%</b>	<b>418</b>

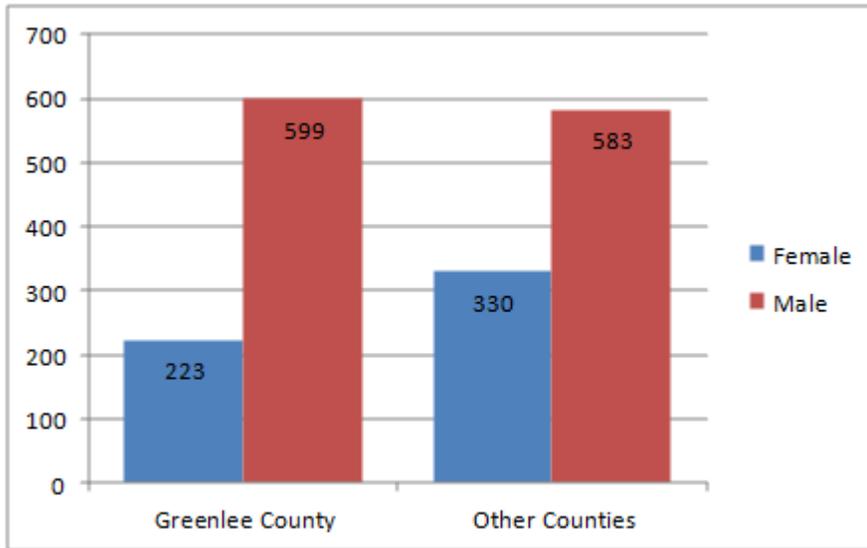
Due to the low trauma frequencies in some age groups, categories have been combined for analysis.

The trauma rate in people older than 14 years of age in Greenlee County is lower as compared to the rest of the state (Figure 4).

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

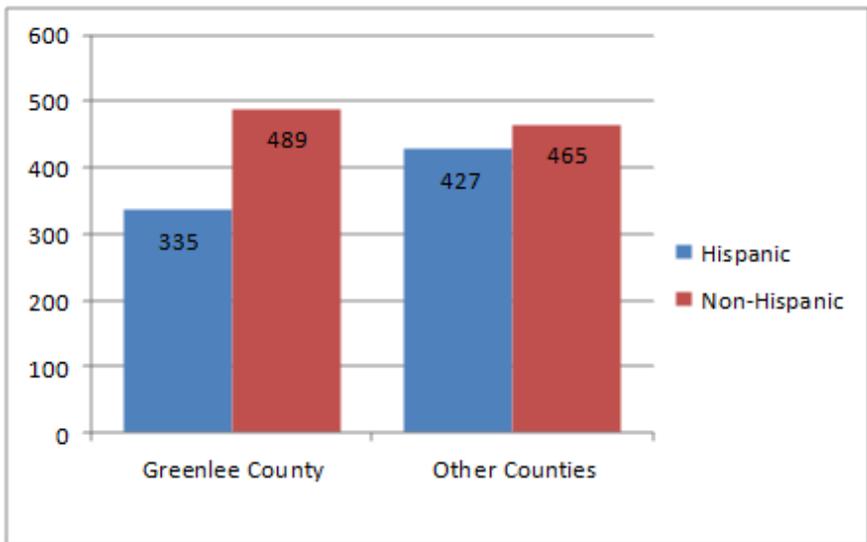


**FIGURE 6: Trauma rate per 100,000 residents by gender**



Males in Greenlee County have higher trauma rates than their counterparts in other counties (Figure 6).

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



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

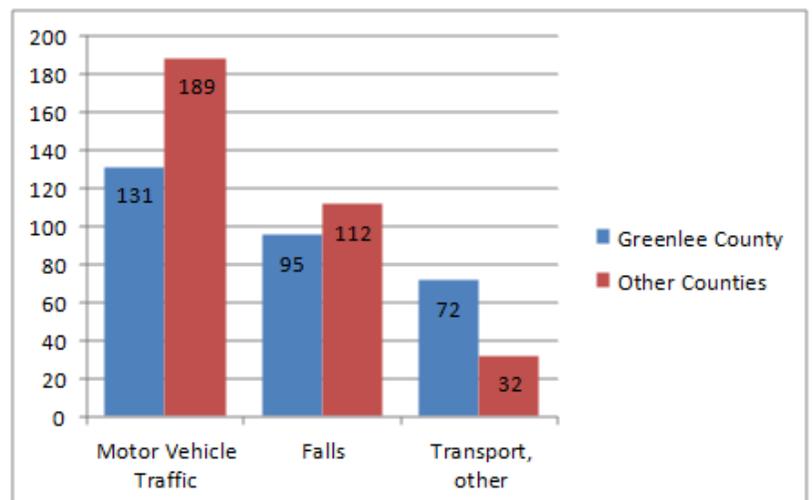
Due to the low trauma frequencies in non-Hispanic race/ethnicities, those categories have been combined for analysis.

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

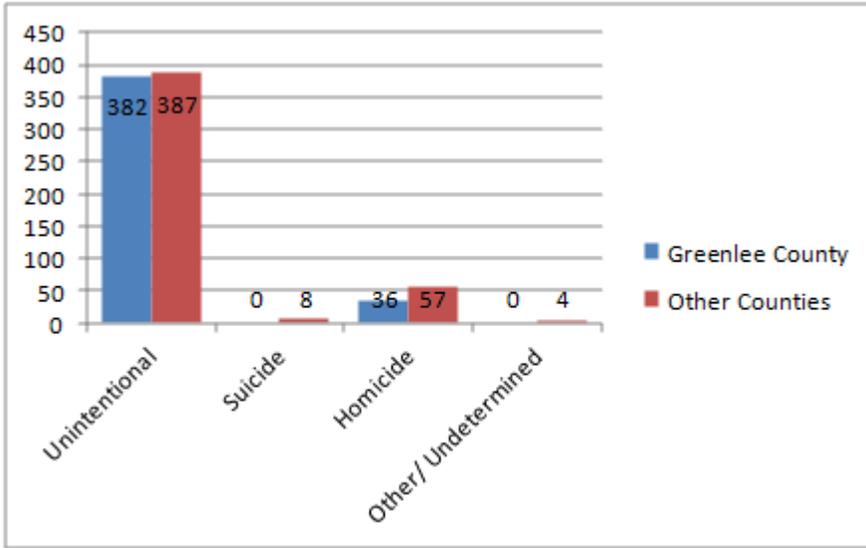
**FIGURE 8: Frequency of top causes of trauma in Greenlee County**

Cause	Count	Percent
Motor Vehicle Traffic	11	31.4%
Falls	8	22.9%
Transport, other	6	17.1%
Other Trauma	10	28.6%
<b>Total</b>	<b>35</b>	<b>100%</b>

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



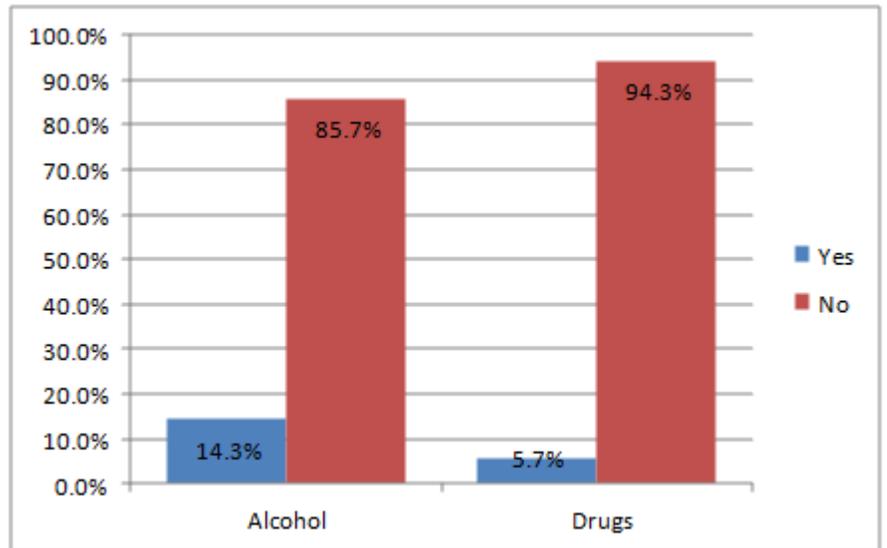
**FIGURE 10: Intention of trauma, rate per 100,000 residents**



The rates of all types of trauma intent in Greenlee County are lower than in other Arizona counties (Figure 10).

Documented alcohol and drug use was present in 14.3% and 5.7% of traumatic injuries in Greenlee County, respectively (Figure 11).

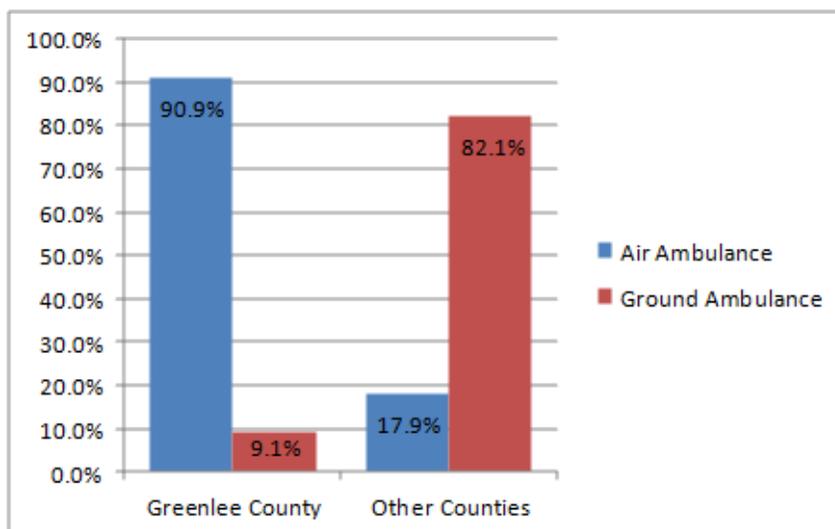
**FIGURE 11: Substance use in traumatic injuries in Greenlee County**



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

Substance Use		Frequency	Percent
Alcohol	No	30	85.7%
	Yes	5	14.3%
	Total	35	100%
Drugs	No	33	94.3%
	Yes	2	5.7%
	Total	35	100%

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



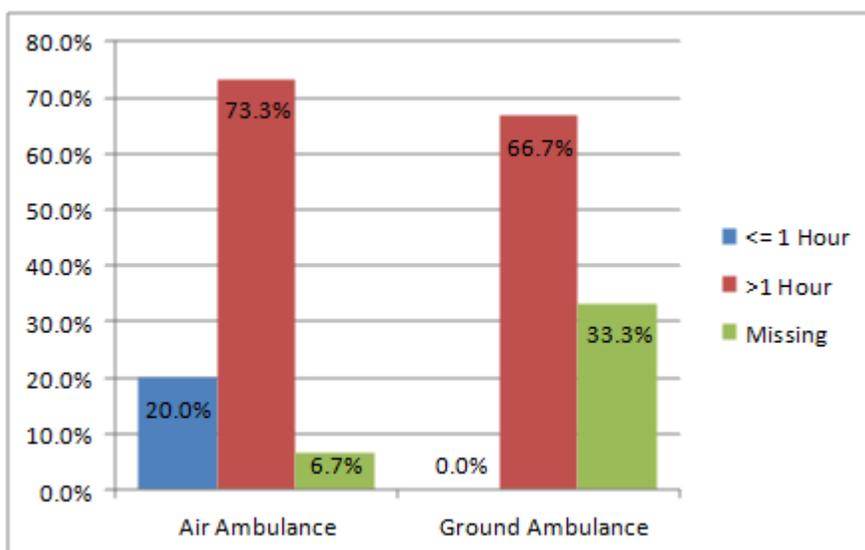
**FIGURE 14: Count of ground and air ambulance transports**

	Air	Ground	Other	Missing
Greenlee County	30	3	2	0
Other Counties	4,543	20,840	3,815	115

**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.

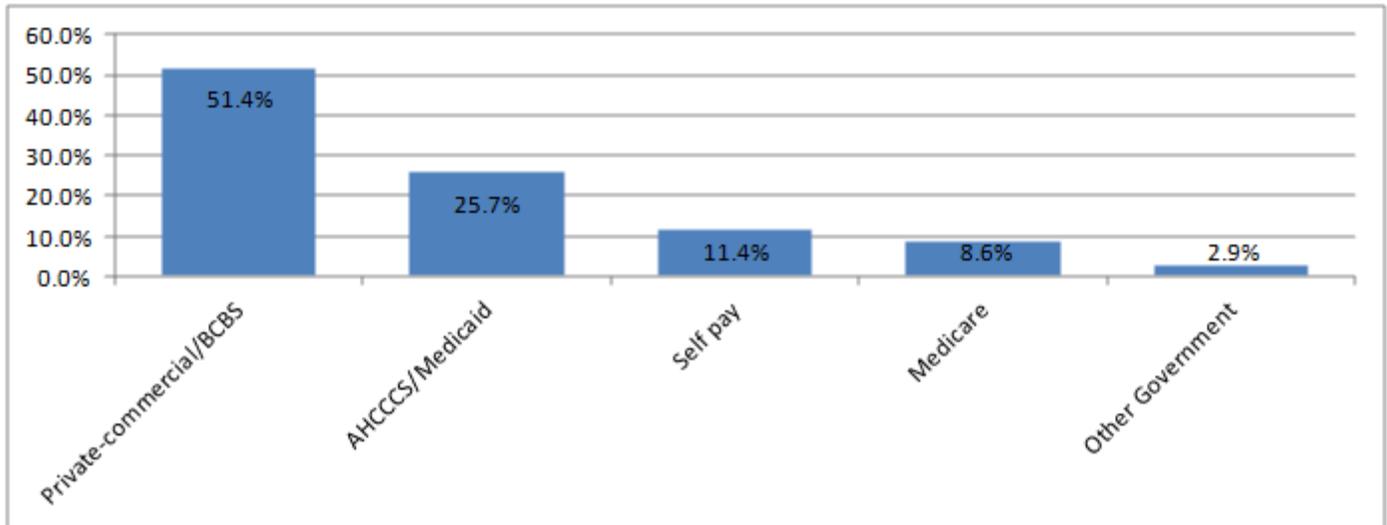
Due to the large amount of missing data on golden hour, results on the proportion of patients arriving at the hospital within one hour are not conclusive.



**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	6	20.0%	0	0.0%	6	18.2%
> 1 Hour	22	73.3%	2	66.7%	24	72.7%
Missing	2	6.7%	1	33.3%	3	9.1%
Total	30	100%	3	100%	33	100%

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



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

Payer	Frequency	Percent
Private-commercial/BCBS	18	51.4%
AHCCCS/Medicaid	9	25.7%
Self pay	4	11.4%
Medicare	3	8.6%
Other Government	1	2.9%

Private-commercial/BCBS is the primary payment source for trauma-related hospital visits in Greenlee County (Figures 17 & 18).

The median charge in Greenlee County in 2011 was \$18,504 (Figure 19).

\* 5 or fewer observations

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

Primary Payer	Total Charges	Median Charges	Total Reimbursements
Self pay	\$115,055	\$24,136	\$9,008
AHCCCS/Medicaid	\$293,288	\$17,853	\$33,764
Private-commercial/BCBS	\$872,314	\$15,545	\$135,058
Other Government	\$28,983	\$28,983	\$0
Medicare	\$118,523	\$14,345	\$18,165
<b>Total</b>	<b>\$1,428,164</b>	<b>\$18,504</b>	<b>\$195,995</b>