

Injury among Residents of Maricopa County, Arizona 2008

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Injury is a public health problem that impacts the lives of thousands of Arizona residents each year. Chronic pain, disability, large medical bills, changes in quality of life, and premature death are just some of the possible effects of injuries. These effects can extend beyond injured individuals to their families and communities. With non-fatal injuries, family members are often required to provide care, which can result in time away from work, loss of income, and increases in stress within the family. At the community level, the financial burden of injuries can include medical expenses, rehabilitation, lost wages, and lost productivity. Most injuries are predictable and preventable. Understanding the causes of injury is an important step toward reducing injury-related morbidity and mortality.

The following report identifies the leading causes of injury among residents of Maricopa County in 2008. This report is intended to be used as a guide for strategy development, program implementation, and evaluation. The Arizona Department of Health Services Injury Prevention Program operates under the vision of reducing injuries in Arizona using integrated surveillance and evidence-based interventions. This report was generated to increase awareness of county-specific injury issues and to facilitate opportunities for effective injury prevention activities.

Figure 1. Injury Pyramid for Maricopa County Residents, Arizona 2008

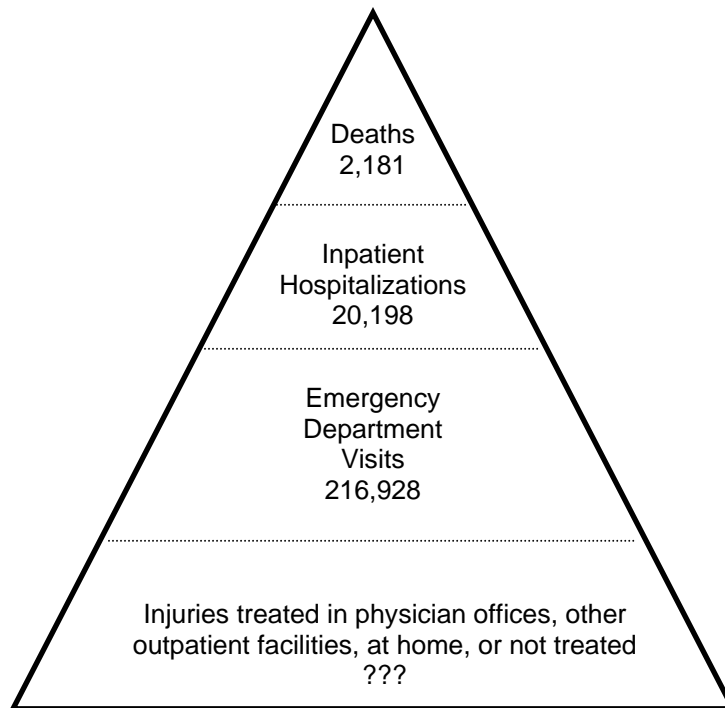
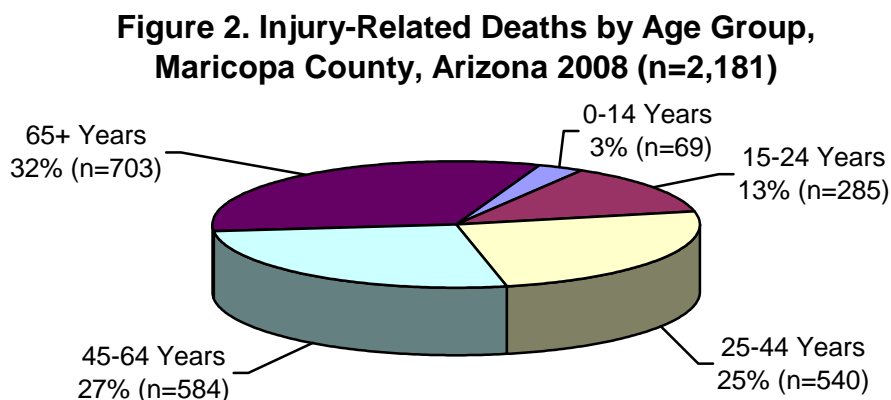


Figure 1 shows an injury pyramid for residents of Maricopa County during 2008. This pyramid shows that deaths represent the smallest proportion of injuries. The proportions increase towards the foundation of the pyramid, which is comprised of hospital discharges, emergency department visits, and self care. Although injuries that do not require medical treatment may be the most numerous, no existing datasets capture these types of injuries.

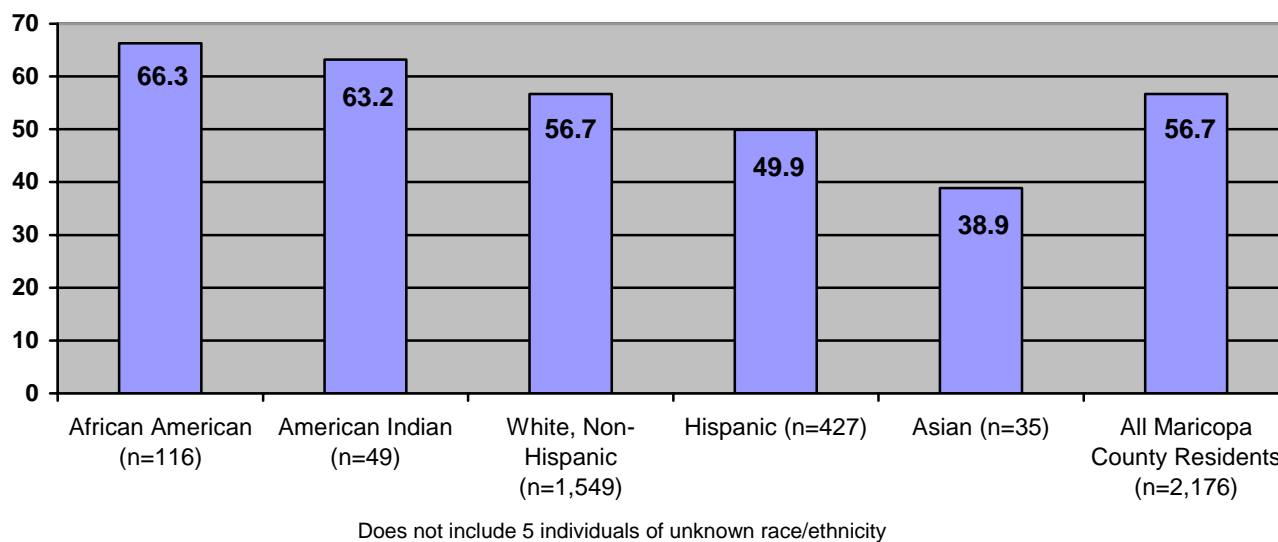
Deaths

In 2008, there were 2,181 injury-related deaths in Maricopa County. Most of these deaths were among males (68 percent, n=1,492), and females accounted for 32 percent (n=688). The largest percentage of deaths was among individuals age 65 years and older (32 percent, n=703). Age distributions are shown in Figure 2.



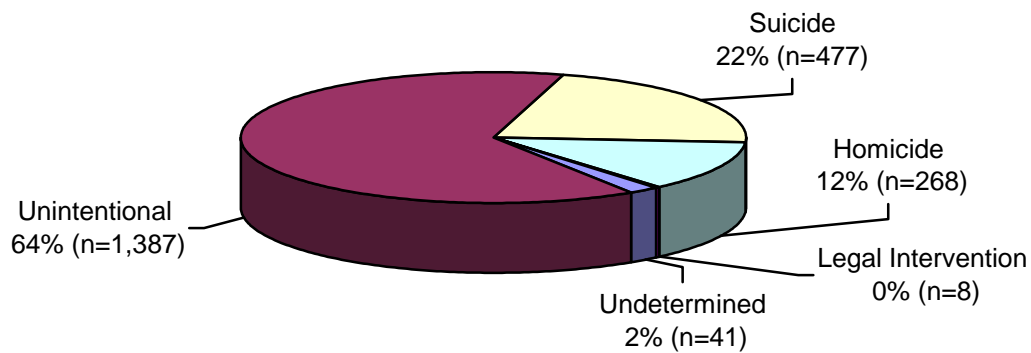
African American residents of Maricopa had the highest rate of injury-related deaths during 2008 (66.3 deaths per 100,000 residents). American Indians had an injury-related death rate of 63.2 deaths per 100,000 Maricopa County residents. Figure 3 shows the age-adjusted injury-related death rates per 100,000 residents by race/ethnicity.

Figure 3. Age-Adjusted Injury-Related Death Rates per 100,000 Residents by Race/Ethnicity, Maricopa County, Arizona 2008 (n=2,176)



Unintentional injury is the leading cause of death among individuals ages 1 to 44 years in Maricopa County and in the state of Arizona as a whole.¹ Sixty-four percent of injury-related deaths in Maricopa County were due to unintentional injuries (n=1,387); 22 percent were suicides (n=477); 12 percent were homicides (n=268); and 2 percent were of undetermined intent (n=41). There were eight injury-related deaths due to legal intervention. Figure 4 shows injury-related deaths by intent.

Figure 4. Injury-Related Deaths by Intent, Maricopa County, Arizona 2008 (n=2,181)



Maricopa County Injury-Related Deaths Compared to Other Arizona Counties

Table 1 shows the intent of injury-related deaths for residents of Maricopa County compared to residents of the rest of Arizona. The leading intent of injury-related deaths was unintentional for both Maricopa County and the remaining counties, accounting for the majority of injury-related deaths. Maricopa County had a slightly larger percentage of homicides (12 percent) than the remainder of Arizona (10 percent).

Table 1. Intent of Injury-Related Deaths, Maricopa County Compared to Other Arizona Counties, 2008			
Maricopa County (n=2,181)		Arizona, excluding Maricopa County (n=1,772)	
Intent	Percent of Total	Intent	Percent of Total
Unintentional	64	Unintentional	65
Suicide	22	Suicide	23
Homicide	12	Homicide	10
Undetermined	2	Undetermined	2

Suicide

Males accounted for the majority of suicides in Maricopa County (78 percent, n=373), while females accounted for 22 percent (n=103). There were no suicides among children younger than 13 years of age. Thirteen percent of suicides were among individuals ages 13 to 24 years (n=62); 29 percent were among individuals ages 25 to 44 years (n=140); 40 percent were among individuals ages 45 to 64 years (n=190); and

1. Arizona Health Status and Vital Statistics 2008.

18 percent were among adults 65 years and older (n=18). The most common cause of suicide was firearms (59 percent, n=283).

Homicide

Males accounted for the majority of homicides in Maricopa County (83 percent, n=223), while females accounted for 17 percent (n=45). Four percent of homicides were among individuals ages 14 years and younger (n=11); 31 percent were among individuals ages 15 to 24 years (n=82); 44 percent were among individuals ages 25 to 44 years (n=117); 18 percent were among individuals ages 45 to 64 years (n=47); and 4 percent were among adults 65 years and older (n=11). The most common cause of homicide was firearms (77 percent, n=206).

Unintentional Injury

The most common causes of unintentional injury-related deaths in Maricopa County were falls (34 percent, n=475) and motor vehicle traffic crashes (26 percent, n=363). The causes of unintentional injury-related deaths during 2008 in Maricopa County are shown in Table 2.

Cause	Number	Percent
Fall	475	34%
Motor vehicle traffic	363	26%
Poisoning	243	18%
Other/unspecified	144	10%
Suffocation	66	5%
Drowning	38	3%
Other land transport	38	3%
Fire/hot objects	20	1%
Total	1,387	100%

Motor vehicle traffic crashes

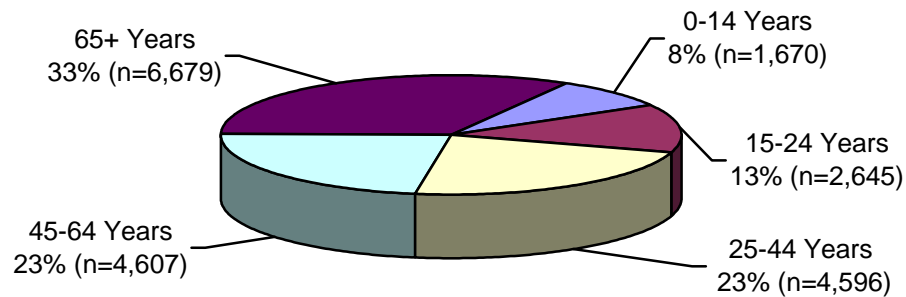
Males accounted for 74 percent of unintentional motor vehicle traffic-related deaths (n=270) and females accounted for 26 percent (n=93). Three percent of these deaths were among children 14 years and younger (n=12); 23 percent were among individuals ages 15 to 24 years (n=82); 58 percent were among individuals ages 25 to 64 years (n=212); and 16 percent were among individuals 65 years and older (n=57).

For most of the motor vehicle traffic-related deaths, the location of the injured person was not specified on the death certificate (60 percent, n=217). Fifty-eight deaths were among pedestrians (16 percent); 55 deaths were among motorcyclists (15 percent); 24 deaths were among motor vehicle occupants (7 percent); and 9 deaths were among pedal cyclists (2 percent).

Non-Fatal Inpatient Hospitalizations

In 2008, there were 20,198 non-fatal inpatient hospitalizations due to injury among residents of Maricopa County. Fifty-one percent were male (n=10,316) and 49 percent were female (n=9,880). There were two non-fatal inpatient hospitalizations among individuals of unknown gender. Thirty-three percent of the hospitalizations were among individuals 65 years and older (n=6,679). Figure 5 shows injury-related inpatient hospitalizations by age group among residents of Maricopa County.

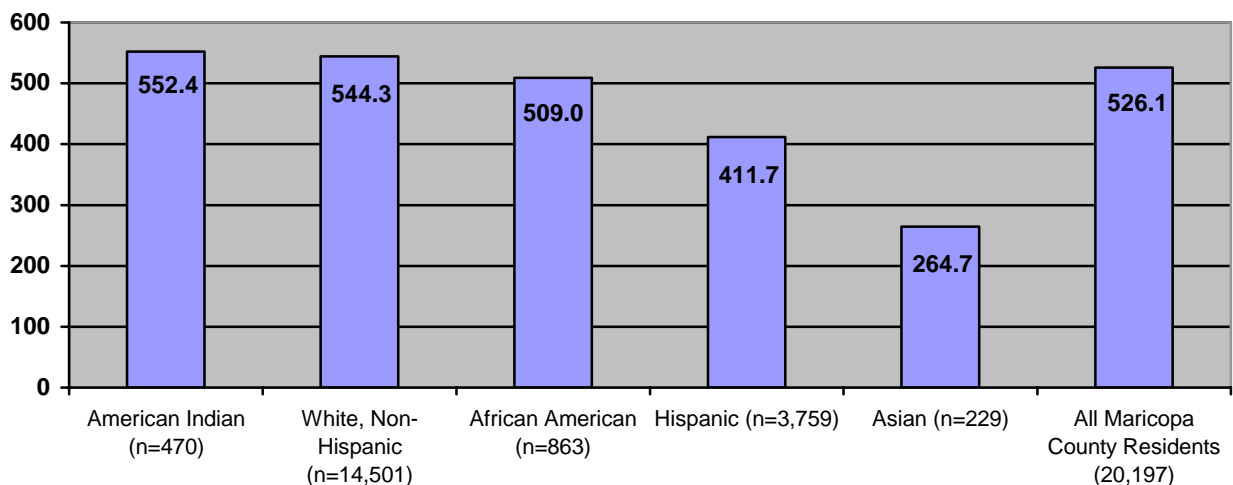
Figure 5. Injury-Related Inpatient Hospitalizations by Age Group, Maricopa County, Arizona 2008 (n=20,197)



Does not include 1 individual missing age information

The highest rate of injury-related hospitalizations was among American Indians with 552.4 hospitalizations per 100,000 Maricopa County residents. The second highest rate was among Non-Hispanic Whites with 544.3 hospitalizations per 100,000 residents. Figure 6 shows age-adjusted injury-related inpatient hospitalization rates by race/ethnicity.

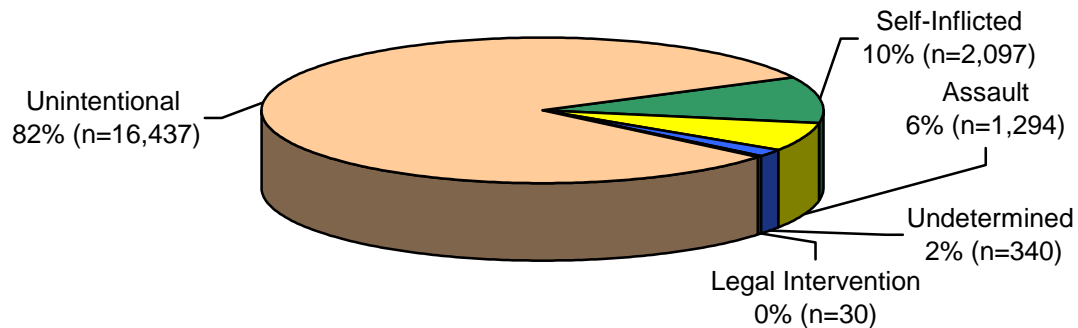
Figure 6. Age-Adjusted Injury-Related Inpatient Hospitalization Rates per 100,000 Residents by Race/Ethnicity, Maricopa County, Arizona 2008 (n=20,197)



There were 375 individuals of other or unknown race/ethnicity. Does not include 1 individual missing age information.

Eighty-one percent of the inpatient hospitalizations were due to unintentional injuries (n=16,437); 10 percent were due to self-inflicted injuries (n=2,097); 6 percent were due to assaults (n=1,294); and 2 percent were of undetermined intent (n=340). There were 30 hospitalizations due to legal intervention. Figure 7 shows injury-related hospitalizations by intent.

Figure 7. Injury-Related Inpatient Hospitalizations by Intent, Maricopa County, Arizona 2008 (n=20,198)



Maricopa County Injury-Related Hospitalizations Compared to Other Arizona Counties

Table 3 shows the intent of injury-related hospitalizations for residents of Maricopa County compared to residents of the rest of Arizona. **The leading intent of injury-related hospitalizations was unintentional for both Maricopa County and the remaining counties, accounting for the majority of injury-related hospitalizations.** Maricopa County and the rest of Arizona had similar percentages of hospitalizations due to self-inflicted injuries and assaults.

Table 3. Intent of Injury-Related Inpatient Hospitalizations, Maricopa County Compared to Other Arizona Counties, 2008			
Maricopa County (n=20,198)		Arizona, excluding Maricopa County (n=12,911)	
Intent	Percent of Total	Intent	Percent of Total
Unintentional	82	Unintentional	83
Self-Inflicted	10	Self-Inflicted	10
Assault	6	Assault	6
Undetermined	2	Undetermined	2

The most common causes of unintentional injury-related hospitalizations in Maricopa County were falls (49 percent, n=8,120) and motor vehicle traffic crashes (19 percent, n=3,070). Table 4 shows the causes of unintentional injury-related hospitalizations among residents of Maricopa County.

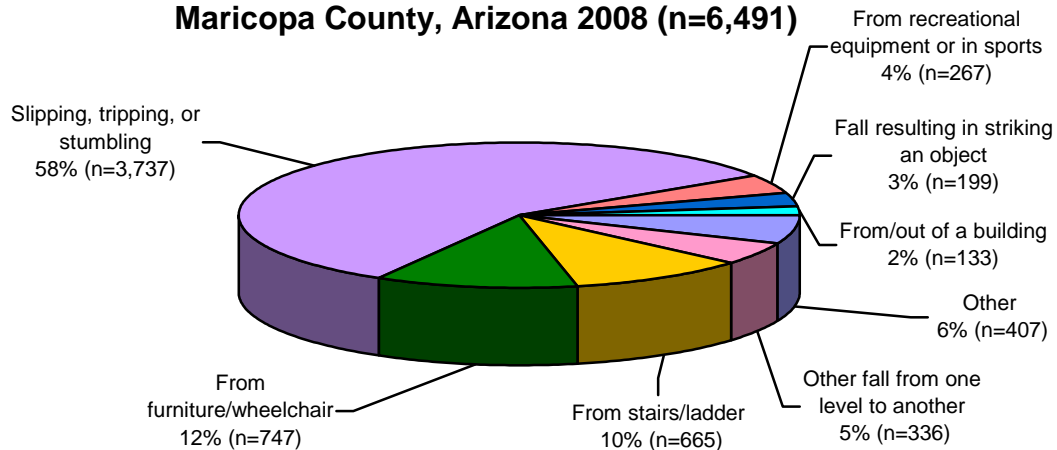
Table 4. Causes of Unintentional Injury-Related Inpatient Hospitalizations among Maricopa County Residents, Arizona 2008		
Cause	Number	Percent
Fall	8,120	49%
Motor vehicle traffic	3,070	19%
Poisoning	1,447	9%
Other/unspecified	1,240	8%
Transport	660	4%
Struck by/against	444	3%
Nature/environment	317	2%
Fire/hot object	316	2%
Overexertion	298	2%
Other pedal cycle	286	2%
Cut/pierce	239	1%
Total	16,437	100%

Falls

Males accounted for 37 percent of unintentional fall-related hospitalizations (n=2,992) and females accounted for 63 percent (n=5,128). Seven percent of fall-related hospitalizations were among children 14 years and younger (n=532); 3 percent were among individuals ages 15 to 24 years (n=230); 25 percent were among individuals ages 25 to 64 years (n=2,024); and 66 percent were among individuals 65 years and older (n=5,334).

For 20 percent of unintentional fall-related inpatient hospitalizations, information regarding contributing event was not specified in the hospital discharge database (n=1,629). Among the hospitalizations for which contributing event was specified, 58 percent were due to slipping, tripping, or stumbling (n=3,737). Figure 8 shows unintentional fall-related hospitalizations by contributing event.

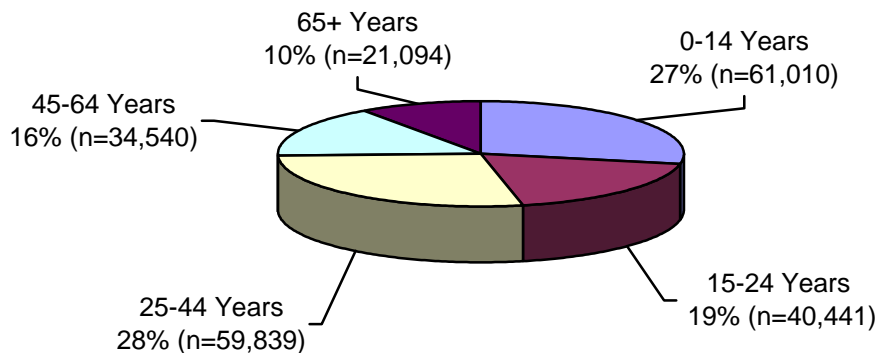
Figure 8. Inpatient Hospitalizations due to Unintentional Falls by Contributing Event, Maricopa County, Arizona 2008 (n=6,491)



Non-Fatal Emergency Department Visits

In 2008, there were 216,928 injury-related emergency department visits among residents of Maricopa County. Males accounted for 54 percent of these visits (n=117,421) and females accounted for 46 percent (n=99,505). There were two individuals of unknown sex. The largest percentage of visits was among children ages 14 years and younger (28 percent, n=61,010). Figure 9 shows injury-related emergency department visits by age group.

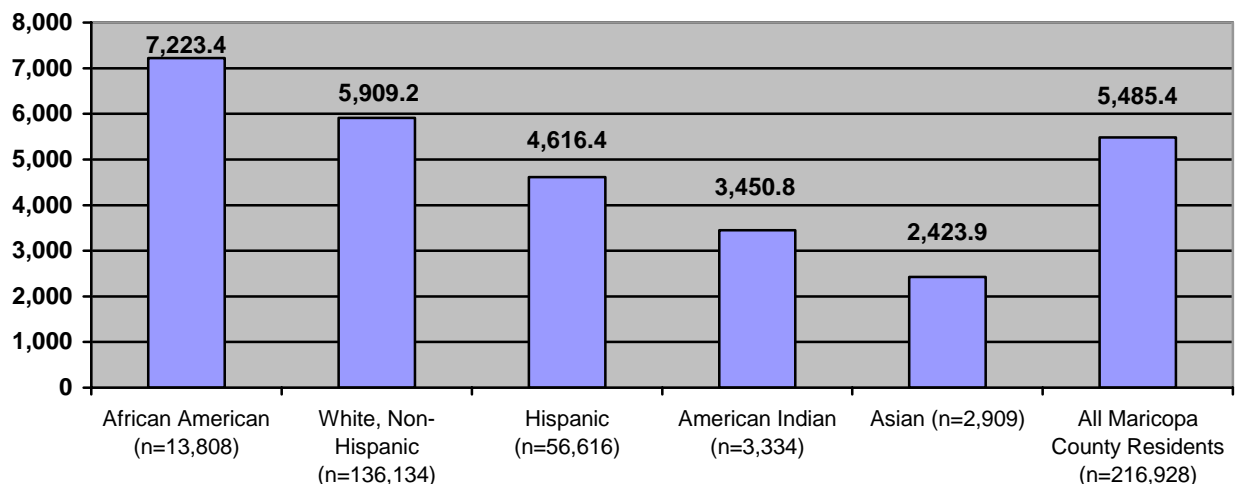
Figure 9. Injury-Related Emergency Department Visits by Age Group, Maricopa County, Arizona 2008 (n=216,924)



Does not include 4 individuals with missing ages

The highest rate of injury-related hospitalizations was among African Americans with 7,223.4 hospitalizations per 100,000 Maricopa County residents. The second highest rate was among Non-Hispanic Whites with 5,909.2 hospitalizations per 100,000 residents. Figure 10 shows age-adjusted injury-related emergency department visit rates by race/ethnicity.

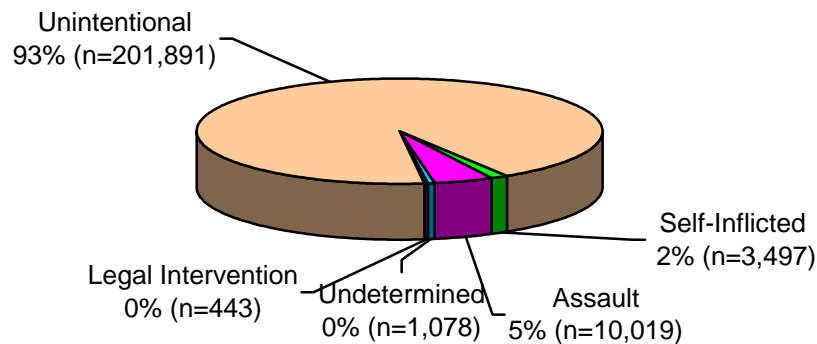
Figure 10. Age-Adjusted Injury-Related Inpatient Hospitalization Rates per 100,000 Residents by Race/Ethnicity, Maricopa County, Arizona 2008 (n=216,928)



There were 4,127 individuals of other or unknown race/ethnicity. Does not include 4 individuals missing age information.

Ninety-three percent of the emergency department visits were due to unintentional injuries (n=201,891); 5 percent were due to assaults (n=10,019); 2 percent were due to self-inflicted injuries (n=3,497); and less than 1 percent were of undetermined intent (n=1,078). There were 443 injury-related emergency department visits due to legal intervention. Figure 11 shows emergency department visits by intent.

Figure 11. Injury-Related Emergency Department Visits by Intent, Maricopa County, Arizona 2008 (n=216,928)



Maricopa County Injury-Related Emergency Department Visits Compared to Other Arizona Counties

Table 5 shows the intent of injury-related emergency department visits for residents of Maricopa County compared to residents of the rest of Arizona. The leading intent of injury-related visits was unintentional for both Maricopa County and the remaining counties, accounting for the majority of injury-related visits. Maricopa County and the rest of Arizona had the same percentages of visits due to self-inflicted injuries and assaults.

Table 5. Intent of Injury-Related Emergency Department Visits, Maricopa County Compared to Other Arizona Counties, 2008			
Maricopa County (n=216,928)		Arizona, excluding Maricopa County (n=157,775)	
Intent	Percent of Total	Intent	Percent of Total
Unintentional	93	Unintentional	93
Self-Inflicted	2	Self-Inflicted	2
Assault	5	Assault	5
Undetermined	0	Undetermined	< 1

The most common causes of unintentional injury-related emergency department visits in Maricopa County were falls (31 percent, n=62,774) and struck by/against injuries (15 percent, n=30,747). Table 6 shows the causes of unintentional injury-related emergency department visits for Maricopa County residents in 2008.

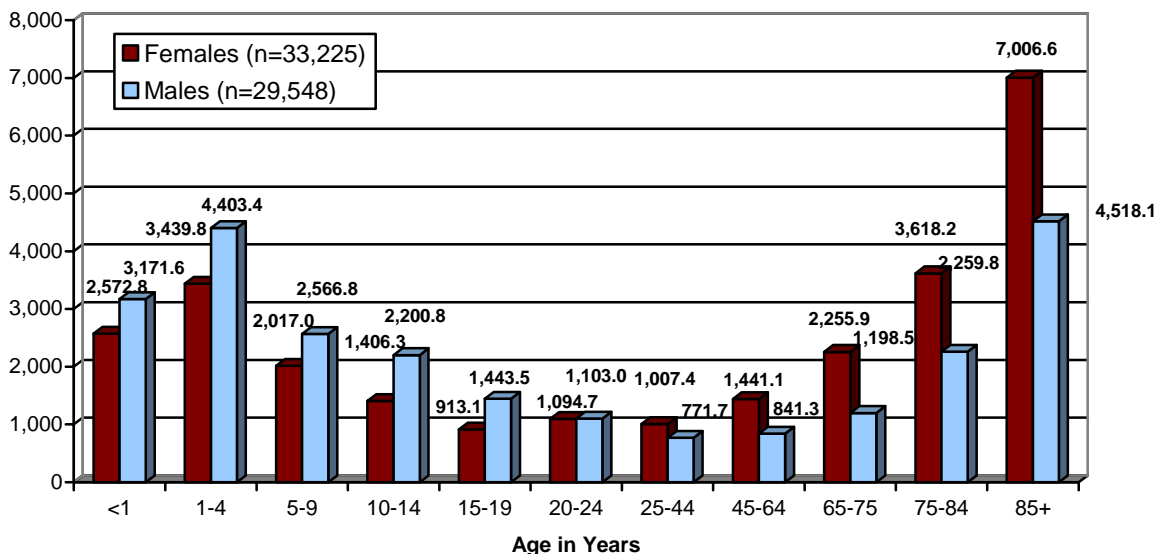
Cause	Number	Percent
Fall	62,774	31%
Struck by/against	30,747	15%
Other/unspecified	22,547	11%
Motor vehicle traffic	21,977	11%
Overexertion	20,743	10%
Cut/pierce	17,408	9%
Nature/environment	10,653	5%
Other pedal cycle	4,237	2%
Fire/hot object	3,848	2%
Transport	3,759	2%
Poisoning	3,198	2%
Total	201,891	100%

Falls

There were 62,774 emergency department visits due to unintentional falls. Males accounted for 47 percent of these visits (n=29,548) and females accounted for 53 percent (n=33,225). There was one visit by an individual of unknown sex. Thirty-eight percent of fall-related emergency department visits were among children 14 years and younger (n=23,731); 9 percent of visits were among individuals ages 15 to 24 years (n=5,957); 33 percent were among individuals ages 25 to 64 years (n=20,564); and 20 percent were among individuals 65 years and older (n=12,522).

The highest rates of unintentional fall-related emergency department visits were among older adults. Females 85 years and older had a rate of 7,006.6 fall-related emergency department visits per 100,000 residents. Figure 12 shows emergency department visit rates of unintentional falls by age group and sex.

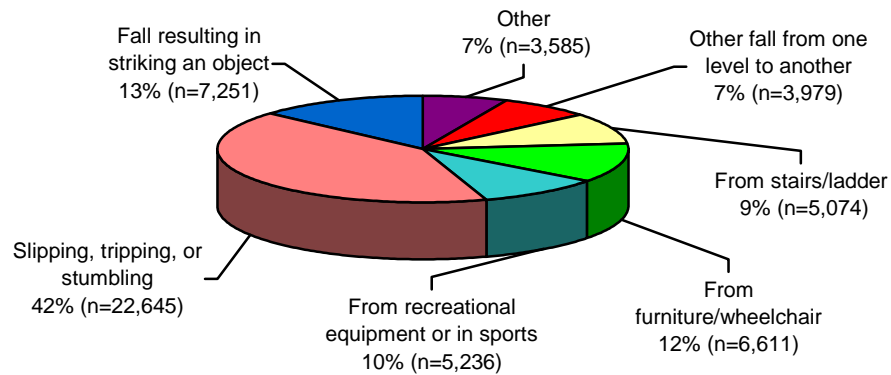
Figure 12. Unintentional Fall-Related Emergency Department Visit Rates per 100,000, Maricopa County, Arizona 2008 (n=62,773)



Does not include one individual missing information on sex

For 13 percent of the unintentional fall-related emergency department visits, information regarding contributing event was not specified in the emergency department database (n=8,393). Among the emergency department visits for which contributing event was specified, 42 percent of unintentional falls were due to slipping, tripping, or stumbling (n=22,645). Figure 13 shows emergency department visits due to unintentional falls by contributing event.

Figure 13. Emergency Department Visits due to Unintentional Falls by Contributing Event, Maricopa County, Arizona 2008 (n=54,381)



Summary

In 2008, there were 2,181 injury-related deaths in Maricopa County, and the largest percentage of deaths was among adults age 65 years and older (32 percent, n=703). The majority of these deaths were due to unintentional injuries (64 percent, n=1,387). The most common cause of unintentional injury deaths was falls (34 percent, n=475). For residents of Maricopa County, unintentional injury is the leading cause of death for individuals ages 1 to 44 years.¹ Twenty-two percent of injury-related deaths in Maricopa County were suicides (n=477); 12 percent were homicides (n=268); and 2 percent were of undetermined intent (n=41). There were eight injury-related deaths due to legal intervention.

There were 20,198 non-fatal inpatient hospitalizations due to injury among residents of Maricopa County. Thirty-three percent of the hospitalizations were among adults 65 years and older (n=6,679). Eighty-one percent of the hospitalizations were due to unintentional injuries (n=16,437); 10 percent were due to self-inflicted injuries (n=2,097); 6 percent were assaults (n=1,294); and 2 percent were of undetermined intent (n=340). Thirty hospitalizations were due to legal intervention. The most common cause of unintentional injury-related hospitalizations was falls (49 percent, n=8,120).

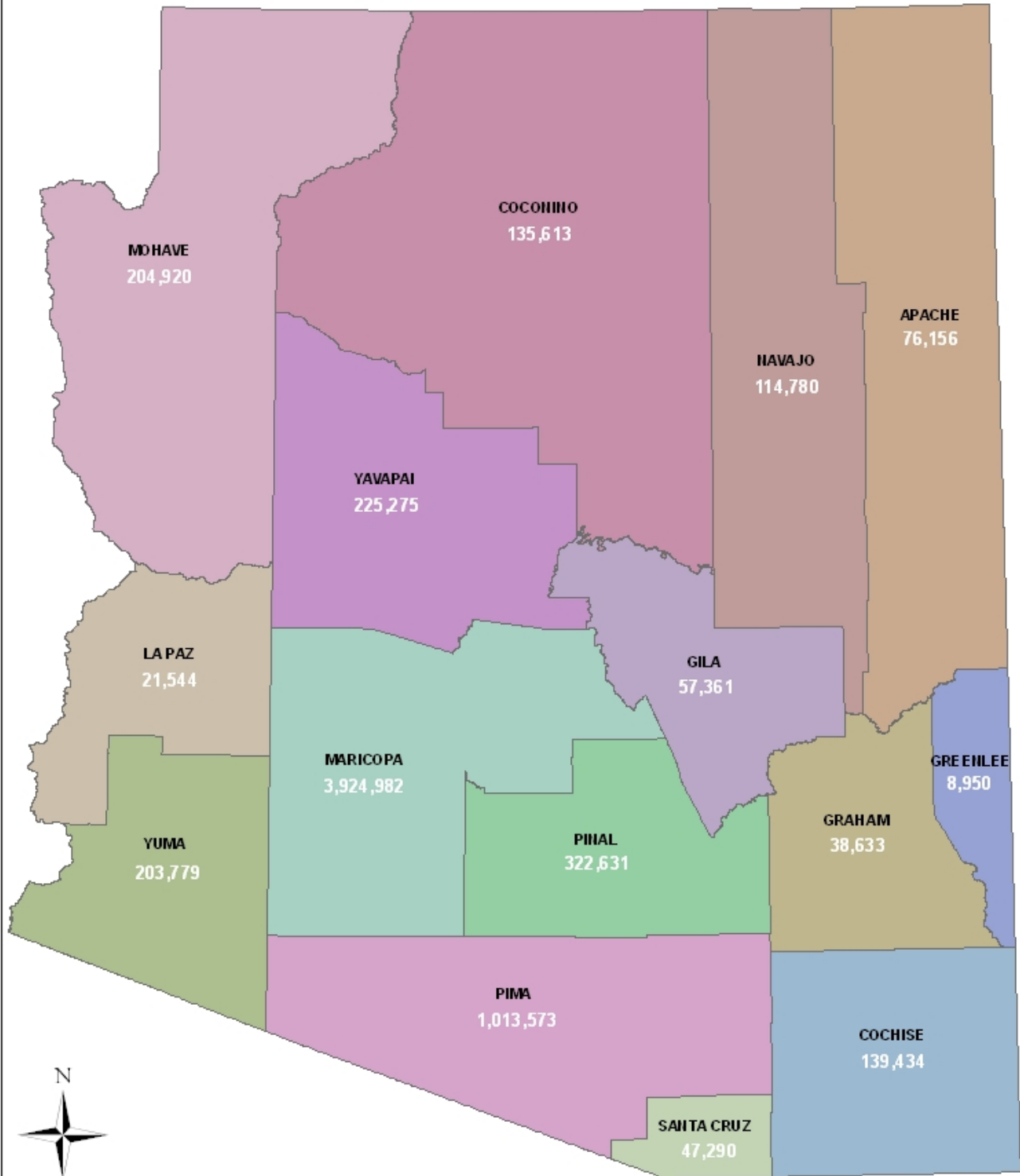
There were 216,928 injury-related non-fatal emergency department visits among residents of Maricopa County in 2008. The largest percentage of visits was among children ages 14 years and younger (28 percent, n=61,010). Ninety-three percent of the emergency department visits were due to unintentional injuries (n=201,891); 5 percent were due to assaults (n=10,019); 2 percent were due to self-inflicted injuries (n=3,497); and less than 1 percent were of undetermined intent (n=1,078). There were 443 injury-related emergency department visits due to legal intervention. The most common cause of unintentional injury-related emergency department visits was falls (31 percent, n=62,774).

Source for deaths: 2008 Death Certificate Database

Source for hospitalizations: 2008 Inpatient Hospital Discharge Database

Source for emergency department visits: 2008 Outpatient Emergency Department Database

Arizona Counties with Population, 2008



1 in = 44 miles

Source: Arizona Health Status and Vital Statistics 2008