



## *Injuries in Oklahoma, 2005*



Shelli Stephens Stidham, Chief  
Injury Prevention Service

Pam Archer, M.P.H.  
Deputy Chief  
Injury Prevention Service  
Oklahoma State Department of Health



For more information, please contact:  
Injury Prevention Service  
Oklahoma State Department of Health  
1000 N.E. 10<sup>th</sup> Street  
Oklahoma City, Oklahoma 73117-1299  
(405) 271-3430  
[www.health.state.ok.us/program/injury/index.html](http://www.health.state.ok.us/program/injury/index.html)



October 2007

## **Table of Contents**

Magnitude of the Problem.....	1
All Injury Deaths and Hospitalizations.....	2
Traumatic Brain Injury Deaths and Hospitalizations.....	3
Drowning Deaths and Near Drowning Hospitalizations.....	4
Fire/Burn Injury Deaths and Hospitalizations.....	5
Firearm Injury Deaths and Hospitalizations.....	6
Homicides .....	6
Suicides and Attempt Hospitalizations.....	7
Motor Vehicle Crash Injury Deaths and Hospitalizations.....	8
Poisoning Deaths and Hospitalizations .....	9
Fall Deaths and Hospitalizations .....	10
Hip Fracture Hospitalizations among Persons aged 65 Years and Older.....	11
References.....	12

## *Injuries in Oklahoma, 2005*

### **Magnitude of the Problem**

Approximately 2400 Oklahomans die every year from an injury, including approximately 1700 unintentional (accidental) deaths, 500 suicides, and more than 200 homicides.<sup>1</sup> In 2005, injuries accounted for 1 of every 13 deaths in Oklahoma; nonfatal injuries accounted for 1 of every 13 hospital days and 1 of every 14 hospital discharges. Also, for every \$10 of inpatient healthcare charges, \$1 was for injuries.<sup>2</sup>

Injuries are the leading cause of death and lifelong disability among persons 1-44 years of age in Oklahoma. Injuries account for more premature deaths before 65 years of age than cancer, heart disease, stroke, and diabetes combined. Oklahoma's death rates due to motor vehicle crashes, drownings, fire/burns, suicide and homicide are higher than the national average.<sup>1</sup>

According to vital statistics data, in 2005 the leading causes of injury death in Oklahoma were motor vehicle crashes (25%), drugs/poisonings (18%), firearms (16%), fire/burns (3%), and drownings (2%). Males were two times more likely to die from injuries than females. Of the fatal motor vehicle traffic crashes in Oklahoma, 21% were alcohol-related. Overall, 57% of fatal crash victims were not using safety belts or child restraint devices.<sup>3</sup>

According to the 2005 United States (U.S.) Census population estimates, the population of Oklahoma constituted 1.2% of the entire U.S. population. Oklahoma has the second highest Native American population in the nation and a lower proportion of African Americans than the national average (Table 1).<sup>4</sup>

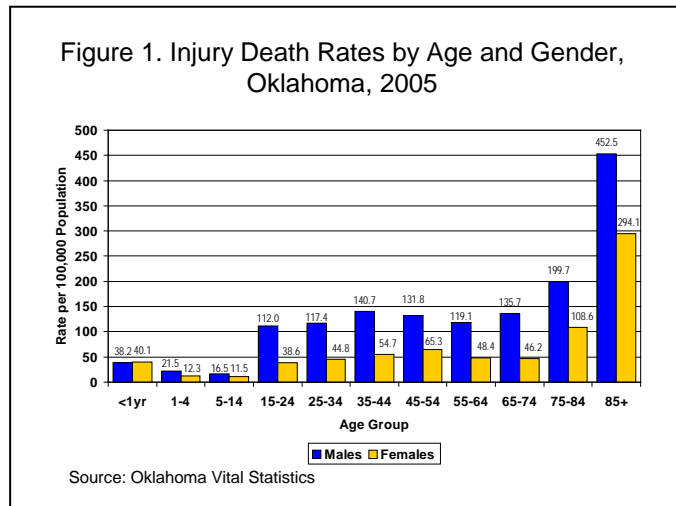
***Table 1. Selected Demographic Characteristics of Oklahoma vs. United States, 2005 U.S.***

		Oklahoma		United States	
		Number	Percent	Number	Percent
Total Population		3,543,442		296,507,061	
Males		1,745,823	49%	145,973,538	49%
Females		1,797,619	51%	150,533,523	51%
Race	White	2,859,745	81%	240,174,619	81%
	African American	297,183	8%	39,067,463	13%
	Native American	319,730	9%	3,161,493	1%
Under 5 years		250,522	7%	20,315,137	7%
Under 18 years		886,369	25%	73,534,240	25%
Over 65 years		440,074	12%	34,577,774	12%

***Census Population Estimates***

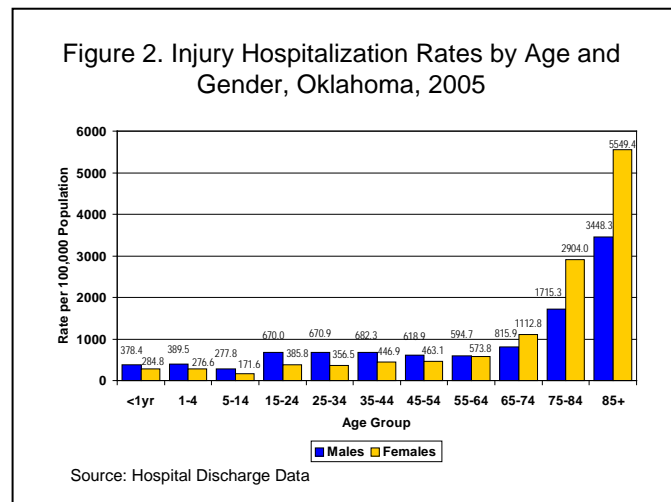
## Injury Deaths

In 2005, a total of 2,833 persons died from an injury in Oklahoma. Death rates for both males and females were highest among persons 85 years and older, followed by persons 75-84 years. Injury death rates were lowest for children 1-14 years of age and then steadily increased with increasing age. Males accounted for 67% of injury deaths and had a higher rate of injury than females in all age groups, except infants under one year of age.



## Injury Hospitalizations

For every injury death in Oklahoma in 2005, there were 8.5 hospitalizations for an injury (24,140 injury hospitalizations total). The number of hospitalizations was highest for fall-related injuries, followed by poisonings and motor vehicle crashes. The number and rate of hospitalized persons were highest among persons 75 years and older. Males had a higher hospitalization rate for injury than females among person less than 65 years of age. Among persons 65 years and older, females had higher rates of hospitalization than males.



## Traumatic Brain Injury Death Rates

Traumatic brain injuries (TBI) are among the most likely injuries to cause death or permanent disability.

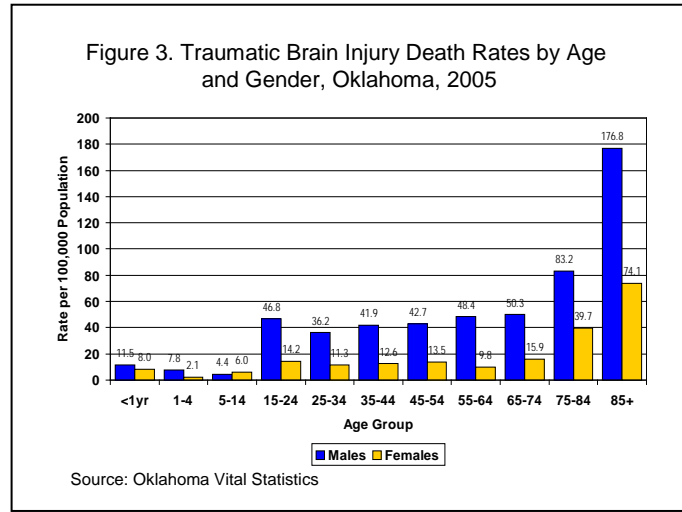
Approximately 1.4 million persons sustain a TBI in the U.S. annually. Of these, 50,000 people die, accounting for one-third of all injury deaths.

Additionally, 80,000 to 90,000 people experience the onset of long-term or lifelong disability associated with a TBI. Motor vehicle crashes, firearms, and falls are the leading causes of TBI.<sup>5</sup>

Firearm-related incidents account for 10% of all TBIs, but 44% of TBI-related deaths.<sup>6</sup>

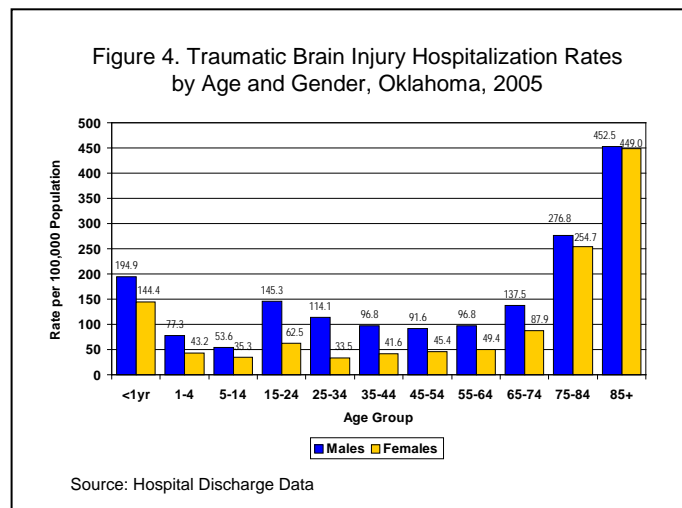
In Oklahoma, 927 persons died as a result of TBI in 2005. Although persons 15-24 years of age accounted for the highest number of injuries, persons 85 years and older had the highest death rate followed by persons 75-84 years and 65-74 years.

Males were nearly three times more likely to die from a TBI than females, and they accounted for 72% of the TBI deaths. The death rate was higher for males than females among all age groups except children 5-14 years of age.



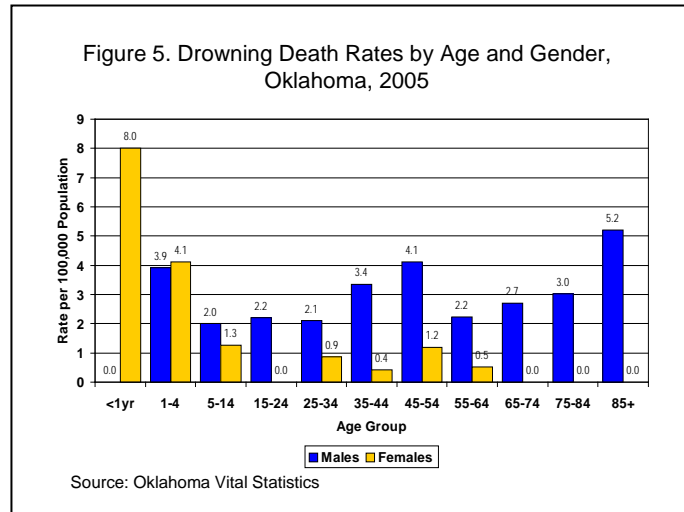
## Traumatic Brain Injury Hospitalizations

A total of 3,250 persons were hospitalized in Oklahoma for a TBI during 2005. Although the number of TBI-related hospitalizations was highest among persons 15-24 years of age, the hospitalization rate was highest for persons 85 years and older, followed by persons 75-84 years and infants less than a year old. The rates of TBI hospitalization were higher for males in all age groups except for persons 75 years and older.



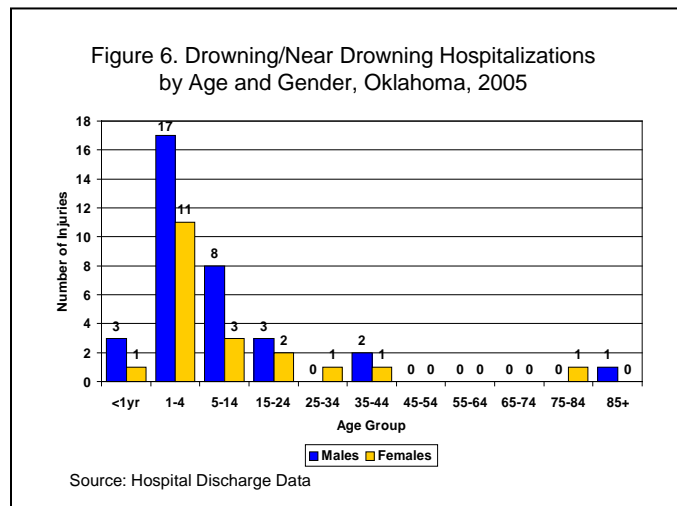
## Drowning Death Rates

Drowning is the sixth leading cause of unintentional injury death for all ages combined in the U.S. and in Oklahoma. Additionally, it is the second leading cause of injury death among children 1-14 years of age and third among persons 15-24 years.<sup>1</sup> In 2005, 64 unintentional drownings occurred in Oklahoma. The highest death rates were among the oldest and youngest age groups. Men were at higher risk than women (3:1) and accounted for 75% of all drownings. Death rates for males were higher than females across all age groups except children less than five years of age.



## Drowning/Near Drowning Hospitalizations

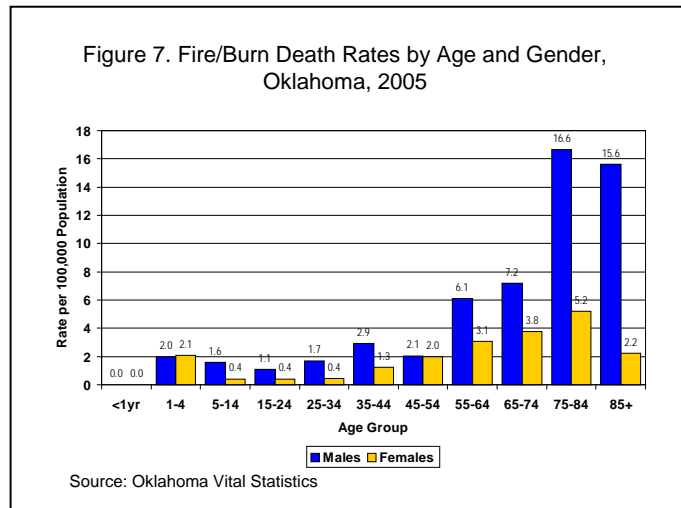
For every drowning death among children under 15 years in the U.S. in 2004, there were approximately five children who received treatment in an emergency department for a nonfatal submersion injury. More than half of these children were hospitalized.<sup>1</sup> Nonfatal drownings can result in brain damage that can cause long-term disabilities, such as memory problems, learning disabilities, and permanent loss of basic functioning.<sup>7</sup> In 2005, 54 Oklahomans were hospitalized due to near-drowning incidents. The 1-4 year age group had the highest number of hospitalizations. Overall, males accounted for 63% of the injuries. The number of hospitalizations for males was almost two times higher than for females.



## Fire/Burn Death Rates

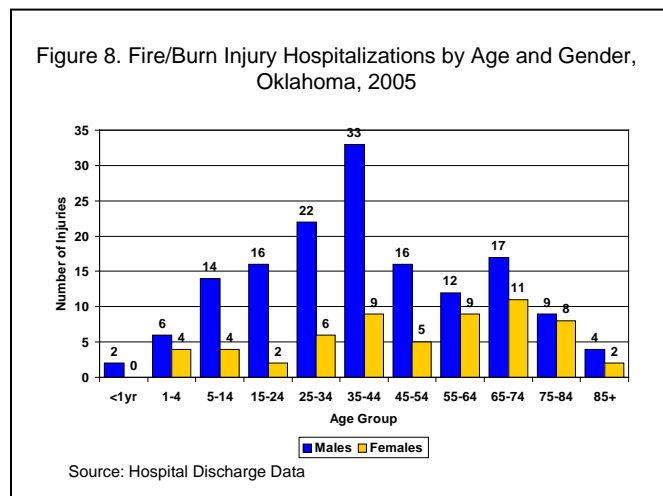
In 2005, an American died in a fire about every two hours. Residential fires accounted for four of every five fire deaths. Nationwide, fire departments responded to 396,000 home fires, which claimed the lives of more than 3,000 Americans (excluding firefighters) and injured approximately 14,000.<sup>8</sup> Most of the fire deaths were due to inhalation of smoke or toxic gases.<sup>9</sup> Smoking was the leading cause of fire-related deaths, while cooking was the primary cause of residential fires.<sup>10</sup> In 2005, fire-related

injuries claimed the lives of 88 people in Oklahoma. Although 55-64 year-olds had the highest number of fire/burn deaths, persons 75 years and older had the highest fire/burn death rates. Males were nearly two times more likely to die in a fire than females and accounted for 66% of fire/burn deaths in Oklahoma. Females 1-4 years old were the only age group that had higher fire-related death rates than males.



## Fire/Burn Injury Hospitalizations

In 2005, someone was injured from a fire-related incident every 29 minutes in the U.S. For every person who died from a fire, 4.5 others were injured.<sup>8</sup> In Oklahoma, 211 persons were hospitalized due to injuries sustained from a fire/burn in 2005. Although persons 35-44 years of age had the highest number of fire/burn injury hospitalizations, persons 65 years and older had the highest rate of hospitalization. Males in all age groups were more likely to be hospitalized due to a fire/burn injury than females.



## Firearm Death Rates

In the U.S., approximately 30,000 individuals die annually as a result of firearm-related incidents. Firearms are the second leading cause of injury-related deaths behind motor vehicle crashes in the U.S. as well as in Oklahoma.<sup>1</sup> In Oklahoma alone, there were 470 deaths resulting from a firearm-related injury in 2005. Overall, persons 25-34 years of age had the highest number and rate of fatal injuries. Among males, persons 65-84 years of age had the highest rate. Nearly all of the firearm-related deaths among persons 75 years and older were suicides. The firearm-related death rate for males was five times higher than for females, with males accounting for 83% of firearm-related deaths.

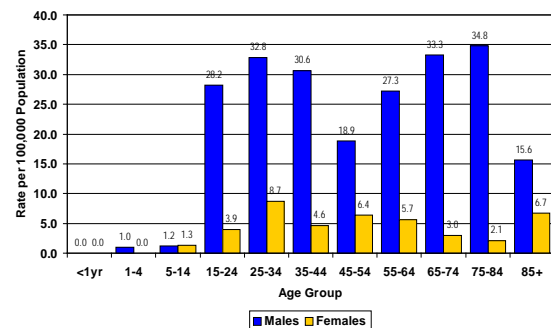
## Firearm Injury Hospitalizations

In Oklahoma, 354 persons were hospitalized as a result of firearm injuries in 2005. Persons in the 15-24 year age group had the highest number of firearm-related injuries, followed by persons 25-44 years of age. Overall, males accounted for 88% of hospitalizations due to firearm-related injuries. Males ages 15-24 were nearly eight times more likely to be hospitalized as a result of firearm-related injuries than their female counterparts.

## Homicide Rates

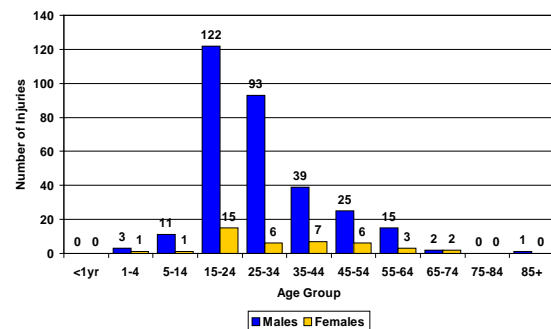
Homicide is the second leading cause of all deaths among persons 15-24 years of age and the 14th leading cause of all deaths in the U.S. In Oklahoma, homicide is the third most common cause of deaths overall among persons ages 1-4 and 15-24 years.<sup>1</sup> In 2005, 216 persons died due to injuries related to homicide incidents. The highest rate of homicides was among persons 25-34 years old. Males accounted for 75% of the deaths and had a mortality rate three times higher than the rate of females.

Figure 9. Firearm Death Rates by Age and Gender, Oklahoma, 2005



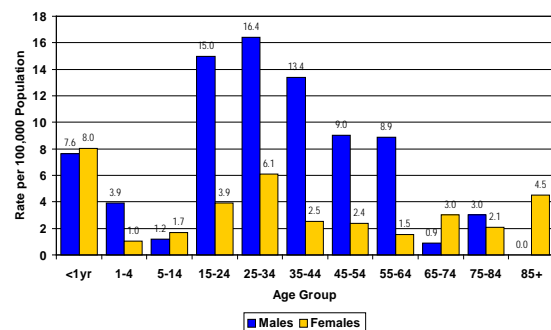
Source: Oklahoma Vital Statistics

Figure 10. Firearm-related Hospitalizations by Age and Gender, Oklahoma, 2005



\*Excludes 1 person where gender was unknown.  
Source: Hospital Discharge Data

Figure 11. Homicide Rates by Age and Gender, Oklahoma, 2005

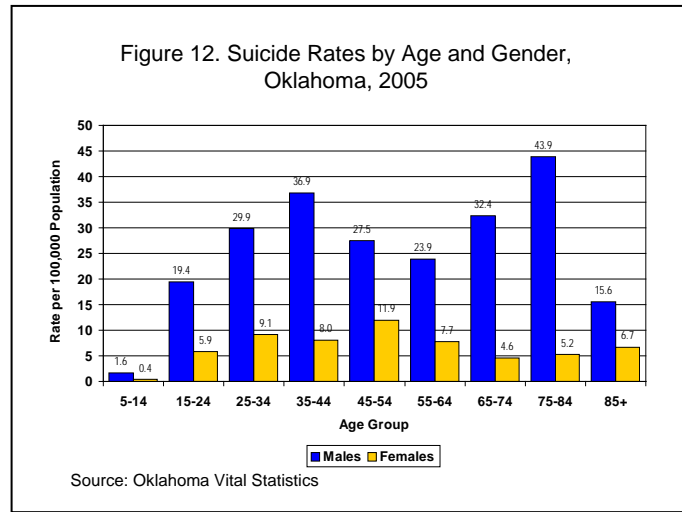


Source: Oklahoma Vital Statistics



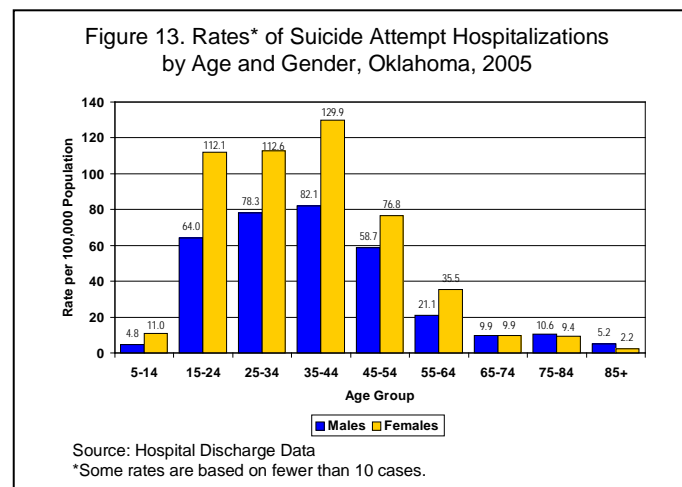
## Suicide Death Rates

Suicide is the 11th leading cause of death among all Americans<sup>1</sup> and the eighth leading cause of death among males in the U.S.<sup>11</sup> It is the second most common cause of all deaths among 25-34 year-olds and the third among persons 10-24 years of age.<sup>1</sup> Suicide is the 10th leading cause of death among all Oklahomans, second among persons 10-34 years of age.<sup>1</sup> In 2005 alone, suicide claimed the lives of 509 Oklahomans. Overall, the highest suicide rate was among 35-44 year-olds. The highest suicide rate for males was among 75-84 year-olds. Males had a higher suicide rate than females for all ages and accounted for 77% of the deaths. Men were 3.4 times more likely to die from suicide than women.



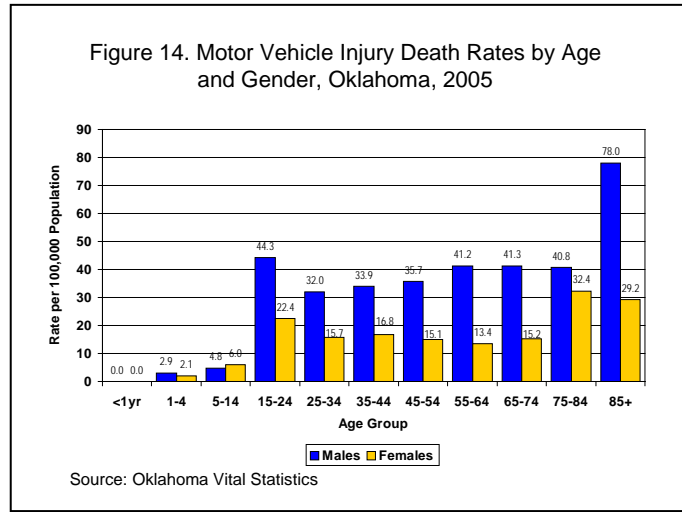
## Suicide Attempt Hospitalizations

In 2005, in the U. S., more than 150,000 individuals were hospitalized following suicide attempts and more than 114,000 were treated in an emergency department and released.<sup>1</sup> In Oklahoma, 1,933 individuals were hospitalized following a suicide attempt in 2005. Suicide attempt rates were highest among persons aged 35-44 years followed by 25-34 and 15-24 year-olds. Females were more likely to attempt suicide than males among all ages except 65-84 year-olds. The most common method of attempted suicides was poisoning.



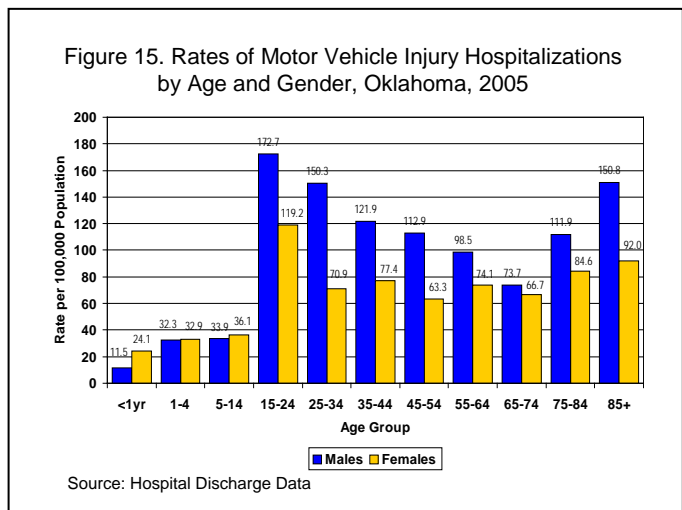
## Motor Vehicle Crash Death Rates

Motor vehicle crashes are the leading cause of death and disability among persons 1-34 years of age in U.S. Thirty-six percent of deaths among U.S. teens are the result of a motor vehicle crash.<sup>12</sup> Motor vehicle crashes are the leading cause of death among persons 1-44 years of age in Oklahoma.<sup>1</sup> Motor vehicle crashes claimed the lives of 819 Oklahomans in 2005. Although the highest number of deaths was among persons aged 15-24 years, persons 85 years and older had the highest rate of motor vehicle crash deaths. Sixty-six percent of the deaths overall occurred among males. Males were twice as likely to die in a motor vehicle crash than females. However, females 5-14 years of age were more likely to die in a crash than males in this age group.



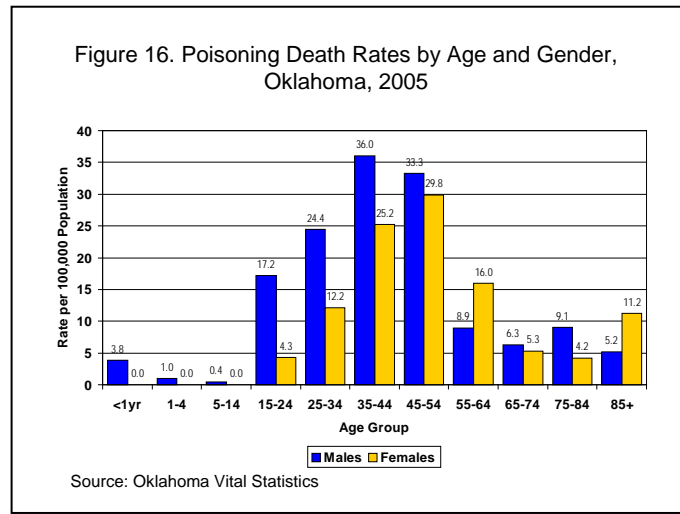
## Motor Vehicle Crash Hospitalizations

In 2005, four individuals were hospitalized for every person who died from a motor vehicle crash in Oklahoma. The highest rate of hospitalization was among persons aged 15-24 years. Males were more likely to be hospitalized as a result of injuries sustained from a motor vehicle crash than females in all age groups, except among children less than 15 years of age.



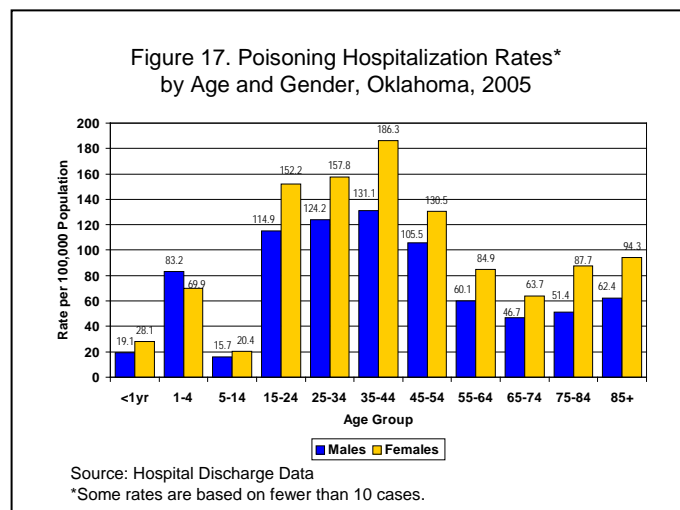
## Poisoning Death Rates

In 2004, poison control centers across the U.S. reported more than 2.4 million human poisoning exposures and an average of one poisoning exposure every 13 seconds. The majority (84%) of poisoning exposures were unintentional. Of the 2.4 million human exposures, 1,183 poisoning deaths were reported. Nearly 93% of poisoning exposures occurred at a residence, and more than 51% occurred among children younger than six years old. Fifty-six percent of poisoning fatalities occurred among persons 20-49 years of age.<sup>13</sup> Poisoning was the second leading cause of unintentional injury deaths among all Oklahomans. In 2005, poisonings took the lives of 526 Oklahomans, with the highest rate among individuals 35-54 years of age. Males were more likely to die due to poisoning than females, accounting for 58% of the deaths.



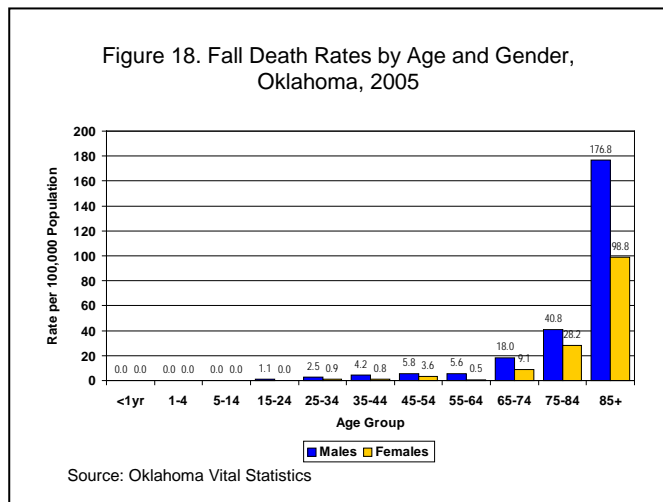
## Poisoning Hospitalizations

In 2004, in the U.S., more than 528,000 persons were treated for a poisoning exposure in a health care facility with approximately 156,000 requiring hospitalization.<sup>13</sup> In 2005, there were 3,533 hospitalizations due to poisoning-related injuries in Oklahoma. The highest rate for hospitalization was among individuals 35-44 years old. Females had a higher rate of hospitalization than males for all age groups, except for individuals 1-4 years old.



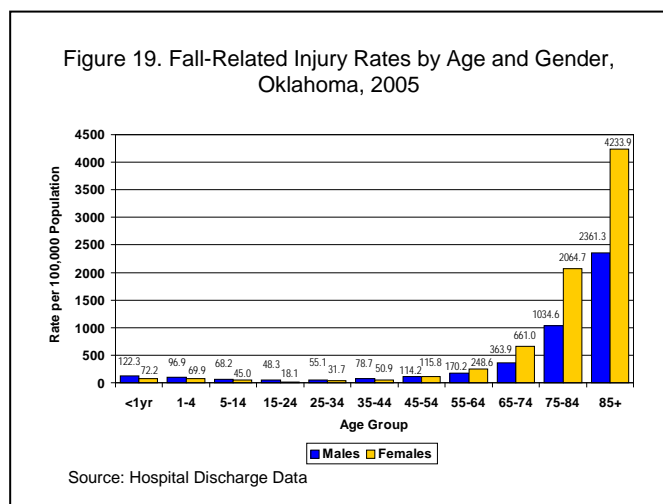
## Fall Death Rates by Age and Gender, Oklahoma, 2005

Falls are the leading cause of injury death in the U.S. and the leading cause of hospitalization for trauma. In 2000, the estimated direct cost for falls among older adults in the U.S. was \$19 billion.<sup>14</sup> In 2005, 221 persons died from a fall injury in Oklahoma. The highest number of deaths and the highest death rates were among persons 75 years and older. Among males, no fall-related deaths occurred among persons under 15 years of age, and among females, no fall-related deaths occurred among persons less than 25 years of age. Among all age groups, males had a higher rate than females.



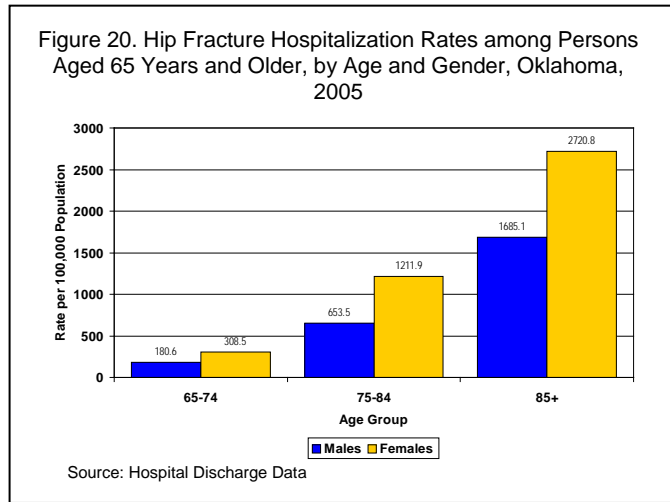
## Fall-Related Injury Hospitalization Rates by Age and Gender, Oklahoma, 2005

For every fall-related death in Oklahoma in 2005, there were 40 hospitalizations for a fall-related injury (8,820 fall-related hospitalizations total). Similar to fall-related deaths, the highest rate of hospitalization for falls was among persons 75 years and older. However, the death rate in this age group was highest for males whereas the hospitalization rate was highest for females. In fact, males had higher fall-related hospitalization rates for persons under 45 years of age and females had higher rates among persons 45 years and older.



## Hip Fracture Hospitalization Rates among Persons Aged 65 Years and Older by Age and Gender, Oklahoma, 2005

Hip fractures among persons 65 years and older can lead to serious health problems and premature death. Approximately one-fourth of survivors who lived on their own prior to injury have to move to a nursing home for at least a year after their injury. In addition, up to 20% of injured persons die within a year of their injury.<sup>15</sup> In 2005, 3,737 persons aged 65 years and older were hospitalized in Oklahoma with a hip fracture. The rate of hip fractures increased with age. Persons 85 years and older were almost 10 times more likely to be hospitalized with a hip fracture than persons 65-74 years of age. Females had a higher rate of injury than males in all of the older age groups.



## References:

1. *Web-based Injury Statistics Query and Reporting System*. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Available at <http://www.cdc.gov/ncipc/wisqars>. Accessed on October 30, 2007.
2. Oklahoma State Department of Health. OK2SHARE. Available at: <http://www.health.state.ok.us/stats>. Accessed on October 30, 2007.
3. Oklahoma Department of Public Safety. Oklahoma Highway Safety Office: *Oklahoma Crash Facts 2005*. Available at: <http://www.dps.state.ok.us/ohso/2005fb.htm>. Accessed on October 30, 2007.
4. United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, Bridged-Race Population Estimates, United States July 1<sup>st</sup> resident population by state, county, age, sex, bridged-race, and Hispanic origin, compiled from 1990-1999 bridged-race intercensal population estimates and 2000-2006 (Vintage 2006) bridged-race postcensal population estimates, on CDC WONDER On-line Database. September 2007. Available at <http://wonder.cdc.gov/bridged-race-v2006.html>. Accessed on October 30, 2007.
5. Thurman D, Alverson C, Dunn K, Guerrero J, Sniezek J. Traumatic brain injury in the United States: a public health perspective. *Journal of Head Trauma and Rehabilitation* 14(6):602–151;1999.
6. Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control. *Traumatic brain injury in the United States—a report to Congress*. Atlanta, GA: Centers for Disease Control and Prevention;1999.
7. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. *Injury Topics and Fact Sheets*. Available at: <http://www.cdc.gov/ncipc/factsheets/drown.htm>. Accessed on October 30, 2007.
8. Karter MJ. *Fire loss in the United States during 2005*, Abridged report. Quincy (MA): National Fire Protection Association, Fire Analysis and Research Division; 2006.
9. Hall JR. Burns, toxic gases, and other hazards associated with fires: deaths and injuries in fire and non-fire situations. Quincy, MA: National Fire Protection Association, Fire Analysis and Research Division; 2001.
10. Ahrens M. The U.S. fire problem overview report: leading causes and other patterns and trends. Quincy, MA: National Fire Protection Association; 2003.
11. Anderson RN, Smith BL. Deaths: leading causes for 2001. *National Vital Statistics Report* 52(9):1-86;2003.
12. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. *Injury Topics and Fact Sheets*. Available at: <http://www.cdc.gov/ncipc/factsheets/teenmvh.htm>. Accessed on October 30, 2007.

13. Watson AW, Litovitz TL, Rodgers GC, Klein-Schwartz W, Reid N, Youniss J, Flanagan A, Wruk KM. 2004 Annual Report of the American Association of Poison Control Centers Toxic Exposures Surveillance System. *American Journal of Emergency Medicine* 23(5):589–666;2005.
14. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. *Injury Topics and Fact Sheets*. Available at: <http://www.cdc.gov/ncipc/duip/preventadultfalls.htm>. Accessed on October 30, 2007.
15. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. *Injury Topics and Fact Sheets*. Available at: <http://www.cdc.gov/ncipc/factsheets/adulthipfx.htm>. Accessed on October 30, 2007.