

## 8 INJURY

According to the National Center for Health Statistics, more than 400 Americans die each day from injuries, primarily from motor vehicle crashes, firearms, poisonings, suffocation, falls, fires and drowning. The risk of injury is so great that most persons sustain a significant injury at some time during their lives. In 1995 the estimate of the cost of injury and violence in the United States was \$224 billion per year. These costs include direct medical care and rehabilitation as well as productivity losses to the nation's workforce. The total societal cost of motor vehicle crashes alone exceeds \$150 billion annually.

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## 8.1 SUICIDE

**HP 2010 Objective 18-1:** Reduce the suicide rate to 5.0 suicides per 100,000 population.

**Jefferson County Status:** The age-adjusted suicide rate in 2002 was 14.5 suicides per 100,000 population.

Suicide was the ninth leading cause of death in the U.S. in 1996 and is the third leading cause of death of young people aged 15 – 24 years. According to the National Center for Health Statistics, 90% of all people who commit suicide have a mental or substance abuse disorder, or a combination of these. Other risk factors include prior suicide attempt, stressful life events such as a history of physical or sexual abuse, and access to lethal suicide methods.

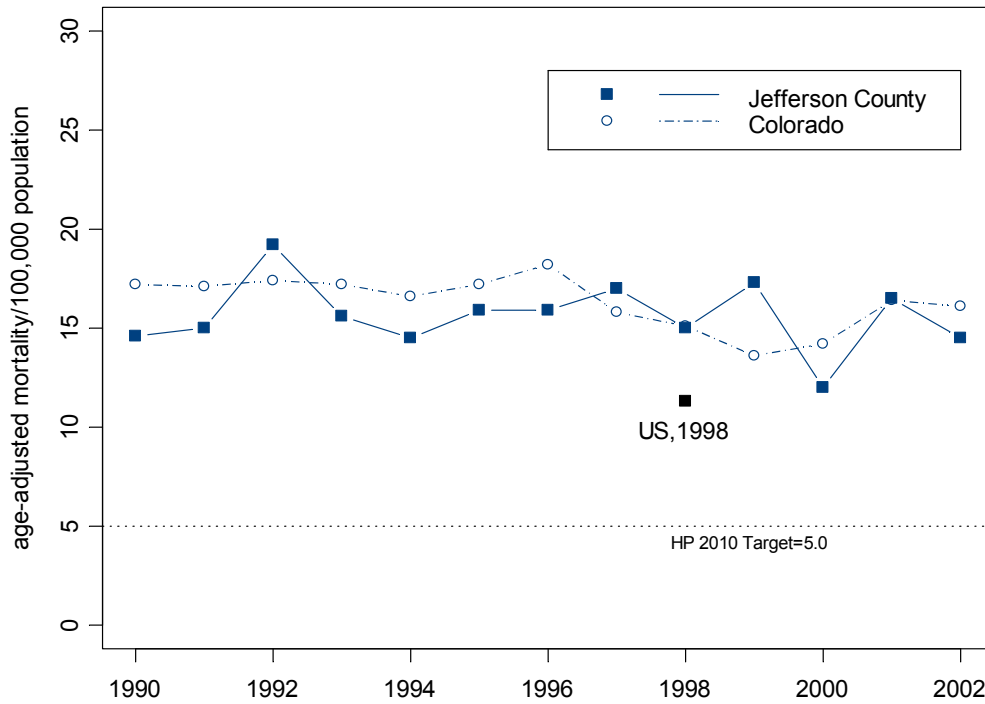
Suicide is difficult to predict and the risk for engaging in suicidal behaviors differs by gender. Women attempt suicide more often than men, but the risk of completed suicide is much higher among men than women. This differential begins in adolescence and grows through later life.

The age-adjusted suicide rate for Colorado is consistently above the national average, and it is the eighth leading cause of death for Coloradans. Suicide rates increase with age, and are highest for persons aged 65 and older. Rates are highest for white/non-Hispanics and lowest for Asians, at 17.2 and 5.3 suicides per 100,000 population, respectively.

### Jefferson County Findings

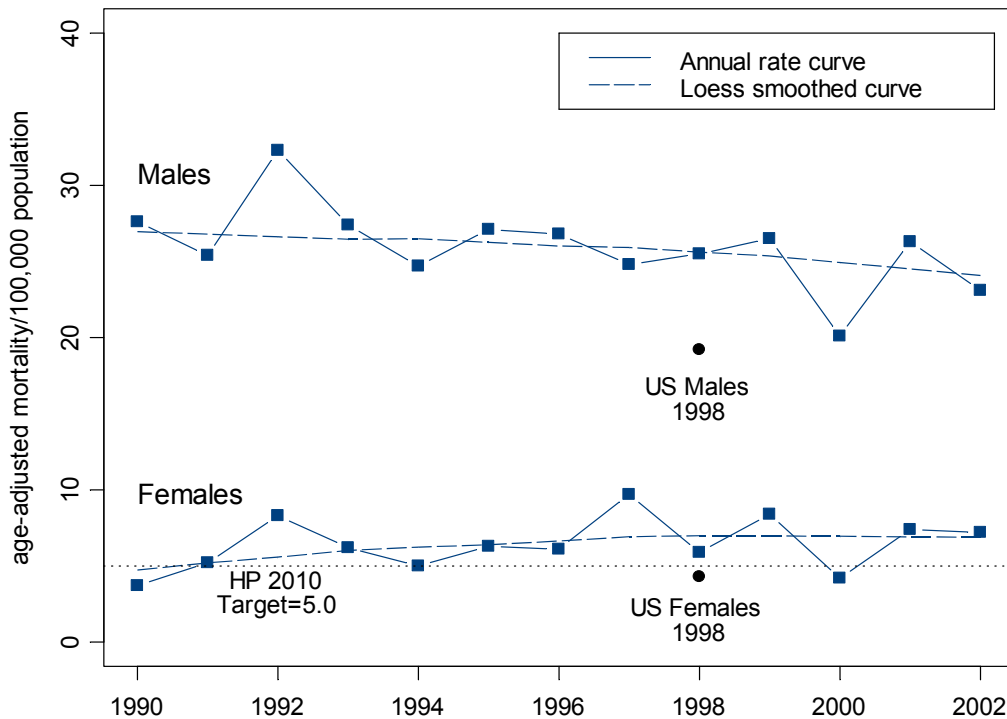
- In the 13-year period 1990 – 2002, the mean suicide rate for the county was 15.6, and for the state, 16.3, deaths per 100,000 population. These rates were both higher than the 1998 U.S. rate, 11.3 deaths per 100,000, and the HP 2010 target (Figure 8.1).
- Suicide trends differed by gender (Figure 8.2). (See Technical Notes, Section 10.2, for a description of the loess method of smoothing.) In 1990 – 2002, the mean rate among males, 25.7, was nearly four times that among females, 6.5 deaths per 100,000 population. The suicide rate among county males was also 33% greater than the U.S. rate for males, 19.2 deaths per 100,000. The rate among females was much closer to the HP 2010 target, but was 50% higher than the U.S. rate for females, 4.3 deaths per 100,000.
- The suicide rate among Jefferson County males appears to be declining, while the rate among females appears to be increasing (Figure 8.2).
- Of the 776 completed suicides by males in 1990 – 2002, 442, or 57%, were by firearm. Of the 213 completed suicides by females, 70, or 32%, were by firearm.

Figure 8.1 Age-adjusted suicide mortality rate, Jefferson County and Colorado, by year, 1990 – 2002



Source: JCDHE-Epidemiology and CDPHE-HSVRD

Figure 8.2 Age-adjusted suicide mortality rate, by gender and year, Jefferson County, 1990 – 2002



Source: JCDHE-Epidemiology and CDPHE-HSVRD

## 8.2 HOMICIDE

**HP 2010 Objective 15-32:** Reduce the homicide mortality rate to 3.0 per 100,000 population.

**Jefferson County Status:** In 2002, the homicide mortality rate was 2.3 per 100,000 population.

Homicide is the second leading cause of death among young adults aged 15 – 24 years. On an average day in the U.S., 53 persons are victims of homicide, and 17 of those are youths. In 1994, the homicide rate among males aged 15 – 24 years in the U.S. was 10 times that of Canada, 15 times that of Australia, and 28 times that of France or Germany.<sup>21</sup>

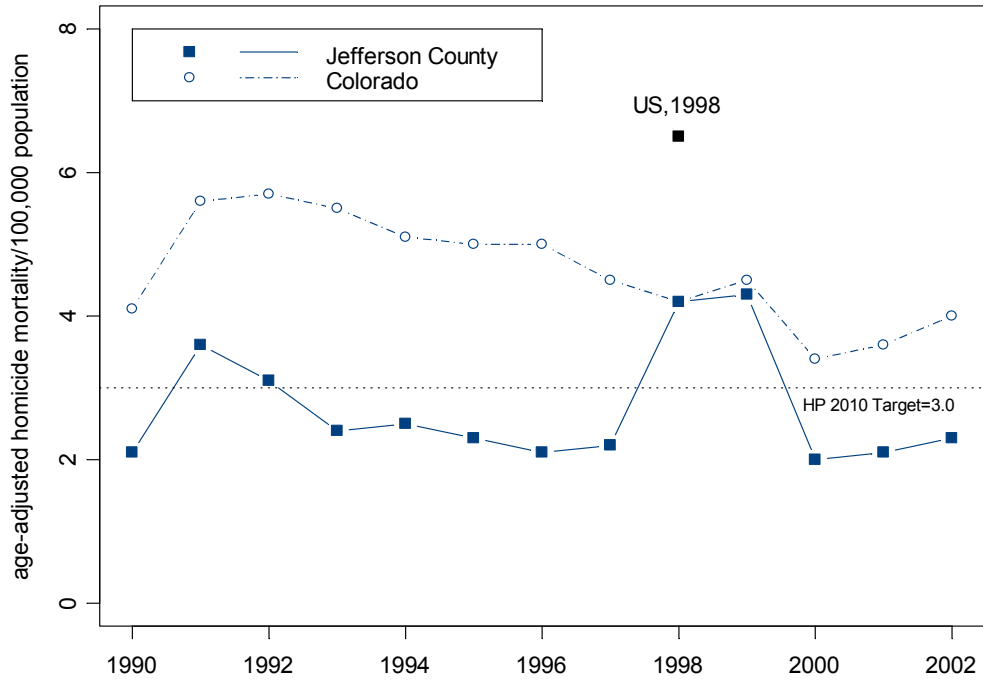
Homicide rates are especially high among African-American and Hispanic young adults. In 1998, African-American and Hispanic adults aged 15 – 34 years had homicide rates of 84.9 and 33.5 deaths per 100,000, respectively. For African-Americans, the rate was nearly 6.5 times, and for Hispanics, 2.6 times, that of all persons aged 15 – 34 years (13 deaths per 100,000).

The U.S. age-adjusted homicide rate for Colorado for the 13-year period 1990 – 2002 was 4.6 deaths per 100,000 population.

### Jefferson County Findings

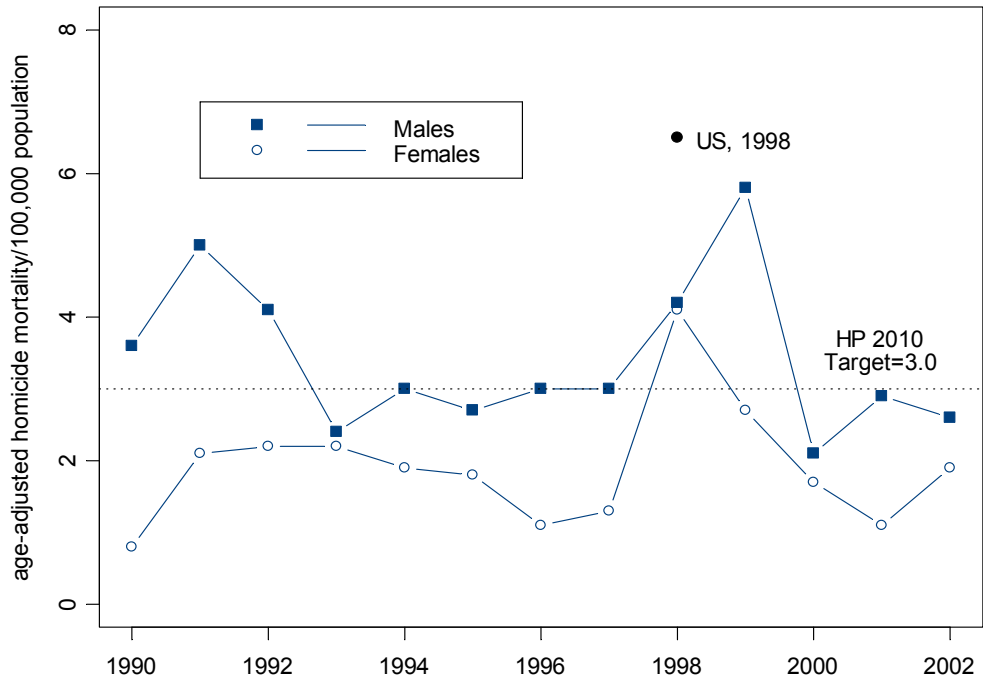
- For the 13-year period 1990 – 2002, the mean age-adjusted homicide rate was 2.7 deaths per 100,000 population, which was lower than the HP 2010 target and the rate for Colorado (Figure 8.3).
- For the same period, gender-specific rates were 3.4 and 1.9 deaths per 100,000 population, among males and females, respectively. In 1993 – 1997 and 2000 – 2002, gender-combined and gender-specific rates were lower than the HP 2010 target (Figure 8.4).
- In both 1998 and 1999, Jefferson County experienced the highest number of homicides, 22, of the 1990 – 2002 period. In 1999, 13 homicides occurred in one event on the morning of April 20 at Columbine High School, with two adolescent males as perpetrators. Excluding 1998 and 1999, the mean number of homicides per year was 12, and the age-adjusted mortality rate for the period was 2.4 deaths per 100,000 population.

Figure 8.3 Age-adjusted homicide mortality rate, Jefferson County and Colorado, by year, 1990 – 2002



Source: JCDHE-Epidemiology and CDPHE-HSVRD

Figure 8.4 Age-adjusted homicide mortality rate, by gender and year, Jefferson County, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

### 8.3 FIREARM DEATHS

**HP 2010 Objective 15-3:** Reduce firearm-related deaths to 4.1 deaths per 100,000 population.

**Jefferson County Status:** In 2002, the firearm related death rate was 8.2 deaths per 100,000 population.

According to the Centers for Disease Control and Prevention, the national total homicide rate rose between 1979 and 1993, and was solely a result of increases in firearm-related homicides. In the early 1990s, rates of firearm-related homicide, suicide, and unintentional death in the U.S. exceeded those of 25 other high-income nations for which data are available. Since 1993, firearm-related injuries in the U.S. have declined, yet remain the second leading cause of injury mortality.<sup>22</sup>

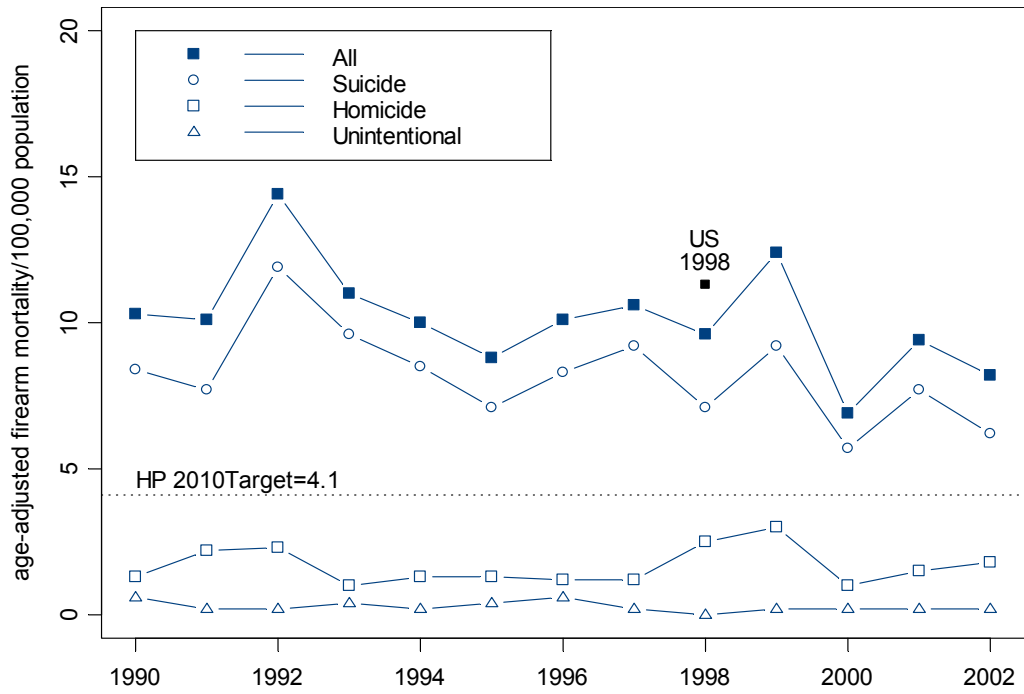
Of 28,663 firearm-related deaths in the U.S. in 2000, 16,586 (57.9%) were suicides, 10,801 (37.7%) were homicides, 776 (2.7%) were unintentional, and 500 (1.7%) were legal interventions or of undetermined intent. Of the 1.4 million violent crimes (murder, aggravated assault, rape, and robbery) committed in the U.S. in 1999, 24% were committed with a firearm. In 1994, the estimated lifetime medical cost of all firearm injuries in the U.S. was \$2.3 billion.<sup>22</sup>

The number of firearm transactions occurring annually in the U.S. is estimated at 9.5 million, including sales of 4.5 million new firearms (and 2.0 million handguns), 2.0 to 4.5 million secondhand firearm transactions, and 0.5 million stolen firearms.<sup>22</sup>

#### Jefferson County Findings

- Between 1990 and 2002, the age-adjusted firearm-related mortality rate was 10.1 deaths per 100,000 population, nearly 2.5 times the HP 2010 target, and slightly lower than the 1998 U.S. baseline of 11.3 deaths. The rate appears to be declining, with peaks in 1992 and 1999 (related to the Columbine High School shootings), and a low in 2000 (Figure 8.5).
- 79% (512) of the county's 645 firearm-related deaths were suicides, 16% (107) were homicides, 3% (18) were unintentional and 1% (8) was due to legal intervention or an undetermined cause.
- The overall decline in firearm-related deaths is reflected primarily in the decline in age-adjusted suicide mortality (Figure 8.5). There appears to be no change in the age-adjusted rates for homicide or accidental deaths.

Figure 8.5 Age-adjusted firearm-related mortality in Jefferson County, by cause and year, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

## 8.4 HEAD AND SPINAL CORD INJURY

### HP 2010 Objectives

**15-1:** Reduce the hospitalization rate for nonfatal head injuries to 45 hospitalizations per 100,000 population.

**15-2:** Reduce the hospitalization rate for nonfatal spinal cord injuries to 2.4 hospitalizations per 100,000 population.

**Jefferson County Status:** In 1997 – 2001, the hospitalization rates for nonfatal head and spinal cord injuries were 69.7 and 5.8 per 100,000 population, respectively.

Head and spinal cord injuries can be incapacitating for individuals and their families, as these injuries carry great risk for lifelong disability. Although the greatest impact is in human suffering, the financial burden is also immense, due to loss of income and productivity as well as direct costs of medical and rehabilitative care. Furthermore, persons with existing disabilities from head and spinal cord injuries are at high risk for further secondary injuries.

Head and spinal cord injuries can result from numerous causes such as motor vehicle or bicycle crashes, falls, firearms and other weaponry, and diving and water accidents. According to the Centers for Disease Control and Prevention, among pedal-cyclist and motorcyclist fatalities, most died from head injuries. Death rates from head injuries are twice as high in states lacking helmet laws or having laws that apply only to young riders, compared with states where laws apply to all riders.<sup>23</sup>

Falls are responsible for 87% of fractures among adults aged 65 years and older and are this age group's second leading cause of spinal cord and brain injury. Among children aged 14 years or younger, falls cause the majority of deaths and severe injury from head trauma, and account for 90% of the severe playground-related injuries and one-third of fatalities. Head injuries are a factor in 75% of fall-related deaths associated with playground equipment.

### Jefferson County Findings

- The 1997 – 2001 age-adjusted nonfatal head injury hospitalization rate for the county was higher than the 1998 national rate (Figure 8.6), and was almost 55% higher than the HP 2010 target.
- Age-specific nonfatal head injury hospitalization rates show several high-risk age groups: infants, young adults aged 15 – 24 years, and older adults (Figure 8.6).
- There is a significant differential by gender (Figure 8.7). Head injury hospitalizations among males (89.8 per 100,000 population) were 80% higher than among females (49.8 per 100,000 population). This differential existed across every age group.
- Nonfatal spinal cord injuries occurred with much lower frequency (Figures 8.8 and 8.9); however, similar to head injuries, the county's rate is higher than the nation's and the HP 2010 goal.

- There were significant age and gender differences in spinal cord injury rates (Figure 8.9). No spinal cord injury hospitalizations were reported among children aged 4 years and younger, and rates were highest among younger (15 to 24 years) and older (75+ years) adults. On average, rates were much higher among males than females in the younger age groups, and higher among females in the older groups.

Figure 8.6 Nonfatal head injury hospitalization rate, by age group, Jefferson County, 1997 – 2001

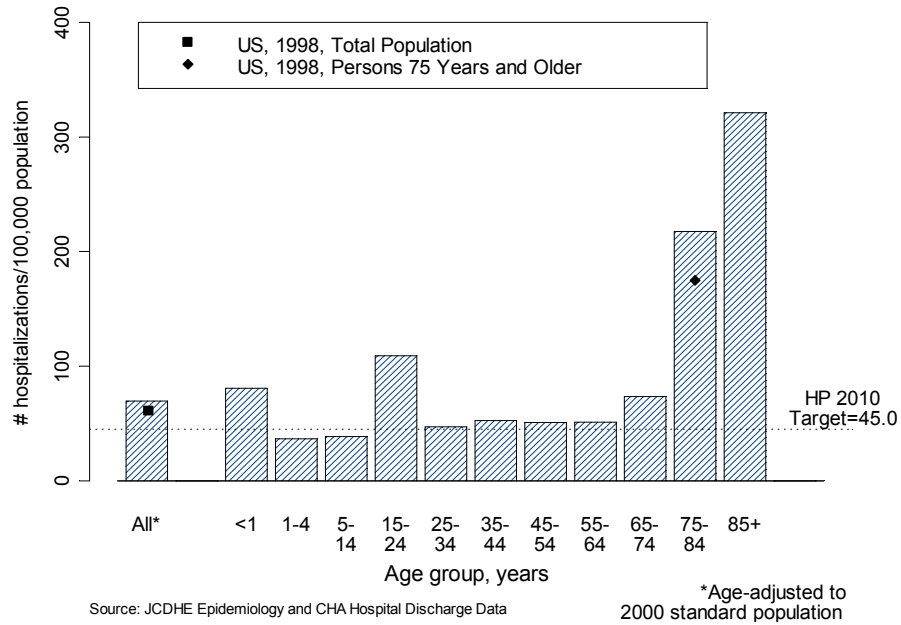


Figure 8.7 Nonfatal head injury hospitalization rate, by age group and gender, Jefferson County, 1997 – 2001

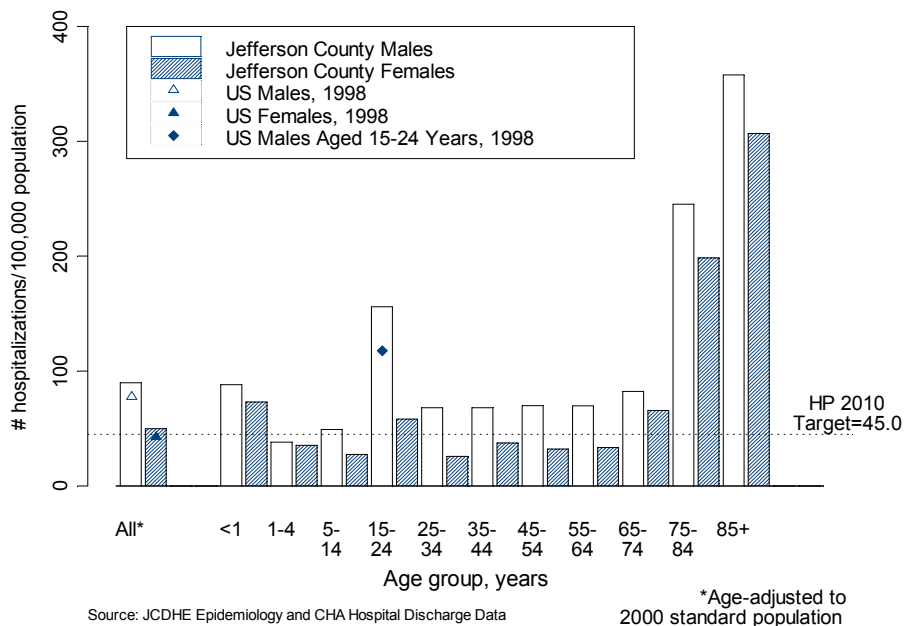


Figure 8.8 Nonfatal spinal cord injury hospitalization rate, by age group, Jefferson County, 1997 – 2001

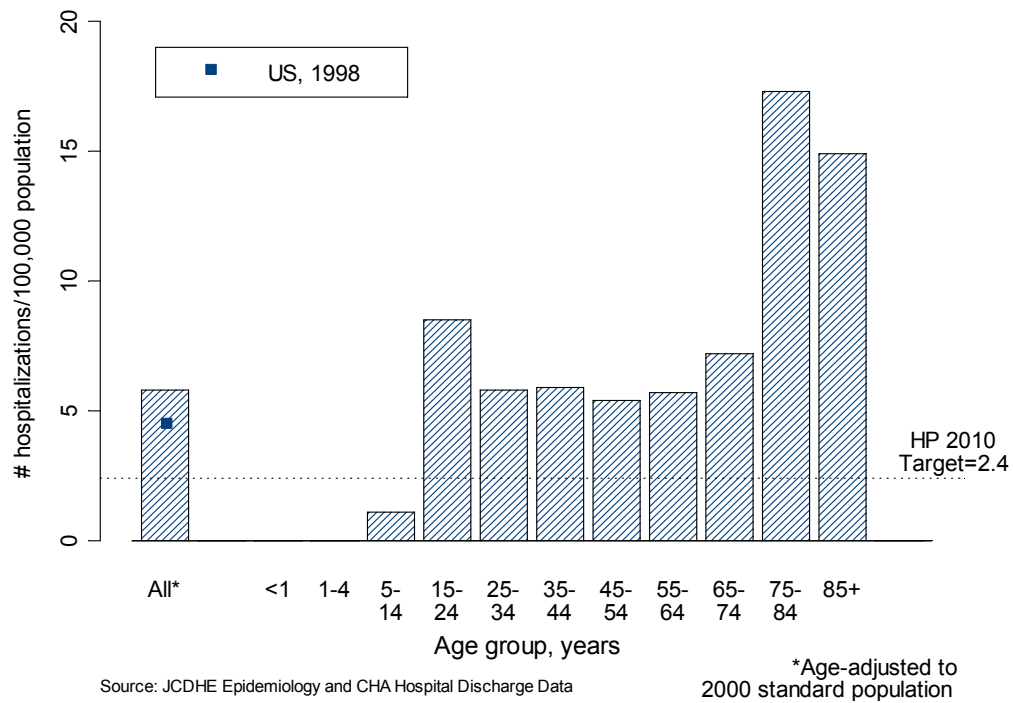
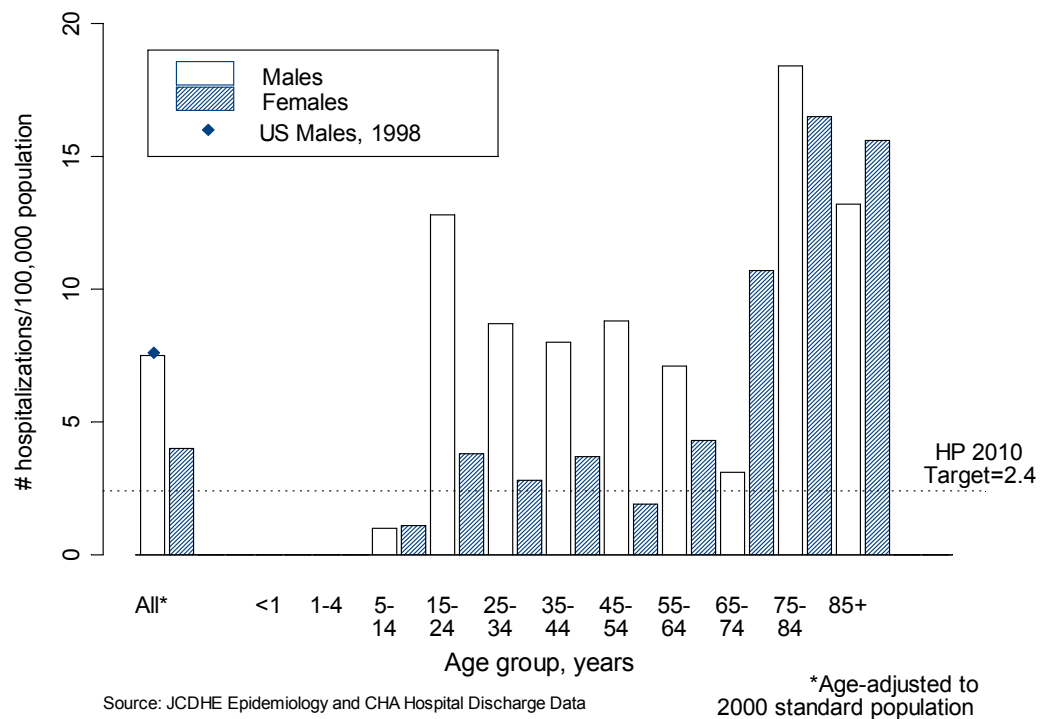


Figure 8.9 Nonfatal spinal cord injury hospitalization rate, by age group and gender, Jefferson County, 1997 – 2001



## 8.5 POISONING

**HP 2010 Objective 15-8:** Reduce deaths caused by poisonings to 1.5 per 100,000 population.

**Jefferson County Status:** In 2002, the age-adjusted death rate due to poisoning was 4.6 deaths per 100,000 population.

Poisoning is defined as the damaging physiologic effects of ingestion, inhalation, or other exposure to pharmaceuticals, illicit drugs, or chemicals, including pesticides, metals, gases and common household substances. During 1990 – 2001, mortality from poisoning in the U.S. increased 56%, from 5.0 to 7.8 deaths per 100,000 population. A Centers for Disease Control and Prevention (CDC) study showed that, during the same period, Colorado experienced a similar increase in unintentional poisoning deaths, and an overall increase of 125% in poisoning deaths.<sup>24</sup>

Among U.S. adults, drug overdoses are the largest cause of poisoning deaths. In the U.S. between 1990 and 2001, increases in unintentional and undetermined poisoning death rates were greatest for persons aged 45 – 54 years (359%) and 35 – 44 years (195%). The substances most frequently associated with unintentional and undetermined poisoning deaths were cocaine, alcohol, heroin, antidepressants, benzodiazepines and methadone. Unintentional drug overdose deaths are often caused by misuse of multiple drugs, and in some states, misuse of prescription drugs has contributed to the increase in mortality.

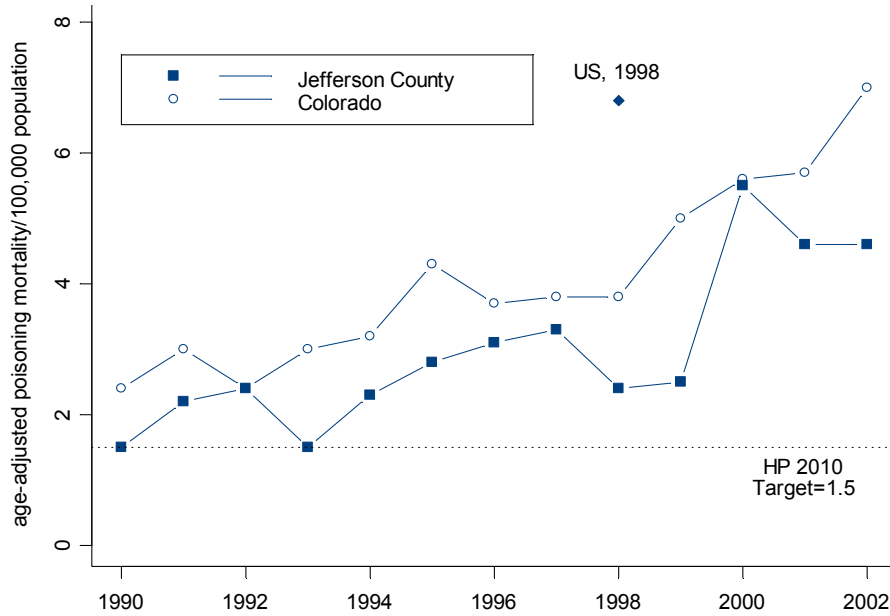
Children are at significant risk from accidental poisoning death due to ingestion of potentially harmful chemicals. In 1996 in the U.S., 1.1 million unintentional poisonings among children aged 5 years and under were reported to poison control centers. Among children in this group, 60% of poisoning exposures were from cosmetics, cleaning substances, plants, foreign bodies, toys and pesticides and 40% were from pharmaceuticals.

### Jefferson County Findings

- Similar to state and national trends, there was a 200% increase in the age-adjusted poisoning mortality rate, from 1.5 to 4.6 deaths per 100,000 between 1990 and 2001 (Figure 8.10).
- The county's age-adjusted poisoning mortality rate in 2001, 4.6 deaths per 100,000 population, was lower than the state's rate, 7.0 deaths per 100,000 population.
- There were increases in rates in both genders, but the increase was especially precipitous, rising nearly 320%, among males (Figure 8.11).
- In nearly every age group, mortality rates among males were higher than those for females (Figure 8.12). Males aged 25 – 44 and 85+ years had the highest mortality rates.

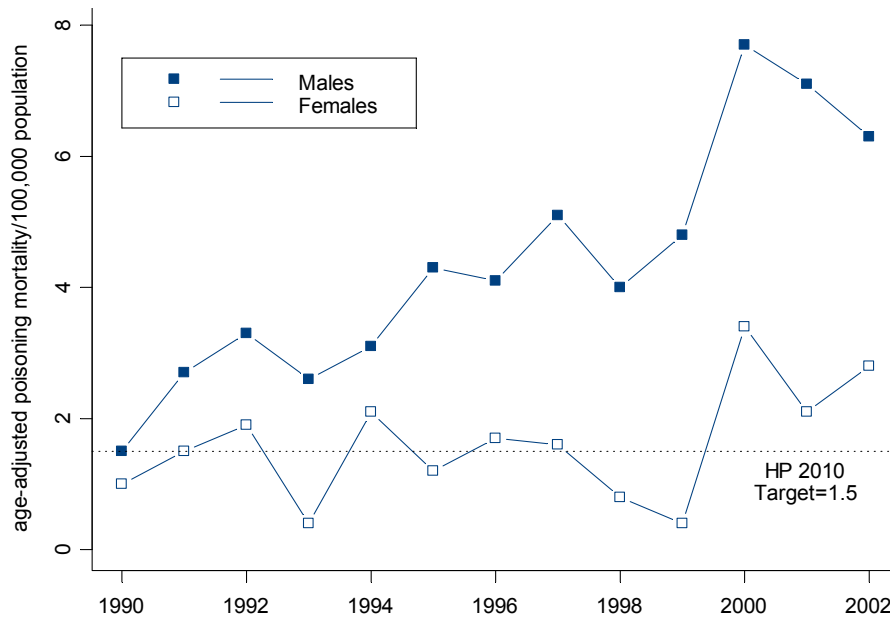
- Poisoning mortality among children was a rare occurrence in the county in 1990 – 2002. The mortality rate for children younger than 14 years of age was 0.7 per 1,000,000 children.

Figure 8.10 Age-adjusted poisoning mortality rate, Jefferson County and Colorado, 1990 – 2002



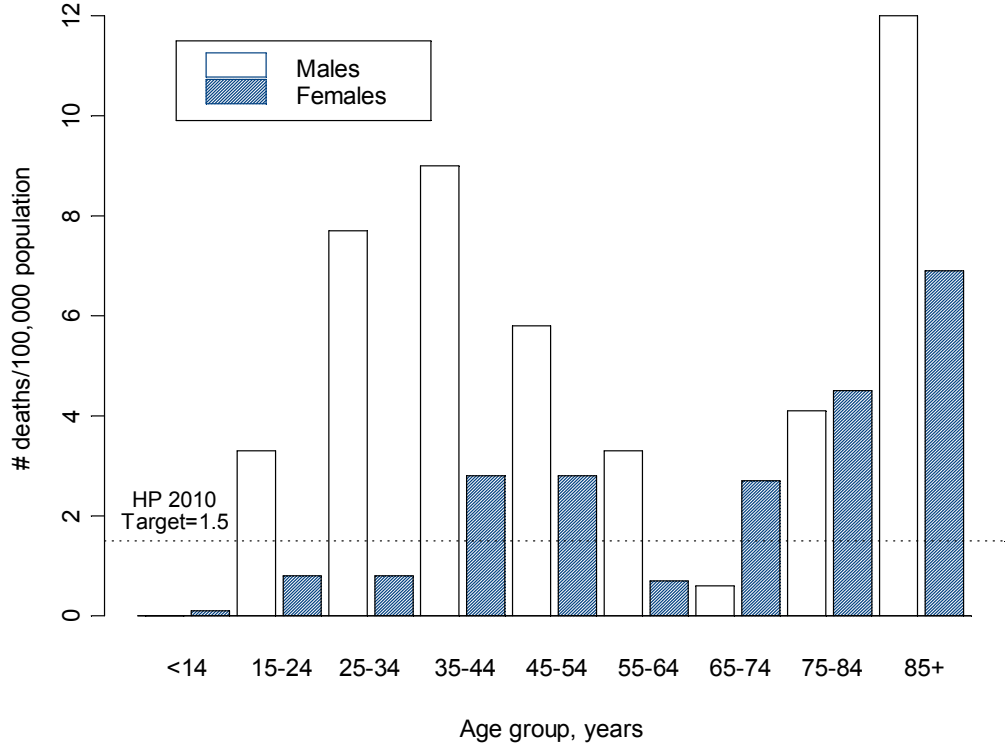
Source: JCDHE Epidemiology and CDPHE-HSVRD

Figure 8.11 Age-adjusted poisoning mortality rate, by gender and year, Jefferson County, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

Figure 8.12 Age-specific poisoning mortality rate, by gender, Jefferson County, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

## 8.6 SUFFOCATION

**HP 2010 Objective 15-9:** Reduce deaths caused by suffocation to 3.0 deaths per 100,000 population.

**Jefferson County Status:** In 2002 the age-adjusted mortality rate from suffocation was 4.2 deaths per 100,000 population.

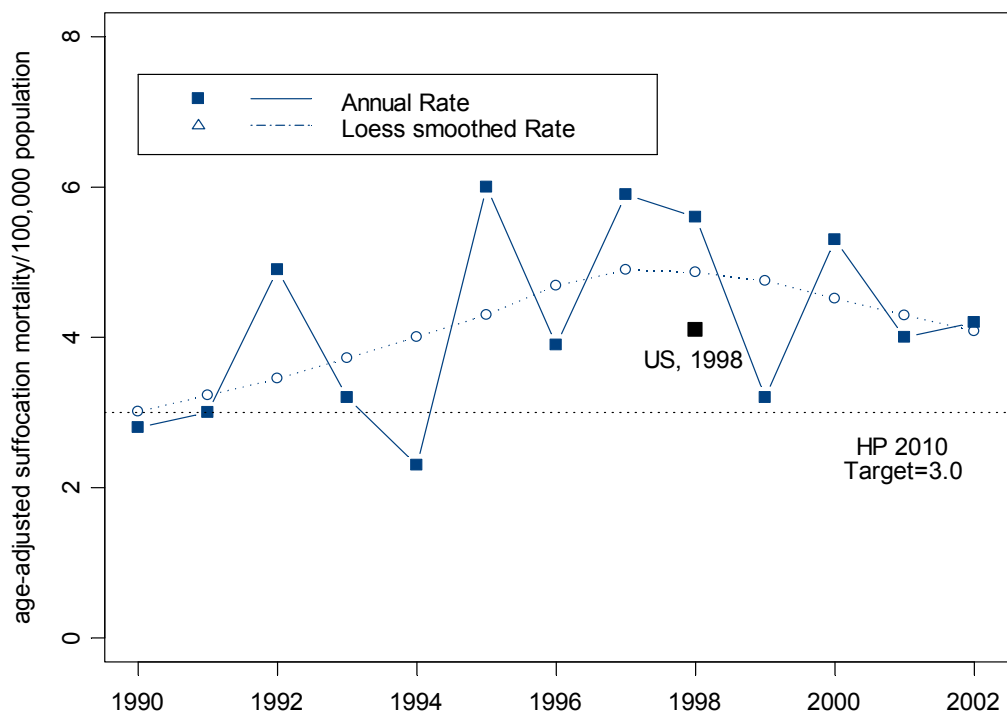
There are two major means of death by suffocation: the inhalation or ingestion of food or other objects that block respiration, and other mechanical means than hinder breathing. This second category includes objects such as plastic bags over the nose or mouth, suffocation by bedding, etc., and may be by unintentional or intentional hanging or strangulation, such as in suicide or homicide.<sup>25</sup>

In 1997 in the U.S. over 10,000 persons died from suffocation. Of these, 934 were children aged 14 years and under, and 598 were aged 4 years and under. An estimated 5,000 children aged 14 years and younger are treated each year in hospital emergency departments for aspirating and ingesting toys and toy parts, and the majority of childhood suffocations and strangulations occur in the home. It is also estimated that as many as 900 infants whose deaths are attributed to sudden infant death syndrome are found in potentially suffocating environments, by sleeping on their stomachs with their noses and mouths covered by soft bedding.

### Jefferson County Findings

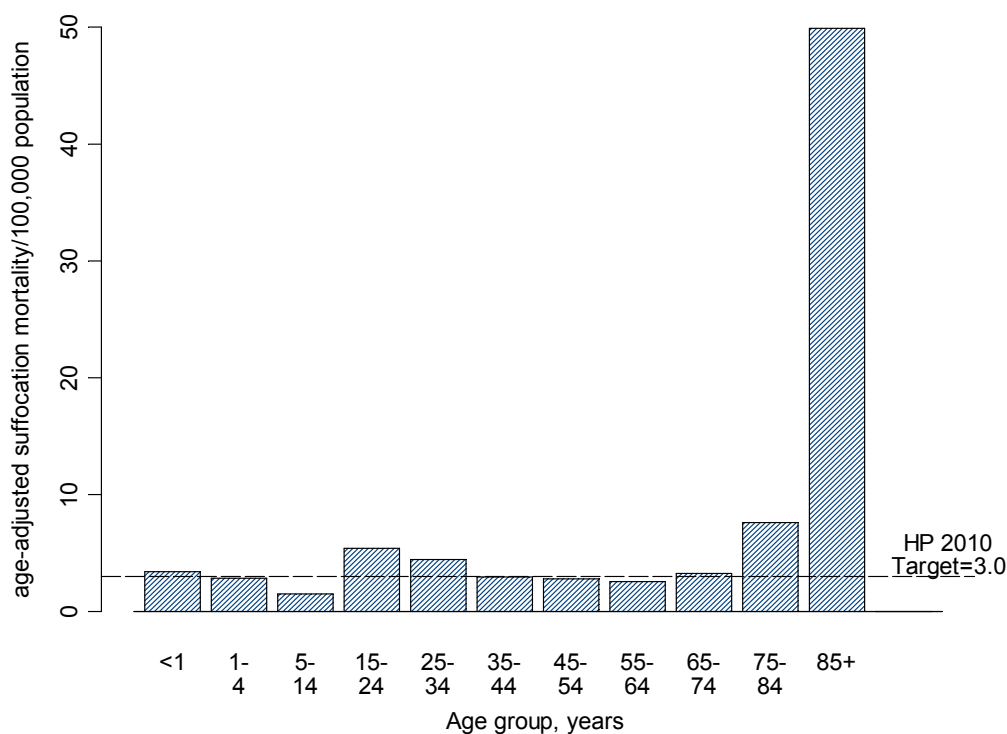
- The age-adjusted rate for suffocation mortality was highly variable during 1990 – 2002 (Figure 8.13). The smoothed regression line suggests a trend increasing over the early half of the period, then declining. Jefferson County's age-adjusted rate was 36% higher than the nation's rate in 1998. (See Technical Notes, Section 10.2, for a description of the loess method of smoothing.)
- Persons aged 15 – 34 years and over 75 years had the highest mortality rates from suffocation (Figure 8.14).

Figure 8.13 Age-adjusted suffocation mortality rate in Jefferson County, by year, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

Figure 8.14 Age-specific suffocation mortality rate in Jefferson County, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

## 8.7 UNINTENTIONAL INJURY

**HP 2010 Objective 15-13:** Reduce deaths caused by unintentional injuries to 17.5 deaths per 100,000 population.

**Jefferson County Status:** In 2002, the age-adjusted unintentional injury mortality rate was 33.3 deaths per 100,000 population.

Injuries are typically classified as either due to violence or as unintended. Events surrounding unintentional injuries are often presumed “accidental,” however, the Centers for Disease Control and Prevention (CDC) notes that many of these events can be predicted or prevented.<sup>26</sup> The major causes of unintentional injuries are motor vehicle crashes, drowning, poisoning, fires, falls, sports- and recreation-related injuries, firearm-related injury, choking, suffocation and animal bites.

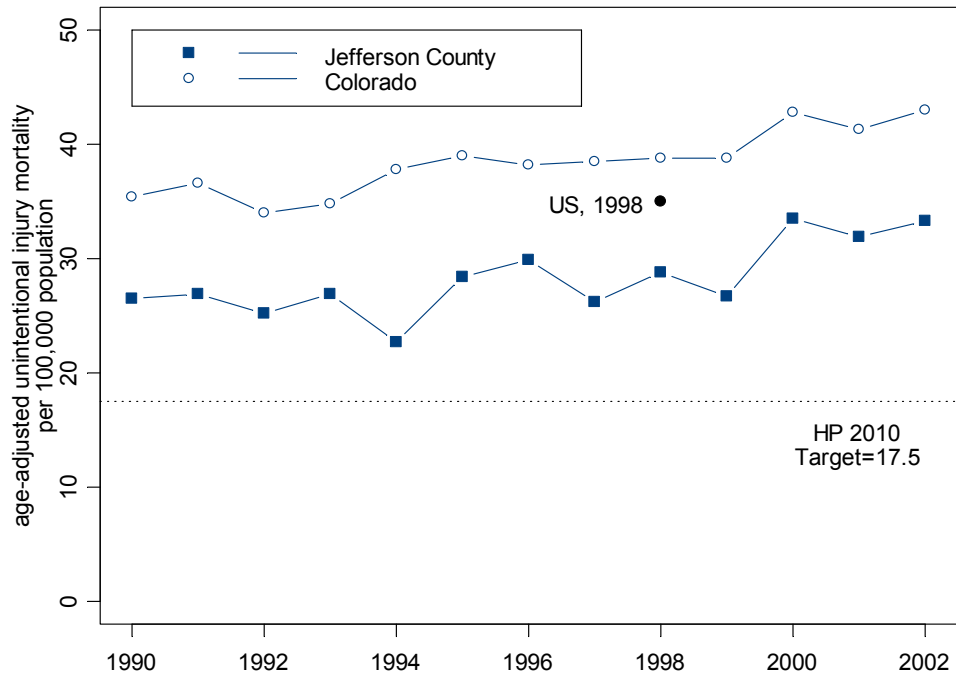
Unintentional injuries, especially those attributed to motor vehicle crashes, are the leading cause of death throughout childhood and adolescence (Figure 3.22). Injuries are also the leading cause of morbidity among young people. An estimated 5.5 million children aged 5 – 14 years and 7.4 million adolescents and young adults aged 15 – 24 years visit hospital emergency departments each year for injuries.

The CDC cites numerous preventive measures for reducing unintentional injuries, including: increasing the use of safety belts, motorcycle helmets, bicycle helmets, smoke alarms and sports-related protective gear; reducing the proportion of adolescents who ride with a driver who has been drinking alcohol; increasing the use of graduated driver licensing laws; and, increasing the proportion of schools that provide comprehensive school health education to prevent unintentional injury, violence and suicide.

### Jefferson County Findings

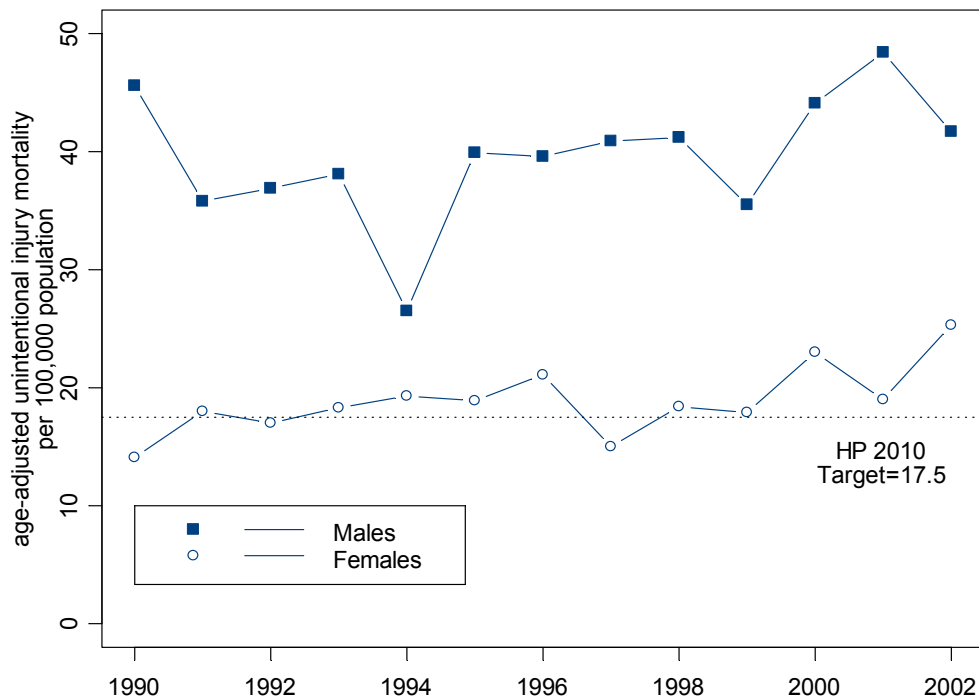
- For the 13-year period 1990 – 2002, the unintentional injury mortality rate was 28.6 deaths per 100,000 population. This rate was 35% lower than the state’s rate (38.7 deaths per 100,000), and 22% lower than the U.S. rate for 1998 (35.0 deaths per 100,000).
- In the same period, there was an increasing trend in unintentional injury mortality (Figure 8.15), with the increase occurring in both the county and the state.
- The age-adjusted mortality rate for males, 39.8, was twice that of females, 19.2, deaths per 100,000 population in 1990 – 2002. The rising mortality trend occurred among both males and females (Figure 8.16).

Figure 8.15 Age-adjusted unintentional injury mortality, Jefferson County and Colorado, by year, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

Figure 8.16 Age-adjusted unintentional injury mortality, by gender and year, Jefferson County, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

## 8.8 MOTOR VEHICLE CRASHES

**HP 2010 Objective 15-15a:** Reduce deaths caused by motor vehicle crashes to 9.2 deaths per 100,000 population.

**Jefferson County Status:** In 2002, the age-adjusted mortality rate from motor vehicle crashes was 13.1 deaths per 100,000 population.

In the U.S., motor vehicle-related injuries are the leading cause of injury death among children and youths aged 5 – 19 years, and among these deaths, 70% are due to motor vehicle crashes.

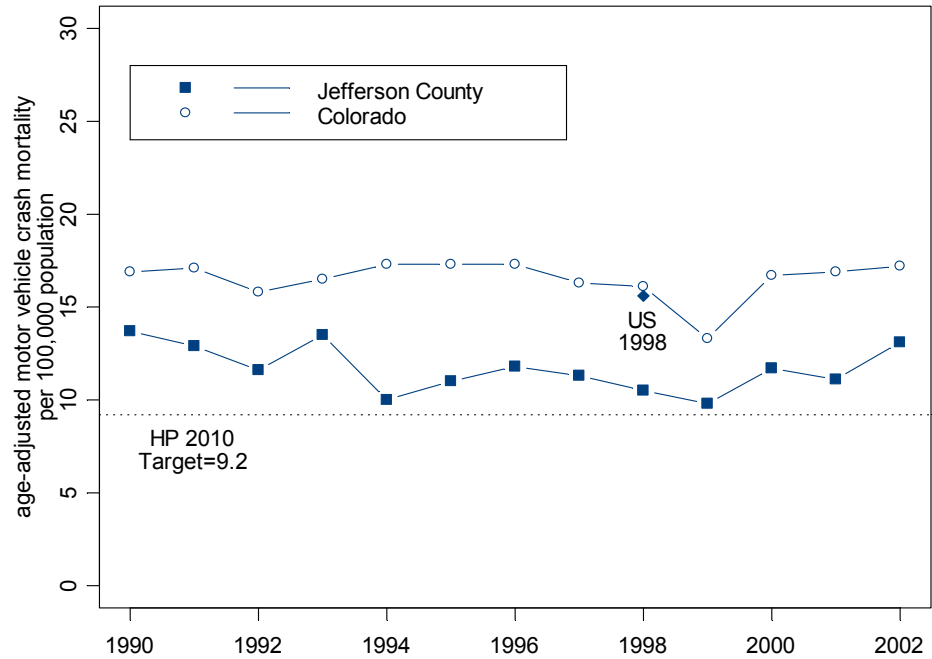
Several factors have been identified that increase the likelihood of fatal injuries to children and adolescents in motor vehicle crashes: if the driver is using alcohol, if there are passengers in the vehicle, if young children are riding in the front seat rather than the back seat, and if child safety seats are not used or used incorrectly.<sup>27</sup>

Alcohol use is one of the most serious contributing factors to motor vehicle-related fatalities. Alcohol use is associated with 56% of motor vehicle-related fatalities among persons aged 21 – 24 years, 36% among fatalities of persons aged 15 – 20 years, and 20% of fatalities among children younger than 15 years.

### Jefferson County Findings

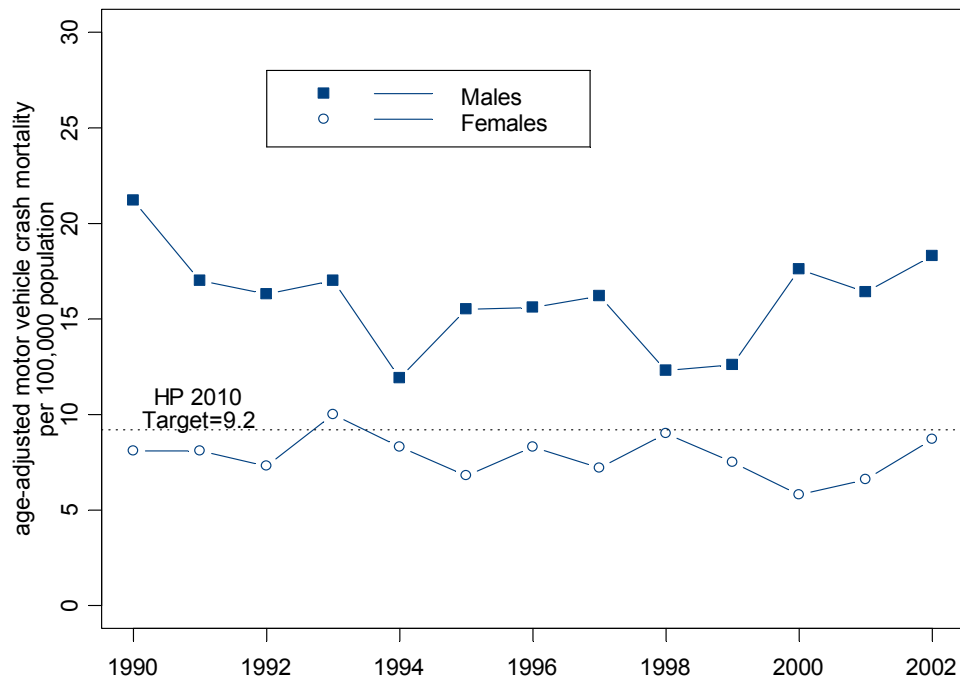
- For the 13-year period 1990 – 2002, the age-adjusted mortality rate was 12.5 deaths per 100,000 population. This was nearly 30% lower than the rate for Colorado (16.2 deaths per 100,000 population) and almost 25% lower than the 1998 U.S. rate, 15.6 deaths per 100,000 population.
- Mortality decreased and leveled out during the mid-1990s through 2000, but has since begun to rise (Figure 8.17).
- Mortality among males remained significantly higher than among females (Figure 8.18), and the rate among females met the HP 2010 in every year except 1993.

Figure 8.17 Age-adjusted motor vehicle crash mortality, Jefferson County and Colorado, by year, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

Figure 8.18 Age-adjusted motor vehicle crash mortality, by gender and year, Jefferson County, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

## 8.9 PEDESTRIAN DEATHS

**HP 2010 Objective 15-16:** Reduce pedestrian deaths on public roads to 1.0 pedestrian death per 100,000 population.

**Jefferson County Status:** In 2002, the age-adjusted pedestrian mortality rate was 0.9 pedestrian deaths per 100,000 population.

Traffic injuries, whether in a motor vehicle or on the roadway as a pedestrian or cyclist, are a global health problem. Many public safety programs target improved road safety for injury and mortality reduction. These programs include strategies to reduce high-risk behaviors such as alcohol use while driving, use of helmets and other safety devices and protection of pedestrians and cyclists by increasing their visibility and separating them from traffic.

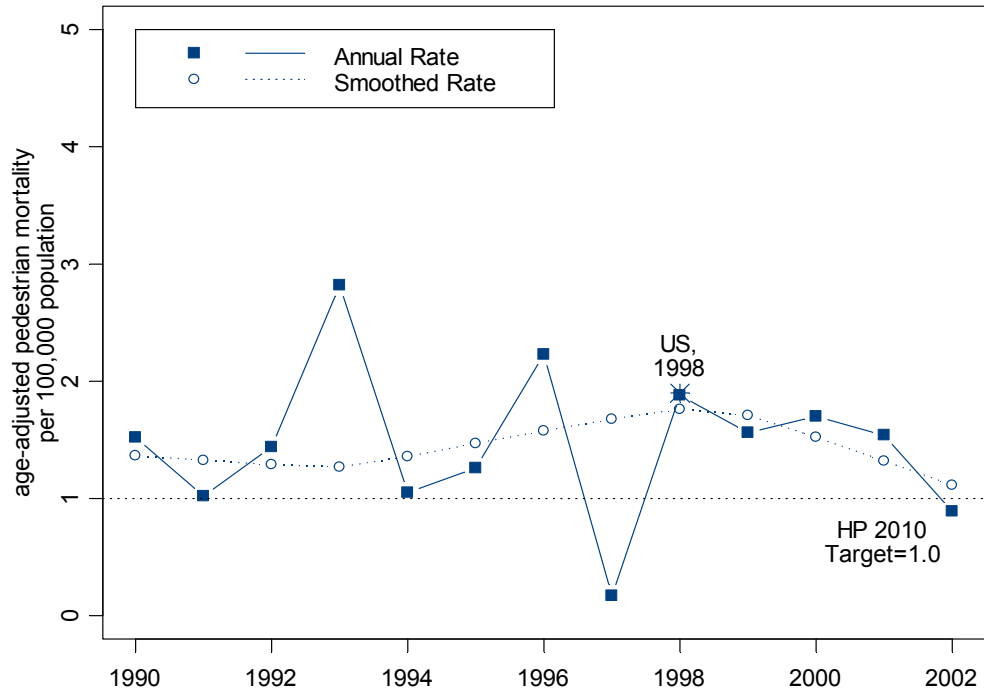
The U.S. Department of Transportation Fatality Analysis Reporting System<sup>28</sup> reported a 13% decline in pedestrian deaths in the U.S. between 1994 and 2002, from 5,489 deaths to 4,808. The majority of pedestrian fatalities in the U.S., 71%, occurred in urban areas, at non-intersection locations (78%), at night (65%), and in normal weather conditions (89%). Males accounted for 68% of fatalities.

Older adults aged 70+ years, have the highest death rate (in 2002 in the U.S., 3.2 deaths per 100,000 persons) and account for 17% of all pedestrian deaths.

### Jefferson County Findings

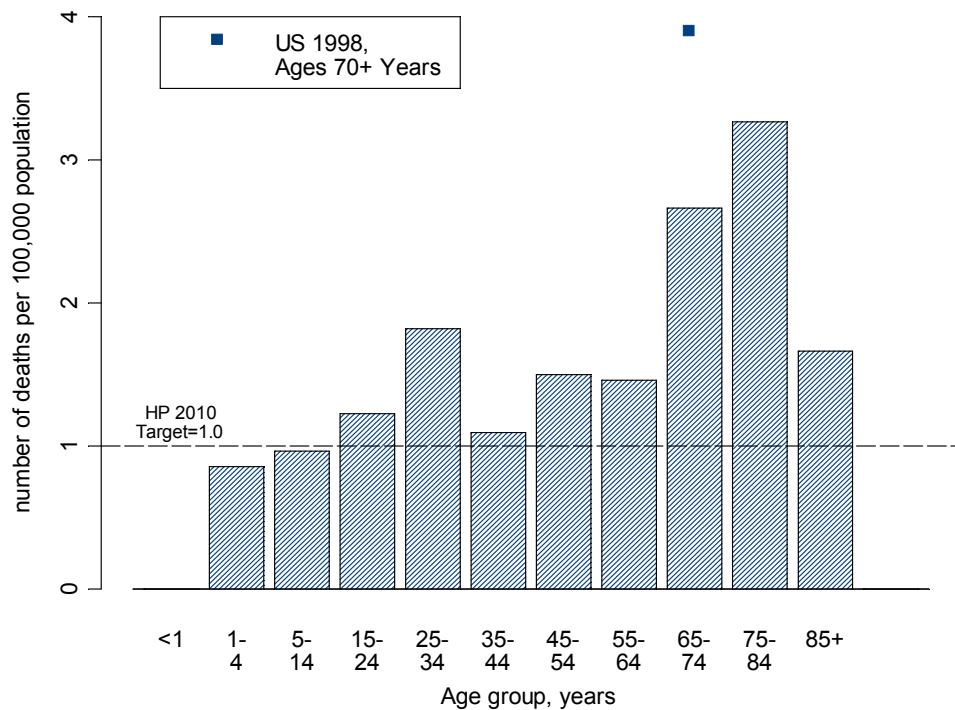
- The annual age-adjusted mortality rate for pedestrian deaths has been highly variable (Figure 8.19). The smoothed regression line suggests that the mortality rate increased slightly in the late-1990s and then dropped below the HP 2010 target rate. (See Technical Notes, Section 10.2, for a description of the loess method of smoothing.)
- Similar to national trends, older adults aged 65+ years have the highest age-specific mortality rates from pedestrian-related accidents (Figure 8.20).

Figure 8.19 Age-adjusted pedestrian mortality in Jefferson County, by year, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

Figure 8.20 Age-specific pedestrian mortality in Jefferson County, 1990 –2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

## 8.10 VEHICLE SAFETY RESTRAINT USE

**HP 2010 Objective 15-19:** Increase the use of safety belts to 92% of the population.

**Jefferson County Status:** In 2003, 92% of adults reported using motor vehicle safety belts.

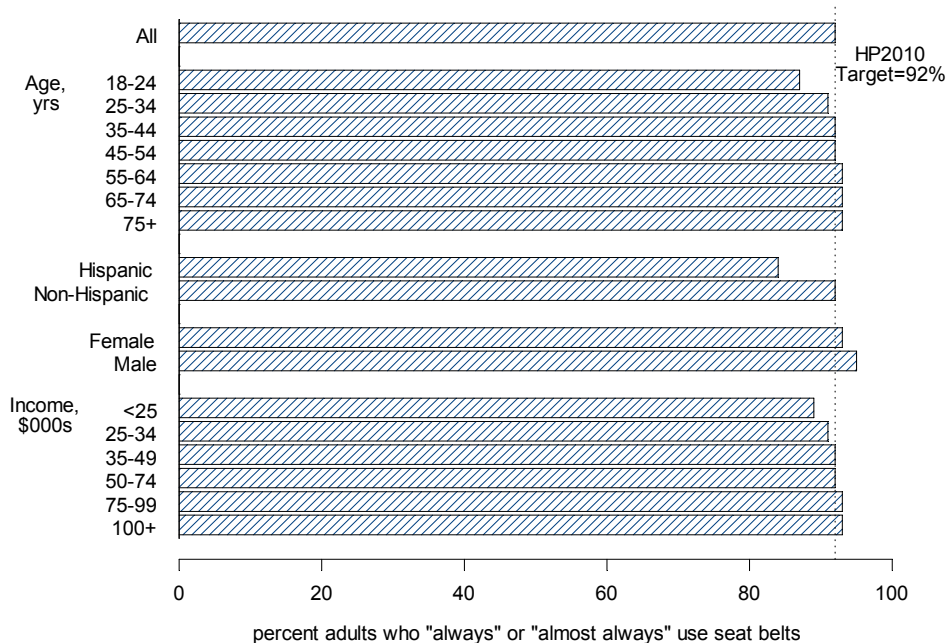
In the U.S. in 2002, 42,815 persons died in motor vehicle related crashes, and more than half of these fatalities were not wearing seat belts. The Centers for Disease Control and Prevention (CDC) notes that enactment and enforcement of safety belt laws are the most effective means of reducing deaths and serious injuries in motor vehicle crashes, and saved an estimated 14,000 lives in 2002.

Seat belt and safety seat use varies by age. Studies by the CDC in 2002 found that prevalence of safety belt use was 99% for infants, 94% for toddlers, 83% for children aged 4 – 7 years, 82% for youths aged 8 – 15 years and 69% for young adults and adults aged 16 – 64 years.<sup>29</sup>

### Jefferson County Findings

- According to results of the 2003 Community Health Survey, the county has met the HP 2010 target, 92%, for motor vehicle safety belt use among adults (Figure 8.21). Rates varied by age, ethnicity and income of the respondent.
- Nearly 100% of survey respondents reported using infant and young child (aged 0 to 3 years) safety seats “always” or “almost always” (Figure 8.22).
- Survey respondents’ safety and seat belt use for older children (aged 4 to 15 years) was lower than that for very young children (Figure 8.23) and there were differences by ethnicity and income of the respondent.

Figure 8.21 Adult seat belt usage in Jefferson County, by age, ethnicity, gender and income, 2003



Source: JCDHE 2003 Community Health Survey

Figure 8.22 Adults in Jefferson County using infant and young child (ages 0 – 3 years) safety seats, by age, ethnicity, gender and income, 2003

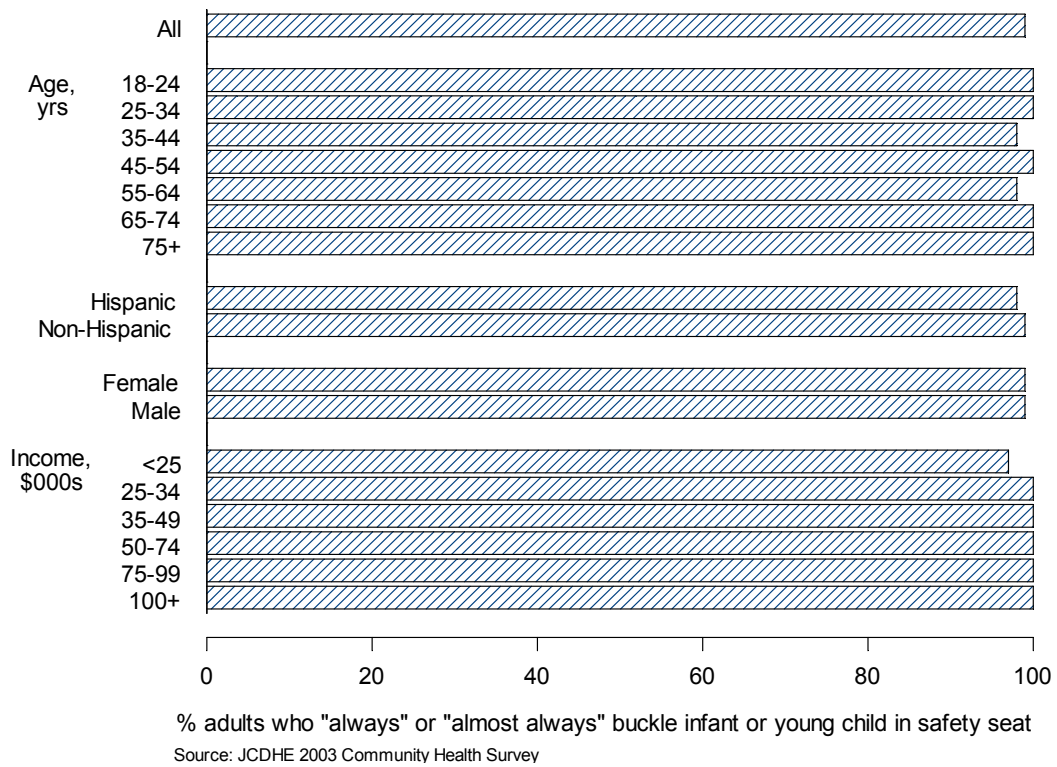
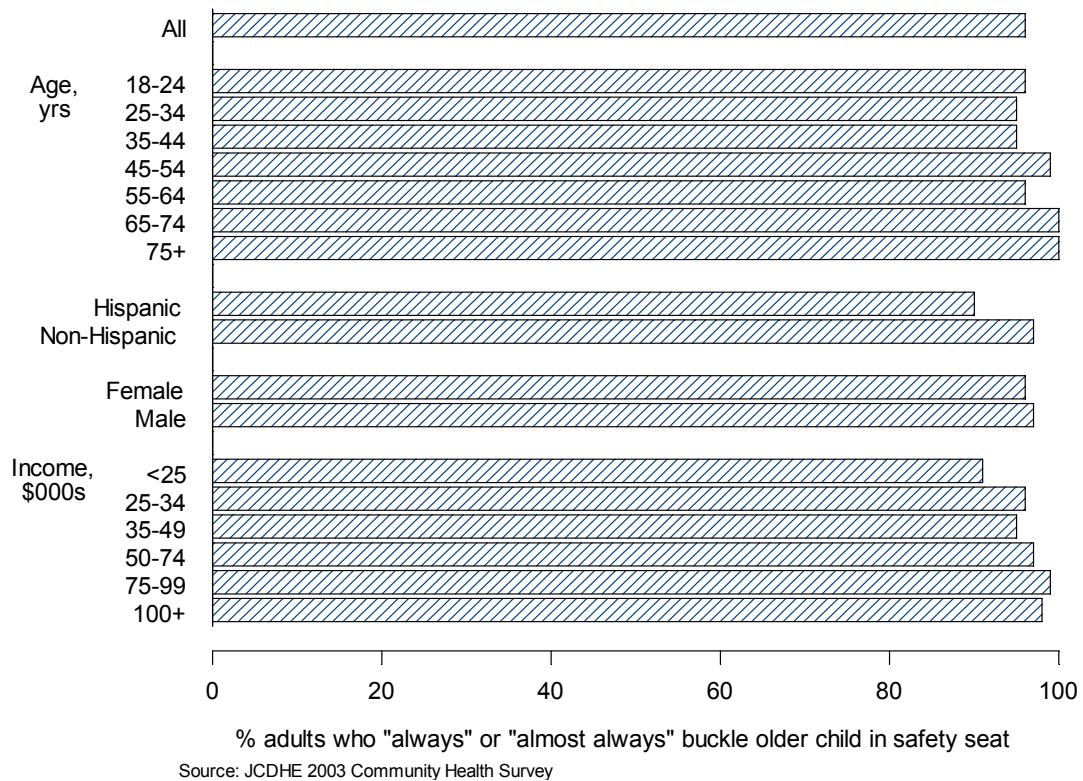


Figure 8.23 Adults in Jefferson County using older child (ages 4 – 15 years) safety seats or buckles, by age, ethnicity, gender and income, 2003



## 8.11 FIRE- AND WATER-RELATED INJURY

### HP 2010 Objectives

**15-25:** Reduce residential fire deaths to 0.2 deaths per 100,000 population.

**15-29:** Reduce drowning to 0.9 per 100,000 population.

**Jefferson County Status:** In 1990-2002, the age-adjusted, fire-related death rate was 0.3, and the water-related death rate was 0.7, deaths per 100,000 population, respectively.

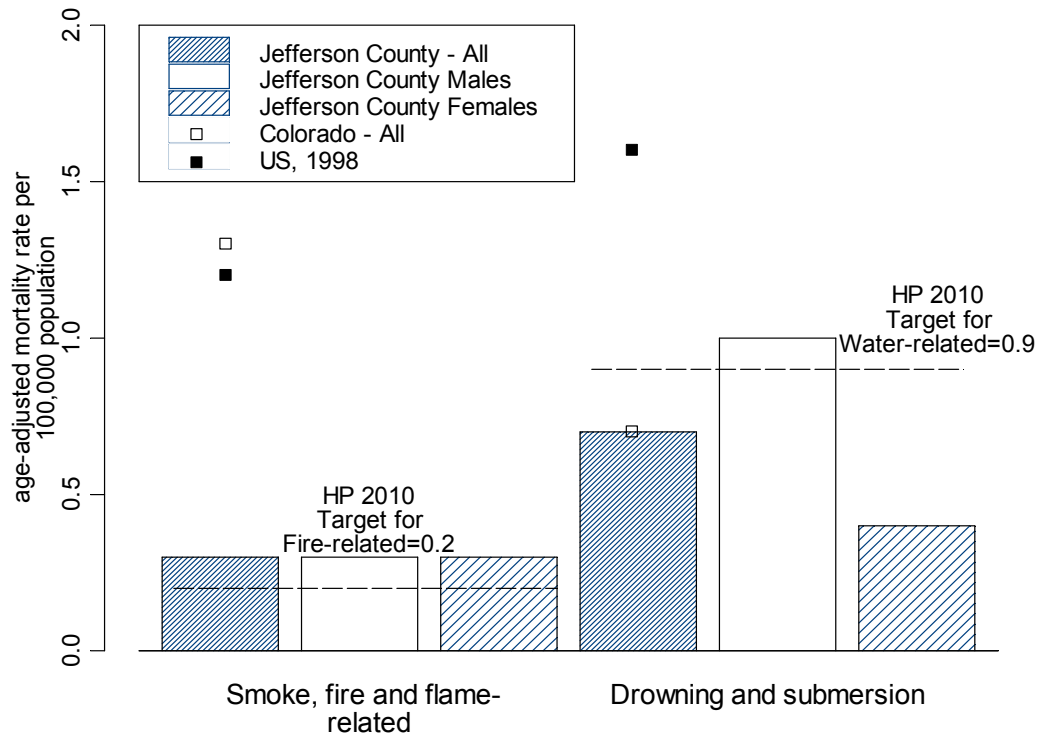
Drowning is the second leading cause of injury-related deaths among children aged 1 – 19 years in the U.S. There were over 1,500 drowning deaths in this age group in 1995. In 1998, 8,061 recreational boating crashes caused 4,612 injuries and 574 drowning deaths. Backyard swimming pools and spas are the greatest drowning risk for preschoolers, and 60% of drowning deaths in this age group occur in residential swimming pools.

Fires are the second leading cause of unintentional injury death for children aged 4 years and under. About 800 children aged 14 years and under die as a result of fire each year, with over 500 of these under age 5 years. Children are disproportionately affected because they do not react to fires as adults do and they sustain more severe burns at lower temperatures than adults. According to the Centers for Disease Control and Prevention, over two-thirds of fire-related deaths among children occur in homes without functioning smoke-alarms.

### Jefferson County Findings

- In the 13-year period 1990 – 2002, there were 17 deaths among county residents due to the effects of smoke, fire or flames. The age-adjusted mortality rate was quite low, 0.3 deaths per 100,000 population (Figure 8.24), nearly attaining the HP 2010 objective. There was no difference in mortality between males and females. The rate was 75% lower than the national rate for 1998, 1.2 deaths per 100,000, and the Colorado rate for 1990 – 2002, 1.0 death per 100,000.
- During the same period, there were 45 drowning and submersion-related deaths. The age-adjusted mortality rate, 0.7 deaths per 100,000 population, was below the national HP 2010 target, however, there was a significant differential between males and females, with the male rate twice that for female

Figure 8.24 Age-adjusted fire- and water-related mortality, Jefferson County, Colorado and U.S., 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

## 8.12 FALL-RELATED MORTALITY

**HP 2010 Objective 15-27:** Reduce deaths from falls to 3.0 deaths per 100,000 population.

**Jefferson County Status:** The age-adjusted, fall-related mortality rate in 1990 – 2002 was 6.9 deaths per 100,000 population.

Fall-related deaths are the leading cause of injury death among adults 65 years and older in the U.S. They are the most common cause of injury and hospitalization for trauma among elderly persons. Importantly, most fractures are the result of falls, so preventing falls among older adults is an essential prevention strategy. Among older adults, 60% of fatal falls occur in the home, 30% in public places and 10% in health care institutions.

Alcohol has been implicated in 35% to 63% of deaths from falls. Other factors that contribute are difficulties in balance, neurological and musculoskeletal disabilities, psychoactive medications, dementia and visual impairment.

### Jefferson County Findings

- The county's mortality rate for the 13-year period 1990 – 2002 was lower than the state's rate of 8.1 deaths per 100,000 population and higher than the 1998 U.S. baseline used for the HP 2010 target. Of some concern is that the county rate appeared to increase during the latter years.
- Gender-specific rates were highly variable (Figure 8.26). Smoothed regression lines suggest that fall-related mortality appeared to decrease among males and increase among females. In 2002, gender-specific rates were nearly identical.

Figure 8.25 Age-adjusted fall-related mortality, Jefferson County and Colorado, by year, 1990 – 2002

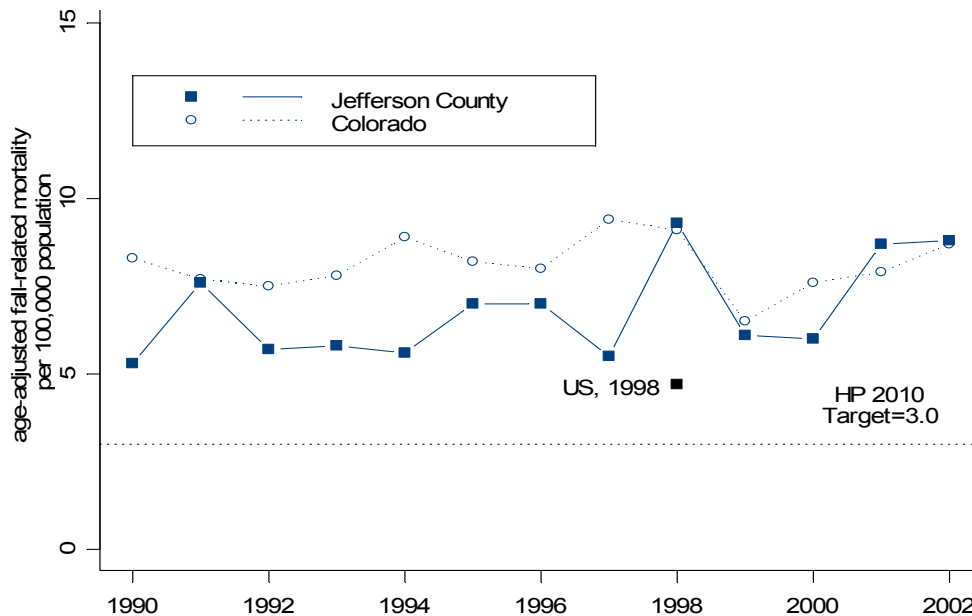
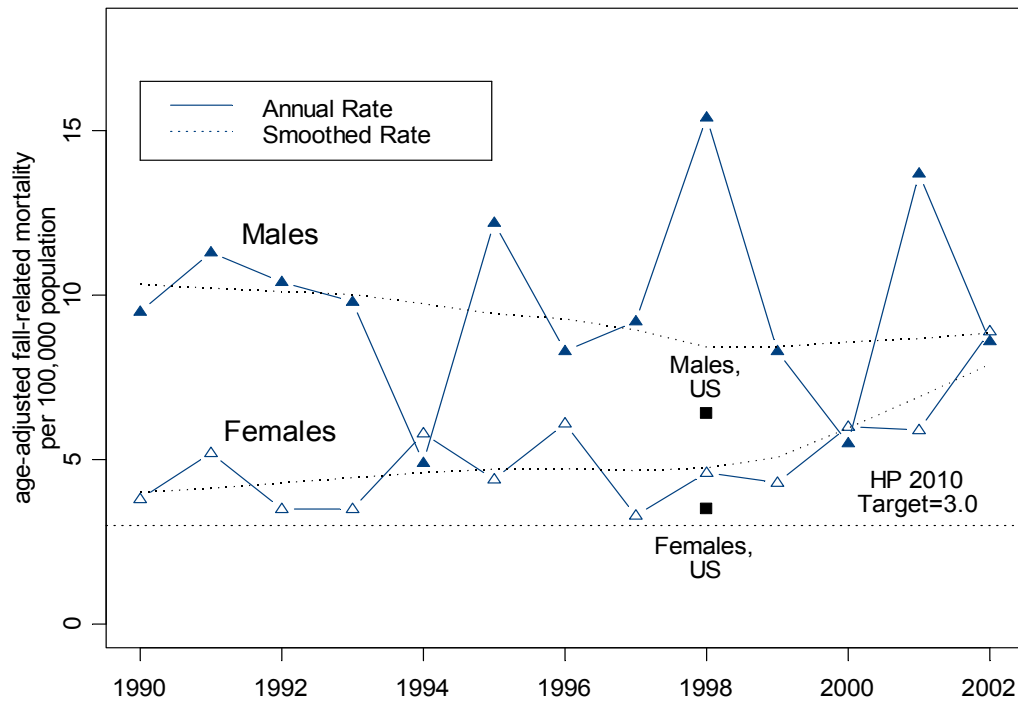
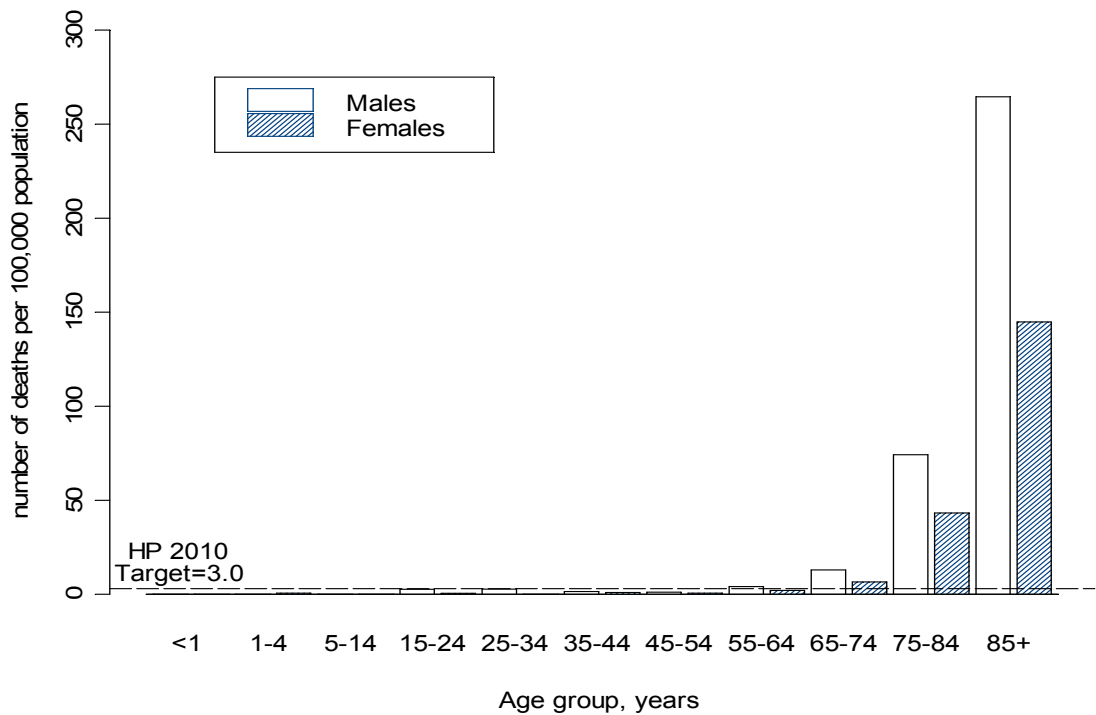


Figure 8.26 Age-adjusted fall-related mortality, by gender and year, Jefferson County, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD

Figure 8.27 Age-specific fall-related mortality, by gender, Jefferson County, 1990 – 2002



Source: JCDHE Epidemiology and CDPHE-HSVRD