

Chapter 7 Injuries

The risk of sustaining some type of significant injury is so high that almost all individuals will experience at least one in their lifetimes. Despite this, many people erroneously believe that injuries happen by chance or are the result of an “accident.” In fact, most injuries are not accidents or random acts and can largely be prevented.

Injuries are typically categorized as intentional, such as suicide, or unintentional, such as falls. This section focuses primarily on risks and outcomes of unintentional injuries. See Chapter 2 for additional injury death data, Chapter 10 for suicide data, and Chapter 13 for homicide data.

Highlights of this chapter include:

- ◆ Sonoma County's death rate for unintentional injury remains significantly higher (29.0/100,000) than the Healthy People 2010 goal of 17.5/100,000.
- ◆ In 2000-2002, almost 40% of all fatal traffic collisions in Sonoma County were alcohol-related.
- ◆ In 2000-2002, the Sonoma County homicide rate was significantly lower than the California homicide rate.



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Nationally, unintentional injury is a leading cause of death regardless of age, race, gender or economic status.¹ Injury results in reduced quality of life, lost productivity, high health care costs, and a huge burden on the health care system. In many cases of fatal and non-fatal injuries, alcohol and other drug use is a significant contributing factor.

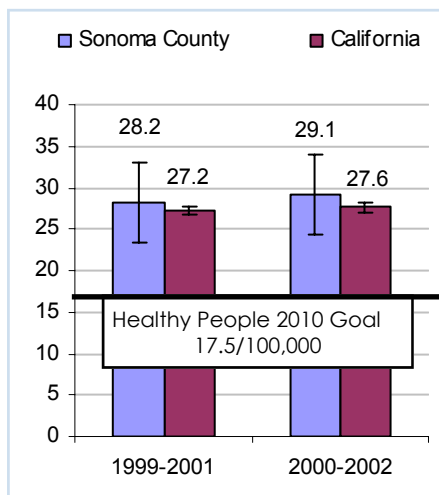
For example, 50% of all deaths from motor vehicle collisions, homicides, and suicides, and over 30% of all drowning and boating deaths involve alcohol. Another contributing factor in injury is failure to use safety equipment. Use of safety equipment, such as pool covers, fencing, smoke detectors, and seat belts, can greatly reduce injury-related mortality and morbidity.²

Unintentional Injury Deaths

Deaths from unintentional injuries represent the tip of the iceberg of injury incidence, the least common outcome of injury in the population. For each death that occurs there are many more hospitalizations, emergency room visits, and treatments in primary care settings, as well as those at non-medical sites.

The unintentional injury death rate for Sonoma County did not change significantly from 1999-2001 to 2000-2002, and the rates were similar to the California unintentional injury death rates for the same time periods (Figure 7.1). From 2000 to

Figure 7.1
Unintentional Injury Death Rates*, Three Year Rolling Average, Sonoma County and California 1999-2002



*Rates are age-adjusted and per 100,000 population.

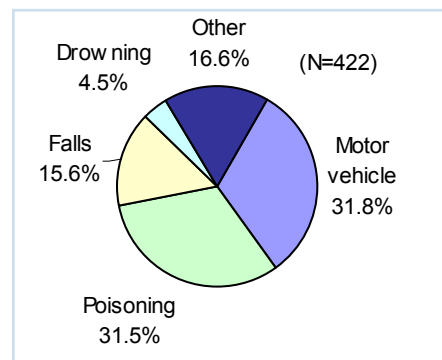
Source: California Department of Health Services, vital statistics death records 1999-2002.

2002, the unintentional injury death rate for Sonoma County was significantly higher than the Healthy People 2010 goal (29.1/100,000 compared to 17.5/100,000).³

From 2000 to 2002, unintentional injury deaths occurred more frequently among Sonoma County males than among females (61.1% males, 38.9% females).

Motor vehicle collisions were, as in the previous 10 years, the leading cause of death from unintentional injury (Figure 7.2). Males in Sonoma County were almost twice as likely to die from a motor vehicle collisions than their female counterparts (65.7% males, 34.3% females).

Figure 7.2
Unintentional Injury Deaths by Cause, Sonoma County 2000-2002



*Other includes burn/fire, suffocation, firearms, machinery, natural/environmental, pedestrian, and other transportation.

Source: California Department of Health Services, vital statistics death records 2000-2002.

Poisoning was the second leading cause of unintentional injury death among Sonoma County residents from 2000 to 2002. Poisoning deaths are caused by accidental ingestion of medication or inhalation of commercial products or gases.⁴

Poisoning can occur from inappropriate ingestion of or exposure to common, household items such as prescription medication, aspirin or chlorine bleach. In 2000-2002, males in Sonoma County were more likely to die from poisoning than females (60% males, 40% females).

The leading causes of unintentional injury vary by age group. In 2000-2002, for children age 0-14, there was no predominant cause of unintentional injury death (Table 7.1). For young adults age 15-24, motor vehicle collisions accounted for 64%

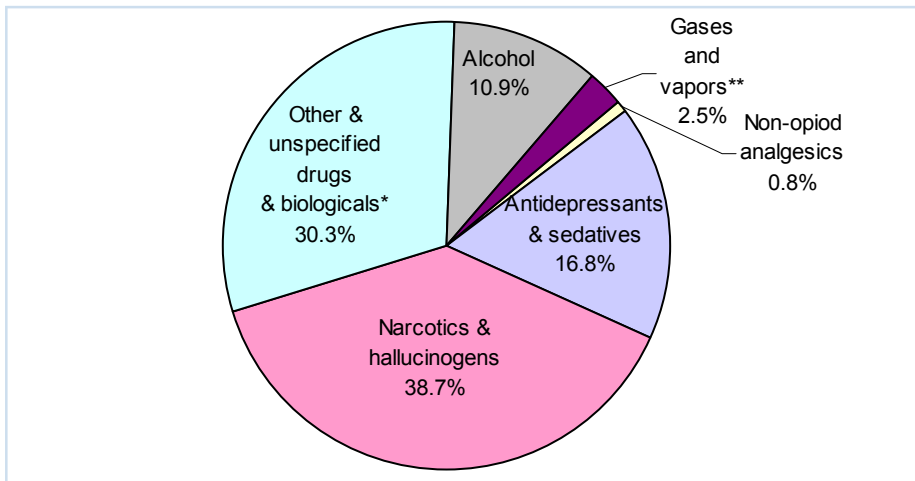


Table 7.1
Unintentional Injury Deaths by Cause and Age Group, Sonoma County 2000-2002

	0-14	15-24	25-44	45-64	65+
Unintentional	11	55	119	137	100
Motor vehicle collision	2	35	36	39	22
Poisoning	0	5	55	64	9
Drowning	1	7	5	5	1
Falls	0	2	10	10	43
Fire/burn	0	1	3	2	4
Other*	8	5	10	17	20

*Other includes pedestrian, struck by object, suffocation, other transportation, machinery, firearms, natural/environmental, cut/pierce, and bicycle.
Source: California Department of Health Services, vital statistics death records 2000-2002.

Figure 7.3
Adult (age 25-64) Unintentional Poisoning Deaths by Cause, Sonoma County 2000-2002



*Other drugs and biologicals include smooth and skeletal muscle relaxants, cardiovascular drugs, and hormones.
**Gases and vapors include carbon monoxide, motor exhaust, utility gas, nitrous oxide.
Source: California Department of Health Services, vital statistics death records 2000-2002.

of all unintentional injury deaths. For Sonoma County residents age 25-64, poisoning was the leading cause of death from unintentional

injury. The primary cause of these deaths was unintentional poisoning from narcotics and hallucinogens. Over 30% of the poisoning deaths

Table 7.2
Non-fatal Injury Hospitalization, Three Year Average Rates*, Sonoma County and California 2000-2002

	Sonoma County	California
Unintentional injury	622.5	583.9
Falls	336.8	307.2
Motor vehicle traffic	90.5	92.8
Poisoning	32.5	30.3
Intentional injury	72.3	85.2
Self-inflicted	52.3	47.9
Assault	20.1	37.2
Undetermined/other	37.4	37.4
Total	732.3	706.5

*Rates are age-adjusted and per 100,000 population.
Source: California Office of Statewide Health Planning and Development, hospital discharge data 2000-2002.

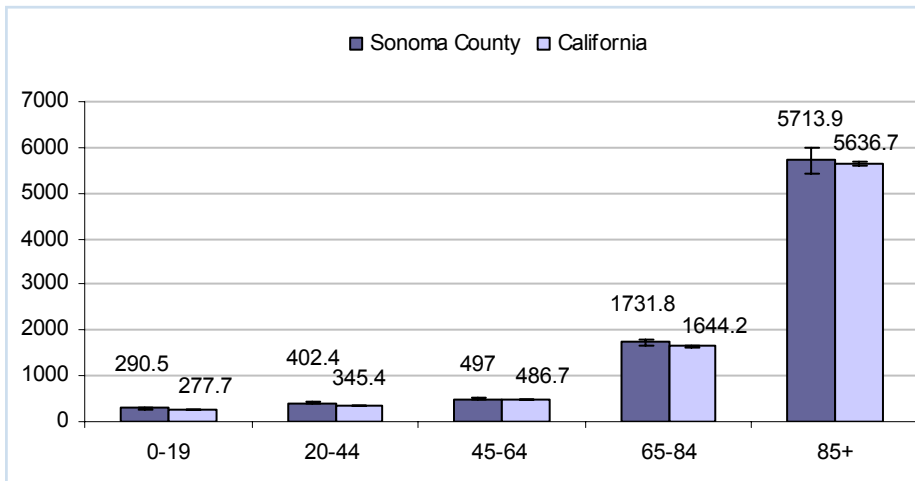
in this age group were caused by commonly prescribed medications such as muscle relaxants, cardiovascular drugs and hormones (Figure 7.3).

For older adults (age 65+), the leading cause of death from unintentional injury was falls (43%).

Non-fatal Injury Hospitalizations

In 2000-2002, over 90% of all injury hospitalizations in Sonoma County were for unintentional injuries (Table 7.2).⁵

Figure 7.4
Non-fatal Hospitalization Rates* for Unintentional Injuries by Age Category, Sonoma County and California 2000-2002



*Rates are age-adjusted per 100,000 population.
 Source: Office of Statewide Health Planning and Development, hospital discharge data 2000-2002.

Compared to 1999-2001, the 2000-2002 non-fatal injury hospitalization rate for Sonoma County increased significantly (605.7/100,000 compared to 622.5/100,000, respectively). In addition, Sonoma County had a significantly higher overall hospitalization rate due to unintentional injuries than California (583.9/100,000).

From 2000 to 2002, adults age 65-74 had a rate of hospitalizations for unintentional injuries up to six times higher than younger age groups. Older adults age 85+ had a hospitalization rate three times that of adults age 65-84 and more than 11 times higher than adults age 45-64 (Figure 7.4).

Sonoma County had significantly higher unintentional injury hospi-

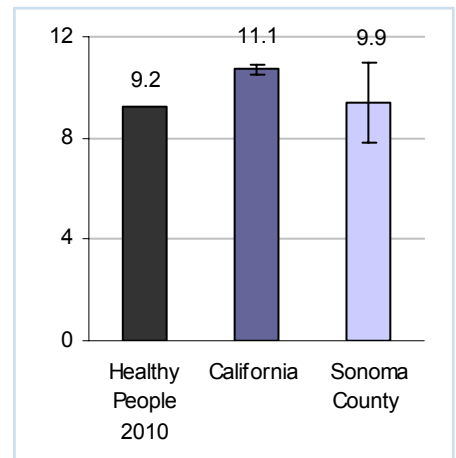
talization rates than California for persons age 20-44 and age 65-84.

During 2000-2002, the Sonoma County hospitalization rate for injuries due to falls was significantly higher than the California rate (226.8/100,000 compared to 207.2/100,000). Approximately 56% of all unintentional injury hospitalizations were due to falls. Almost 70% of the hospitalizations for falls were to adults age 65+.

Motor Vehicle Deaths and Injuries

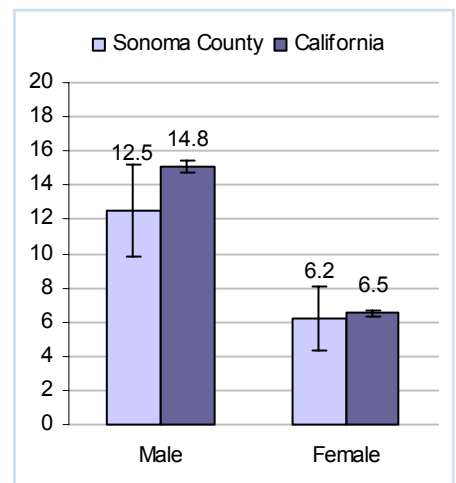
From 1999-2002 to 2000-2002 there was no significant change in injury deaths from motor vehicle collisions. Sonoma County has nearly met the Healthy People 2010 objec-

Figure 7.5
Motor Vehicle Injury Death Rates*, Sonoma County and California 2000-2002



*Rates are per 100,000 population.
 Source: California Department of Health Services, vital statistics death records 2000-2002.

Figure 7.6
Motor Vehicle Injury Death Rates* by Gender, Sonoma County and California, 2000-2002



*Rates are per 100,000 population.
 Source: California Department of Health Services, vital statistics death records 2000-2002.



Table 7.3
Traffic-related Fatalities and Injuries,
Sonoma County 2002

Victim	Deaths	Injuries
Motor vehicle driver*	31	2,712
Motor vehicle passenger*	12	1,223
Pedestrian	3	131
Bicyclist	3	140
Total	49	4,206

*Motorcyclist included under Motor Vehicle Driver and Passenger categories. Source: CHP Statewide Integrated Traffic Records System 2002.

tive for motor vehicle injury deaths (Figure 7.5). During 2000-2002, the motor vehicle injury death rate for Sonoma County males was almost twice that of females. The motor vehicle death rates for Sonoma County males and females are similar to California rates (Figure 7.6).

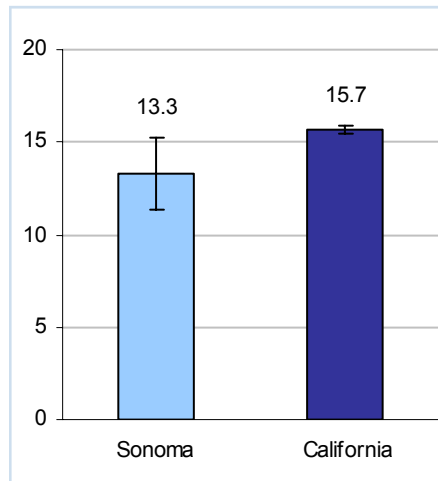
In 2002, more than 4,250 Sonoma County residents died or were injured in motor vehicle collisions. More than 250 of these individuals were pedestrians or bicyclists (Table 7.3).⁶

The non-fatal hospitalization rate from motor vehicle collisions did not change significantly from 1999-2001 to 2000-2002 (88.2/100,000 and 87.9/100,000, respectively).

In 2000-2002, almost 40% of all fatal traffic collisions in Sonoma County were alcohol-rated, compared to 33% for California.⁷

The rate of persons killed in alco-

Figure 7.7
Intentional Injury Death Rates*, Sonoma County and California 2000-2002



*Rates are per 100,000 population. Source: California Department of Health Services, vital statistics death records 2000-2002.

hol-involved collisions in Sonoma County in 2002, 4.5/100,000 licensed drivers, was similar to the 1998 rate, 5.7/100,000.

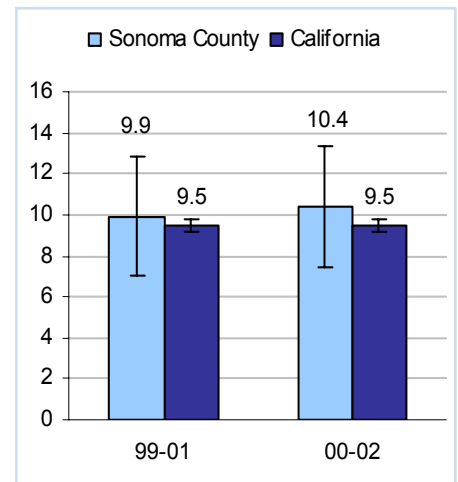
The rate of alcohol-related traffic injuries decreased significantly from 187.8/100,000 licensed drivers in 1998 to 163.4/100,000 licensed drivers in 2002.

Intentional Injury Deaths

Intentional injury encompasses injuries and deaths that are self-inflicted or perpetrated by another person.

The death rate for intentional injuries in Sonoma County did not change significantly from 1999-2001 to 2000-2002. During 2000-2002, the

Figure 7.8
Suicide Death Rates*, Three Year Rolling Average, Sonoma County and California 1999-2002



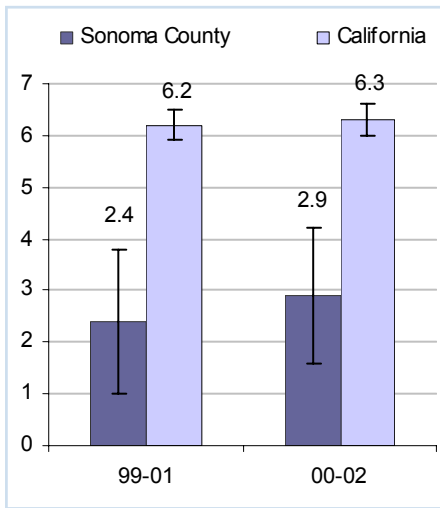
*Rates are per 100,000 population. Source: California Department of Health Services, vital statistics death records 1999-2002.

rate remained lower than the California rate (Figure 7.7).

The leading cause of intentional injury deaths is suicide. Suicide accounted for close to 80% of all intentional injury deaths in Sonoma County during 2000-2002 (homicides accounted for the other 20%). From 1997 to 2002, the suicide death rates (three-year average) were similar for Sonoma County and California (Figure 7.8).

From 2000 to 2002, Sonoma County males had a significantly higher suicide death rate than females (16.9/100,000 compared to 4.8/100,000). Females, however, had a significantly higher hospitalization rate for suicide attempts than males (72.1/100,000 compared to

Figure 7.9
Homicide Death Rates*, Sonoma County and California 1999-2002



*Rates are age-adjusted and per 100,000 population.
Source: California Department of Health Services, vital statistics death records 1999-2002.

33.3/100,000). National statistics show that suicide rates increase with age and are very high among those age 65+. From 2000-2002, suicide death rates were highest for Sonoma County adults age 85+ (41.8/100,000). For more information on suicide refer to Chapter 10.

The homicide rate for Sonoma County did not change significantly from 1999-2001 to 2000-2002. The rate was significantly lower than the California homicide rate during these time periods (Figure 7.9).

During 2000-2002, firearm use was the leading method for suicide (50.3%) and homicide (52.5%) deaths in Sonoma County.

Table 7.4
Fatal and Non-fatal Injuries to Youth (age 0-19) by Cause, Sonoma County 2000-2002

	Hospitalizations	Deaths
Unintentional injuries	1,091	34
Motor vehicle collisions	226	18
Drowning/submersion	12	5
Falls	405	< 3
Poisoning	36	< 3
Suffocation	18	3
Other	394	6
Intentional injuries	206	16
Self-inflicted/suicide	144	5
Assault/homicide	62	11
Other-undetermined intent	62	3
Total	1,359	53

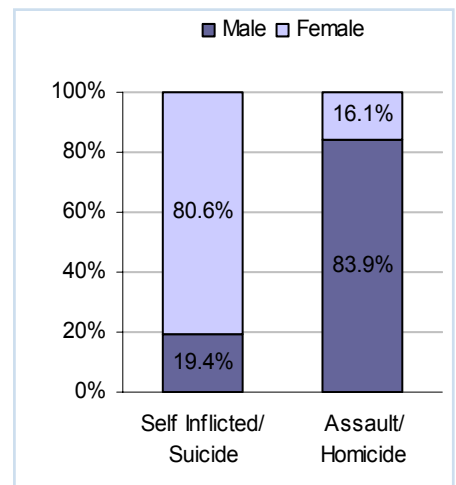
Sources: California Department of Health Services, vital statistics death records 2000-2002, and California Office of Statewide Health Planning and Development, hospital discharge data 2000-2002.

Youth Injuries

In 2000-2002 in Sonoma County, 53 youth age 0-19 were fatally injured. The 2000-2002 death rate (13.8/100,000) was similar to the 1999-2001 death rate (12.7/100,000).

Motor vehicle-related injuries are the leading cause of death among youth in Sonoma County. From

Figure 7.10
Non-fatal Hospitalizations for Intentional Injuries in Youth (age 0-19) by Gender, Sonoma County 2000-2002



Source: Office of Statewide Health Planning and Development, patient discharge data 2000-2002.

2000 to 2002, they accounted for 52% of unintentional injury deaths and 36% of all injury deaths.

Falls were the leading cause of non-fatal injury hospitalizations for youth age 0-19 during 2000-2002, accounting for over 37% of all unintentional injury hospitalizations (Table 7.4). In 2000-2002, there were twice as many unintentional injury deaths and hospitalizations for male youth than for female youth.

Hospitalizations due to intentional injuries varied by gender. Female youth accounted for more self-inflicted injury hospitalizations than males, while males accounted for more assault injuries (Figure 7.10).



Table 7.5
Fatal and Non-fatal Injuries to Older Adults (age 65+) by Cause, Sonoma County 2000-2002

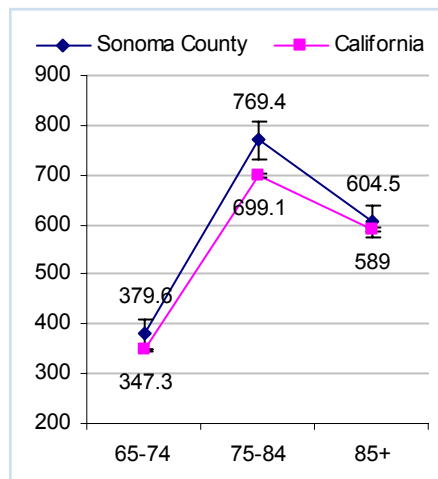
	Hospitalizations	Deaths
Unintentional injuries	4,427	100
Motor vehicle collisions	179	22
Falls	3,515	44
Poisoning	159	9
Natural/environmental	88	1
Overexertion	73	0
Other	413	24
Intentional injuries	61	48
Self-inflicted/Suicide	50	47
Assault/Homicide	11	1
Other-undetermined intent	108	4
Total	4,573	152

Sources: California Department of Health Services, vital statistics death records 2000-2002, and California Office of Statewide Health Planning and Development, hospital discharge data 2000-2002.

From 2000 to 2002, the hospitalization rate for non-fatal, unintentional injuries was twice as high for White, non-Hispanic youth age 0-19 than for Hispanic youth in Sonoma County (333.5/100,000 and 173.3/100,000).

The hospitalization rates for falls and motor vehicle collisions were also twice as high for White, non-Hispanic youth (127.1/100,000 and

Figure 7.11
Hospitalization Rates* for Non-fatal Falls in Older Adults (age 65+) by Age Category, Sonoma County and California 2000-2002



*Rates are age-adjusted and per 100,000 population.

Source: California Office of Statewide Health Planning and Development, hospital discharge data 2000-2002.

64.6/100,000) than for Hispanic youth (61.8/100,000 and 36.4/100,000).

Primary and Secondary Prevention

An estimated 14% of children age 14 and under ride unrestrained in motor vehicles. Riding unrestrained is the greatest risk factor for death and injury among child occupants of motor vehicles. When installed and used correctly, car seats can reduce the risk of death by 71% for infants and 54% for children age 1-4.⁸

Multiple studies suggest the benefit of Graduated Driver's Licenses

(GDL) for young drivers. GDL address the high risks faced by new drivers by allowing them to get their initial driving experience under low risk conditions (during the day and without young occupants in the vehicle).⁹ California requires drivers under age 18 to obtain graduated driver's licenses.

Injury in Older Adults

Falls are the most common cause of non-fatal injury in older adults (age 65+). In 2000-2002, Sonoma County older adults had more fall-related deaths and injuries than for all other types of fatal and non-fatal injuries combined (Table 7.5).

From 2000 to 2002 in Sonoma County, the age-adjusted rate of hospitalizations due to falls for adults age 65+ was 1,753.5/100,000. This is significantly higher than the California rate of 1,635.4/100,000.

The hospitalization rate for falls to older adults in Sonoma County was significantly higher for adults age 75-84 than for adults age 65-74 or age 85+. The rate was also significantly higher than the California hospitalization rate for falls among adults age 75-84 (Figure 7.11).

Sonoma County females age 65+ had a hospitalization rate for falls that was significantly higher than for males (1743.2/100,000 females, 1,269.0/100,000 males).



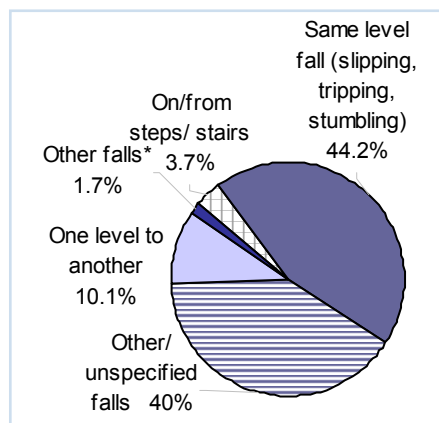
From 2000 to 2002, nearly 60% of all falls requiring hospitalization to Sonoma County adults age 65+ resulted in a fracture. For females, fractures were the result of 64.2% of falls. Males had proportionally fewer fractures from falls (47.7%).

Over 44% of falls to older adults (resulting in hospitalization) were from slipping, tripping or stumbling. Examples of these types of falls include falling from slipping on a wet floor or from tripping on an electrical cord (Figure 7.12).

Primary and Secondary Prevention

The U.S. Preventive Services Task Force recommends counseling older patients on measures to reduce the risk of falling. These measures include an exercise routine emphasizing muscle strength and balance, safety-related skills and behaviors, environmental hazard reduction, and monitoring and adjusting medications. Since falls and resulting injuries are more common among those in residential care facilities, effective implementation of these measures are of utmost importance in these settings.¹⁰

Figure 7.12
Non-fatal Hospitalizations to Older Adults (age 65+) from Falls by Cause, Sonoma County 2000-2002



*Other falls include falls on/from ladder or scaffolding, falls from/out of building, and falls from collision of one pedestrian with another pedestrian.

Source: California Office of Statewide Health Planning and Development, patient discharge data 2000-2004.



Chapter 7 References

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