INJURY IN COLORADO

Highlights

- Injuries are still the leading cause of death for Coloradans ages 1-44 during 2012-2014.
- Over the past 5 years, the age-adjusted injury death rate increased from 65 deaths per 100,000 population in 2010 to 69 deaths per 100,000 population in 2014.
- Between 2012 and 2014, most of the injury deaths in Colorado are due to suicide, falls and unintentional drug overdose (an average of 1038, 749 and 666 deaths each year, respectively).
- Most individuals who die from injury do not survive long enough to receive hospital medical care. Only 17 percent of injury deaths occur after a person has been admitted to a hospital.
- From 2010 to 2014, age-adjusted injury hospitalization rates decline from 669.5 hospitalizations per 100,000 population to 554.9 hospitalizations per 100,000 population, a 17.0 percent decrease.
- Almost half of the injury hospitalizations in Colorado are due to falls (41 percent of all injury hospitalizations). Of the injury hospitalization with a known cause, 50 percent are due to falls, 13 percent due to motor vehicles, and 10 percent due to suicide attempts, and 9 percent due to unintentional drug overdose (including overdose of undetermined intent).
- For major causes of injury in Colorado, men are more likely to die from injuries than women. However, women have higher age-adjusted rates of hospitalizations and emergency department visits for suicide attempts and falls, compared to men. Women also have higher rates of emergency department visits for motor vehicle-related injuries. Men have higher rates of emergency department visits for assaults, compared to women.
- Traumatic brain injury is a factor in 29 percent of all injury deaths, 17 percent of all injury hospitalizations, and 13 percent of all injury emergency department visits.

Injuries affect everyone regardless of age, gender, race, or economic status. In Colorado, injuries are the third leading cause of death, with approximately 3,700 injury deaths occurring each year. Although injury deaths are significant, they are only the “tip of the iceberg.” Each year, there are more than 30,000 hospitalizations and more than 340,000 emergency department (ED) visits among Coloradans treated for injuries. For many individuals, the injury causes temporary pain and inconvenience, but for some, the injury can lead to chronic pain, disability, and a change in lifestyle.
An injury affects more than the individual – families, employers, communities, and society at large are also profoundly influenced when people are injured.

In recognizing the importance of this public health issue, the Colorado Department of Public Health and Environment (the Department) implements several statewide injury surveillance and prevention and control programs. These programs track injury-related emergency department visits, hospitalizations and deaths through a variety of data sources and use this information to help reduce the rates of injury through public education, intervention and prevention programs, and policy development. Data have been used to evaluate the effectiveness of Colorado’s trauma system in providing care to residents and visitors injured in the state.

The purpose of this overview is to provide an understanding of the leading causes of injury deaths, hospitalizations, and emergency department visits in Colorado, the circumstances under which these injuries occur, and the populations that are particularly at risk. Both intentional (suicide and homicide/assault) and unintentional injuries are addressed. This information can be used to prioritize needs, direct resources, and target prevention strategies with the ultimate goal of reducing the number and severity of injuries that affect Coloradans each year.

The Department and the partners in the Injury Community Planning Group compiled the Colorado Injury Prevention Strategic Plan in 2003 to serve as a blueprint to guide Colorado’s injury prevention activities. The plan was updated in 2011 as the Colorado Injury Prevention Strategic Plan, 2010-2015: Bold Steps toward Preventing Injuries. Recognizing that a strategic plan cannot solve all of the state’s injury prevention issues, the Department and the Injury Community Planning Group prioritized four injury problems for specific bold steps towards prevention. Based on data reflecting injury related death and disability, and on the community and political will in Colorado, the following four injury areas were selected:

- Motor vehicle-related injuries
- Fall-related injuries
- Suicide
- Unintentional drug overdose

These four injury areas represent 78 percent of the total injury related deaths in Colorado, 82 percent of the total injury related hospitalizations, and 49 percent of the visits to EDs between 2012 and 2014.
Leading causes of death in the United States and Colorado

As shown in Tables 1 and 2, unintentional injury ranks overall as the fourth leading cause of death in the U.S. and the third leading cause of death in Colorado.

In terms of rankings among different age groups, unintentional injuries rank first for ages 1-44 in both the U.S. and in Colorado. For older age groups, cancer and heart disease are the leading causes of death.

The ranking of intentional injury deaths also differs across age groups. In Colorado, suicide is the second leading cause of death for ages 10-44 and ranks fifth for ages 45-54 years old. Homicide is the second leading cause of death for children ages 1-4 year old and third for youth and young adults, ages 15-24 years old. Homicide ranks fifth among Coloradans age 25-34, yet ranks third in the U.S. for this age group.

Table 1: Five leading causes of death by age group, United States, 2013*

<table>
<thead>
<tr>
<th>Rank</th>
<th>Age &lt;1</th>
<th>Age 1-4</th>
<th>Age 5-9</th>
<th>Age 10-14</th>
<th>Age 15-24</th>
<th>Age 25-34</th>
<th>Age 35-44</th>
<th>Age 45-54</th>
<th>Age 55-64</th>
<th>Age 65+</th>
<th>Total</th>
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<tbody>
<tr>
<td>1</td>
<td>Congenital Anomalies</td>
<td>Unintentional Injury</td>
<td>Unintentional Injury</td>
<td>Unintentional Injury</td>
<td>Unintentional Injury</td>
<td>Unintentional Injury</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
<td>Heart Disease</td>
<td>Heart Disease</td>
</tr>
<tr>
<td>2</td>
<td>Short Gestation</td>
<td>Congenital Anomalies</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
<td>Suicide</td>
<td>Suicide</td>
<td>Malignant Neoplasms</td>
<td>Heart Disease</td>
<td>Heart Disease</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
</tr>
<tr>
<td>3</td>
<td>Maternal Pregnancy Complications</td>
<td>Homicide</td>
<td>Congenital Anomalies</td>
<td>Suicide</td>
<td>Homicide</td>
<td>Malignant Neoplasms</td>
<td>Unintentional Injury</td>
<td>Unintentional Injury</td>
<td>Chronic Low Respiratory Disease</td>
<td>Chronic Low Respiratory Disease</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>SIDS</td>
<td>Malignant Neoplasms</td>
<td>Homicide</td>
<td>Congenital Anomalies</td>
<td>Malignant Neoplasms</td>
<td>Suicide</td>
<td>Liver Disease</td>
<td>Chronic Low Respiratory Disease</td>
<td>Cerebrovascular Unintentional Injury</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Unintentional Injury</td>
<td>Heart Disease</td>
<td>Chronic Low Respiratory Disease</td>
<td>Homicide</td>
<td>Heart Disease</td>
<td>Heart Disease</td>
<td>Malignant Neoplasms</td>
<td>Diabetes Mellitus</td>
<td>Alzheimer’s Disease</td>
<td>Cerebral Vascular Disease</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Five leading causes of death by age group, Colorado residents, 2013†

<table>
<thead>
<tr>
<th>Rank</th>
<th>Age &lt;1</th>
<th>Age 1-4</th>
<th>Age 5-9</th>
<th>Age 10-14</th>
<th>Age 15-24</th>
<th>Age 25-34</th>
<th>Age 35-44</th>
<th>Age 45-54</th>
<th>Age 55-64</th>
<th>Age 65+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Congenital Anomalies</td>
<td>Unintentional Injury</td>
<td>Unintentional Injury</td>
<td>Unintentional Injury</td>
<td>Unintentional Injury</td>
<td>Unintentional Injury</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
<td>Heart Disease</td>
<td>Heart Disease</td>
</tr>
<tr>
<td>2</td>
<td>Short Gestation</td>
<td>Homicide</td>
<td>Malignant Neoplasms</td>
<td>Suicide</td>
<td>Suicide</td>
<td>Suicide</td>
<td>Suicide</td>
<td>Heart Disease</td>
<td>Heart Disease</td>
<td>Malignant Neoplasms</td>
<td>Heart Disease</td>
</tr>
<tr>
<td>3</td>
<td>Maternal Pregnancy Complications</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
<td>Homicide</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
<td>Unintentional Injury</td>
<td>Chronic Low Respiratory Disease</td>
<td>Unintentional Injury</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Placenta, Cord, Membranes Complications</td>
<td>Congenital Anomalies</td>
<td>*</td>
<td>Malignant Neoplasms</td>
<td>Heart Disease</td>
<td>Heart Disease</td>
<td>Suicide</td>
<td>Chronic Low Respiratory Disease</td>
<td>Cerebrovascular Chronic Low Respiratory Disease</td>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>Unintentional Injury</td>
<td>Heart Disease</td>
<td>*</td>
<td>*</td>
<td>Homicide</td>
<td>Liver Disease</td>
<td>Liver Disease</td>
<td>Liver Disease</td>
<td>Alzheimer’s Disease</td>
<td>Cerebrovascular</td>
<td></td>
</tr>
</tbody>
</table>

†Centers for Disease Control and Prevention. From WONDER. Available at http://wonder.cdc.gov/ (October 25, 2015). To provide more reliable results for ages 0-14 years, deaths in 2011-2013 were used to rank Colorado’s leading causes of death. *Less than 9 deaths
Injury deaths as a percent of all deaths

Eleven percent of all deaths in Colorado are the result of injuries. The death toll from injury is most apparent for younger age groups. Injuries are responsible for two-thirds (67 percent) of deaths among Coloradans ages 1-34 years.

The age groups with the highest percent of deaths due to injury are ages 15-19 and ages 20-24 years. More than 75 percent of the deaths in these two age groups are due to injury.

Table 3: Injury deaths as a percent of all deaths by age group
Colorado residents, 2014

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Injury Deaths</th>
<th>All deaths</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Ages</td>
<td>3,743</td>
<td>35,193</td>
<td>10.6%</td>
</tr>
<tr>
<td>&lt;1</td>
<td>24</td>
<td>315</td>
<td>7.6%</td>
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<tr>
<td>1-4</td>
<td>24</td>
<td>60</td>
<td>40.0%</td>
</tr>
<tr>
<td>5-9</td>
<td>11</td>
<td>34</td>
<td>32.4%</td>
</tr>
<tr>
<td>10-14</td>
<td>29</td>
<td>57</td>
<td>50.9%</td>
</tr>
<tr>
<td>15-19</td>
<td>124</td>
<td>159</td>
<td>78.0%</td>
</tr>
<tr>
<td>20-24</td>
<td>233</td>
<td>309</td>
<td>75.4%</td>
</tr>
<tr>
<td>25-34</td>
<td>509</td>
<td>810</td>
<td>62.8%</td>
</tr>
<tr>
<td>35-44</td>
<td>504</td>
<td>1,176</td>
<td>42.9%</td>
</tr>
<tr>
<td>45-54</td>
<td>565</td>
<td>2,391</td>
<td>23.6%</td>
</tr>
<tr>
<td>55-64</td>
<td>505</td>
<td>4,731</td>
<td>10.7%</td>
</tr>
<tr>
<td>65-74</td>
<td>324</td>
<td>6,169</td>
<td>5.3%</td>
</tr>
<tr>
<td>75-84</td>
<td>352</td>
<td>7,944</td>
<td>4.4%</td>
</tr>
<tr>
<td>85+</td>
<td>539</td>
<td>11,038</td>
<td>4.9%</td>
</tr>
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Injury death rates over time

Since 2010, the age-adjusted injury death rate in Colorado increased from 65 deaths per 100,000 population to 69 deaths per 100,000 population. Increases in the rates of death due to falls and suicide contributed to the increase in the overall injury death rate in 2014 compared to 2010.

Figure 1: Age-Adjusted Injury Death Rates
Colorado Residents, 2010-2014

Deaths per 100,000 population

Year

2010 2011 2012 2013 2014

65.0 69.1 72.3 69.9 69.4
Leading causes of injury deaths

Approximately 65 percent of injury deaths in Colorado are from unintentional causes and 33 percent are from intentional causes. The intent is undetermined for less than three percent of injury deaths. Falls, unintentional drug overdoses, and motor vehicles account for 79 percent of the unintentional injury deaths. Most of the intentional injury deaths in Colorado (84 percent) are suicides.

Figure 2: Age-adjusted injury death rates by cause
Colorado residents, 2012-2014

*Unintentional drug overdose includes drug overdoses of undetermined intent
Changes in leading causes of injury deaths over time

Since 2010, suicide, the leading cause of injury death, increased slightly. The age-adjusted suicide rate increased from 16.7 deaths per 100,000 population in 2010 to 19.4 deaths per 100,000 in 2014. Unintentional drug overdose (including drug overdose of undetermined intent) also increased slightly. The age-adjusted rate of death due to unintentional drug overdose was 10.1 deaths per 100,000 population in 2010 and reached a high of 13.1 deaths in 2011. In 2014, the rate was 12.7 deaths per 100,000 population.

Deaths due to falls, motor vehicles, and homicide fluctuated from 2010 to 2014, though fall deaths have increased over a longer period, and motor vehicle-related deaths have decreased over a longer period. The age-adjusted rate for deaths due to falls was 14.3 in 2010 and 14.9 deaths per 100,000 population in 2014. The age-adjusted rate for deaths due to motor vehicle was 9.4 deaths per 100,000 population in 2010 and 9.0 deaths in 2014, still lower than the age-adjusted rate of 12.0 deaths in 2007. Age-adjusted homicide rates remained similar over the five years, ranging between 3.4 and 4.0 deaths per 100,000 population. In 2010, the homicide rate was 3.4 deaths per 100,000 population. In 2014, it was 3.3 deaths per 100,000.
Injury hospitalization rates over time

From 2010 to 2014, age-adjusted injury hospitalization rates declined from 669.5 hospitalizations per 100,000 population to 554.9 hospitalizations per 100,000 population, a 17.0 percent decrease. The decline is primarily due to decreases in the rate of hospitalization for injuries due to falls.
Leading causes of injury hospitalizations

While suicide is the leading cause of injury deaths in Colorado, accounting for 28 percent of all injury deaths, suicide ranks as the third leading cause of injury hospitalizations, accounting for 10 percent of injury hospitalizations with a reported cause.

The leading cause of injury hospitalizations is falls, primarily in the older adult age group. Falls contribute to 50 percent of the injury hospitalizations. The second leading cause of injury hospitalizations, based on the age-adjusted rates, is motor vehicles.

Figure 5: Age-adjusted injury hospitalization rates by cause
Colorado residents, 2012-2014

*Unintentional drug overdose includes drug overdoses of undetermined intent*
Changes in leading causes of injury hospitalizations over time

The age-adjusted hospitalization rates for the leading causes of injury hospitalizations decreased from 2010 to 2014. For falls, the leading cause of injury hospitalizations, the age-adjusted rate was 290.6 injury hospitalizations per 100,000 population in 2010 and was 239.7 in 2014. Age-adjusted rates of hospitalization for injuries from motor vehicle crashes decreased from 91 per 100,000 population in 2007 to 69.9 in 2010 and 59.8 in 2014. Rates of hospitalization for injuries due to suicide attempts decreased from 56.5 hospitalizations per 100,000 population in 2010 to 46.7 in 2014. Age-adjusted rates for unintentional drug overdose (including undetermined intent) decreased from 44.1 hospitalizations in 2010 to 37.9 in 2014. Rates for assault significantly decreased from 26.8 injury hospitalizations per 100,000 population in 2007 to 21.6 per 100,000 in 2010 and 15.4 in 2014.

Figure 6: Age-Adjusted Injury Hospitalization Rates by Cause
Colorado Residents, 2010-2014

*Unintentional drug overdose includes drug overdoses of undetermined intent
In 2014, there are 342,635 emergency department (ED) visits that mentioned an injury as one of the first six discharge diagnoses. Of the injury ED visits, 93 percent mention a mechanism of injury or cause of injury. Of the injury-related ED visits with causes, 93 percent are unintentional causes, five percent are assault, and two percent are suicide attempts or attempts at self harm.

Falls account for 33 percent of the injury-related ED visits, 12 percent are related to a motor vehicle in traffic, and struck unintentionally by an object or person for 14 percent. Being struck unintentionally can happen during sports and recreational activities as well as during the use of machinery. The age-adjusted rate for injury ED visits is highest for falls, with a rate of 2001.2 visits per 100,000 population.

Figure 7: Age-adjusted injury emergency department visits rates by cause
Colorado residents, 2014

*Unintentional drug overdose includes drug overdoses of undetermined intent
Injury deaths, hospitalizations and emergency department visits by sex

Injury death and hospitalization rates differ for males and females. For all major causes of injury, more males than females die from injury. In contrast, for injury hospitalizations, men are more likely than women to be hospitalized for injuries resulting from motor vehicle crashes and assaults, while women are more likely than men to be hospitalized for injuries resulting from falls and suicide attempts. Males and females have similar hospitalization rates for non-fatal unintentional drug overdose (which were combined with drug overdose of undetermined intent.) Males compared to females have a pattern of causes of injury treated in ED visits similar to the pattern for injury hospitalizations, with one exception. Males have a higher rate of injury hospitalizations for motor-vehicle events, compared to females. In contrast, females have a higher rate of ED visits for motor vehicle-related injuries, compared to males.

Figure 8: Age-adjusted injury death rates by sex Colorado residents, 2012-2014

*Unintentional drug overdose includes drug overdoses of undetermined intent*
Figure 9: Age-adjusted injury hospitalization rates by sex
Colorado residents, 2012-2014

Figure 10: Age-adjusted injury emergency department visits rates by sex
Colorado residents, 2014

*Unintentional drug overdose includes drug overdoses of undetermined intent.
Injury deaths, hospitalizations and emergency department visits by age group

Injury death and hospitalization rates reflect similar patterns across age groups. Both death and hospitalization rates increase during the teen years as youth gain more independence and participate in more risk-taking behavior. Rates remain relatively constant until age 75. Coloradans ages 75 and older are the group most likely to be hospitalized or die from injury. This may reflect the fact that many older people have underlying health conditions that might contribute to the likelihood of injury as well as reduce their ability to recover once injury has occurred. ED visits for injuries show a different pattern, with youth and young adults, ages 10-24 having high rates, and adults, age 85 years and older having the highest rates.

**Figure 11:**
Injury death rate by age group among Colorado residents, 2012 - 2014 (N=11,316)
**Figure 12:** Injury hospitalization rate by age group among Colorado residents, 2012 - 2014 (N=91,969)

**Figure 13:** Rates of injury emergency department visits by age group among Colorado residents, 2014 (N=342,635)
Injury deaths, hospitalizations and emergency department visits for infants (<1 year)

Although less than eight percent of all deaths among infants younger than a year old are due to injury, the vulnerability and fragility of this population warrant a description of the causes of injury death and hospitalization in this age group.

The leading cause of injury death among infants less than a year old is unintentional suffocation and other threats to breathing. From 2012 to 2014, an average of 17 infants died each year from unintentional suffocation, typically from unintentional strangulation or suffocation from bedding, pillows or someone’s body. An average of five infants died each year from child abuse and other maltreatment. Seventeen percent of all injury deaths among Colorado infants are the result of assault/homicide or child abuse.

Sadly, child abuse/assaults are also a leading cause of injury hospitalization in this age group. Falls--typically from beds, other furniture, or stairs--is the leading cause of injury hospitalization and ED visits.
Causes of death, hospitalization, and ED visits among young children reflect the developmentally appropriate curiosity and increased mobility of this age group. Children might fall while playing, get bitten by a dog, drown in a home or outdoor setting, or swallow harmful drugs or household products. Adult supervision of young children is critical.

The leading causes of injury deaths for this age group are child abuse/homicide, motor vehicle and drowning. Almost a quarter of all injury deaths among children between the ages of 1 to 4 years results from child abuse/homicide.

The leading cause of injury hospitalization and ED visits among children ages 1-4 is falls, frequently from beds or other furniture, from buildings or structures or from playground equipment. Unintentional drug overdoses (poisoning), the natural environment (such as animal bites and insect stings), and motor vehicle events are important causes of injury hospitalizations and ED visits for this age group. Unintentionally being struck by an object or person is the second leading cause of ED visits for injury.
Injury hospitalization rates
Colorado residents, 2012-2014
Age Group=1-4

Injury hospitalization rates
Colorado residents, 2012-2014
Age Group=1-4

Rates of injury emergency department visits
Colorado residents, 2014
Age Group=1-4

*Unintentional drug overdose includes drug overdoses of undetermined intent
Injury deaths, hospitalizations and emergency department visits for children ages 5-9

Children ages 5-9 experience the lowest injury death and hospitalization rates of any age group. Motor vehicle events are the leading cause of injury death.

Falls continue to be the leading cause of injury hospitalizations and ED visits; most commonly from playground equipment (an average of 24 children hospitalized each year). This mechanism accounts for 24 percent of all hospitalizations for injuries due to falls among children ages 5-9. Each year, children in this age group averaged 503 visits to the ED for injuries from falling off playground equipment, which represents 17 percent of all fall-related visits in this age group.

Bicycles are important for play and transportation among 5-9 year olds. On average each year, children ages 5-9 have 16 hospitalizations and 252 ED visits for injuries due to bicycle crashes (that do not also involve a motor vehicle).

Other significant causes of injury hospitalization and ED visits include striking against an object or person (including sports) and motor vehicle crashes. The natural environment, such as animal and insect bites, contribute to the need for emergency care and hospitalization in this age group.

<table>
<thead>
<tr>
<th>Injury Death Rate</th>
<th>Deaths per 100,000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Vehicle</td>
<td>1.86</td>
</tr>
<tr>
<td>Homicide</td>
<td>0.65</td>
</tr>
<tr>
<td>Suffocation</td>
<td>0.28</td>
</tr>
<tr>
<td>Falls</td>
<td>0.19</td>
</tr>
<tr>
<td>Drowning</td>
<td>0.09</td>
</tr>
<tr>
<td>Drug OD</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Injury death rate among Colorado children (5 - 9 years), 2012 - 2014 (N=37)
Pre- and early adolescents experience relatively low injury rates compared to older adolescents. Unfortunately, the rate of intentional self-inflicted injuries begins to increase with this age group. This change is reflected in both hospitalizations and deaths. The highest rate of injury death and hospitalization in this age group is due to suicide. The methods most frequently seen in deaths due to suicide are different from those in hospitalized suicide attempts. Of the 44 suicide deaths among youth ages 10-14 in 2012-2014, 25 resulted from hanging or suffocation (57 percent) and 15 (34 percent) from firearms. Of the 442 hospitalizations for suicide attempts from 2012-2014, 329 (74 percent) resulted from a drug overdose. There are 894 ED visits among this age group during 2012-2014. The top means of suicide attempts that resulted in ED visits in this age group are cutting or piercing and non-fatal drug overdoses.

The leading cause of injury ED visits among youth age 10-14 is falls, most frequently as a result of falling on the same level by slipping, tripping or stumbling. Motor vehicle, sports (unintentionally struck by or against an object or person) and bicycle injuries continue to be an issue for this age group.

**Injury death rates**

*Colorado residents, 2012-2014*

*Age Group=10-14*

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Deaths per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicide</td>
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</tr>
<tr>
<td>Motor Vehicle</td>
<td>2.0</td>
</tr>
<tr>
<td>Homicide</td>
<td>0.5</td>
</tr>
<tr>
<td>Drowning</td>
<td>0.3</td>
</tr>
<tr>
<td>Unintentional Drug Overdose</td>
<td></td>
</tr>
<tr>
<td>Falls</td>
<td></td>
</tr>
<tr>
<td>Fires</td>
<td></td>
</tr>
<tr>
<td>Suffocation</td>
<td></td>
</tr>
</tbody>
</table>

*Unintentional drug overdose includes drug overdoses of undetermined intent*
Injury hospitalization rates
Colorado residents, 2012-2014
Age Group=10-14

Cause of injury
*Unintentional drug overdose includes drug overdoses of undetermined intent

Rates of injury emergency department visits
Colorado residents, 2014
Age Group=10-14

Cause of injury
*Unintentional drug overdose includes drug overdoses of undetermined intent
Injury deaths, hospitalizations and emergency department visits adolescents ages 15-19

Teens, age 15-19 are increasingly independent and most have begun to drive. Generally known for experimentation and fearlessness, this age group may use alcohol and/or drugs or become involved in high risk activities. In addition, they may experience significant stress or depression. These and other factors combine to create a huge increase in injury rates compared to younger age groups.

Teens have the highest hospitalization and ED visit rates for suicide attempts of any age group. Hospitalizations for suicide attempts most often result from drug overdose (74 percent). About half of the ED visits for suicide result from drug overdose and a third from cutting and piercing. In contrast, 43 percent of suicide deaths in this age group involve hanging/suffocation. Compared to children age 10-14, teens are 5.6 times more likely to die and 3 times more likely to be hospitalized or treated in the ED for injuries sustained in a motor vehicle crash.

Teens are 5.8 times more likely than children age 10-14 to be involved in an assault requiring hospitalization.

Compared to rates of injury ED visits among other age groups, teens have the second highest rate of injury ED visits due to motor vehicle crashes, being unintentionally struck by an object or person, such as in a sports activity and for unintentional drug overdose.
Injury hospitalization rates
Colorado residents, 2012-2014
Age Group=15-19

*Unintentional drug overdose includes drug overdoses of undetermined intent

Rates of injury emergency department visits
Colorado residents, 2014
Age Group=15-19

*Unintentional drug overdose includes drug overdoses of undetermined intent
Injury deaths, hospitalizations and emergency department visits for adults ages 20-24

Injury death and hospitalization rates remain high for this young adult population. Suicide is the leading cause of injury death among young adults. Of the 251 suicide deaths in this age group in 2012-2014, 47 percent result from use of a firearm. In contrast, the majority of the 885 hospitalized suicide attempts involve a drug overdose (79 percent). Suicide is the second leading cause of injury hospitalizations.

Among all age groups, this young adult population has the highest rate of death, hospitalization and ED visits due to homicide or assault.

Coloradans ages 20-24 have the third highest rate of death from injuries due to motor vehicle crashes (with Coloradans ages 75 and older having the highest rates) and the highest rate for hospitalizations and ED visits. Motor vehicles are the leading cause of injury hospitalizations in this age group.

This age group has the highest rate of ED visits for unintentional drug overdose (including drug overdoses of undetermined intent).

The leading cause of injury ED visits among these young adults is falls.

Injury death rate among Colorado young adults (20 - 24 years), 2012 - 2014
(N=732)

<table>
<thead>
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<th>Injury Death Rate</th>
<th>Suicide</th>
<th>Motor Vehicle</th>
<th>Drug OD</th>
<th>Homicide</th>
<th>Falls</th>
<th>Drowning</th>
<th>Suffocation</th>
<th>Natural/Environ.</th>
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Injury deaths, hospitalizations and emergency department visits for adults ages 25-34

Although still high, death and hospitalization rates for injuries due to motor vehicle crashes begin to decrease in the 25-34 age group. While suicides remain a significant cause of injury deaths, homicide rates begin to decline in this age group and continue to decline with age. This age group has the second highest death rate of unintentional drug overdose, second only to Coloradans age 45-54.

Similar to other age groups, falls are a major cause of hospitalizations and ED visits for Coloradans age 25-34. Nearly 30 percent of the fall hospitalizations and 41 percent of the fall ED visits in this age group are the result of slipping or tripping on the same level. An additional 10 percent of fall hospitalizations involve skiing or snowboarding, and 11 percent are falls from ladders, scaffolding or structures. Almost 16 percent of the falls resulting in an ED visit are falls on or from stairs.

![Injury death rate among Colorado adults (25 - 34 years), 2012 - 2014 (N=1,525)](chart.png)
Injury hospitalization rates
Colorado residents, 2012-2014
Age Group=25-34

Rate per 100,000 population

Motor Vehicle 77.1
Suicide 69.0
Fall 68.1
Unintentional Drug Overdose 42.7
Assault 34.0
Stuck by/Against 13.3
Natural 8.9
Firearm 0.6
Firearm 7.0
Drowning 0.2

Cause of injury
*Unintentional drug overdose includes drug overdoses of undetermined intent

Rates of injury emergency department visits
Colorado residents, 2014
Age Group=25-34

Rate per 100,000 population

Fall 1614.7
Motor Vehicle 1143.5
Stuck by/Against 851.4
Assault 601.3
Natural 210.0
Suicide Attempt 151.1
Unintentional Drug Overdose 131.3
Firearm 116.2
Firearm 14.6
Drowning 1.3

Cause of injury
*Unintentional drug overdose includes drug overdoses of undetermined intent
Death, hospitalization, and emergency department visit rates for motor vehicle crashes and homicides continue to decline in this age group, based on comparing younger age-specific rates. The rate of death due to suicide continues to remain high although the rate of injury hospitalization and ED visits for suicide attempts begins to decrease, a trend that continues with age.

This group has the third highest rate of deaths due to unintentional drug overdose (poisoning) when combined with drug overdoses of undetermined intent.

Falls replace motor vehicle as the leading cause of injury hospitalizations for this age group. Almost 27 percent of these fall-related hospitalizations are from slipping, tripping or stumbling on the same level, 12 percent involve falls from ladders, scaffolding or structures, and 11 percent involve falls on stairs. Slipping on the same level resulted in 41 percent of the emergency visits for falls. Falls on or from stairs account for another 14 percent of the fall-associated ED visits.

*Unintentional drug overdose includes drug overdoses of undetermined intent*
Injury hospitalization rates
Colorado residents, 2012-2014
Age Group=35-44

Cause of injury
*Unintentional drug overdose includes drug overdoses of undetermined intent

Rates of injury emergency department visits
Colorado residents, 2014
Age Group=35-44

Cause of injury
*Unintentional drug overdose includes drug overdoses of undetermined intent
Suicide and unintentional drug overdose remain the leading causes of injury deaths in this age group. Compared to other age groups, middle aged adults have the highest rate of death from unintentional drug overdose (when combined with drug overdose of undetermined intent).

The hospitalization rate for suicide attempts declines in this age group, compared to younger age groups, while the hospitalization rate for falls begins to increase, a trend that continues with increasing age.

Falls resulting in hospitalization often result from slipping, tripping or stumbling on the same level (29 percent), falls from ladders, scaffolding or structures (11 percent), and falls from stairs/steps (13 percent). Forty-two percent to ED visits for falls involve falls from slipping on the same level, and 12 percent are falls on or from stairs or steps.
Injury hospitalization rates
Colorado residents, 2012-2014
Age Group=45-54

Cause of injury
*Unintentional drug overdose includes drug overdoses of undetermined intent

Rates of injury emergency department visits
Colorado residents, 2014
Age Group=45-54

Cause of injury
*Unintentional drug overdose includes drug overdoses of undetermined intent
Suicide remains the leading cause of injury death while the injury hospitalization rate for suicide attempts ranks fourth for this age group. Compared to younger age groups, the suicide hospitalization rate is lower for adults 55-64. Unintentional drug poisoning and motor vehicle traffic crashes also continue to be major causes of death and hospitalization.

Though the fourth leading cause of injury death in this age group, falls is the leading cause of injury hospitalizations and ED visits. The rate of hospitalization for injuries due to falls in this age group is twice the rate for adults ages 45-54. For adults ages 55-64, more than 33 percent of falls resulting in hospitalization result from slipping, tripping or stumbling on the same level, while 13 percent are falls from stairs/steps and 8 percent are falls from ladders, scaffolding or structures. Forty-four percent of falls resulting in ED visits are falls from slipping on the same level and 10 percent from stairs.

Injury death rate among Colorado adults (55 - 64 years), 2012 - 2014 (N=1,556)
Suicide is the leading cause of injury death for this age group. Suicide by firearm accounts for 62 percent of these deaths. The other major means of suicide are drug or alcohol poisoning (21 percent) and hanging/strangulation (seven percent).

The rate of death due to falls increases with increasing age. The fall death rate for adults 65-74 is almost 3 times the rate for 55-64 year olds. The injury hospitalization rate due to falls among adults ages 65-74 is twice the rate for 55-64 year olds.

For adults ages 65-74, falls ranks as the second leading cause of injury death and the first leading cause of injury hospitalization or ED visit. More than a third of the fall hospitalizations (37 percent) and 45 percent of the fall-related ED visits are slips and trips on the same level. Eleven percent of fall hospitalizations and 10 percent of fall-related ED visits involve stairs or steps.

Injury deaths, hospitalizations and emergency department visits for adults ages 65-74

Suicide is the leading cause of injury death for this age group. Suicide by firearm accounts for 62 percent of these deaths. The other major means of suicide are drug or alcohol poisoning (21 percent) and hanging/strangulation (seven percent).

The rate of death due to falls increases with increasing age. The fall death rate for adults 65-74 is almost 3 times the rate for 55-64 year olds. The injury hospitalization rate due to falls among adults ages 65-74 is twice the rate for 55-64 year olds.

For adults ages 65-74, falls ranks as the second leading cause of injury death and the first leading cause of injury hospitalization or ED visit. More than a third of the fall hospitalizations (37 percent) and 45 percent of the fall-related ED visits are slips and trips on the same level. Eleven percent of fall hospitalizations and 10 percent of fall-related ED visits involve stairs or steps.

Injury death rate among Colorado older adults (65 - 74 years), 2012 - 2014 (N=944)
Injury hospitalization rates
Colorado residents, 2012-2014
Age Group=65-74

Cause of injury
*Unintentional drug overdose includes drug overdoses of undetermined intent

Rates of injury emergency department visits
Colorado residents, 2014
Age Group=65-74

Cause of injury
*Unintentional drug overdose includes drug overdoses of undetermined intent
Injury death and hospitalization rates in the 75-84 age group increase dramatically, primarily due to injuries from falls. The rate of fall-related deaths for this age group is 5 times the rate for adults age 65-74. The rate of fall-related hospitalizations for this age group is 3.1 times the rate for adults age 65-74. For fall-related ED visits, the rate for this age group is two times the rate for 65-74.

Suicide remains the second leading cause of injury death. The majority of suicides in this age group (75 percent) involve the use of a firearm. The other major means of suicide are drug or alcohol poisoning (10 percent) and hanging/strangulation (10 percent).
The 85 and older age group has the highest overall injury death rate and the second highest suicide death rate of any group. Deaths due to suicide in this age group most frequently involve firearms (69 percent), hanging/strangulation (10 percent), and drug or alcohol overdose (nine percent).

Falls continue to be the leading cause of injury deaths, hospitalizations, and ED visits. Seventy-two percent of the injury deaths, 70 percent of the injury hospitalizations, and 70 percent of the ED visits for this age group are due to falls. The death rate for fall-related injuries for Coloradans ages 85 and older is 66 times higher than the rate for the age group 0 to 84 years. The hospitalization rate is 23 times higher than the rate for all other ages combined.

Injury death rate among Colorado senior citizens (85+ years), 2012 - 2014  
(N=1,594)
Injury hospitalization rates
Colorado residents, 2012-2014
Age Group=85 and older

*Unintentional drug overdose includes drug overdoses of undetermined intent

Rates of injury emergency department visits
Colorado residents, 2014
Age Group=85 and older

*Unintentional drug overdose includes drug overdoses of undetermined intent
Suicide deaths, hospitalizations, and emergency department visits

Suicide is the leading cause of injury death in Colorado. Each year, an average of 1038 Coloradans die by suicide and 2514 hospitalizations for a suicide attempt or self harm occur, based on results from 2012-2014. In 2014, almost 6,000 ED visits mentioned an injury and a suicide attempt or self harm, representing only two percent of the injury ED visits. The age groups with the highest suicide rates include ages 45-54 and 55-64. In contrast, the highest rates of hospitalization and ED visits for suicide attempts are among ages 15-19. For ages 20 and older, rates of hospitalization and ED visit for suicide attempts decline dramatically as the age group increases age. Suicide death rates are 3.3 times higher for men than women while the suicide attempt hospitalization rate and ED visit rate are 1.7 and 1.9 times higher for women than men, respectively.

Suicide death rate by age group among Colorado residents, 2012 - 2014
(N=3,115)
Injury hospitalization rates
Colorado residents, 2012-2014
Cause of Injury—Suicide Attempt

Rate per 100,000 population

*Unintentional drug overdose includes drug overdoses of undetermined intent

Injury emergency department visits rates
Colorado residents, 2014
Cause of Injury—Suicide Attempt

Emergency department visits per 100,000 popul.

*Unintentional drug overdose includes drug overdoses of undetermined intent
The means or methods most frequently seen in suicide deaths vary from those for suicide attempts. While a large percentage of suicide deaths result from use of a firearm, most suicide attempts result from drug overdose.

The means of suicide vary by gender. More than half (57 percent) of suicides by males involve a firearm. Hanging/suffocation (24 percent) and drug overdose (13 percent) are also common among males. In contrast, only 27 percent of suicides by females involve a firearm. Drug overdose (46 percent) is the leading method of suicide among females. Hanging/suffocation (22 percent) ranks third among females.

For suicide attempts resulting in hospitalizations or ED visits, the international coding scheme has a category of other means that includes jumping from a high place, crashing a motor vehicle, or using gases such as motor vehicle exhaust or carbon monoxide as well as literally “other” and “unspecified” means. Overall, less than two percent of hospitalizations indicate only “other” or “unspecified” means. For ED visits for attempts, eight percent indicate “other” means and two percent “unspecified” means.

The means of suicide attempts based on injury hospitalizations are similar for males and females. Drug overdose is the major means of suicide attempts resulting in injury hospitalizations among males (73 percent) and females (85 percent).

**Figure 56: Comparison of methods used in suicide and attempts, Suicide deaths vs. attempts resulting in hospitalizations and emergency department visits Colorado residents, 2012-2014**
Drug overdose is the leading means of attempts resulting in ED visits for both males (47 percent) and females (60 percent). However, compared to hospitalizations, a larger percentage of ED visits for suicide attempts among both males (28 percent) and females (33 percent) indicate cutting or piercing as a means of attempting suicide. Men also use a greater variety of means to attempt suicide as reflected by 19 percent of the ED visits for attempts among males are other means.

The Colorado Violent Death Reporting System gathers information from coroner and law enforcement investigations on the circumstances associated with a suicide death. This data system found that 92 percent of the suicides that took place in Colorado among residents during 2009-2013 had at least one known circumstances. They are:

- 58 percent of the individuals were recognized by others as having a recent depressed mood (including feeling sad or despondent);
- 38 percent left a suicide note; 35 percent disclosed their intent to die by suicide;
- 36 percent had recent difficulties with an intimate partner, such as a divorce, separation, or breakup;
- 33 percent had a documented diagnosis of depression; 44 percent were described as having a current mental health problem; and 33% were receiving treatment for a mental health program;
- 31 percent had a physical health problem that contributed to the suicide decision;
- 28 percent had a history of suicide attempts; and
- 21 percent had a job problem; 20 percent had financial problems, such as high credit card debt, gambling debts, bankruptcy, or foreclosure of a home or business.

Fall deaths, hospitalizations, and emergency department visits

Falls are the second leading cause of injury deaths in Colorado. The age-adjusted rate for deaths due to falls has increased from 8.2 deaths per 100,000 in 1995 to 11.1 in 2007 and 14.3 in 2010. In 2014, the age-adjusted rate for deaths due to falls is 14.9 deaths per 100,000 population. (See Figure 3 on page 6.)

Falls are the leading cause of injury hospitalizations and ED visits. Males account for more fall deaths, compared to females. However, females account for more fall-related hospitalizations and ED visits. The rates of fall-related deaths and hospitalizations increase with age, with the highest rates seen for ages 75 and older. The rates for ED visits are high for the young and highest for the older age groups.
Rates of injury hospitalization for falls by age group among Colorado residents, 2012 - 2014 (N=38,075)

Injury Hospitalizations per 100,000 Population

- < 1: 58
- 1 - 4: 34
- 5 - 9: 28
- 10 - 14: 32
- 15 - 19: 44
- 20 - 24: 60
- 25 - 34: 68
- 35 - 44: 74
- 45 - 54: 135
- 55 - 64: 251
- 65 - 74: 517
- 75 - 84: 1,597
- 85+: 4,175

Injury emergency department visits rates
Colorado residents, 2014
Cause of Injury = Fall

Emergency department visits per 100,000 population

- Under 1: 251.0
- 7 - 14: 337.2
- 15 - 19: 257.2
- 20 - 24: 109.9
- 25 - 34: 10.7
- 35 - 44: 9.0
- 45 - 54: 14.1
- 55 - 64: 26.2
- 65 - 74: 9.4
- 75 - 84: 763.4
- 85 and older: 376.7

*Unintentional drug overdose includes drug overdoses of undetermined intent
Falls are the leading cause of injury death among Coloradans ages 65 and older. On average, 646 older Coloradans die from falls each year. This number is seven times higher than the number of deaths due to motor vehicle crashes (annual average of 89 deaths) and four times higher than the number of deaths due to suicide (annual average of 152 deaths) for this age group. Since 1999, the death rate for falls among older adults has more than doubled.

Among older adults who die from fall-related injuries, 35 percent sustained a traumatic brain injury and 31 percent sustained a hip fracture.

Falls are also the leading cause of injury hospitalization and ED visits for Coloradans age 65 and older. Each year on average, 8,295 hospitalizations for injuries due to falls occur among older adults. The age-adjusted rate of hospitalization for fall-related injuries for women age 65 and older is 1.8 times the rate for men (1600.0 vs. 899.0 per 100,000). Of the fall-related hospitalizations among older adults, 16.1 percent mention a diagnosis of a traumatic brain injury and 34.8 percent with a hip fracture. Of the 2883 hospitalizations for hip fractures sustained by older adults in a fall each year in Colorado, nearly 72 percent are among women.

The average length of hospital stay for Coloradans age 65 and older who are hospitalized for fall-related injuries is 4.2 days with a median total hospital charge of $42,104. Each year, the hospitalization charges for older adults hospitalized for fall-related injuries in Colorado total more than $840 million. These charges relate to the hospital admission only and do not include such additional expenses as pre-hospital care, physicians’ fees, home health care, rehabilitation, or other charge.
An overdose is when a drug is eaten, inhaled, injected, or absorbed through the skin in excessive amounts and injures the body (www.corxconstortium). Overdoses can be intentional (as in a suicide attempt) or unintentional, meaning the person taking a drug did not intend any harm. Sometimes it is unknown or undetermined if the harm is intended. This report combines overdoses of undetermined intent with unintentional overdoses.

Unintentional drug overdose can result from misuse of illegal, prescription or over-the-counter drugs. Misuse in this context can mean taking a drug for a non-medical purpose that results in unintended harm or taking more of the drug than prescribed or recommended, either in error or on purpose. Examples of drug categories include:

- nonopioid pain relievers (aspirin, acetaminophen);
- opioids prescribed for pain control (oxycodone, hydrocodone);
- other prescribed opiates or opioid derivatives (morphine, methadone) and illegal derivative (heroin);
- sedative-hypnotics, tranquilizers, sleep medication or depressants (barbiturates, benzodiazepines); and
- psychotropic or hallucinogens (lysergide also know as LSD, and cannabis or marijuana derivatives).

Providing results for specific drugs is limited by challenges of multiple drugs involved and challenges of coding specific drugs in these data sources, which use different versions of the International Classification of Diseases (ICD). The causes of death on death certificates are coded in ICD-10. The hospitalization and ED visit data are from electronic claims (billing) databases for healthcare treatment in inpatient units and emergency departments. They are coded in ICD-9-CM. For example, in 2014, 19 percent of the death certificates that mentioned drug overdose (intentional, unintentional, and undetermined intent) have a contributing cause of death coded as other and unspecified drug (ICD-10 T50).

In Colorado, unintentional drug overdose (including drug overdose of undetermined intent) is the third leading cause of injury death. Non-fatal drug overdoses is the fourth leading cause of injury hospitalizations and the fifth cause of injury-related ED visits. From 2012-2014, the average annual age-adjusted rate is 12.3 deaths per 100,000 population, 42.7 hospitalizations per 100,000 population, and 102.6 ED visits per 100,000 population in 2014. Each year, on average, 664 Coloradans die by unintentional drug overdose, and 2,327 hospitalizations and another 5,397 ED visits for unintentional drug overdose occur.
Deaths due to this cause are particularly concerning as the death rate for drug overdose has more than doubled since 2000. Nine out of 10 poisoning deaths among Coloradans are drug overdoses. Drug overdose deaths surpassed motor vehicle traffic-related deaths in 2005 and all motor vehicle deaths (traffic and non-traffic) in 2009.

The age group with the highest rate of death due to unintentional drug overdose is ages 45-54.

The death rate for unintentional drug overdose is higher among Colorado males, compared to females during 2012-2014.

Unintentional drug overdose death rate by age group among Colorado residents, 2012 - 2014 (N=1,998)

The death rate for unintentional drug overdose is higher among Colorado males, compared to females during 2012-2014. In contrast, females have a slightly higher hospitalization rate for unintentional drug overdoses compared to males. Males and females have similar rates of ED visits for unintentional drug overdoses.

Though Coloradans ages 45-54 have the highest death rate, the hospitalization rate increases with age, with a low hospitalization rate noted for children ages 5-14. ED visits for non-fatal drug overdose shows a different pattern by age than deaths or hospitalizations. ED visits are highest among children ages 1 to 4 years old.
Motor vehicle crashes are the fourth leading cause of injury deaths in Colorado. Unlike many of the other causes of injury, deaths due to motor vehicle crashes have declined significantly over the past 20 years. The age-adjusted rate for deaths due to motor vehicle crashes has decreased from 17.3 deaths per 100,000 population in 1995 to 12.0 per 100,000 population in 2007 and down again to 9.0 per 100,000 in 2014.

Motor vehicle death rates by age group show higher rates for two age groups: young adults (ages 20-24) and older adults (ages 75-84 and 85+). This pattern is also mirrored in the motor vehicle hospitalization rates by age group. In contrast, rates of ED visits for motor vehicle-related injuries are highest among youth and young adult age groups (ages 15-19, 20-24, and 25-34 years old).
Motor vehicle injury hospitalization rate by age group among Colorado residents, 2012-2014 (N=10,069)

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<th>Age Group</th>
<th>Rate</th>
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<td>85+</td>
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Injury emergency department visits rates
Colorado residents, 2014
Cause of Injury=Motor Vehicle

*Unintentional drug overdose includes drug overdoses of undetermined intent*
Motor vehicle death rates for young adults ages 15-19 have steadily declined over the past 10 years, such that this age group no longer has the highest motor vehicle-related death rate. Graduated driver licensing (GDL) programs are widely credited with the decline in teen motor vehicle deaths. The provisions of GDL provide young drivers experience under controlled conditions, longer periods of restricted driving, and limitations on driving under high-risk conditions (at night, with passengers or other distractions, without seatbelts) and require parental participation as teens learn to drive.

Colorado’s graduated driver licensing provisions first went into effect July 1, 1999 with additional passenger restrictions in 2005 and cell phone use restriction in 2009. The rates for this age group have decreased from 30.3 deaths per 100,000 in 2001 to 19.7 deaths per 100,000 in 2006 (after the GDL was strengthened in 2005) to 9.8 deaths per 100,000 in 2014.
TECHNICAL NOTES

1. Typically, injuries are categorized as either intentional or unintentional. Intentional injuries such as homicide and suicide involve acts in which there is intent to harm. Unintentional injuries are frequently labeled as “accidental.” However, with appropriate interventions, most unintentional injuries can be prevented. For some hospitalizations and deaths, intentionality has not been determined. In the discussions throughout this report, the hospitalizations and deaths listed as “undetermined” intent are included in total counts, but they are not included in the discussions of intentional or unintentional mechanisms. The exception is unintentional drug overdose, also known as drug poisoning, which includes drug overdose poisoning of undetermined intent, for this report.

2. An international coding system, the *International Classification of Diseases (ICD)*, is the method used nationally to standardize diagnosis and external cause of injury information on death certificates and hospital discharge data. Several versions of this coding system have been developed. The *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)* has been used routinely in Colorado to code hospital discharge data. However, it was not until 1995 that the external cause of injury codes (E-codes) were routinely applied to most injury hospitalizations. E-codes are used to identify specific causes of injury, such as motor vehicle crashes, falls, drowning, and burns. Therefore, use of hospitalization records prior to 1995 is limited, because the cause of injury information is not complete. In the years covered in this report, coding of external cause of injury was 86-89 percent complete for all injury hospitalizations. All discussion of the cause of injury resulting in hospitalization in this overview is based on ICD-9-CM. For this report, hospital deaths were excluded prior to analyzing injury hospitalizations. The hospital discharge database is from the Colorado Hospital Association.

3. The emergency department (ED) visits database contains up to 30 diagnoses also coded in ICD-9-CM. This centralized electronic database of ED visits is relatively new with the first complete year of data in 2011. The EDs are affiliated with acute care inpatient hospitals, and these hospitals are members of the Colorado Hospital Association. It is estimated that the database for visits for any reason (not just for injury) contains 91 percent to 96 percent of all visits in 2011 and 89-91 percent of visits in 2012. In 2011, non-reporting hospitals were limited to a few smaller hospitals and some (but not all) critical access hospitals (with 11-25 licensed inpatient beds) in rural areas. This ED visit database contains visits for persons who were treated and released from the ED. This ED visit database does not contain visits for persons seen in the ED and then admitted as an
inpatient to a hospital. Therefore, collectively, the severity of these injuries is less serious than injuries among persons admitted as an inpatient for treatment.

4. In 1999, by direction of the National Center for Health Statistics, the 10th revision of the ICD (ICD-10) was implemented for the coding of death certificates. In this report, all of the tables and figures that provide annual average death information use 2012-2014 data coded using ICD-10. The time trend analyses of injury deaths show results for 2010 through 2014, data coded using ICD-10. Leading causes of death for Colorado are from: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2013 on CDC WONDER Online Database, released 2015. Data are from the Multiple Cause of Death Files, 1999-2013, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/mcd-icd10.html on Oct 25, 2015 12:48:23 PM

5. The majority of the report focuses on injuries to individuals who are residents of Colorado, but it is important to recognize that out-of-state visitors can also be hospitalized or die from injury. The distinction between residents and non-residents is denoted in this report by the terms “residents,” meaning a person who was reported as being a resident of Colorado, and “occurrences,” meaning the event took place in Colorado regardless of the state of residence of the individual. All the rates presented in the report are based on deaths, hospitalizations, and ED visits of Colorado residents.

6. Multiple-year annual averages are frequently cited in the report. Because numbers and rates for any given year might be small for a particular age, race/ethnicity, or geographic group, annual averages provide better estimates of the “typical” value by reducing the effects of fluctuations from year to year for groups with small numbers of events.

7. Several different categories/labels are used to identify deaths, hospitalizations, and ED visits resulting from transportation events. The term “Transportation” denotes all types of transportation, including motor vehicles, non-motorized vehicles, trains, aircraft, watercraft and other modes of moving from one point to another. “Motor vehicle” denotes events involving a motor vehicle, including such vehicles as cars, trucks, motorcycles, electric trains, snowmobiles, and motocross, as well as pedestrians and bicyclists that were struck by a motor vehicle. These events can occur in any setting including on a public roadway, on a private roadway, in a parking lot or driveway, or off-road. “Motor vehicle traffic” is specific to motor vehicles operating on a public roadway. These events do not include crashes that occur on a private roadway, in a parking lot or driveway or off-road.

8. The Colorado Violent Death Reporting System is a CDC-funded injury surveillance system that collects detailed information on violent deaths (suicides, homicides, unintentional firearm deaths and certain deaths of undetermined intent/manner).
These deaths occur in Colorado among Colorado residents. Data are collected from death certificates, coroner/medical examiner investigations and law enforcement reports. In addition to demographic characteristics of the decedent, data are also captured on the circumstances of the violent death. This data source provides greater detail than that available from death certificates alone.

ACKNOWLEDGEMENTS

This report follows a design, outline, and completed report (available in 2012) by Holly Hedegaard, MD, MSPH. This edition was updated by Barbara Gabella, MSPH and Nicole Richmond, MPH during the fall of 2015. Thank you to Kirk Bol, MSPH, manager of the Vital Statistics Program, for reviewing the section on the Colorado Violent Death Reporting System, for creating the de-identified analytic data files and for updating the injury hospitalization module of the Colorado Health Information Dataset. See http://www.chd.dphe.state.co.us/cohid/Default.aspx Ms. Gabella appreciates Lindsey Myers, MPH and Nicole Richmond, MPH for their ideas and advice on this report. Thank you also to the Colorado Hospital Association, its member hospitals, and the Colorado Health Information Management Association for providing quality claims data for hospitalizations and ED visits that can be used to also describe the burden of injury in Colorado. The Colorado Department of Public Health and Environment acknowledges that the purpose of the claims databases is for healthcare reimbursement, not for the analyses presented in this report.

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