

CHAPTER TEN: SUICIDE

Highlights

- In 2002, Colorado had the eighth highest suicide rate of any state in the nation.
- Suicide is the leading cause of injury death in Colorado. More people die of suicide than are killed in motor vehicle crashes. On average, 720 individuals die by suicide and 2,560 are hospitalized for attempted suicide each year.
- The age-adjusted suicide rate for males is almost four times higher than the rate for females. The majority of suicides in Colorado (68 percent) involve white males.
- Females ages 15-24 have the highest rate of suicide attempt.
- The majority of suicide deaths involve the use of a firearm (52 percent). The majority of hospitalizations for suicide attempt involve drug overdose (81 percent).

Overview and trends

Suicide is a major public health issue in the U.S., resulting in almost twice as many deaths each year as homicide. Nationally, suicide claims more than 31,000 lives each year.¹ Suicide rates are highest among adults over age 65, and although the suicide rate for the general population has remained relatively stable over time, the rate for adolescents and young adults has nearly tripled since the 1950s. The number of completed suicides reflects only a small portion of the impact of suicidal behavior. In 2002, an estimated 132,000 individuals in the U.S. were hospitalized following a suicide attempt and another 117,000 were treated in emergency departments and released.²

On average, approximately 720 individuals die and 2,560 individuals are hospitalized for suicide/self-directed violence in Colorado each year (Tables D3, H3).³ In comparing rates by state, the highest suicide rates occur in the Rocky Mountain region (see map on page 128).⁴ In 2002, Colorado had the eighth highest suicide rate of any state in the nation. Suicide is the eighth leading cause of death in Colorado, with more individuals dying of suicide than are killed in motor vehicle crashes (Table D3).



1. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2004). *Suicide: Fact Sheet*. Retrieved March 5, 2005, from <http://www.cdc.gov/ncipc/factsheets/suifacts.htm>.

2. Ibid.

3. Death tables are found in Appendix A. Hospitalization tables are found in Appendix B. Traumatic brain injury tables are found in Appendix C.

4. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. (2005). *Web-based Injury Statistics Query and Reporting System (WISQARS)*. Retrieved February 11, 2005, from <http://www.cdc.gov/ncipc/wisqars/>.

**Figure 90: Age-adjusted suicide death rates by state
U.S., 2000-2002**

Legend:

- Below U.S. average
- Within U.S. average
- Above U.S. average

Some deaths and hospitalizations resulting from legal intervention also might be considered suicide. On average, there are nine deaths and 39 hospitalizations resulting from legal intervention in Colorado each year (Tables D3, H16). For some cases, it is clear that the intent of the person was to be killed by the law enforcement officer. These events, sometimes called “suicide by cop,” potentially could add yet a few more deaths to the totals described in this chapter.

Deaths

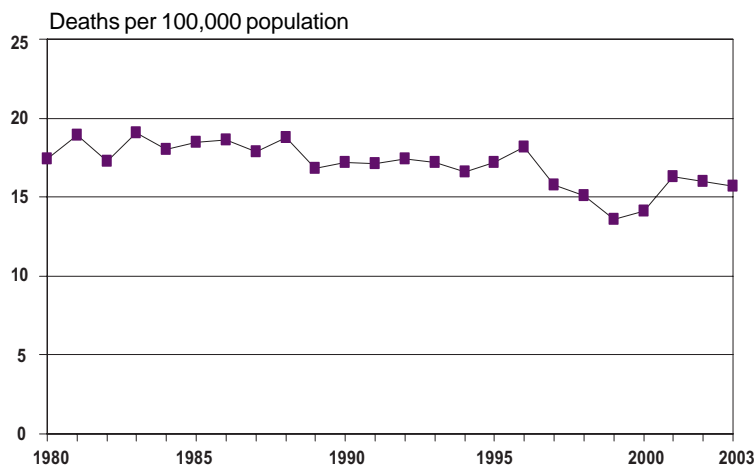
For the past 20 years, the suicide rate in Colorado has remained relatively stable. From 1996 to 1999, there was a significant decrease in the age-adjusted suicide rate from 18.2 per 100,000 to 13.6 per 100,000. From 1999 to 2003, however, the rate has increased slightly to 15.7 per 100,000 (Table D4).

Overall, suicide is the eighth leading cause of death in Colorado. However, for certain age groups, suicide is an even more alarming issue. Suicide is the second leading cause of death for Coloradans ages 10-34 and the leading cause of injury death for Coloradans ages 35-74 (Tables D16, D18).

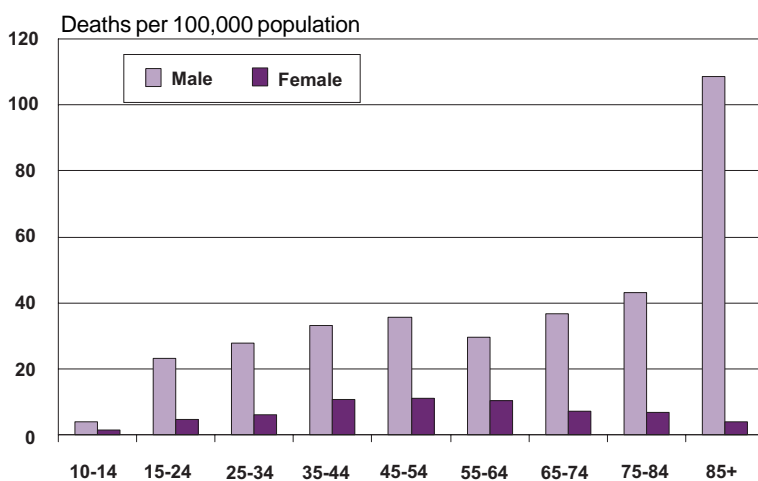
Suicide rates vary significantly by sex, age, race/ethnicity, and geographic location. The age-adjusted suicide rate is almost four times higher for males (26.1 per 100,000) than for females (6.6 per 100,000) (Table D5). Suicide is the leading cause of injury deaths for males and the second leading cause of injury deaths for females (Table D17). Gender differences are seen in the methods used in suicide. For women, 30 percent of suicides involve firearms and 37 percent involve drug overdose; for men, 58 percent of suicides involve firearms and 20 percent involve hanging/suffocation (Table D22).

One of the most striking patterns with regard to suicide is the high suicide rates among older adults. Suicide rates steadily increase from age 65 and older. The highest suicide rate in Colorado is among adults ages 85 and older (Table D8). People in this age group are 2.5 times more likely to die from suicide than are people ages 15-24. This difference is particularly pronounced among men. Colorado men ages 75 and older are 10 times more likely to die by suicide than are women of the same age group (Tables D9, D10).

**Figure 91: Age-adjusted suicide rates
Colorado residents, 1980-2003**



**Figure 92: Suicide rates by age and sex
Colorado residents, 2001-2003**



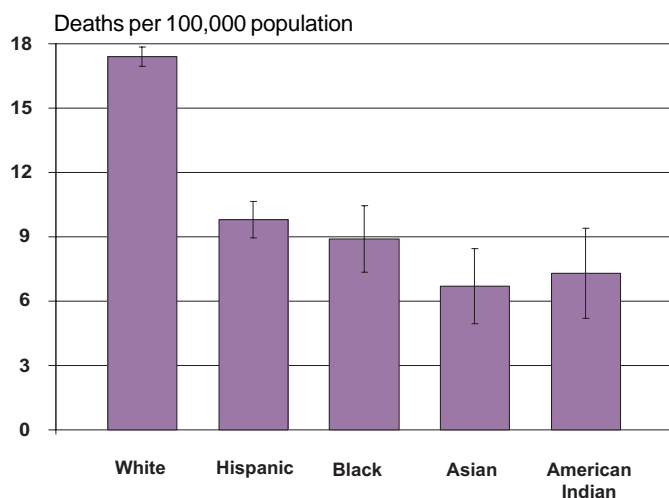
The methods used in suicide deaths also differ by age. Although firearms are involved in the majority of suicides in all age groups, hanging/suffocation is

seen more frequently in younger age groups (30 percent of suicides of individuals ages 10-34) than in older age groups (15 percent of suicides of individuals ages 35 and older) (Tables D18, D19).

The suicide rate for whites is significantly higher than for other race/ethnic groups. The rate for whites is twice that for Blacks, American Indians, or Asians. White males account for almost 70 percent of all suicide deaths in Colorado (Tables D6, D7).

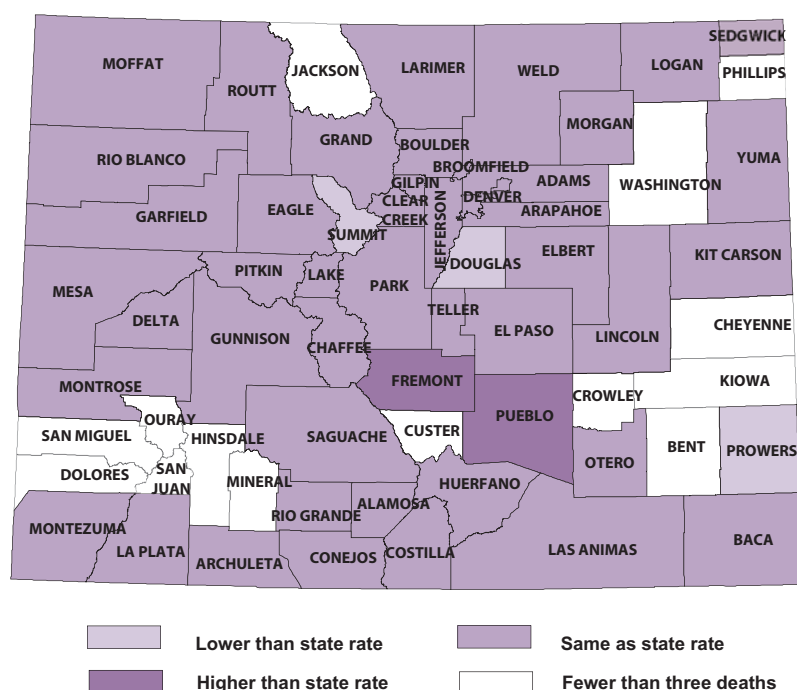
Three-year annual averages show differences in age-adjusted suicide rates by county of residence. Fremont and Pueblo counties have age-adjusted suicide rates that are statistically higher than the overall state rate, while Douglas, Prowers and Summit counties have age-adjusted suicide rates that are statistically lower than the overall state rate. Most suicide deaths (74 percent) occur in the home (Table D21).

**Figure 93: Age-adjusted suicide rates by race/ethnicity, with 95 percent confidence intervals
Colorado residents, 1994-2003**



The lines on the bars indicate the possible error in the estimate of the rate. The longer the line, the more variation there may be in the rate. For more information on confidence intervals, please see Appendix D: Technical Notes.

Figure 94: Age-adjusted suicide rates by county of residence, 2001-2003



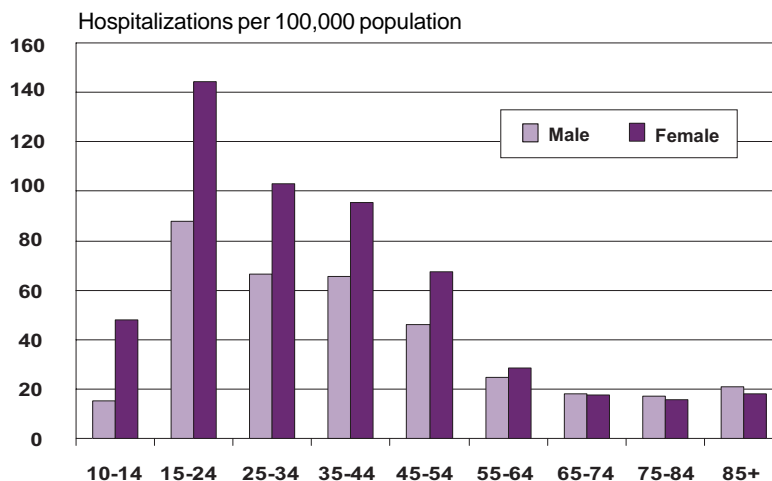
Data for Broomfield County are for 2002-2003 only.

Hospitalizations

Suicide attempts are among the five leading causes of injury hospitalization for Coloradans ages 10-64. Suicide attempts are the second leading cause of injury hospitalization for ages 15-24 and the third leading cause of injury hospitalization for ages 10-14 and 25-54 (Table H11).

As with suicide deaths, rates of hospitalization for suicide attempt also vary by sex, age, and geographic location; however, the patterns seen with hospitalizations are quite different. For example, the age-adjusted rate of hospitalization for suicide attempt is significantly higher for females (66.7 per 100,000) than for males (43.6 per 100,000) (Table H5). This difference between males and females is particularly evident among younger age groups (ages 10-54) (Table H10).

Figure 95: Suicide attempt hospitalization rates by age and sex
Colorado residents, 2001-2003



Higher rates of hospitalization for suicide attempt are seen among adolescents and young adults ages 15-44. The highest rate of hospitalization for suicide attempt occurs among females ages 15-24 (144.1 per 100,000). For males, the highest rate is also seen in the 15-24 age group (87.7 per 100,000) (Tables H8, H9).

Traumatic Brain Injury Facts

Suicide is the second leading cause of fatal traumatic brain injury (Table T3). Nearly a third of all traumatic brain injury deaths are due to suicide.

- On average, 270 Coloradans sustain a fatal traumatic brain injury due to suicide each year (Table T1), accounting for 38 percent of all suicides. Almost all of these deaths (97 percent) result from the use of a firearm.

Traumatic brain injuries include concussions, skull fractures, and intracranial injuries from an external impact or forces of acceleration/deceleration. Traumatic brain injury tables are found in Appendix C.

For both sexes and all age groups, hospitalizations for suicide attempt are most frequently the result of drug overdose. However, interesting patterns

emerge when other methods are examined. For example, the age-adjusted rate of hospitalization for suicide attempt by hanging/suffocation is 2.3 times higher for males than females (Table H16). The rates for suicide attempt by cutting/piercing are the same for both sexes.

Three-year annual averages show significant differences in age-adjusted hospitalization rates for suicide attempt by county of residence. Ten counties, Adams, Denver, Fremont, Larimer, Las Animas, Mesa, Morgan, Otero, Prowers and Pueblo, have age-adjusted suicide hospitalization rates that are statistically higher than the overall state rate (Table H18).

Figure 96: Hospitalization rates by method of suicide attempt and age
Colorado residents, 2001-2003

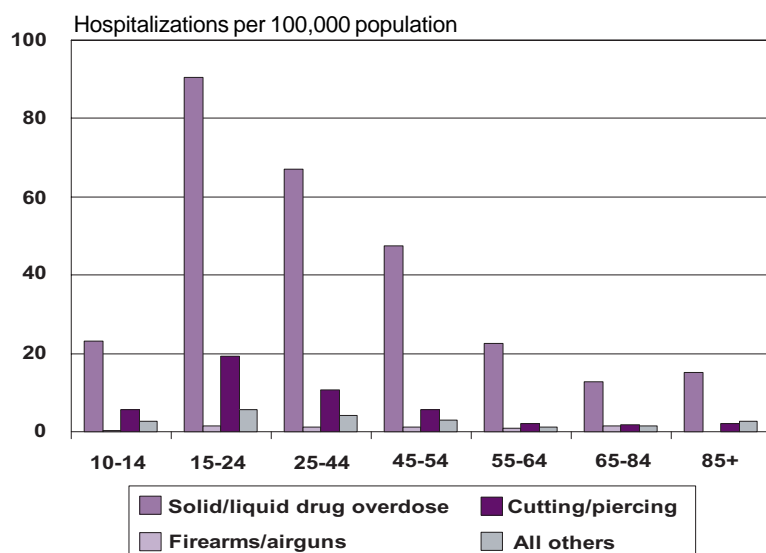
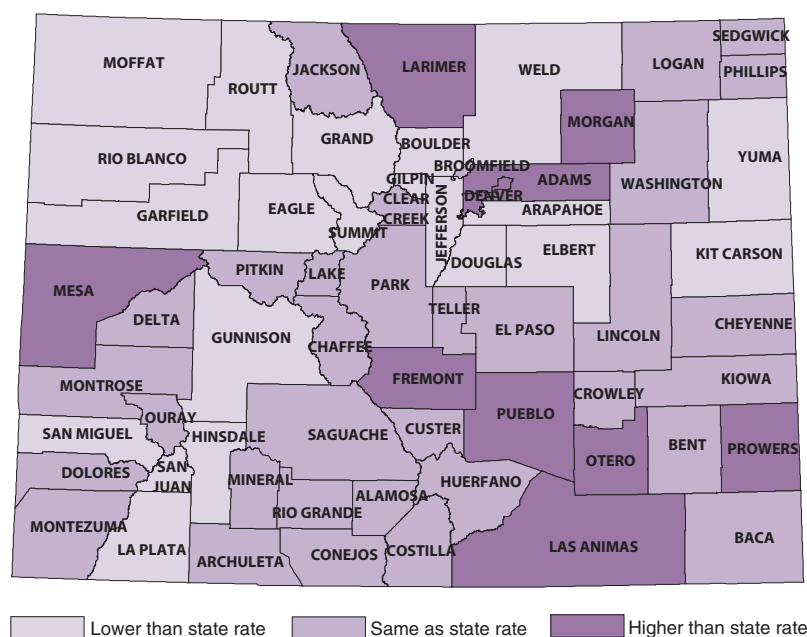


Figure 97: Age-adjusted suicide attempt hospitalization rates by county of residence, 2001-2003



Data for Broomfield County are for 2003 only.

Methods used in suicide deaths and attempts

As briefly mentioned previously, the methods used in suicide attempts resulting in hospitalization are quite different from those resulting in death. The majority of hospitalizations for suicide attempt involve drug overdose (81 percent) or cutting (14 percent), while the majority of suicide deaths involve firearms (52 percent) or hanging/suffocation (20 percent) (Tables D22, H16).

The lethality of different suicide methods is shown in Figure 99. Less than 5 percent of suicide events involving drug overdose result in death, whereas 93 percent of the events involving firearms are fatal.

This difference in lethality explains the difference in suicide attempt and death rates by age. Young people are more likely to attempt suicide by drug overdose while older individuals are more likely to use firearms. Due to the differences in the methods used, less than 10 percent of suicide events involving children ages 10-14 result in death, whereas approximately 50 percent of events involving individuals age 55 and older are fatal. The highest percent of events resulting in death occurs among men ages 65 and older. More than 75 percent of suicide events in this age/sex category result in death; 80 percent of these deaths involve firearms.

Figure 98: Comparison of methods used, suicide hospitalizations vs. deaths Colorado residents, 2001-2003

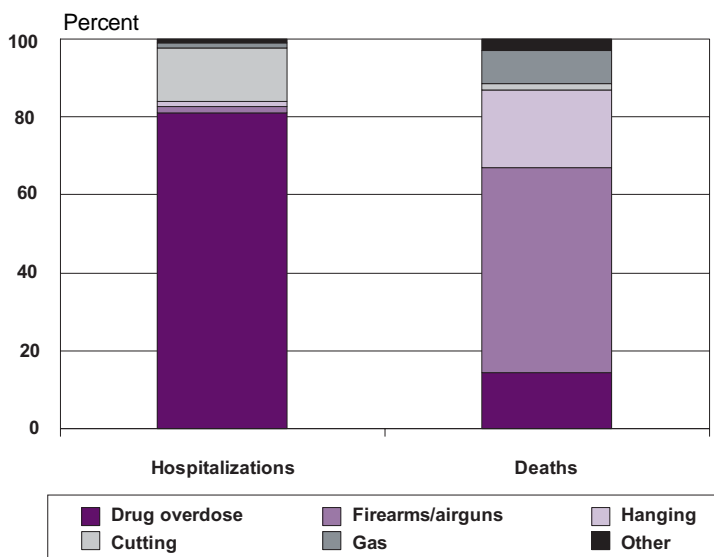


Figure 99: Percent of known suicide attempts* resulting in death, by method Colorado residents, 2001-2003 total

| Method | Known attempts* | Deaths | Percent resulting in death |
|---------------------|-----------------|--------|----------------------------|
| All methods | 9,691 | 2,159 | 22.3 |
| Firearms/airguns | 1,209 | 1,129 | 93.4 |
| Hanging/suffocation | 497 | 422 | 84.9 |
| Poison gas | 274 | 184 | 67.0 |
| Jumping | 78 | 25 | 32.1 |
| Poison solid/liquid | 6,481 | 309 | 4.8 |
| Cutting | 1,073 | 35 | 3.3 |
| Other | 241 | 55 | 22.8 |

*Known attempts equal total deaths plus hospitalizations not resulting in death.

Suicide ideation and suicide attempts

In 1996, 1997 and 1998, questions about suicide ideation and suicide attempts were added to the Colorado Behavioral Risk Factor Surveillance System.⁵ Results of the survey indicate:

- An estimated 87,500 Colorado adults seriously considered suicide in the year prior to the survey (3 percent of the Colorado population ages 18 and older).
- The prevalence of suicide ideation among adults was highest among those ages 18-24 and lowest among those ages 65 and above.
- Women were 1.5 times more likely than men to contemplate suicide.
- Colorado adults with an annual household income less than \$15,000 were three times more likely to have suicidal thoughts than those with an annual household income of \$25,000 or greater.
- Suicide ideation among adults who were married or partnered was estimated at 2 percent, compared to approximately 6 percent for those who had never been married or were separated, divorced, or widowed.
- 11 percent of unemployed adults seriously considered suicide in the previous year compared to 3 percent of those who were employed.
- Of those adults who thought about suicide, 8,200 (9 percent) attempted suicide.

Suicide circumstances

In 2003, the Colorado Department of Public Health and Environment received funding from the Centers for Disease Control and Prevention (CDC) to participate in the National Violent Death Reporting System. This data system collects information on all homicides, suicides, deaths of undetermined intent and unintentional firearm-related deaths from a variety of sources, including death certificates, coroner/medical examiner reports, law enforcement investigations, and the Supplemental Homicide Report from the Colorado Bureau of Investigation at the Colorado Department of Public Safety.

5. Colorado Department of Public Health and Environment, Health Statistics Section. (2001). *Suicide in Colorado*. Retrieved March 30, 2005, from <http://www.cdphe.state.co.us/hs/pubs/suicidefactweb.pdf>.

Of the 822 suicides identified in 2004, detailed information was available for 499 deaths in seven counties (Adams, Arapahoe, Denver, Douglas, El Paso, Jefferson, and Pueblo). A preliminary review of the circumstances and characteristics of this subset of individuals indicates:

- 63 percent were recognized by others as having a recent depressed mood
- 40 percent left a suicide note
- 35 percent had recent difficulties with an intimate partner, such as divorce, separation, or a breakup with a girlfriend or boyfriend
- 34 percent had a documented mental health diagnosis, such as major depression, bipolar illness or schizophrenia
- 32 percent disclosed to others their intent to complete suicide
- 29 percent had physical health problems that contributed to the suicide decision
- 23 percent had a history of suicide attempts
- 21 percent had financial problems, such as high credit card debt, gambling debts, bankruptcy, or foreclosure of a home or business
- 20 percent had a problem with alcohol; 15 percent had a substance abuse problem
- 20 percent had a recent problem at work, such as losing a job or having difficulty finding a job
- 13 percent had criminal legal problems, such as a recent or impending arrest, police pursuit, an impending court date, or imprisonment
- 9 percent were identified as “never getting over” the death within the past five years of a friend or family member

“Police are trying to identify a man who walked into the emergency room of Denver Health Medical Center and shot himself in the head. The man died shortly after.”

The Denver Post, 4/1/05

This type of information may be useful in identifying high-risk populations and circumstances that would benefit from targeted prevention efforts.

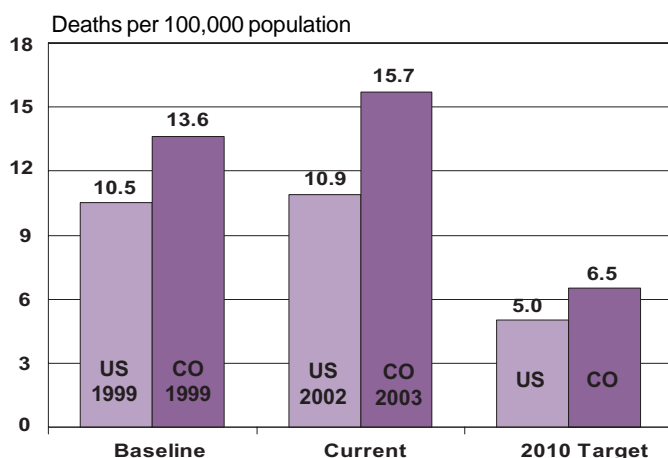
Suicide can be prevented

Health agencies and safety advocates can participate in a community approach to suicide prevention by developing partnerships with mental health agencies, conducting public awareness campaigns and promoting the development of promising prevention strategies:

- Create and implement training programs for health care professionals and community gatekeepers to help them recognize warning signs and risk factors and teach suicide prevention and intervention skills.
- Increase public awareness about suicide warning signs and the connection between suicide and mental illness to reduce the stigma of getting help.
- Provide data and information to policy makers and advocates working to promote improved access to mental health care.
- Develop or participate in a public education campaign to encourage safe storage and use of firearms. In particular, remove firearm access for high-risk individuals. High-risk individuals include those who use excessive drugs and/or alcohol, engage in suicidal talk or behavior, have mental health concerns such as depression, or have high impulsivity.

Through these strategies, efforts can be made to change community norms to ones that promote less isolation, acceptance of help-seeking behavior, and a sense of responsibility for other community members.

Figure 100: Healthy People 2010 Objective 18-1
Reduce the suicide rate



Based on ICD-10 codes X60-X84 and Y87.0.

For more information

- The Office of Suicide Prevention at the Colorado Department of Public Health and Environment at www.cdphe.state.co.us/pp/Suicide/suicidehom.asp
- American Association of Suicidology at www.suicidology.org
- Centers for Disease Control and Prevention, National Center for Injury Prevention and Control at www.cdc.gov/ncipc
- National Institute of Mental Health at www.nimh.nih.gov
- Suicide Prevention Advocacy Network at www.spanusa.org
- National Strategy for Suicide Prevention at www.mentalhealth.samhsa.gov/suicideprevention/
- American Foundation for Suicide Prevention at www.afsp.org
- Suicide Prevention Resource Center at www.sprc.org/
- Suicide Awareness Voices of Education at www.save.org
- Yellow Ribbon Suicide Prevention Program at www.yellowribbon.org
- SAFE: TEEN at www.safe-teen.com
- Living Works at www.livingworks.net



