OREGON DEPARTMENT OF HUMAN SERVICES

Public Health Division (PHD)

# Suicides in Oregon
## Trends and Risk Factors

Oregon Violent Death Reporting System

Injury and Violence Prevention Program

Office of Disease Prevention and Epidemiology

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## Executive Summary

Suicide is one of Oregon's most persistent yet largely preventable public health problems. Suicide is the leading cause of injury death – there are more deaths due to suicide in Oregon than due to car crashes. Suicide is the second leading cause of death among Oregonians ages 15-34, and the 9th leading cause of death among all Oregonians. This report provides the most current suicide statistics in Oregon that can inform prevention programs, policy, and planning. We analyzed mortality data from 1981 to 2007 and 2003 to 2007 data of Oregon Violent Death Reporting System (ORVDRS). This report presents main findings of suicide trends and risk factors in Oregon.

*Key Findings*

In 2007, the age-adjusted suicide rate among Oregonians of 15.2 per 100,000 was 35 percent higher than the national average.

The rate of suicide among Oregonians has been increasing since 2000.

Suicide rates among women ages 45-64 rose 55 percent from 8.2 per 100,000 in 2000 to 12.8 per 100,000 in 2007.

Men were 3.7 times more likely to die by suicide than women. The highest suicide rate occurred among men ages 85 and over (78.4 per 100,000). White males had the highest suicide rate among all races / ethnicity (25.6 per 100,000). Firearms were the dominant mechanism of suicide among men (62%).

Approximately 27 percent of suicides occurred among veterans. Male veterans had a higher suicide rate than non-veteran males (45.7 vs. 27.4 per 100,000). Significantly higher suicide rates were identified among male veterans ages 18-24, 35-44 and 45-54 when compared to non-veteran males. Veteran suicide victims were reported to have more physical health problems than non-veteran males.

Over 70 percent of suicide victims had a diagnosed mental disorder, alcohol and /or substance use problems, or depressed mood at time of death. Despite the high prevalence of mental health problems, less than one third of male victims and just about half of female victims were receiving treatment for mental health problems at the time of death.

Investigators suspect that 30 percent of suicide victims had used alcohol in the hours preceding their death.

The number of suicides in each month varies. But there was not a clear seasonal pattern.

Coos, Curry, Douglas, Grant, Jackson, Josephine, Lincoln and Tillamook counties had a higher than state average suicide rate; and Clackamas, Hood River, Washington, and Wheeler counties had a lower than state average suicide rate.

## Recommendations

Implement the state's elder suicide prevention plan.

Enhanse and evaluate the state's youth suicide prevention plan.

Complete statewide implementation of comprehensive suicide prevention in high schools.

Expand focus of prevention efforts across the age span focusing in particular on men.

Identify culturally appropriate approaches that engage men successfully and enable men to identify depression as a manageable condition and promote community, business, family and individual tools to support successful self management.

Promote universal depression screening and care for adults, particularly seniors by healthcare providers.

Expand suicide intervention skills efforts that will have an impact on adults, particularly males and veterans throughout Oregon.

## Introduction

Suicide is an important public health problem in Oregon. Each year there are more than 550 Oregonians who died by suicide and more than 1800 hospitalizations due to suicide attempts. Suicide is the leading cause of injury death in Oregon with more deaths due to suicide among Oregonians than car crashes. Suicide is the second leading cause of death among Oregonians ages 15-34, and the 9th leading cause of death among all ages in Oregon[1]. The cost of suicide is enormous. In 2006 alone, self-inflicted hospitalization charges exceeded 24 million dollars; and the estimate of total lifetime cost of suicide in Oregon was over 570 million dollars [1, 2]. The loss to families and communities broadens the impact of each death.

"Suicide is a multidimensional, multi-determined, and multi-factorial behavior. The risk factors associated with suicidal behaviors include biological, psychological, and social factors"[3]. This report provides the most current suicide statistics in Oregon, provides suicide prevention programs and planners a detailed description of suicide, examines risk factors associated with suicide and generates public health information and prevention strategies. We analyzed mortality data from 1981 to 2007 and 2003 to 2007 data from the Oregon Violent Death Reporting System (ORVDRS). This report presents findings of suicide trends and risk factors in Oregon.

## Methods, data sources and limitations

Suicide is a death resulting from the intentional use of force against oneself. In this report, suicide deaths are identified according to International Classification of Diseases, Tenth Revision (ICD-10) codes for the underlying cause of deaths on death certificates. Suicide was considered with code of X60-84 and Y87.0.[4] Deaths relating to the death with Dignity Act (physician-assisted suicides) are not classified as suicides by Oregon law and therefore are excluded from this report.

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[1] Injury in Oregon, 2008 Annual Report. http://www.oregon.gov/DHS/ph/ipe/docs/report2008v2_2.pdf. Accessed on March. 26, 2010.

[2] Phaedra S. Corso, James A. Mercy, Thomas R. Simon et al, Medical Costs and Productivity Losses Due to Interpersonal and Self-Directed Violence in the United States.
Am J Prev Med. 2007;32(6):474–482.

[3] Ronald W Maris, Alan L. Berman, Aorton M. Silverman. (2000).
Comprehensive Textbook of suicidology. New York: The Guilford Press.
(p378)

[4] Paulozzi LJ, Mercy J, Frazier Jr L, et al. CDC's National Violent Death Reporting System: Background and Methodology. Injury Prevention, 2004;10:47-52.

Mortality data from 1981 to 2007 are from Web-based Injury Statistics Query and Reporting System (WISQARS) of the Centers of Disease Control and Prevention[1]. This system contains information from death certificates filed in state vital-statistics offices.

The ORVDRS is a statewide, active surveillance system that collects detailed information on all homicides, suicides, deaths of undetermined intent, deaths resulting from legal intervention, and deaths related to unintentional firearm injuries [2]. ORVDRS obtains data from Oregon medical examiners, local police agencies, death certificates, and the Homicide Incident Tracking System. All available data are reviewed, coded, and stored in the National Violent Death Reporting System. Details regarding NVDRS procedures and coding are available at http://www.cdc.gov/ncipc/profiles/nvdrs/publications.htm.

Rates were calculated according to death counts and bridged-race postcensal estimates that released by the National Center for Health Statistics (NCHS)[3]. The age-adjusted rate was adjusted to the 2000 standard million. Because of limited death counts in some categories, some rates might not be statistically reliable or stable; use caution with regard to those categories with fewer than 20 deaths.

A three-year moving average of age-specific suicide death rates were computed to smooth fluctuations from one year to another. The trend in rates was tested by using Poisson regression analysis. $P<0.05$ is considered significant.

When comparing rates, 95 percent confidence intervals were calculated. If the 95 percent confidence intervals do not overlap, then the difference is considered to be statistically significant at the 0.05-level[4]. A Chi-square test was used to test the difference on proportion (percentage) in the studying groups.

Occupation information is based on description of usual occupation and field of industry on death certificates and is coded by using a word-matching computer program[5].

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[1] The Centers for Disease control and Prevention. WISQARS. http://webappa.cdc.gov/sasweb/ncipc/mortrate.html. Accessed on June 11, 2010.

[2] Paulozzi LJ, Mercy J, Frazier Jr L, et al. CDC's National Violent Death Reporting System: Background and Methodology. Injury Prevention, 2004;10:47-52.

[3] National Center for Health Statistics. U.S. Census Population with Bridged-race Categories (vintage 2007 postcensal estimates): http://www.cdc.gov/nchs/about/major/dvs/popbridge/datadoc.htm
Accessed on Dec. 20, 2008.

[4] Miniño AM, Anderson RN, Fingerhut LA et al, Deaths: Injury, 2002.
National Vital Statistics Reports, 2006; Vol. 54, No. 10

[5] Ossiander EM, Milham S, A computer system for coding occupation. Am J of Industrial Med, 2006; 49:854-57.

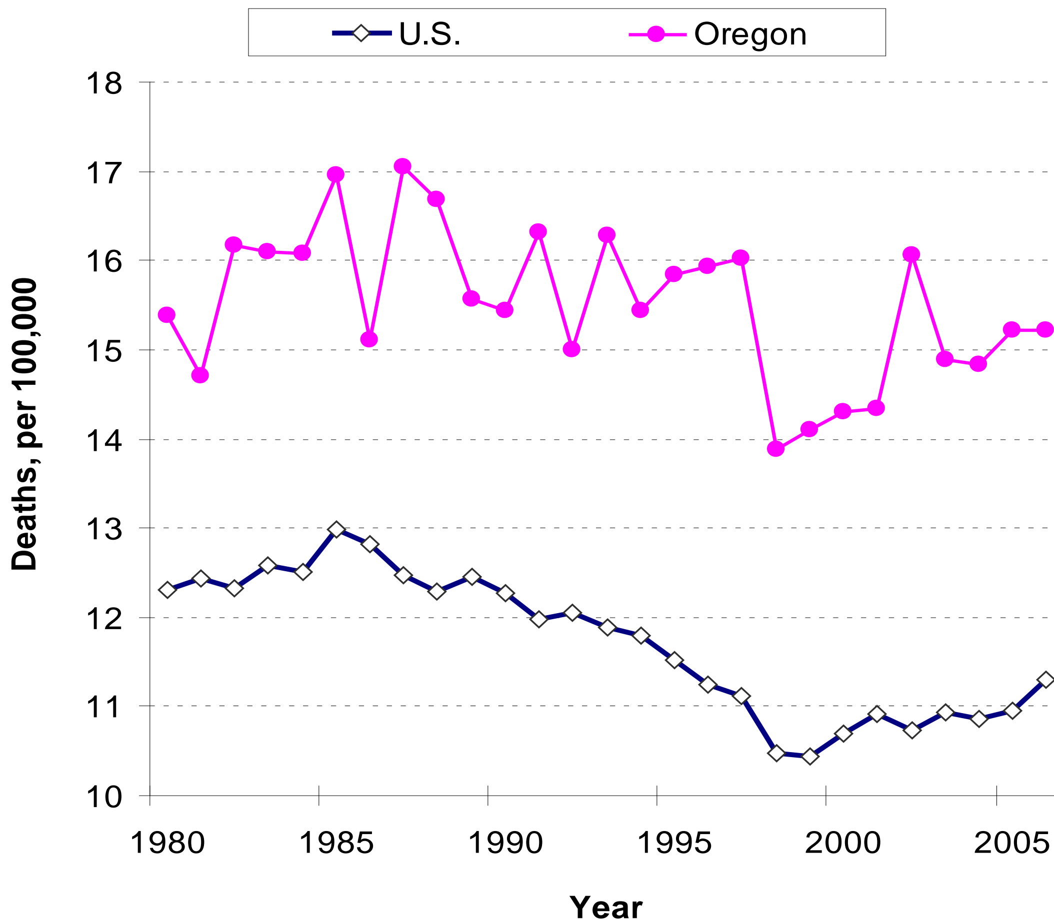
Although ORVDRS collects data from multiple sources, it is a challenge to capture all of the details and circumstances surrounding a death due to suicide.  Lack of standardized questionnaires and investigation protocols, and limited witnesses and limited witness contacts with a victim could result in underreporting of some suicides and in particular some circumstances surrounding suicide incidents. For example, if a person who died by suicide lived alone and did not have many connections with his family members and friends, it is difficult to get information on this person's health status and know his/her life stressors. In addition, all circumstances were based on the reports from the persons who were interviewed by investigators. Those interviewed persons might not recognize some mental health problems.  Therefore, this report most certainly underestimates some circumstances surrounding suicide deaths such as mental health problems.

## Findings

*Overview*

Figure 1 shows suicide rates in the US and Oregon between 1981 and 2007. Overall the trend in Oregon suicide rates is similar to the national trend— but rates in Oregon are higher. The peak age-adjusted rate in Oregon between 1981 and 2007 occurred in 1986 at 17.0 per 100,000. The lowest age-adjusted rate during this period occurred in 1999 at 13.9 per 100,000. The age-adjusted rates declined 18 percent from 1986 to 1999. A huge rate decrease occurred in late 90s, as rates fell from 16.2 per 100,000 in 1998 to 13.9 in 1999. Since 2000 Oregon suicide rates have increased eight percent, reaching 15.2 in 2007.

**Figure 1. Age-adjusted suicide rates, 1981-2007**




Compared to the national average, Oregon suicide rates have been higher for more than two decades. Most recently available national data shows Oregon age-adjusted suicide

rate of 15.2 per 100,000 in 2007 was 35 percent higher than the national average and Oregon ranked 10th place among all US states in suicide incidence. Between 2000 and 2007, Oregon suicide rates were significantly higher than the national average among all age groups except women ages 10-24 (Table 1).

**Table 1. Suicide rates per 100,000 by age group and sex, U.S. and Oregon, 2000-2007**

| | Sex | Ages 10-24 | Ages 25-44 | Ages 45-64 | Ages >= 65 |
|---|---|---|---|---|---|
| U.S. | Male | 11.5 | 21.9 | 23.8 | 29.9 |
| | Female | 2.3 | 5.8 | 7.2 | 3.9 |
| | All | 7 | 13.9 | 15.3 | 14.8 |
| Oregon | Male | 14.6 | 27.7 | 31.8 | 47.9 |
| | Female | 3.0* | 8.1 | 11 | 5.9 |
| | All | 8.9 | 17.8 | 21.2 | 24.1 |

* Not statistically significant

## *Trend by age group*

Three-year rolling average rates of suicide by age group in Oregon are illustrated in Figure 2A and Figure 2B. For a long period, from 1991 to 2006, suicide rates decreased among men ages 10-24, 25-44 and 65 and older, and women ages 10-24 and 65 and older. Suicide rates remained unchanged among women ages 25-44. In contrast, suicide rates increased among both men and women ages 45 to 64, especially among women. For a short period, from 2000 to 2006, suicide rates remain approximately same except among women ages 45 to 64. Suicide rates among women ages 45 to 64 rose 55 percent from 8.2 per 100,000 in 2000 to 12.8 per 100,000 in 2006. The suicide trends in Oregon fit the national picture in general[1].

[1] Guoqing Hu, Holly C. Wilcox, Lawrence Wissow, Susan Baker, Mid-life suicide- An Increasing problem in US Whites, 1999-2005. Am J Prev Med. 2008;35(6):589-593.

**Figure 2A. Three year moving average of suicide rates among males, Oregon, 1991-2006**

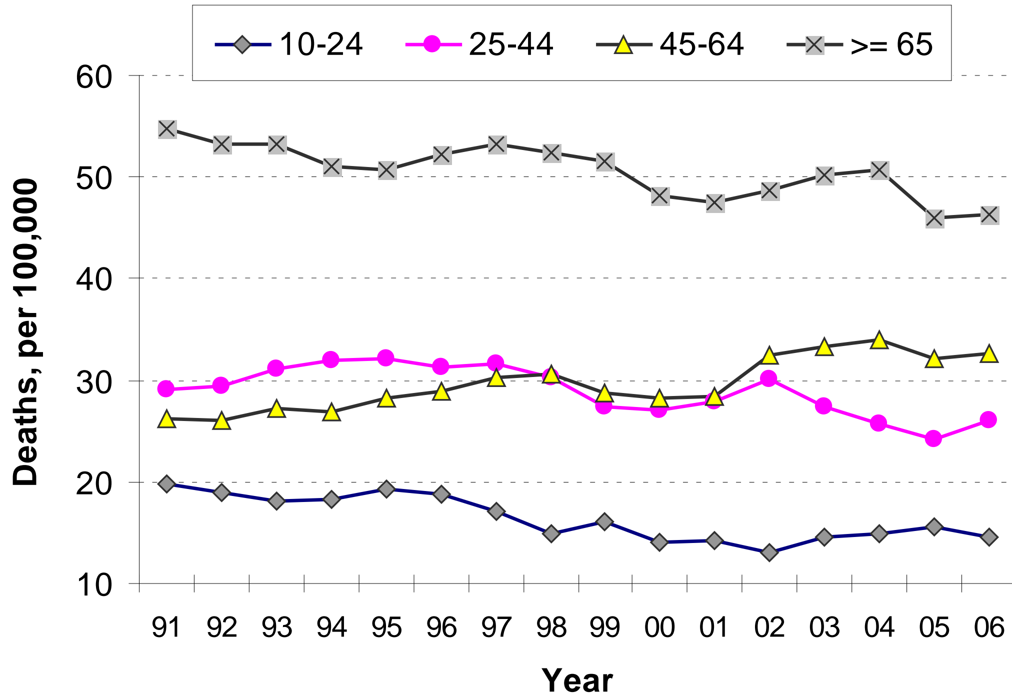
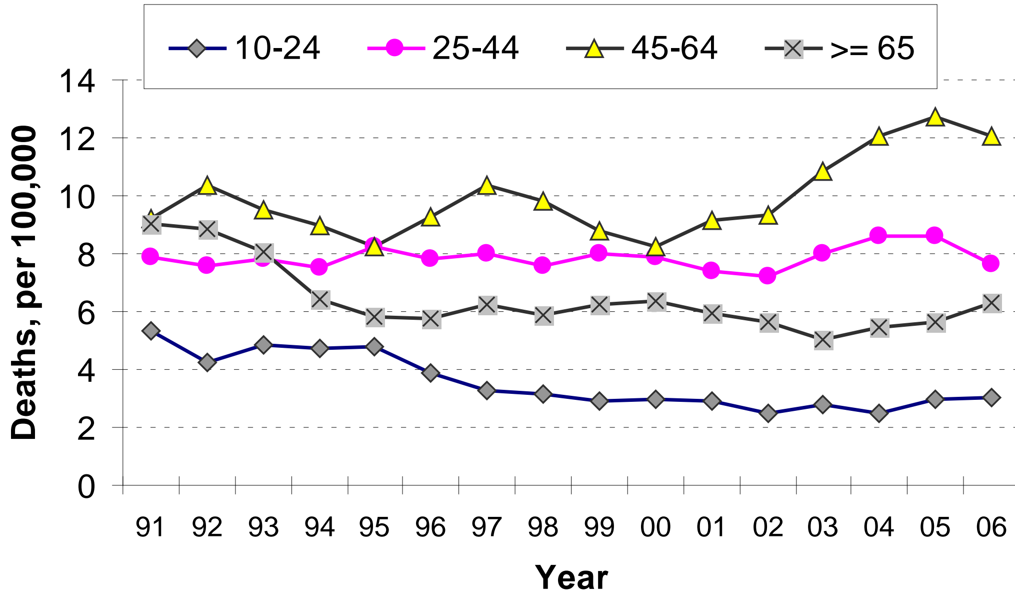


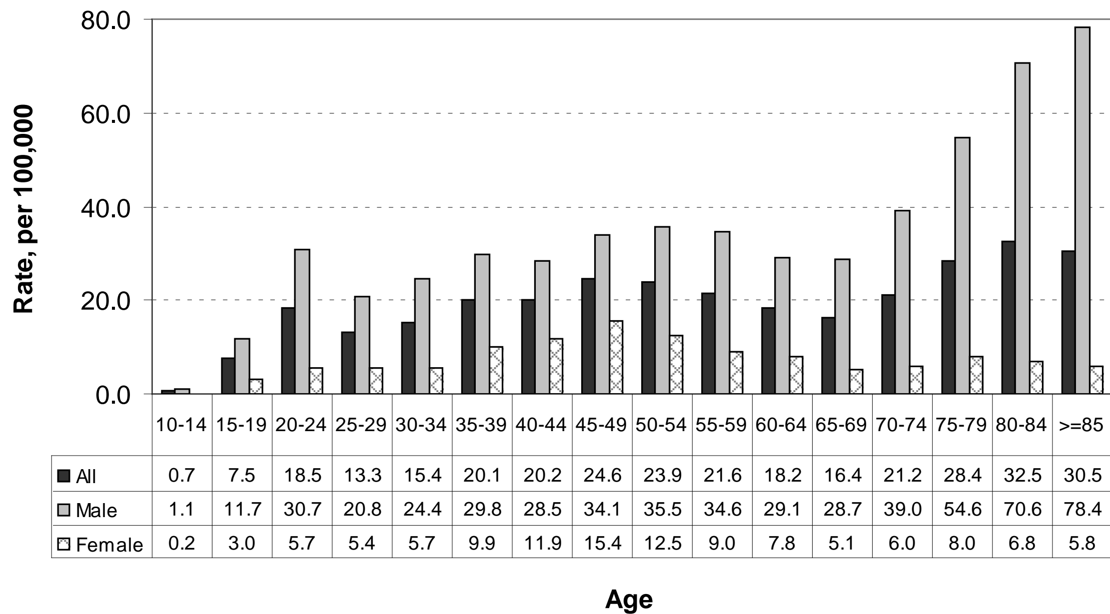

**Figure 2B. Three year moving average of suicide rates among females, Oregon, 1991-2006**



## *Suicide rate by age, sex, and race/ethnicity*

Age
In general, suicide rates increase with age. Suicide among children under 10 is rare. The age-specific rate of suicide among men rose sharply after age 15 and reached the first peak between the ages of 20 and 24; the rate decreased slightly at the ages of 25-29, then rose gradually and reached the second peak around age of 50. The rates decreased slowly between the ages of 50 and 69. After age 70 the rates rose dramatically. The highest suicide rate was among those ages 85 and over. The age distribution of suicide among women is different from that of men. The age-specific rate of suicide rose gradually after age 10 and reached the peak between the ages of 45 and 49, then decreased slowly. The rates increased slightly again after age of 70 (Figure 3).

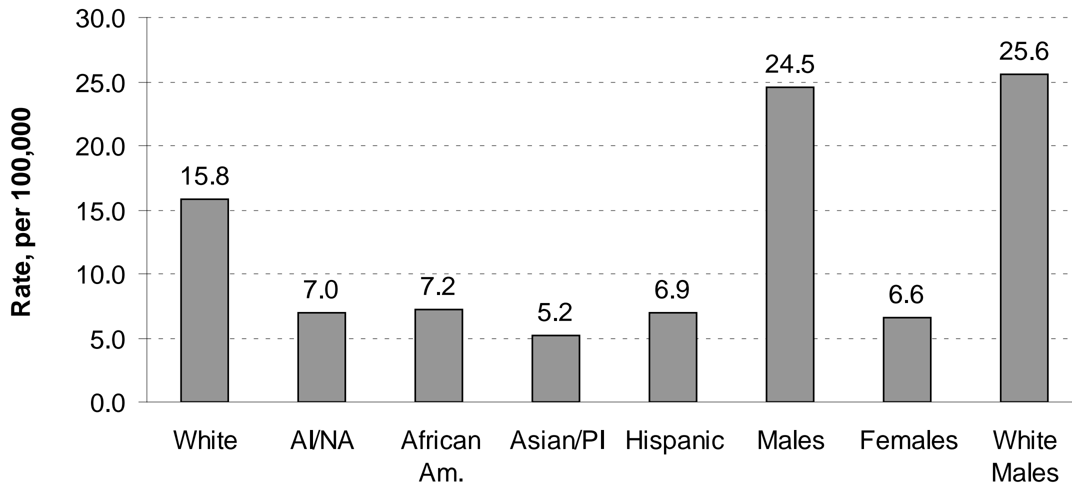
**Figure 3. Age-specific rate of suicide, Oregon, 2003-2007**




| | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75-79 | 80-84 | >=85 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All | 0.7 | 7.5 | 18.5 | 13.3 | 15.4 | 20.1 | 20.2 | 24.6 | 23.9 | 21.6 | 18.2 | 16.4 | 21.2 | 28.4 | 32.5 | 30.5 |
| Male | 1.1 | 11.7 | 30.7 | 20.8 | 24.4 | 29.8 | 28.5 | 34.1 | 35.5 | 34.6 | 29.1 | 28.7 | 39.0 | 54.6 | 70.6 | 78.4 |
| Female | 0.2 | 3.0 | 5.7 | 5.4 | 5.7 | 9.9 | 11.9 | 15.4 | 12.5 | 9.0 | 7.8 | 5.1 | 6.0 | 8.0 | 6.8 | 5.8 |

Sex, Race / Ethnicity
Men have a greater risk of dying by suicide than women. In each age group, suicide rates are higher among males than among women (figure 3). Overall men were 3.7 times more likely to die by suicide than women (figure 4). Among all suicide victims, 97 percent of the suicides were white. The age-adjusted suicide rate among whites was 15.8 per 100,000, which was almost double the rates observed among populations of other races. Overall white men had the highest suicide rate. This is mainly due to extremely high suicide rates among elder white men aged 60 and over. There were not significant differences in rates between white women and women of other races (Figure 4).

**Figure 4. Suicide rate by race / ethnicity, Oregon, 2003-2007**




## *Mechanism of death*

Firearms, suffocation (hanging) and poisoning are the most frequently observed mechanisms of injury in suicide deaths. Differences in mechanisms of death were observed by sex and race/ethnicity (Table 2). Firearms were the mechanism of suicide in as many as 62 percent of men compared with 31 percent of women. Suffocation was identified as the mechanism of death among 17 percent of men and 16 percent of women. Poisoning was the mechanism of death among only 14 percent of men but 46 percent of the deaths among women. The proportion of firearm suicides increased with age among men (Table 2A-2D – see pages 28, 30, 32, and 34 for age groups).

**Table 2. Mechanism of suicide by sex, Oregon, 2003-2007**

| Method | Male | % | Female | % | Total | % |
|---|---|---|---|---|---|---|
| Firearm | 1389 | 62 | 197 | 31 | 1586 | 55 |
| Poisoning | 304 | 14 | 286 | 46 | 590 | 21 |
| Hanging / suffocation | 387 | 17 | 99 | 16 | 486 | 17 |
| Sharp instrument | 40 | 2 | 9 | 1 | 49 | 2 |
| Drowning | 29 | 1 | 16 | 3 | 45 | 2 |
| Fall | 54 | 2 | 16 | 3 | 70 | 2 |
| Motor Vehicle | 9 | <1 | 1 | <1 | 10 | <1 |
| Other MV | 8 | <1 | 0 | <1 | 8 | <1 |
| Fire / Burn | 7 | <1 | 1 | <1 | 8 | <1 |
| Other / Unknown | 6 | <1 | 2 | <1 | 8 | <1 |

White men were more likely to die from firearms than other races (63% vs. 46%). Men with Hispanic ethnicity were more likely to die from hanging than other men (41% vs. 16%) (Table 3).

**Table 3. Mechanism of suicide by race /ethnicity, Oregon, 2003-2007**

| Race / Ethnicity | Method | Male | % | Female | % | Total | % |
|---|---|---|---|---|---|---|---|
| White | Firearm | 1359 | 63 | 189 | 32 | 1548 | 56 |
| | Poisoning | 295 | 14 | 277 | 47 | 572 | 21 |
| | Hanging / suffocation | 371 | 17 | 88 | 15 | 459 | 17 |
| | Sharp instrument | 39 | 2 | 9 | 2 | 48 | 2 |
| | Drowning | 25 | 1 | 13 | 2 | 38 | 1 |
| | Fall | 52 | 2 | 14 | 2 | 66 | 2 |
| Non-white | Firearm | 18 | 46 | 3 | 25 | 21 | 41 |
| | Poisoning | 6 | 15 | 5 | 42 | 11 | 22 |
| | Hanging / suffocation | 10 | 26 | 4 | 33 | 14 | 27 |
| | Sharp instrument | 1 | 3 | 0 | 0 | 1 | 2 |
| | Drowning | 2 | 5 | 0 | 0 | 2 | 4 |
| | Fall | 2 | 5 | 0 | 0 | 2 | 4 |
| Hispanic | Firearm | 41 | 43 | 5 | 45 | 46 | 43 |
| | Poisoning | 10 | 10 | 2 | 18 | 12 | 11 |
| | Hanging / suffocation | 39 | 41 | 1 | 9 | 40 | 37 |
| | Sharp instrument | 1 | 1 | 2 | 18 | 3 | 3 |
| | Drowning | 2 | 2 | 0 | 0 | 2 | 2 |
| | Fall | 2 | 2 | 1 | 9 | 3 | 3 |
| Non-Hispanic | Firearm | 1344 | 63 | 191 | 31 | 1535 | 56 |
| | Poisoning | 292 | 14 | 283 | 46 | 575 | 21 |
| | Hanging / suffocation | 346 | 16 | 97 | 16 | 443 | 16 |
| | Sharp instrument | 39 | 2 | 7 | 1 | 46 | 2 |
| | Drowning | 0 | 0 | 0 | 0 | 0 | 0 |
| | Fall | 0 | 0 | 0 | 0 | 0 | 0 |

Of 1586 firearm suicides, 1089 (69%) involved a handgun, 224 (14%) involved a rifle and 173 (11%) involved a shotgun; in 100 cases the type of firearm involved was unknown.

Among 590 suicides due to poisoning, more than 50 percent of them resulted from a single substance. The most often reported poisoning substance was a prescription medication. Prescription medications were involved 51 percent of male poisoning suicides and 71 percent of female poisoning suicides (Table 4).

**Table 4. Frequency and percentage of cases where single or multimple substances were found in suicide poisoning incidents, Oregon, 2003-2007**

| | Males (N=304) | % | Females (N=286) | % |
|---|---|---|---|---|
| Single substance | 201 | 66 | 164 | 57 |
| Prescription drug only | 84 | 28 | 105 | 37 |
| Over-counter drug only | 11 | 4 | 9 | 3 |
| CO or other gas only | 84 | 28 | 36 | 13 |
| Alcohol only | 1 | <1 | 0 | 0 |
| Street / Recreation drug only | 4 | 1 | 0 | 0 |
| Other | 17 | 6 | 14 | 5 |
| | | | | |
| Multiple substances | 94 | 31 | 114 | 40 |
| Prescription drug | 69 | 23 | 98 | 34 |
| Alcohol | 30 | 10 | 20 | 7 |
| Street / Recreation drug | 7 | 2 | 6 | 2 |
| CO or other gas | 3 | 1 | 1 | <1 |
| | | | | |
| Unknown | 9 | 3 | 8 | 3 |

Table 5 lists the frequencies of prescription medications that contributed to deaths. Opiate and antidepressant medications were most often observed.

**Table 5. Frequency of drugs found present in suicide deaths where poisoning was the mechanism of death by sex, Oregon, 2003-2007**

| Category | Chemical Name | Total | Males | Females |
|---|---|---|---|---|
| Antidepressant | | | | |
| | Amitriptyline | 36 | 15 | 21 |
| | Citalopram | 22 | 6 | 16 |
| | Bupropion | 21 | 8 | 13 |
| | Doxepin | 14 | 9 | 5 |
| | Trazodone | 12 | 5 | 7 |
| | Venlafaxine Hydrochloride | 10 | 3 | 7 |
| | Fluoxetine | 8 | 3 | 5 |
| | Nortriptyline | 7 | 2 | 5 |
| | Paroxetine | 6 | 0 | 6 |
| | Imipramine | 4 | 2 | 2 |
| | Mirtazapine | 4 | 2 | 2 |
| | Sertraline | 4 | 1 | 3 |
| | Desipramine | 3 | 0 | 3 |
| Opiate | | | | |
| | Oxycodone Hydrochloride | 47 | 27 | 20 |
| | Methadone | 46 | 25 | 21 |
| | Hydrocodone Bitartrate | 32 | 11 | 21 |
| | Morphine Sulfate | 32 | 14 | 18 |
| | Fentanyl | 12 | 6 | 6 |
| | Propoxyphene Hydrochloride | 8 | 2 | 6 |
| | Codeine | 4 | 2 | 2 |
| | Hydromorphone Hydrochloride | 3 | 2 | 1 |
| | Propoxyphene and Acetaminophen | 3 | 0 | 3 |
| | Acetaminophen with Codeine | 1 | 0 | 1 |
| | Codeine Sulfate | 1 | 1 | 0 |
| | Oxymorphone | 1 | 1 | 0 |

Continued on page 17

***Continued Table 5. Frequency of drugs found present in suicide deaths where poisoning was the mechanism of death by sex, Oregon, 2003-2007***

| Category | Chemical Name | Total | Males | Females |
|---|---|---|---|---|
| Other | | | | |
| | Quetiapine | 18 | 10 | 8 |
| | Humulin | 13 | 6 | 7 |
| | Carisoprodol | 12 | 5 | 7 |
| | Cyclobenzaprine Hydrochloride | 12 | 6 | 6 |
| | Lorazepam | 12 | 5 | 7 |
| | Alprazolam | 11 | 4 | 7 |
| | Benzodiazepine - Unspecified | 10 | 4 | 6 |
| | Diazepam | 10 | 7 | 3 |
| | Olanzapine | 10 | 2 | 8 |
| | Clonazepam | 9 | 4 | 5 |
| | Temazepam | 9 | 3 | 6 |
| | Zolpidem | 8 | 3 | 5 |
| | Hydroxyzine | 6 | 4 | 2 |
| | Tramadol Hydrochloride | 4 | 2 | 2 |
| | Butalbital Compound | 2 | 2 | 0 |
| | Carbamazepine | 2 | 1 | 1 |
| | Diltiazem Hydrochloride | 2 | 1 | 1 |
| | Hydrochlorothiazide | 2 | 1 | 1 |
| | Lithium | 2 | 2 | 0 |
| | Meprobamate | 2 | 0 | 2 |
| | Phenobarbital Sodium | 2 | 1 | 1 |
| | Ziprasidone | 2 | 0 | 2 |
| | Amitriptyline/Perphenazine | 1 | 1 | 0 |
| | Amlodipine Besylate | 1 | 1 | 0 |
| | Buspirone | 1 | 0 | 1 |
| | Divalproex Sodium | 1 | 0 | 1 |
| | Haloperidol | 1 | 0 | 1 |
| | Metformin Hydrochloride | 1 | 0 | 1 |
| | Midazolam Hydrochloride | 1 | 1 | 0 |
| | Pentobarbital Sodium | 1 | 1 | 0 |
| | Promethazine | 1 | 1 | 0 |
| | Risperidone | 1 | 0 | 1 |
| | Secobarbital | 1 | 1 | 0 |
| | Theophylline | 1 | 0 | 1 |

### *Circumstances*

Circumstance differed by sex of victim. Female victims were more likely to have a report indicating that they had a diagnosed mental disorder, depressed mood, substance use problem, that they were receiving treatment for mental health problems and had experienced a previous suicide attempt. Overall, more than 70 percent of suicide victims had a diagnosed mental disorder, alcohol and /or substance use disorder, or depressed mood at time of death; 36 percent of female victims and 16 percent of male victims had experienced a previous suicide attempt. Alcohol and/or other substance use problems were reported among 12 to 20 percent of suicide victims. Ten percent of males and 20 percent of females had both a mental disorder and a substance use problem. Despite the high prevalence of mental health problems, less than one third of male victims and just about half female victims were receiving treatment at the time of death. A crisis in the two weeks prior to a suicide death was reported for nearly 40 percent of victims. The most common crisis circumstance reported among men were a problem with an intimate partner (29%), physical health problems (29%), loss job / job problem (13% ), crime legal problems (12% ) and financial problem (11%). Among women, they were physical health problems (33%), a problem with an intimate partner (27%), job loss / job problem (11%), and financial problem (11%). Nearly one third of persons who died by suicide had disclosed their intent to kill themselves before they died (Table 6: see next page – for age group specific info see Tables 6A – 6D on pages 29, 32, 33, and 35 respectively).

Major depression / dysthymia (75%) was the most frequently diagnosed mental health condition, followed by anxiety disorder (12%) and bipolar disorder (11%) (Table 7). Women were more likely to have a diagnosed mental health disorder and more likely to be receiving treatment for mental health problems across all age groups.

**Table 6. Number and percentage* of mental illness found among suicide victims by sex, Oregon, 2003-2007**

| Mental illness | Males (N=743) # | % | Females (N=371) # | % | All (N=1114) # | % |
|---|---|---|---|---|---|---|
| Depression / Dysthymia | 564 | 76 | 277 | 75 | 841 | 75 |
| Bipolar | 79 | 11 | 69 | 19 | 148 | 13 |
| Schizophrenia | 43 | 6 | 14 | 4 | 57 | 5 |
| Anxiety disorder | 88 | 12 | 52 | 14 | 140 | 13 |
| Posttraumatic stress disorder | 19 | 3 | 6 | 2 | 25 | 2 |
| Attention deficit disorder / Attention deficit and hyperactivity disorder | 5 | 1 | 1 | <1 | 5 | 1 |
| Eating disorder | 0 | 0 | 0 | 0 | 0 | 0 |
| Obsessive compulsive | 2 | <1 | 2 | 1 | 4 | <1 |
| Other | 25 | 3 | 6 | 2 | 31 | 3 |
| Unknown | 8 | 1 | 2 | 1 | 10 | 1 |

* A total percentage might exceed 100% because some victims might have more than one mental disease.

**Table 7. Percentage of circumstances found in suicide incidents by sex, Oregon, 2003-2007**

| Circumstances | Male % (N=2235) | Females % (N=627) |
|---|---|---|
| Mental Health Status | | |
| Mentioned mental health problems * | 70 | 82 |
| Diagnosed mental disorder | 33 | 59 |
| Problem with alcohol | 20 | 19 |
| Problem with other substance | 12 | 19 |
| Problem with alcohol and other substance | 6 | 8 |
| Diagnosed mental disorder and problem with alcohol and /or other substance | 11 | 20 |
| Current depressed mood | 52 | 63 |
| Current treatment for mental health problem ** | 28 | 55 |
| Interpersonal Relationship Problems | | |
| Intimate partner problem | 29 | 27 |
| Non-intimate partner relationship problem | 2 | 3 |
| Victim of interpersonal violence within past month | 0 | 1 |
| Perpetrator of interpersonal violence within past month | 6 | 2 |
| Death of family member or friend within past five years | 6 | 10 |
| Suicide of family member or friend within past five years | 1 | 2 |
| Life Stressors | | |
| A crisis in the past two weeks | 41 | 39 |
| Physical health problem | 29 | 33 |
| Financial problem | 11 | 11 |
| Lost job / job problem | 13 | 11 |
| Recent criminal legal problem | 12 | 4 |
| Noncriminal legal problem | 4 | 6 |
| School problem | 1 | 0 |
| Suicidal Behaviors | | |
| Disclosed intent to commit suicide | 34 | 31 |
| Left a suicide note | 32 | 40 |
| History of suicide attempt | 16 | 36 |

* includes diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.
** includes treatment for problems with alcohol and/or other substances
A total percentage might exceed 100% because suicide decedents might experience more than one circumstance.

*Death by month*

The number of suicides in each month varied. On average there were approximately 48 suicide deaths per month. Overall the greatest number of suicides occurred in May (Figure 5), but there was not a clear seasonal pattern (Figure 6).

**Figure 5. Number of suicdes by month, Oregon, 2003-2007**

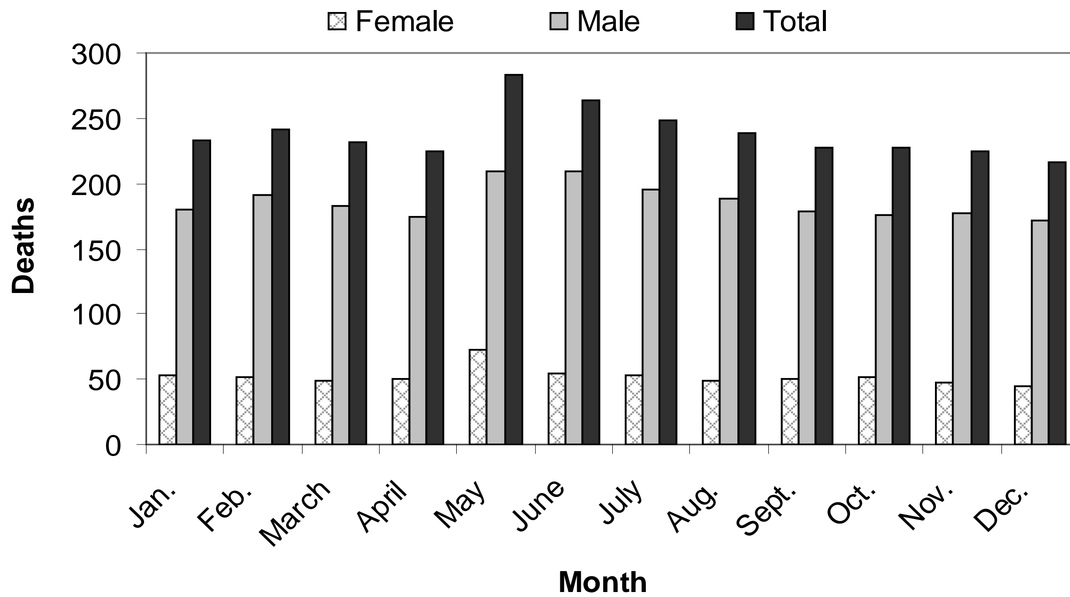
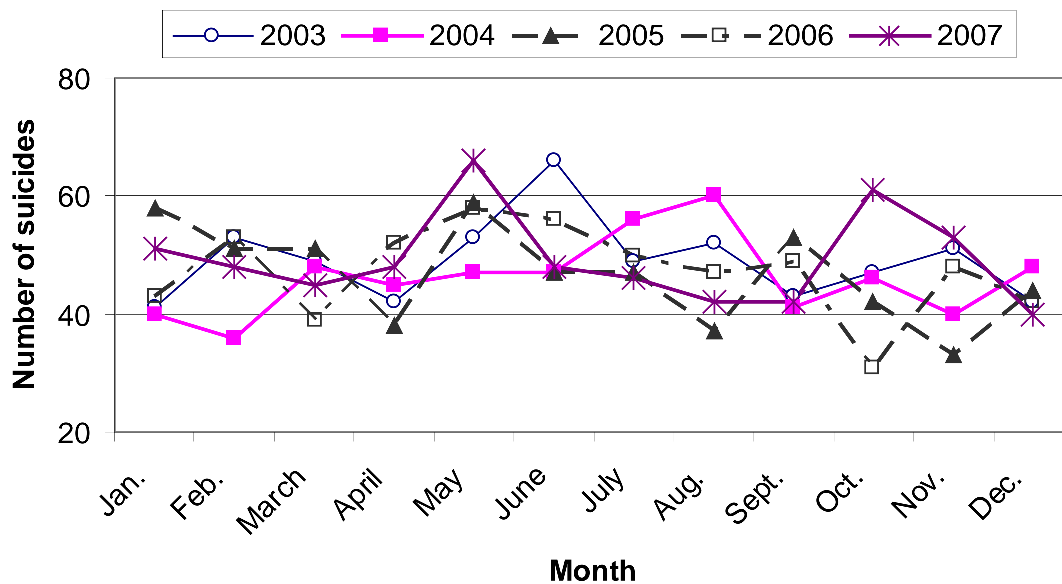



**Figure 6. Suicides by month and year, Oregon, 2003-2007**



### *Type of suicide*

The majority of suicide incidents in Oregon involve one death. Multiple suicides (suicide pacts) occur rarely. From 2003-2007, there were four suicide incidents that involved more than one death, which counted for 0.3 percent of total suicide deaths. Forty-four suicides (1.5%) were followed by a homicide (combined homicide-suicide).

### *Location of suicide*

Suicides occur in a variety of locations; however, three in four suicides occurred at a house or apartment (Table 8).

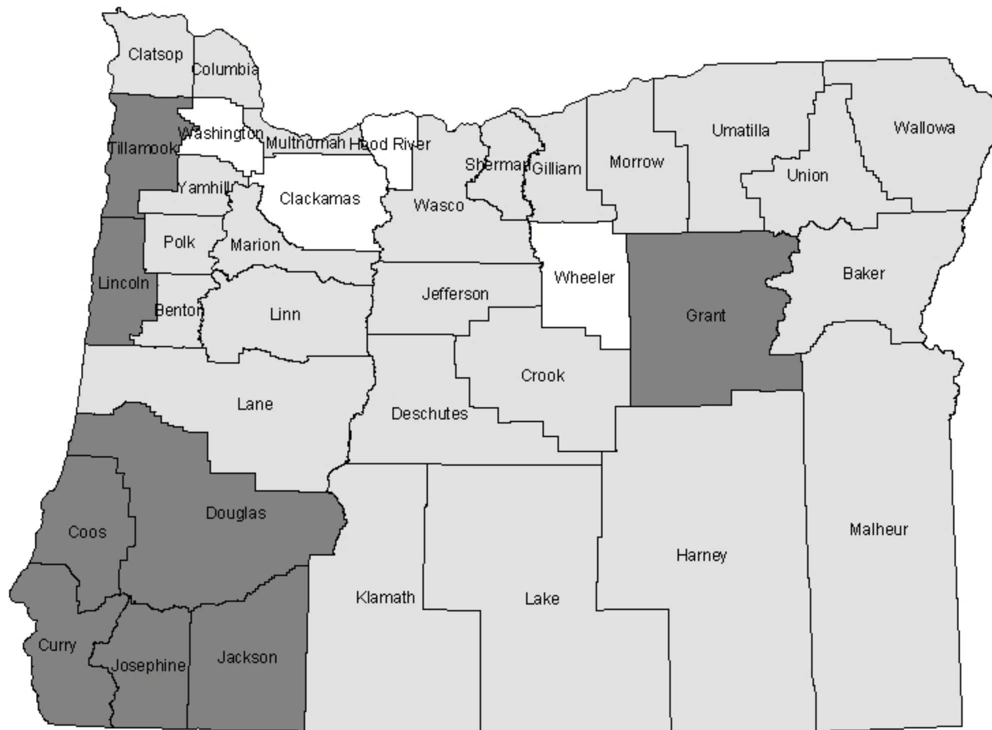
**Table 8. Location of suicide incident by sex, Oregon, 2003-2007**

| Type of location | Males | | Females | |
|---|---|---|---|---|
| | # | % | # | % |
| House / Apartment | 1647 | 74 | 507 | 81 |
| Natural Area (e.g. field, river, woods) | 153 | 7 | 45 | 7 |
| Park / Public use area | 76 | 3 | 15 | 2 |
| Street / Road | 76 | 3 | 13 | 2 |
| Parking lot / Garage | 47 | 2 | 4 | 1 |
| Motor Vehicle | 42 | 2 | 9 | 1 |
| Motel / Inn /Hotel | 33 | 1 | 18 | 3 |
| Jail / Prison | 25 | 1 | 1 | <1 |
| Highway | 23 | 1 | 3 | <1 |
| Hospital | 10 | <1 | 1 | <1 |
| Commercial area | 9 | <1 | 0 | <1 |
| Supervised Resident Facilities | 7 | <1 | 2 | <1 |
| Railroad | 6 | <1 | 1 | <1 |
| Bank / Office building | 6 | <1 | 0 | <1 |
| Industrial or construction areas | 6 | <1 | 0 | <1 |
| College/University/School | 4 | <1 | 1 | <1 |
| Abandoned house, building | 4 | <1 | 0 | <1 |
| Synagogue, Church, Temple | 3 | <1 | 0 | <1 |
| Farm | 3 | <1 | 0 | <1 |
| Other | 32 | 1 | 5 | 1 |
| Unknown | 23 | 4 | 2 | <1 |

*Suicide by county*

Suicide rates varied from 0 to 36.6 per 100,000 among the 36 counties in Oregon. The counties of Coos, Curry, Douglas, Grant, Jackson, Josephine, Lincoln and Tillamook had a higher than state average suicide rate. The counties of Clackamas, Hood River, Washington, and Wheeler had a lower than state average suicide rate (Table 9).

Suicide rate by county, Oregon, 2003-2007




Lower than the state average

The state average rate
(95% CI: 15.1 -16.3 per 100,000)

Higher than the state average

**Table 9. Suicide deaths and crude rates by age group and county, Oregon, 2003-2007**

| County | All ages | | 10-24 | | 25-44 | | 45-64 | | >=65 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Deaths | Rate | Deaths | Rate | Deaths | Rate | Deaths | Rate | Deaths | Rate |
| Baker | 19 | 23.6 | 0 | 0.0 | 6 | 36.1 | 2 | 8.3 | 11 | 66.6 |
| Benton | 50 | 12.5 | 9 | 7.5 | 18 | 18.5 | 16 | 16.1 | 7 | 16.0 |
| Clackamas | 230 | 12.6 | 26 | 7.0 | 76 | 15.5 | 88 | 16.4 | 40 | 18.6 |
| Clatsop | 34 | 18.6 | 2 | 5.5 | 13 | 30.0 | 13 | 24.2 | 6 | 20.4 |
| Columbia | 39 | 16.5 | 3 | 6.2 | 8 | 12.6 | 19 | 27.8 | 9 | 32.9 |
| Coos | 84 | 26.5 | 13 | 22.6 | 13 | 18.4 | 38 | 40.4 | 20 | 31.6 |
| Crook | 20 | 18.4 | 2 | 9.4 | 4 | 13.8 | 7 | 25.0 | 7 | 40.5 |
| Curry | 30 | 27.5 | 2 | 11.8 | 5 | 23.1 | 11 | 33.6 | 12 | 40.9 |
| Deschutes | 122 | 17.2 | 10 | 7.4 | 39 | 19.3 | 49 | 25.7 | 24 | 25.5 |
| Douglas | 108 | 21.0 | 12 | 12.5 | 26 | 21.7 | 38 | 26.3 | 32 | 32.4 |
| Gilliam | 1 | 11.5 | 1 | 67.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Grant | 13 | 36.6 | 2 | 29.5 | 3 | 44.2 | 3 | 26.5 | 5 | 70.5 |
| Harney | 11 | 31.9 | 0 | 0.0 | 4 | 54.0 | 2 | 18.9 | 5 | 81.6 |
| Hood River | 8 | 7.6 | 0 | 0.0 | 2 | 7.2 | 2 | 7.3 | 4 | 30.2 |
| Jackson | 206 | 21.2 | 25 | 12.9 | 53 | 21.9 | 95 | 35.6 | 33 | 20.9 |
| Jefferson | 10 | 10.0 | 1 | 4.7 | 7 | 27.2 | 1 | 4.1 | 1 | 7.6 |
| Josephine | 95 | 23.8 | 10 | 13.9 | 18 | 19.9 | 45 | 39.8 | 22 | 26.9 |
| Klamath | 66 | 20.2 | 5 | 7.3 | 22 | 28.2 | 23 | 25.6 | 16 | 31.7 |
| Lake | 5 | 13.8 | 1 | 14.9 | 1 | 12.9 | 2 | 18.0 | 1 | 14.2 |
| Lane | 281 | 16.7 | 27 | 7.4 | 104 | 23.1 | 91 | 20.1 | 59 | 25.5 |
| Lincoln | 52 | 23.0 | 3 | 7.8 | 11 | 21.5 | 24 | 33.9 | 14 | 32.0 |
| Linn | 80 | 14.7 | 11 | 10.1 | 26 | 18.2 | 24 | 16.8 | 19 | 23.4 |
| Malheur | 24 | 15.5 | 7 | 19.6 | 5 | 12.7 | 8 | 22.4 | 4 | 18.2 |
| Marion | 221 | 14.6 | 26 | 7.9 | 72 | 16.8 | 76 | 21.5 | 47 | 25.8 |
| Morrow | 5 | 8.8 | 0 | 0.0 | 1 | 6.8 | 2 | 14.0 | 2 | 31.9 |
| Multnomah | 518 | 15.1 | 66 | 10.6 | 189 | 17.1 | 197 | 22.0 | 66 | 18.4 |
| Polk | 46 | 13.1 | 2 | 2.4 | 14 | 16.2 | 18 | 20.6 | 12 | 22.3 |
| Sherman | 1 | 11.9 | 0 | 0.0 | 0 | 0.0 | 1 | 36.0 | 0 | 0.0 |
| Tillamook | 35 | 28.2 | 0 | 0.0 | 9 | 31.5 | 13 | 35.4 | 13 | 53.8 |
| Umatilla | 55 | 15.1 | 10 | 12.8 | 13 | 13.1 | 18 | 19.9 | 14 | 31.5 |
| Union | 29 | 23.7 | 3 | 10.4 | 10 | 36.9 | 6 | 17.8 | 10 | 53.9 |
| Wallowa | 8 | 23.4 | 1 | 15.7 | 1 | 17.3 | 5 | 43.1 | 1 | 13.7 |
| Wasco | 19 | 16.1 | 1 | 4.4 | 6 | 22.3 | 7 | 21.0 | 5 | 24.7 |
| Washington | 277 | 11.1 | 37 | 7.6 | 85 | 10.5 | 116 | 19.0 | 39 | 17.5 |
| Wheeler | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Yamhill | 59 | 12.8 | 8 | 7.6 | 13 | 10.2 | 24 | 21.5 | 14 | 25.8 |
| *State* | *2862* | *15.7* | *326* | *8.9* | *879* | *17.9* | *1084* | *22.5* | *574* | *24.4* |

Rates are per 100,000.
Use caution when rates are calculated from numbers less than 20.

### *Suspected alcohol use and toxicology*

According to medical examiner and/or police reports, approximately 30 percent of suicide victims might have used alcohol in the hours preceding their deaths. Not all suicide deaths are screened for alcohol or drug use. Toxicology tests showed over one third of tested cases were positive for alcohol and opiates among the suicide deaths (Table 10).

**Table 10. Number and percentage of incidents with suspected alcohol use, toxicology tests and positive test results in suicide deaths, Oregon, 2003-2007**

| Toxicology variable | Investigated/Screening | Present | % positive |
|---|---|---|---|
| Alcohol | | | |
| Suspected alcohol use | 1197 | 350 | 29 |
| | | | |
| Alcohol present in the blood | 313 | 113 | 36 |
| | | | |
| Amphetamines | 160 | 15 | 9 |
| | | | |
| Cocaine | 156 | 5 | 3 |
| | | | |
| Marijuana | 156 | 15 | 10 |
| | | | |
| Opiate | 173 | 66 | 38 |
| | | | |
| Antidepressant drug | 151 | 49 | 32 |
| | | | |
| Other substances (drug) | 167 | 36 | 22 |

## *Occupation of victims*

Occupation and the industry variables on death certificates were used to group data to examine occupational status among suicide victims. Seven percent of males and nine percent of females were unemployed. Table 11 lists types of occupation and specific occupations among suicide victims ages 18-64.

**Table 11. Frequency and percent of the type of occupation among people ages 18-64 who died by suicide by sex, Oregon, 2003-2007**

| Type of Occupation | Males # (N=1687) | % | Females # (N=528) | % |
|---|---|---|---|---|
| Classification | | | | |
| Agriculture | 34 | 2 | 4 | 1 |
| Clerical | 53 | 3 | 52 | 10 |
| Craftsmen / Foremen and kindred | 348 | 21 | 11 | 2 |
| Laborers | 155 | 9 | 6 | 1 |
| Manager / Official | 90 | 5 | 22 | 4 |
| Operative | 173 | 10 | 6 | 1 |
| Professional technical | 246 | 15 | 105 | 20 |
| Service Workers | 149 | 9 | 88 | 17 |
| Sales | 51 | 3 | 34 | 6 |
| Other | 174 | 10 | 139 | 26 |
| Unknown | 214 | 13 | 61 | 12 |
| Specific group | | | | |
| Police / Firefighter | 31 | 2 | 4 | 1 |
| Army/Navy listed | 21 | 1 | 2 | 0 |
| Housewife/Househusband, Homemaker | 3 | 0 | 82 | 16 |
| Unemployed | 116 | 7 | 47 | 9 |
| Student age over 18 years | 59 | 3 | 17 | 3 |

## *Educational level and marital status*

Table 12 and Table 13 show educational attainment and marital status of suicide victims. Educational attainment was missing from 14 percent of the data. However, educational

attainment is inversely related to suicide – higher levels of educational attainment are related to lower incidence of suicide (Table 12).

**Table 12. Educational attainment among people who died by suicide by sex, Oregon, 2003-2007**

| Educational Level | Males | | Females | |
|---|---|---|---|---|
| | # | %* | # | %* |
| 8th grade or less | 105 | 5 | 13 | 2 |
| 9-12th grade | 273 | 14 | 73 | 13 |
| High school or GED | 833 | 43 | 203 | 37 |
| Some college or associate degree | 426 | 22 | 152 | 28 |
| Bachelor or graduate degree | 316 | 16 | 104 | 19 |
| Unknown | 282 | NA | 82 | NA |

**Table 12A. Percent of educational attainment by educational level among people who died by suicide by age group and sex, Oregon, 2003-2007**

| Educational Level | Ages 10-24 | | Ages 25-44 | |
|---|---|---|---|---|
| | % * Males | % * Females | % * Males | % * Females |
| | (N=247) | (N=48) | (N=572) | (N=182) |
| 8th grade or less | 6 | 4 | 4 | 2 |
| 9-12th grade | 32 | 35 | 14 | 14 |
| High school or GED | 39 | 38 | 47 | 37 |
| Some college or associate degree | 19 | 19 | 24 | 27 |
| Bachelor or graduate degree | 4 | 4 | 11 | 21 |

| Educational Level | Ages 45-64 | | Ages >= 65 | |
|---|---|---|---|---|
| | % * Males | % * Females | % * Males | % * Females |
| | (N=701) | (N=244) | (N=433) | (N=71) |
| 8th grade or less | 3 | 2 | 11 | 6 |
| 9-12th grade | 9 | 9 | 12 | 11 |
| High school or GED | 41 | 36 | 42 | 41 |
| Some college or associate degree | 25 | 32 | 16 | 23 |
| Bachelor or graduate degree | 23 | 20 | 19 | 20 |

*Percentage is calculated based on cases where status is known.

**Table 13. Frequency and percent of reported marital status among people who died by suicide by sex, Oregon, 2003-2007**

| Marital status | Males | | Females | |
|---|---|---|---|---|
| | # | %* | # | %* |
| Married | 765 | 35 | 201 | 33 |
| Never Married | 663 | 31 | 129 | 21 |
| Divorced | 594 | 27 | 221 | 36 |
| Widowed | 151 | 7 | 61 | 10 |
| Other /Unknown | 62 | NA | 15 | NA |

* Percentage is calculated according to available data.

**Table 13A. Marital status among people who died by suicide by age group and sex, Oregon, 2003-2007**

| Marital Status | Ages 10-24 | | Ages 25-44 | |
|---|---|---|---|---|
| | % * Males | % * Females | % * Males | % * Females |
| | N=259 | N=50 | N=643 | N=202 |
| Married | 4 | 4 | 33 | 42 |
| Never Married | 93 | 88 | 42 | 27 |
| Divorced | 3 | 8 | 25 | 30 |
| Widowed | 0 | 0 | 0 | 1 |

| Marital Status | Ages 45-64 | | Ages >= 65 | |
|---|---|---|---|---|
| | % * Males | % * Females | % * Males | % * Females |
| | N=781 | N=277 | N=490 | N=83 |
| Married | 38 | 33 | 49 | 28 |
| Never Married | 16 | 10 | 6 | 4 |
| Divorced | 42 | 51 | 19 | 18 |
| Widowed | 3 | 6 | 26 | 51 |

* Percentage is calculated according to available data.

## *Characteristics of different life stages*

Youth ages 10-24

Suicide among youth suicides accounted for approximately 11 percent of suicides. The rate of suicide among youth was 8.9 per 100,000. The rate ratio between men (14.6 per 100,000) and women (3.0 per 100,000) was 4.9. Among youth suicides, approximately 98 percent were ages 15-24.

Firearms were the most common mechanism among men (59%), followed by hanging / suffocation (27%) and poisoning (6%). Among women hanging / suffocation was the most common mechanism (40%), followed by firearms (28%) and poisoning (26%) (Table 2A).

Approximately 70 percent of youth suicide victims had a diagnosed mental disorder, alcohol and /or substance use problems, or depressed mood at time of death; 51 percent of women and 17 percent of men had previously attempted suicide. Less than one fourth of male victims were under treatment for mental health problems at time of death. Alcohol and/or other substance use problems were reported among 11 to 21 percent of suicide victims. Suicides are often precipitated by one or more stressful events. A crisis in the two weeks prior to suicide was reported for nearly 50 percent of victims. The most common circumstances reported were a problem with an intimate partner, accounting for approximately 40 percent of suicide victims, followed by criminal legal problems (14%) among men (Table 6A).

Among 326 youth who died by suicide, 103 (32%) were students and 19 were veterans.

Nearly 90 percent of youth suicide victims were single, never married (Table 13A page 27).

**Table 2A. Frequency and percentage of suicide by mechanisms of suicide among youth ages 10-24 by sex, Oregon, 2003-2007**

| Mechanism | Male | | Female | | Total | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| Firearm | 161 | 59 | 15 | 28 | 176 | 54 |
| Poisoning | 16 | 6 | 14 | 26 | 30 | 9 |
| Hanging / suffocation | 73 | 27 | 21 | 40 | 94 | 29 |
| Sharp instrument | 1 | 0 | 1 | 2 | 2 | 1 |
| Drowning | 3 | 1 | 1 | 2 | 4 | 1 |
| Fall | 8 | 3 | 1 | 2 | 9 | 3 |
| Motor Vehicle | 4 | 1 | 0 | 0 | 4 | 1 |
| Other MV | 3 | 1 | 0 | 0 | 3 | 1 |
| Other | 4 | 1 | 0 | 0 | 4 | 1 |

**Table 6A. Percentages of circumstances found surrounding suicide incidents among youth ages 10-24, by sex, Oregon, 2003-2007**

| Circumstances | % Males (N=273) | % Females (N=53) |
|---|---|---|
| Mental Health Status | | |
| Mentioned mental health problems * | 68 | 75 |
| Diagnosed mental disorder | 29 | 64 |
| Problem with alcohol | 15 | 11 |
| Problem with other substance | 14 | 21 |
| Problem with alcohol and other substance | 6 | 6 |
| Diagnosed mental disorder and problem with alcohol and /or other substance | 6 | 25 |
| Current depressed mood | 48 | 57 |
| Current treatment for mental health problem ** | 23 | 57 |
| Interpersonal Relationship Problems | | |
| Intimate partner problem | 38 | 43 |
| Non-intimate partner relationship problem | 5 | 2 |
| Victim of interpersonal violence within past month | 0 | 4 |
| Perpetrator of interpersonal violence within past month | 9 | 4 |
| Death of family member or friend within past five years | 2 | 4 |
| Suicide of family member or friend within past five years | 2 | 2 |
| Life Stressors | | |
| A crisis in the past two weeks | 49 | 58 |
| Physical health problem | 4 | 15 |
| Financial problem | 5 | 8 |
| Lost job / job problem | 7 | 6 |
| Recent criminal legal problem | 14 | 2 |
| Noncriminal legal problem | 4 | 2 |
| School problem | 6 | 4 |
| Suicidal Behaviors | | |
| Disclosed intent to commit suicide | 33 | 30 |
| Left a suicide note | 29 | 42 |
| History of suicide attempt | 17 | 51 |

* includes diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.
** include treatment for alcohol and/or other substance abuse
A total percentage might exceed 100% because decedents might experience more than one circumstance.

Young adults ages 25-44

Suicides among adults ages 25-44 accounted for approximately 31 percent of suicides. The suicide rate among adults ages 25-44 was 17.8 per 100,000. The rate ratio between men (27.7 per 100,000) and women (8.1 per 100,000) was 3.4.

Firearms were the most common mechanism of suicide among men (49%), followed by hanging / suffocation (28%) and poisoning (15%). Among women poisoning was the most common mechanism of death (45%), followed by firearms (29%) and hanging / suffocation (19%) (Table 2B).

**Table 2B. Frequency and percentage of suicide by mechanisms of suicide among adults ages 25-44 by sex, Oregon, 2003-2007**

| Mechanism | Male | | Female | | Total | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| Firearm | 331 | 49 | 59 | 29 | 390 | 44 |
| Poisoning | 103 | 15 | 93 | 45 | 196 | 22 |
| Hanging / suffocation | 185 | 28 | 40 | 19 | 225 | 26 |
| Sharp instrument | 14 | 2 | 1 | 0 | 15 | 2 |
| Drowning | 11 | 2 | 5 | 2 | 16 | 2 |
| Fall | 21 | 3 | 6 | 3 | 27 | 3 |
| Motor Vehicle | 2 | 0 | 1 | 0 | 3 | 0 |
| Other MV | 2 | 0 | 0 | 0 | 2 | 0 |
| Other | 3 | 0 | 0 | 0 | 3 | 0 |

Over 75 percent of suicide victims ages 25-44 had a diagnosed mental disorder, alcohol and /or substance use problem, or depressed mood at time of death; 45 percent of women and 24 percent of men had previously attempted suicide. Alcohol and/or other substance use problems were reported among 20 to 27 percent of suicide victims. Sixteen percent of male suicide victims and 24 percent of female suicide victims had a mental disorder and substance use problem. Less than one third of male victims and only 55 percent of female victims were under treatment for mental health problems at the time of death. A crisis in the two weeks prior to suicide was reported for nearly 45 percent of victims. The most common circumstances reported among men were a problem with an intimate partner (43%), loss job / job problem (18%), crime legal problems (17%) and financial problem (13%). Among women, they were a problem with an intimate partner (40%), physical health problems (19%), job loss / job problem (14%), and financial problem (11%) (Table 6B next page).

Over 80 percent of suicide victims graduated from high school (Table 12A page 26). Nearly 40 percent of male suicide victims were single, never married (Table 13A on page 27).

**Table 6B. Percent of circumstances found surrounding suicide incidents among adults ages 25-44, by sex, Oregon, 2003-2007**

| Circumstances | % Males | % Females |
|---|---|---|
| | (N=672) | (N=206) |
| Mental Health Status | | |
| Mentioned mental health problems * | 75 | 83 |
| Diagnosed mental disorder | 37 | 60 |
| Problem with alcohol | 26 | 25 |
| Problem with other substance | 20 | 27 |
| Problem with alcohol and other substance | 10 | 13 |
| Diagnosed mental disorder and problem with alcohol and /or other substance | 16 | 24 |
| Current depressed mood | 53 | 62 |
| Current treatment for mental health problem ** | 30 | 56 |
| Interpersonal Relationship Problems | | |
| Intimate partner problem | 43 | 40 |
| Non-intimate partner relationship problem | 3 | 5 |
| Victim of interpersonal violence within past month | 0 | 4 |
| Perpetrator of interpersonal violence within past month | 9 | 3 |
| Death of family member or friend within past five years | 3 | 9 |
| Suicide of family member or friend within past five years | 1 | 2 |
| Life Stressors | | |
| A crisis in the past two weeks | 44 | 48 |
| Physical health problem | 10 | 19 |
| Financial problem | 13 | 11 |
| Lost job / job problem | 18 | 14 |
| Recent criminal legal problem | 17 | 8 |
| Noncriminal legal problem | 6 | 10 |
| School problem | 0 | 0 |
| Suicidal Behaviors | | |
| Disclosed intent to commit suicide | 36 | 29 |
| Left a suicide note | 28 | 36 |
| History of suicide attempt | 24 | 45 |

* includes diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.
** include treatment for alcohol and/or other substance abuse
A total percentage might exceed 100% because decedents might experience more than one circumstance.

Adults ages 45-64

Suicides among adults ages 45-64 accounted for approximately 38 percent of suicides. Forty-five percent of female suicides occurred among this age group. The suicide rate among adults ages 45-64 was 21.2 per 100,000. The rate ratio between men (31.8 per 100,000) and women (11.0 per 100,000) was 2.9.

Firearms were the most common mechanism of death among male victims (60%), followed by poisoning (20%), and hanging / suffocation (13%). Among women, poisoning was the most common mechanism of death (51%), followed by firearms (34%) and hanging / suffocation (8%) (Table 2C).

**Table 2C. Frequency and percentage of suicide by mechanisms of suicide among adults 45-64 by sex, Oregon, 2003-2007**

| Mechanism | Male | | Female | | Total | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| Firearm | 478 | 60 | 97 | 34 | 575 | 53 |
| Poisoning | 159 | 20 | 146 | 51 | 305 | 28 |
| Hanging / suffocation | 102 | 13 | 24 | 8 | 126 | 12 |
| Sharp instrument | 16 | 2 | 5 | 2 | 21 | 2 |
| Drowning | 10 | 1 | 6 | 2 | 16 | 1 |
| Fall | 23 | 3 | 6 | 2 | 29 | 3 |
| Motor Vehicle | 1 | 0 | 0 | 0 | 1 | 0 |
| Other MV | 3 | 0 | 0 | 0 | 3 | 0 |
| Other | 7 | 1 | 1 | 0 | 8 | 1 |

Over 75 percent of suicide victims ages 45-64 had a diagnosed mental disorder, alcohol and /or substance use problem, or depressed mood at the time of death; 33 percent of women and 15 percent of men had previously attempted suicide. Alcohol and/or other substance use problems were reported among 11 to 26 percent of suicide victims. Only about one third of male victims and 60 percent of female victims were under treatment for mental health problems at time of death. A crisis in the two weeks prior to suicide was reported for nearly 35 percent of victims. The most common circumstances reported among men were a problem with an intimate partner (29%), physical health problems (27%), loss job / job problem (18%), and financial problem (17%). Among women, they were physical health problems (36%), a problem with an intimate partner (20%), job loss / job problem (13%), and financial problem (12%) (Table 6C next page).

Over 50 percent of female suicide victims had at least a college or associate degree, and half female victims were divorced (Table 12A page 26, Table 13A page 27).

**Table 6C. Percent of circumstances found surrounding suicide incidents among adults ages 45-64 by sex, Oregon, 2003-2007**

| Circumstances | % Males (N=781) | % Females (N=280) |
|---|---|---|
| Mental Health Status | | |
| Mentioned mental health problems * | 75 | 86 |
| Diagnosed mental disorder | 39 | 63 |
| Problem with alcohol | 26 | 20 |
| Problem with other substance | 11 | 18 |
| Problem with alcohol and other substance | 6 | 6 |
| Diagnosed mental disorder and problem with alcohol and /or other substance | 14 | 20 |
| Current depressed mood | 56 | 67 |
| Current treatment for mental health problem ** | 33 | 60 |
| Interpersonal Relationship Problems | | |
| Intimate partner problem | 29 | 20 |
| Non-intimate partner relationship problem | 2 | 3 |
| Victim of interpersonal violence within past month | 0 | 1 |
| Perpetrator of interpersonal violence within past month | 5 | 1 |
| Death of family member or friend within past five years | 7 | 11 |
| Suicide of family member or friend within past five years | 1 | 2 |
| Life Stressors | | |
| A crisis in the past two weeks | 40 | 33 |
| Physical health problem | 27 | 36 |
| Financial problem | 17 | 12 |
| Lost job / job problem | 18 | 13 |
| Recent criminal legal problem | 13 | 3 |
| Noncriminal legal problem | 5 | 5 |
| School problem | 0 | 0 |
| Suicidal Behaviors | | |
| Disclosed intent to commit suicide | 32 | 31 |
| Left a suicide note | 36 | 42 |
| History of suicide attempt | 15 | 33 |

* includes diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.
** include treatment for alcohol and/or other substance abuse
A total percentage might exceed 100% because decedents might experience more than one circumstance.

Elder adults ages 65 and over

Suicides among older adults accounted for approximately 20 percent of suicides. The elder suicide rate was 24.1 per 100,000. The rate ratio between men (47.9 per 100,000) and women (5.9 per 100,000) was 8.1, which was the highest among all age groups.

Firearms were the dominate mechanism of death among men (85%); poisoning and hanging / suffocation accounted for only 5 percent respectively. Among women, poisoning was the most common mechanism of death (40%), followed by firearms (31%) and hanging / suffocation (17%) (Table 2D).

**Table 2D. Frequency and percentage of suicide by mechanisms of suicide among seniors >= 65 by sex, Oregon, 2003-2007**

| Mechanism | Male | | Female | | Total | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| Firearm | 419 | 85 | 26 | 31 | 445 | 78 |
| Poisoning | 26 | 5 | 33 | 40 | 59 | 10 |
| Hanging / suffocation | 27 | 5 | 14 | 17 | 41 | 7 |
| Sharp instrument | 9 | 2 | 2 | 2 | 11 | 2 |
| Drowning | 5 | 1 | 4 | 5 | 9 | 2 |
| Fall | 2 | 0 | 3 | 4 | 5 | 1 |
| Motor Vehicle | 2 | 0 | 0 | 0 | 2 | 0 |
| Other MV | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 1 | 0 | 1 | 1 | 2 | 0 |

Approximately 55 percent of elder male victims and 70 percent of elder female victims had a diagnosed mental disorder, alcohol and /or substance use problem, or depressed mood at time of death. Compared to other young age groups, few elder suicides had a history of suicide attempt and problems with alcohol and substance use. Less than 20 percent of male victims and only one third of female victims were receiving treatment for mental health problems at time of death. The notable circumstances reported among elder suicides were physical health problems, which were reported among 71 percent of men and 64 percent of women, followed by a death of family member or friend within past five years (13%). (Table 6D next page).

Among 348 elder men with physical health problems, 88 percent of had declining health; 58 percent had a loss of autonomy or independence; 33 percent had visited a physician within 30 days. The most frequently reported physical illnesses were heart disease (28 percent), cancer (27 percent), and chronic pain (17 percent). Among 53 elder women with physical health problems, 70 percent had declining health; 40 percent had a loss of autonomy or independence; 17 percent had visited a physician within 30 days. The most frequently reported physical illnesses were chronic pain (28 percent), cancer (15 percent) and heart disease (11 percent).

More than seven percent of elder suicide victims experienced their spouse's death in the past year.

Among elder suicides, 38 percent of men and 51 percent of women lived alone; nearly 50 percent of males were married; 51 percent of females were widowed (**Table 13A page 27**).

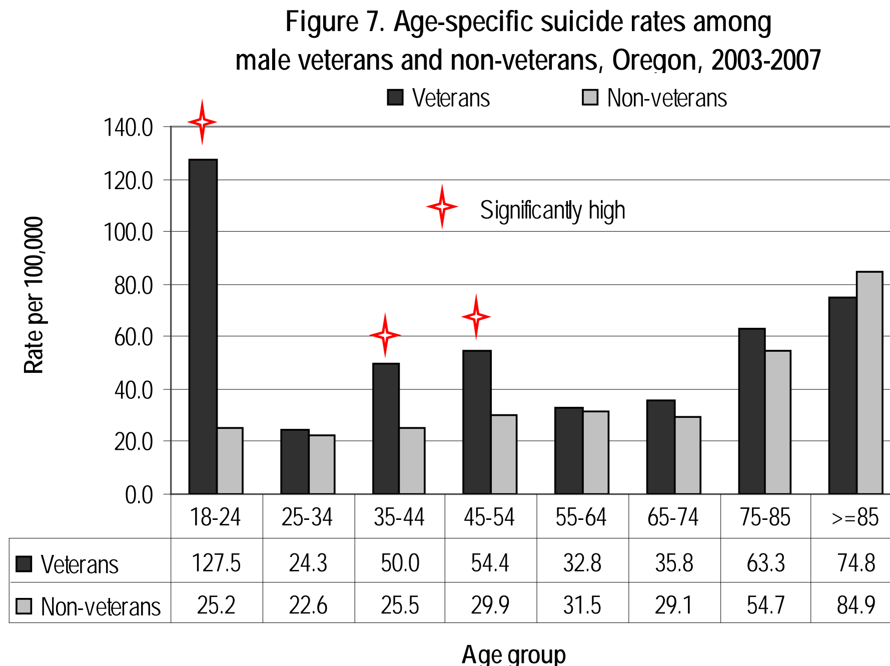
**Table 6D. Percent of circumstances found surrounding suicide incidents among seniors ages 65 and over, Oregon, 2003-2007**

| Circumstances | % Males (N=491) | % Females (N=83) |
|---|---|---|
| Mental Health Status | | |
| Mentioned mental health problems * | 55 | 70 |
| Diagnosed mental disorder | 22 | 42 |
| Problem with alcohol | 5 | 5 |
| Problem with other substance | 1 | 4 |
| Problem with alcohol and other substance | 0 | 1 |
| Diagnosed mental disorder and problem with alcohol and /or other substance | 2 | 7 |
| Current depressed mood | 49 | 60 |
| Current treatment for mental health problem ** | 19 | 36 |
| Interpersonal Relationship Problems | | |
| Intimate partner problem | 6 | 5 |
| Non-intimate partner relationship problem | 1 | 2 |
| Victim of interpersonal violence within past month | 0 | 0 |
| Perpetrator of interpersonal violence within past month | 2 | 0 |
| Death of family member or friend within past five years | 13 | 13 |
| Suicide of family member or friend within past five years | 0 | 0 |
| Life Stressors | | |
| A crisis in the past two weeks | 33 | 28 |
| Physical health problem | 71 | 64 |
| Financial problem | 4 | 10 |
| Lost job / job problem | 0 | 0 |
| Recent criminal legal problem | 1 | 0 |
| Noncriminal legal problem | 1 | 1 |
| School problem | 0 | 0 |
| Suicidal Behaviors | | |
| Disclosed intent to commit suicide | 34 | 35 |
| Left a suicide note | 32 | 37 |
| History of suicide attempt | 9 | 13 |

* includes diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.
** include treatment for alcohol and/or other substance abuse
A total percentage might exceed 100% because decedents might experience more than one circumstance.

Suicide among veterans

Approximately 27 percent of suicides occurred among veterans in Oregon. Ninety-seven percent of veteran suicides were male. Based on the estimates of veterans in Oregon[1], figure 7 shows male suicide rates by age group. There were statistically significant differences in rates of suicide between veterans and non-veterans among ages 18-24, 35-44 and 45-54. Overall male veterans had a much higher suicide rate than non-veteran males (45.7 vs. 27.4 per 100,000).




| | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75-85 | >=85 |
|---|---|---|---|---|---|---|---|---|
| Veterans | 127.5 | 24.3 | 50.0 | 54.4 | 32.8 | 35.8 | 63.3 | 74.8 |
| Non-veterans | 25.2 | 22.6 | 25.5 | 29.9 | 31.5 | 29.1 | 54.7 | 84.9 |

Firearms were a dominant mechanism of suicide among male veterans, accounting for 74 percent of male suicidal deaths, which were much more common than that of non-veteran males (56 percent).

Over 75 percent of male veterans ages 18-64 who died by suicide had a diagnosed mental disorder, alcohol and /or substance use problem, or depressed mood at time of death; 17 percent of them had previously attempted suicide. Alcohol and/or other substance use problems were reported among 14 to 25 percent of those veterans. A crisis in the two weeks prior to suicide was reported among nearly 40 percent of victims. Only about one third of victims were reported to be receiving treatment for mental health problems at the time of death. The most common circumstances reported among male veterans were a

[1] United States Department of Veteran Affairs. VetPop 2007 State data tables: http://www1.va.gov/vetdata/docs/VP2007_state.htm Accessed on Aug. 14, 2008.

problem with an intimate partner (38%), physical health problems (23%), loss job / job problem (15%), financial problem (14%) and crime legal problems (14%) (Table 6E).

**Table 6E. Percent of circumstances found surrounding suicide incidents among male veterans, by age group, Oregon, 2003-2007**

| Circumstances | % 18-64 (N=412) | % >= 65 (N=345) |
|---|---|---|
| Mental Health Status | | |
| Mentioned mental health problems * | 76 | 53 |
| Diagnosed mental disorder | 38 | 20 |
| Problem with alcohol | 25 | 4 |
| Problem with other substance | 14 | 1 |
| Problem with alcohol and other substance | 7 | 0 |
| Diagnosed mental disorder and problem with alcohol and /or other substance | 14 | 2 |
| Current depressed mood | 56 | 48 |
| Current treatment for mental health problem ** | 34 | 26 |
| Interpersonal Relationship Problems | | |
| Intimate partner problem | 34 | 7 |
| Non-intimate partner relationship problem | 2 | 0 |
| Victim of interpersonal violence within past month | 8 | 3 |
| Perpetrator of interpersonal violence within past month | 0 | 0 |
| Death of family member or friend within past five years | 6 | 13 |
| Suicide of family member or friend within past five years | 2 | 0 |
| Life Stressors | | |
| A crisis in the past two weeks | 38 | 34 |
| Physical health problem | 23 | 71 |
| Financial problem | 14 | 4 |
| Lost job / job problem | 15 | 0 |
| Recent criminal legal problem | 14 | 1 |
| Noncriminal legal problem | 6 | 1 |
| School problem | 0 | 0 |
| Suicidal Behaviors | | |
| Disclosed intent to commit suicide | 33 | 36 |
| Left a suicide note | 34 | 33 |
| History of suicide attempt | 17 | 9 |

* includes diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.
** include treatment for alcohol and/or other substance abuse
A total percentage might exceed 100% because decedents might experience more than one circumstance.

The circumstances of suicide among male veterans were similar to those non-veterans except veteran victims reported more physical health problems (Table 6F).

**Table 6F. Percent of circumstances found surrounding suicide incidents among male veterans and non-veterans ages under 65, Oregon, 2003-2007**

| Circumstances | % of Veterans (N=412) | % of Non-veterans (N=1274) |
|---|---|---|
| Mental Health Status | | |
| Mentioned mental health problems * | 76 | 74 |
| Diagnosed mental disorder | 38 | 36 |
| Problem with alcohol | 25 | 25 |
| Problem with other substance | 14 | 15 |
| Problem with alcohol and other substance | 7 | 7 |
| Diagnosed mental disorder and problem with alcohol and /or other substance | 14 | 15 |
| Current depressed mood | 56 | 53 |
| Current treatment for mental health problem ** | 34 | 29 |
| Interpersonal Relationship Problems | | |
| Intimate partner problem | 34 | 36 |
| Non-intimate partner relationship problem | 2 | 3 |
| Victim of interpersonal violence within past month | 0 | 0 |
| Perpetrator of interpersonal violence within past month | 8 | 7 |
| Death of family member or friend within past five years | 6 | 4 |
| Suicide of family member or friend within past five years | 2 | 1 |
| Life Stressors | | |
| A crisis in the past two weeks | 38 | 45 |
| Physical health problem | 23 | 16 |
| Financial problem | 14 | 14 |
| Lost job / job problem | 15 | 18 |
| Recent criminal legal problem | 14 | 15 |
| Noncriminal legal problem | 6 | 5 |
| School problem | 0 | 1 |
| Suicidal Behaviors | | |
| Disclosed intent to commit suicide | 33 | 35 |
| Left a suicide note | 34 | 31 |
| History of suicide attempt | 17 | 20 |

* includes diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.
** include treatment for alcohol and/or other substance abuse
A total percentage might exceed 100% because decedents might experience more than one circumstance.

Among elder veterans age 65 and over who died by suicide, approximately 55 percent of them had a diagnosed mental disorder, alcohol and /or substance use disorder, or

depressed mood at the time of death. Compared to the young veterans, few elder suicides had a history of suicide attempt and problems with alcohol and substance.

The notable circumstance among elder veterans were physical health problems, which were reported among 71 percent of male veterans, followed by death of family member or friend within past five years (13%) (Table 6F).

There were differences in marital status among males ages 18-64 between veterans and non-veterans. Compared with non-veterans, veterans who died by suicide were more likely to be married and divorced (Table 13B).

**Table 13B. Marital status among men ages 18-64, who died by suicide, by veteran status, Oregon, 2003-2007**

| Marital status | Veterans | | Non-veterans | |
|---|---|---|---|---|
| | Frequency | %* | Frequency | %* |
| Married | 152 | 38 | 369 | 30 |
| Never Married | 82 | 21 | 510 | 41 |
| Divorced | 155 | 39 | 343 | 28 |
| Widowed | 9 | 2 | 13 | 1 |
| Other /Unknown | 14 | NA | 39 | NA |

* Percentage is calculated according to available data.

## Discussion

Suicide is a major public health issues both nationally and in Oregon. The rates of suicide are especially high among elderly men. The Oregon Injury Prevention and Epidemiology Program has developed an elder suicide prevention plan (review the plan at: http://www.oregon.gov/DHS/ph/ipe/esp/index.shtml) which emphasizes the following prevention concepts and strategies:

- Promote awareness that suicide in older adults is a public health problem that is preventable.
- Develop broad-based support for elder suicide prevention.
- Develop and implement strategies to reduce the stigma associated with aging and with being a senior consumer of mental health, substance abuse and suicide prevention services.
- Develop and implement community-based suicide prevention programs for older adults.
- Promote efforts to reduce access to lethal means and methods of self-harm by older adults.
- Implement training for recognition and assessment of at-risk behavior in and delivery of effective treatment to older adults.
- Develop and promote effective clinical and professional practices for suicide prevention.
- Improve reporting and portrayals of suicidal behavior, mental illness, and substance abuse among older adults in the entertainment and news media.
- Promote and support research on late life suicide and suicide prevention.
- Improve and expand surveillance systems and evaluation of prevention programs for suicidal behavior.

The Oregon Injury and Violence Prevention progam has created a variety of other resources to guide state and local approaches to suicide. These include:

Review the Suicide chapter in Oregon's Injury in Oregon Annual Report, 2009 at http://www.oregon.gov/DHS/ph/ipe/index.shtml

Review the Suicide chapter in Oregon's Injury Prevention Plan, 2005-2010 at:
http://www.oregon.gov/DHS/ph/ipe/index.shtml

Review Oregon's Youth Suicide Prevention Plan at:
http://www.oregon.gov/DHS/ph/ipe/ysp/2000plan/index.shtml

Finally, the data report above suggests the following actions:

- Complete statewide implementation of comprehensive suicide prevention in high schools.
- Expand focus of prevention efforts across the age span focusing in particular on men.
- Identify culturally appropriate approaches that engage men successfully and enable men to identify depression as a manageable condition and promote community, business, family and individual tools to support successful self management.
- Promote universal depression screening and care for seniors by healthcare providers.
- Expand suicide intervention skills efforts that will have an impact on adults, particularly males and veterans throughout Oregon.

## *Glossary*

The following definitions refer to terms identified in this report from The State Violent Death Reporting System Workgroup[1], NVDRS coding manual[2] and ORVDRS' annual report[3].

Age-adjusted mortality rate: A mortality rate statistically modified to eliminate the effect of different age distributions in the different populations.

Age-specific mortality rate: A mortality rate limited to a particular age group. The numerator is the number of deaths in that age group; the denominator is the population in that age group.

Alcohol problem: A suicide circumstance in which the victim is perceived by self or others as having a problem with or being addicted to alcohol. A victim who is participating in an alcohol rehabilitation program or treatment, including self-help groups and 12-step programs, and has been clean and sober for less than five years is also considered as having this circumstance.

Blunt instrument: Clubs, bats, boards, or other objects that can be used to inflict an injury.

Crude mortality rate: The mortality rate from all causes of death for a population. It is calculated by dividing the number of deaths in a population in a period by resident population.

Criminal legal problem: A suicide circumstance in which the victim was facing a recent or impending arrest, police pursuit, or an impending criminal court date, and the consequence was relevant to the suicide event.

Crisis: A suicide circumstance in which an acute precipitating event appears to have contributed to the suicide (e.g., the victim was just arrested; divorce papers were served that day; the victim was about to be laid off; the person had a major argument with a spouse the night before).

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[1] Sanford C and Hedegaard H (editors). Deaths from Violence: A Look at 17 States -- Data from the National Violent Death Reporting System. December 2008

[2] Centers for Disease Control and Prevention. National Violent Death Reporting System (NVDRS) Coding Manual (Online). (2003). National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (producer). Available from: URL: www.cdc.gov/injury.

[3] Shen X, Millet L, Kohn M. 2009. Violent Deaths in Oregon: 2007. Oregon Department of Human Services, Portland, Oregon.

Depressed mood: A suicide circumstance in which the person was noted by others to be sad, despondent, down, blue, unhappy, etc. This circumstance can apply whether or not the person has a diagnosed mental health problem.

Drowning: A mechanism of death resulting from submersion in water or other liquid.

Falls: A mechanism of death resulting from a fall, push or jump from a high place.

Financial problem: A suicide circumstance in which the victim was experiencing monetary issues such as bankruptcy, overwhelming debts, a gambling problem, or foreclosure of a home or business.

Firearm: Any weapon (including a starter gun) which is designed to or may readily be converted to expel a projectile by the action of an explosive (e.g., gun powder).

Hanging/suffocation/strangulation:
Mechanisms of injury resulting in airway obstruction in which the victim died from lack of oxygen.

Homicide-suicide: It is defined as one person killing one or more others then taking his/her own life within 24 hours.

Incident: All victims and suspects associated with a given incident are in one record. A violent death incident can be made up of any of the following: a) One isolated violent death. b) Two or more homicides, including legal interventions, when the deaths involve at least one person who is a suspect or victim in the first death and a suspect or victim in the second death. c) Two or more suicides or undetermined manner deaths, when there is some evidence that the second or subsequent death was planned to coincide with or follow the preceding death. d) One or more homicides or unintentional firearm deaths combined with one or more suicides, when the suspect in the first death is the person who commits suicide. e) Two or more unintentional firearm deaths when the same firearm inflicts two or more fatal injuries and the fatal injuries are inflicted by one shot or burst of shots. For categories (b), (c) and (d), the fatal injuries must occur within 24 hours of each other.

Intent to commit suicide: The victim had previously expressed suicidal feelings to another person, whether explicitly (e.g., "I'm considering killing myself") or indirectly (e.g., "I know how to put a permanent end to this pain").

Intimate partner: A current or former girlfriend, boyfriend, date or spouse. The definition of intimate partner includes first dates.

Intimate partner problem/violence: A suicide or homicide circumstance in which the victim was experiencing problems with a current or former intimate partner, such as a divorce, break-up, argument, jealousy, conflict, or discord.

Job: A suicide circumstance in which the victim was either experiencing a problem at work (such as tension with a co-worker, poor performance reviews, increased pressure, feared layoff) or was having a problem with joblessness (e.g., recently laid off, having difficulty finding a job).

Mechanism: The primary instrument used by a victim or suspect that contributed to someone's death.

Mental health problem (Current mental illness): A suicide circumstance in which the victim was identified as having a mental health illness, such as depression, schizophrenia, obsessive-compulsive disorder, etc. The mental health problem must have been diagnosed by someone who is professionally trained.

Mental health treatment: A suicide circumstance in which the victim had a current prescription for a psychiatric medication or saw a mental health professional within the two months prior to death. Treatment includes seeing a psychiatrist, psychologist, medical doctor, therapist or other counselor for a mental health or substance abuse problem; receiving a prescription for an antidepressant or other psychiatric medication; or residing in an inpatient or halfway house facility for mental health problems.

Motor vehicle: A mechanism of death resulting from a crash of any motorized vehicle.

Other relationship problem: A suicide circumstance in which the person was experiencing problems or conflict with a family member, friend or associate (other than an intimate partner) that appeared to have contributed to the suicide.

Perpetrator: Person or persons suspected of having killed another person in an incident, whether intentionally (any method/weapon) or unintentionally (firearm only) or assisted in the homicide.

Physical health problem: A suicide circumstance in which the victim was experiencing terminal disease, debilitating condition, or chronic pain, that was relevant to the suicide event.

Poisoning: A state of illness caused by the presence of any harmful or toxic substance that has been ingested, inhaled, applied to the skin or resulted from any other form of contact.

Reliability of rates: Some rates in this report are based on a small number of deaths. Chance variation is a common problem when the numbers being used to calculate rates are extremely small. From year to year, large swings can occur in rates, which do not reflect real changes. The rates based on small numbers (less than 20) may be unstable due to random chance factors, and should be used with caution.

Resident: The decedent was an official inhabitant of the state (or territory) including those portions of a Native American reservation within the state at the time of injury, according to the death certificate.

Sharp instruments: Objects that can be used to inflict a penetrating injury, such as knives, razors, machetes or pointed instruments such as a chisel or broken glass.

Substance problem: A suicide circumstance in which the victim was noted as using illegal drugs (such as heroin or cocaine), abusing prescription medications (such as pain relievers or Valium), or regularly using inhalants (e.g., sniffing gas) even if the addiction or abuse is not specifically mentioned. The exception to this is marijuana use. For marijuana, the use must be noted as chronic, abusive, or problematic (e.g., “victim smoked marijuana regularly,” “victim’s family indicated he had been stoned much of the past months”).

Suicide: A death resulting from the intentional use of force against oneself. A preponderance of evidence should indicate that the use of force was intentional.

Suicide attempt history: A suicide circumstance in which the victim was known to have previously tried to end his/her own life, regardless of the severity of the injury inflicted.

Suicide note: A suicide circumstance in which the victim left a message, e-mail, video, or other communication that he or she intended to end his/her own life. A will or folder of financial papers near the victim does not constitute a suicide note.

Victim: Person or persons who died in a suicide, violence-related homicide, legal intervention, as the result of a firearm injury, or from an undetermined manner.
Age-adjusted mortality rate: A mortality rate statistically modified to eliminate the effect of different age distributions in the different populations.