Suicides in Oregon: Trends and Associated Factors 2003-2012

Oregon Health Authority, Public Health Division, Oregon Violent Death Reporting System

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Table of Contents

Executive Summary

Suicide is one of Oregon's most persistent public health problems. Suicide is the second leading cause of death among Oregonians aged 15 to 34 years, and the eighth leading cause of death among all Oregonians in 2012. The financial and emotional impacts of suicide on family members and the broader community are devastating and long-lasting. This report provides the most current suicide statistics in Oregon. We analyzed mortality data from 1981 to 2012 and Oregon Violent Death Reporting System (ORVDRS) data from 2003 to 2012. This report presents findings of suicide trends and associated factors in Oregon. These data can inform prevention programs, policy, and planning.

Key Findings

In 2012, the age-adjusted suicide rate among Oregonians was 17.7 per 100,000, 42 percent higher than the national average.

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

Suicide rates among adolescents aged 10 through 17 years has increased since 2011 after decreasing from 1990 to 2010.

Suicide rates among adults aged 45 to 64 years rose more than 50 percent from 18.1 per 100,000 in 2000 to 28.7 per 100,000 in 2012; the rate increased more among females than among males.

Suicide rates among males aged 65 years and older decreased approximately 18 percent from nearly 50 per 100,000 in 2000 to 42 per 100,000 in 2012.

From 2003 to 2012:

Males were 3.6 times more likely to die by suicide than females. The highest suicide rate occurred among males aged 85 years and older (72.4 per 100,000). Non-Hispanic white males had the highest suicide rate among all racial / ethnic groups (27.1 per 100,000).

Approximately 25 percent of suicides occurred among veterans. Male veterans had almost twice the suicide rate than non-veteran males (45.5 vs. 29.0 per 100,000). Veteran suicide victims were reported to have more physical health problems than non-veteran males.

Psychological, behavioral, and health problems co-occur and are known to increase suicide risk. Approximately 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, fewer than one third of male victims, and fewer than 60 percent of female victims, were receiving treatment for mental health problems at the time of death.

Interpersonal conflicts (problems with an intimate partner and poor family relationships) were commonly reported circumstances in the incident of suicide.

Eviction/loss of home was a factor associated with 199 deaths by suicide (7%) between 2009 and 2012.

Firearms were the most common mechanism of injury among males who died by suicide, which accounted for 61 percent of deaths among males.

Investigators suspect that one in four suicide victims had used alcohol prior to the incident.

The number of suicides in each month varies; but there was no clear seasonal pattern.

Baker, Coos, Curry, Douglas, Grant, Harney, Jackson, Josephine, Klamath, Lincoln and Tillamook counties had a higher than state average suicide rate; and Benton, Clackamas, Hood River, Polk, Washington, and Yamhill counties had a lower than state average suicide rate.

Recommendations

- Develop a new statewide suicide prevention strategy that prioritizes:

    a. A system of comprehensive primary prevention that implements evidence-based, upstream, primary prevention strategies that foster successful development and prevent psychological and behavioral problems, examples of such as nurse family partnership, Paxis Good Behavior Game, Communities that Care, evidence-based parenting programs, mindfulness practice, and other evidence-based practices.

    b. Identify and implement evidence-based and culturally-appropriate practices that address depression and suicidality among adult males to:

        i. enable males to identify depression as a manageable health condition, and
        ii. promote community, business, family and individual tools to support successful self-management.

    c. Develop integrated behavioral health and primary care solutions to address depression and suicidal thoughts and behaviors among older adults.

- Complete statewide implementation of comprehensive suicide prevention in high schools.

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

- Ensure that all mental health providers are trained to assess and manage suicidal persons.

- Ensure follow-up care for persons who have been seen for suicidal behaviors in the emergency department and inpatient psychiatric units.

- Restrict access to the most common lethal means / firearms for individuals at risk for suicide.

- Encourage health systems to adopt a Zero Suicide initiative as an aspiration goal.

Introduction

Suicide is an important public health problem in Oregon. Health surveys conducted in 2008 and 2009 showed that approximately 15 percent of teens and four percent of adults aged 18 years and older had serious thoughts of suicide during the past year; and about five percent of teens and 0.4 percent of adults made a suicide attempt in the past year.[1,2] In 2012, 717 Oregonians died by suicide and more than 2,100 hospitalizations were due to suicide attempts.[3,4] Suicide is the second leading cause of death among Oregonians aged 15 to 34 years, and the eighth leading cause of death among all ages in Oregon.[3] The cost of suicide is enormous. In 2013 alone, self-inflicted injury hospitalization charges in Oregon exceeded $54 million; and the estimate of total lifetime cost of suicide in Oregon was over $677 million.[3,4] 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".[5] This report provides the most current suicide statistics in Oregon, provides suicide prevention programs and planners a detailed description of suicide, examines factors associated with suicide and generates public health information and prevention strategies. We analyzed mortality data from 1981 to 2012, and 2003 to 2012 data from the Oregon Violent Death Reporting System (ORVDRS). This report presents findings of suicide trends and associated 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.

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[1] Oregon Healthy Teens 2009 -11th Grade Results. http://public.health.oregon.gov/BirthDeathCertificates/Surveys/OregonHealthyTeens/results/2009/11/Documents/mental11.pdf

[2] Crosby A.E., Han B., Ortega L.A.G., Park S.E., et al, Suicidal Thoughts and Behaviors Among Adults aged >= 18 Years – United States, 2008-2009. MMWR. 2011;60:13.

[3] Oregon Vital Statistics Annual Report, Vol. 2, 2012. Oregon Heath Authority.

[4] Oregon Injury and Violence Prevention Program, Injury in Oregon, 2013 Injury Data Report. Oregon Heath Authority.

[5] Maris R.W., Berman A.L., Silverman A.M. (2000). Comprehensive Textbook of suicidology. New York: The Guilford Press. (p378)

Suicide was considered with code of X60-84 and Y87.0.[1] **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.**

Mortality data from 1981 to 2012 are from Web-based Injury Statistics Query and Reporting System (WISQARS) of the Centers of Disease Control and Prevention.[2] 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.[1] 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 released by the National Center for Health Statistics (NCHS).[3] The populations of 2007 and 2008, which were at the mid-point of the period from 2003 to 2012, were used to calculate rates. 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 was 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 in proportion (percentage) for the studied groups.

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[1] 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.

[2] The Centers for Disease control and Prevention. WISQARS. http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html. Accessed on Jan 8, 2015.

[3] National Center for Health Statistics. U.S. Census Population with Bridged-race Categories (vintage 2010 postcensal estimates): http://www.cdc.gov/nchs/nvss/bridged_race/data_documentation.htm#vintage2010 Accessed on June. 20, 2012.

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

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.[1]

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 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 likely underestimates some circumstances surrounding suicide deaths, such as mental health problems.

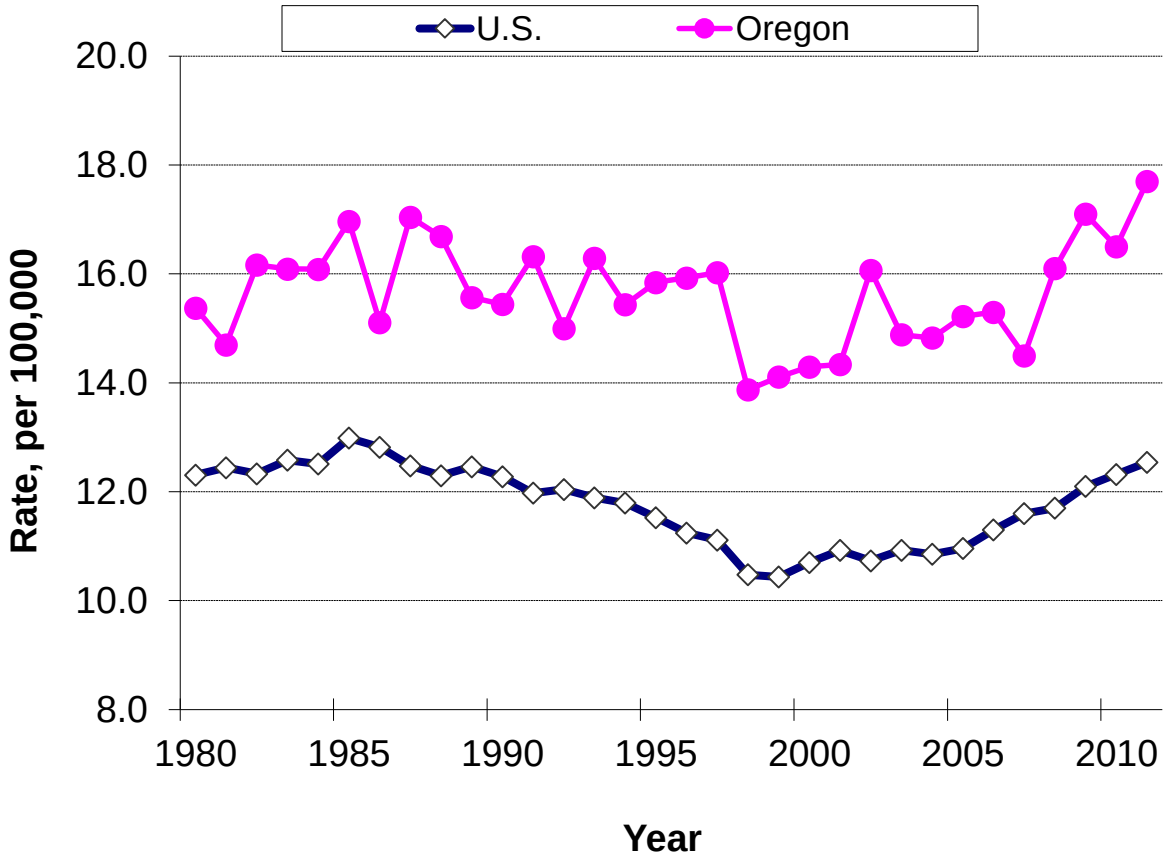
[1] Ossiander EM, Milham S, A computer system for coding occupation. Am J of Industrial Med, 2006; 49:854-57.

Findings

Overview

Figure 1 shows suicide rates in the U.S. and Oregon between 1981 and 2012. The trend in Oregon suicide rates is similar to the national trend— but rates in Oregon are higher. The first peak in the age-adjusted rate in Oregon 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 rate declined 18 percent from 1986 to 1999. Much of this decrease occurred in a single year, as rate fell from 16.2 per 100,000 in 1998 to 13.9 in 1999. Since 2000, Oregon suicide rates have increased 25.5 percent, reaching 17.7 in 2012.

Figure 1. Age-adjusted suicide rates, U.S. and Oregon, 1981-2012



Source: CDC WISQARS.

Compared to the national average, Oregon suicide rates have been higher for the past three decades. The Oregon age-adjusted suicide rate of 17.7 per 100,000 in 2012 was 42 percent higher than the national average and Oregon ranked the ninth among all US states in suicide incidence. Between 2003 and 2012, Oregon suicide rates were significantly

higher than the national average among all age groups except those aged 10 to 17 years and females aged 18 to 24 years (Table 1).

Table 1. Suicide rates (per 100,000), by age group and sex, U.S. vs. Oregon, 2003-2012

	Sex	Age Group (years)				
		10-17	18-24	25-44	45-64	>= 65
U.S.	Males	4.3	19.9	22.9	26.6	29.1
	Females	1.6	3.9	6.2	8.1	4.1
	All	3.0	12.1	14.6	17.1	14.8
Oregon	Males	4.3*	24.8	29.2	36.3	44.0
	Females	1.9*	4.7*	8.9	12.5	6.0
	All	3.1*	14.9	19.2	24.2	22.8

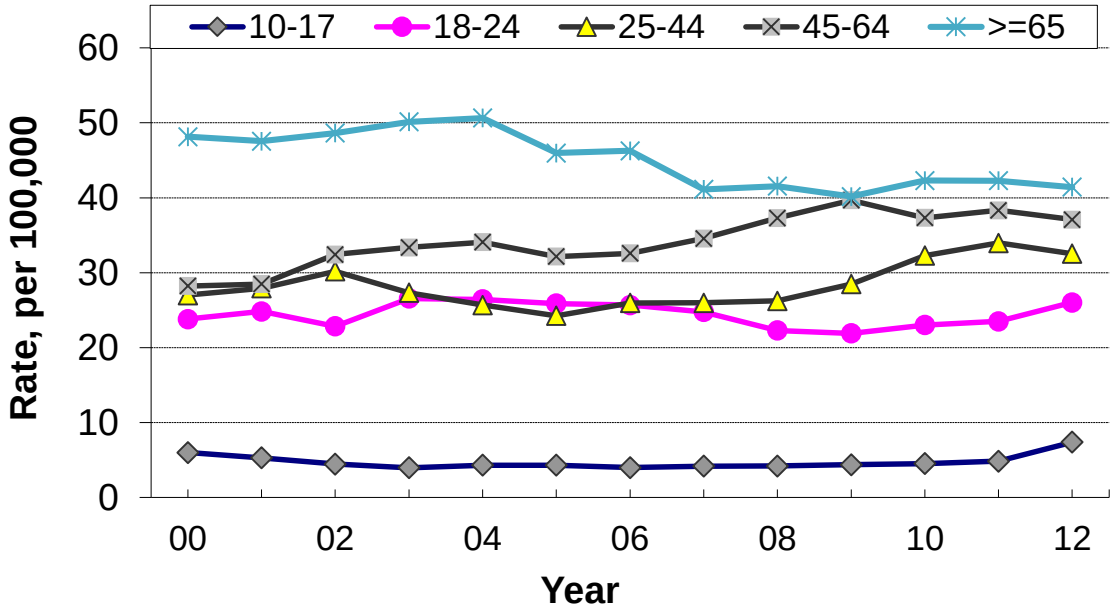
* Not statistically significant compared to the U.S. rate for the same age group.
Source: CDC WISQARS.

Trend by age group

Three-year rolling average rates of suicide by age group in Oregon are illustrated in Figure 2A and Figure 2B. Suicide rates among adolescents aged 10-17 years did not change much between 2000 and 2010; then the rates rose after 2011. Suicide rates among those aged 18-24 years fluctuated and overall remained at a similar level from 2000 to 2012. Suicide rates among males aged 25-44 years decreased slightly from 2000 to 2005; then the rates rose after 2006; overall, the rates for this age group increased from 2000 to 2012. Suicide rates among females aged 25-44 years fluctuated and overall did not increased from 2000 to 2012. Suicide rates among people aged 45-64 years increased significantly from 2000 to 2012; suicide rates increased 31 percent from 28.2 per 100,000 in 2000 to 37.8 per 100,000 in 2012 among males aged 45-64 years; and the rates increased 66 percent from 8.2 per 100,000 in 2000 to 13.6 per 100,000 in 2012 among females aged 45-64 years. Suicide rates decreased 14 percent among older males aged 65 and older from 2000 to 2007; and the rates have flattened since 2007. Suicide rates among older females aged 65 and older did not change much between 2000 and 2010; and then the rates rose slightly after 2010. The suicide trends in Oregon fit the national picture in general.[1,2]

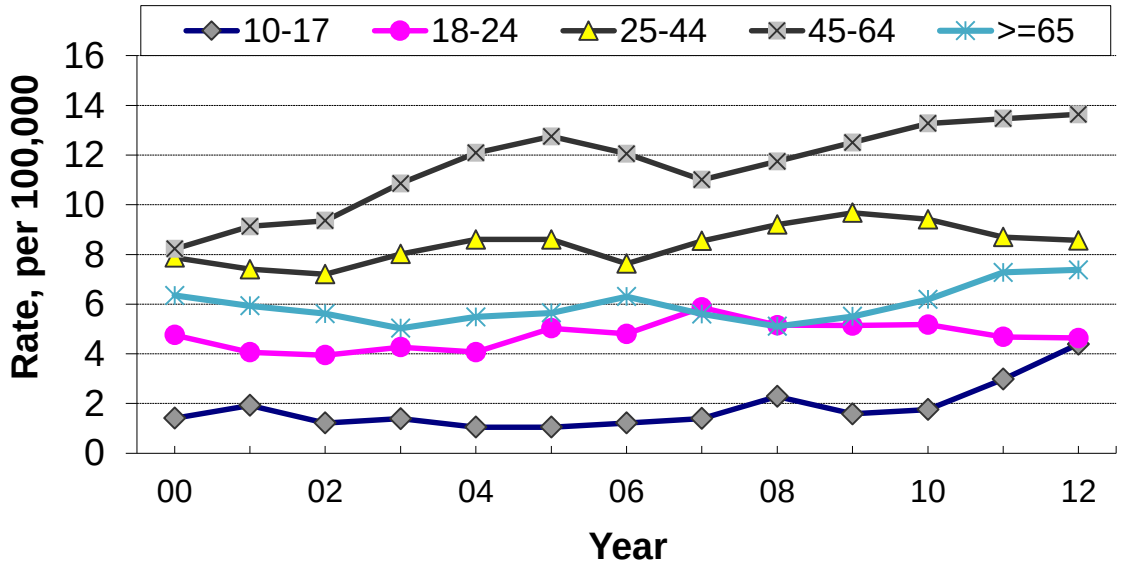
[1] Hu G., Wilcox H.C, Wissow L., Baker S., Mid-life suicide- An Increasing problem in US Whites, 1999-2005. Am J Prev Med. 2008;35(6):589-593.
[2] CDC. Suicide among adults aged 35-64 years – United States, 1999-2010. MMWR. 2013; 62:322-325.

Figure 2A. Three year moving average of suicide rates among males, by age group (years), Oregon, 2000-2012



Source: CDC WISQARS, ORVDRS

Figure 2B. Three year moving average of suicide rates among females, by age group (years), Oregon, 2000-2012



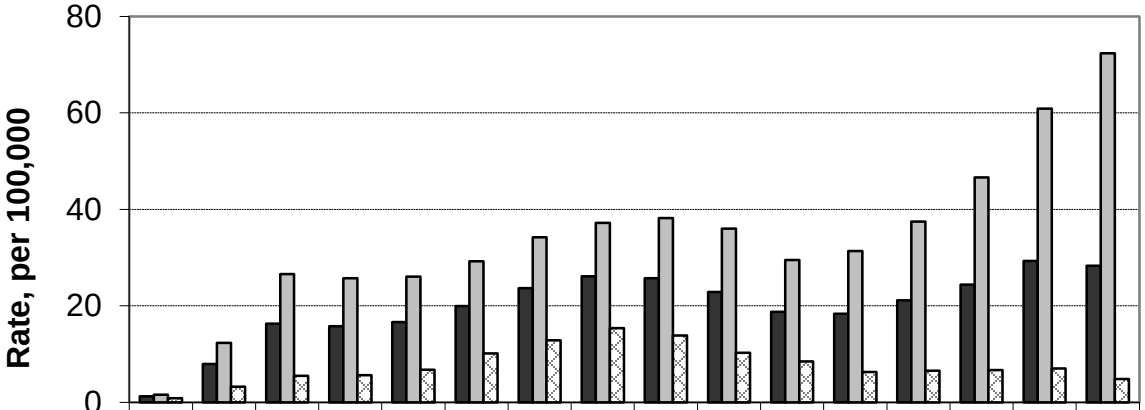
Source: CDC WISQARS, ORVDRS

Suicide rate by age, sex, and race/ethnicity

Age

In general, suicide rates increase with age. Suicide among children under 10 years of age was rare. Among males, the age-specific rate of suicide rose sharply after the age of 15 years and reached the first peak for those aged 20 to 24 years. The rate decreased slightly for those aged 25 to 29 years, then rose gradually and reached the second peak for those aged 50 to 54 years. The rates decreased for those aged 55 to 64 years, and rose again after the age of 65 years. After the age of 70 years, the rates rose dramatically. The highest suicide rate was among those aged 85 years and older. Among females, the age distribution of suicide was different. The age-specific rate of suicide rose gradually, beginning with those aged 10 to 14 years, and reached the peak between the ages of 45 and 49 years; rate then decreased slowly. Rates remained relatively stable for those aged 65 years and older (Figure 3).

Figure 3. Age-specific rate of suicide, by sex, Oregon, 2003-2012



	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	1.2	7.9	16.3	15.8	16.6	19.9	23.6	26.1	25.7	22.9	18.7	18.4	21.1	24.4	29.3	28.3
Male	1.6	12.3	26.6	25.7	26.0	29.2	34.2	37.2	38.2	36.0	29.5	31.4	37.5	46.6	60.9	72.4
Female	0.9	3.2	5.5	5.6	6.7	10.1	12.8	15.3	13.8	10.2	8.4	6.3	6.5	6.7	7.0	4.8

Age in years

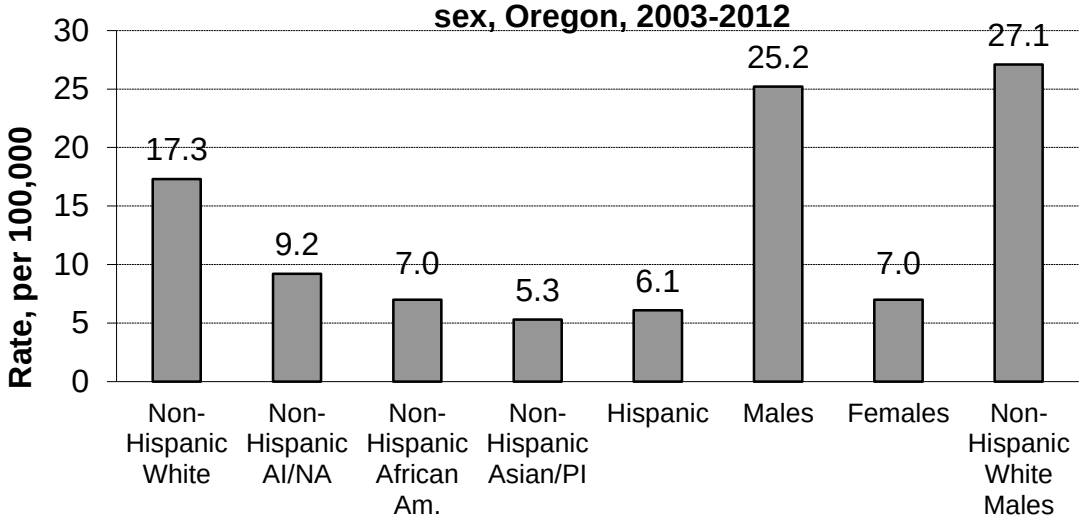
Source: ORVDRS

Sex, Race / Ethnicity

Males had a higher rate of death by suicide than females. In each age group, suicide rates were higher among males than among females (Figure 3). Overall, the suicide rate for males was 3.6 times higher than for females (Figure 4). Among all suicide victims, 93 percent of the suicides were non-Hispanic white. The age-adjusted suicide rate among non-Hispanic whites was 17.3 per 100,000, which was higher than the rates observed among populations of other races. Non-Hispanic white males had the highest suicide rate. This is mainly due to high suicide rates among white males aged 60 years and over.

There were not significant differences in rates among females between non-Hispanic white and other racial/ethnic groups.

Figure 4. Age-adjusted suicide rate, by race / ethnicity and sex, Oregon, 2003-2012



AI/NA: American Indian/Native Alaskan. PI: Pacific Islander.
Source: ORVDRS

Mechanism of death

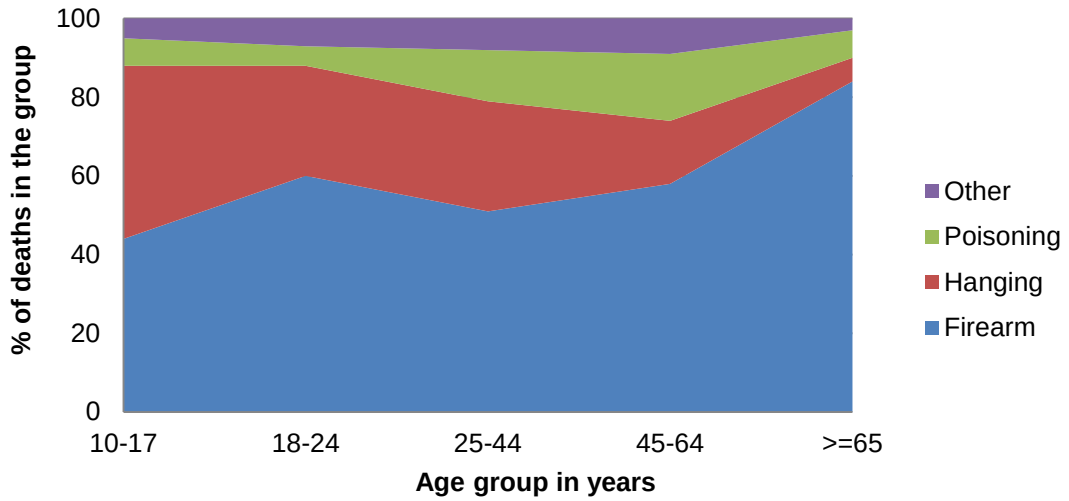
Firearms, poisoning, and suffocation (hanging) were the most frequently observed mechanisms of injury in suicide deaths. Differences in mechanisms of death were observed by sex and race/ethnicity (Table 2 & Table 3). Firearms were the mechanism of suicide in 61 percent of deaths among males, compared with 31 percent of deaths among females. Poisoning was the mechanism of death among 12 percent of males, but 42 percent of the deaths among females. Suffocation was identified as the mechanism of death among 19 percent of males and females. The proportion of firearm suicides increased with age among males (Figure 5A); and persons aged less than 25 years were much more likely to die from the mechanism of suffocation than older adults aged 65 years and older (Figure 5A & Figure 5B). Tables 2A-2E have details on mechanism of suicide by age group – see pages 29, 31, 33, 35 and 37.

Table 2. Mechanism of suicide, by sex, Oregon, 2003-2012

Method	Males	%	Females	%	Total	%
Firearm	2,922	61	418	31	3,340	54
Poisoning	595	12	577	42	1,172	19
Hanging / suffocation	927	19	256	19	1,183	19
Fall	123	3	39	3	162	3
Sharp instrument	87	2	27	2	114	2
Drowning	57	1	35	3	92	1
Motor Vehicle (MV)	20	<1	5	<1	25	<1
Other MV	19	<1	1	<1	20	<1
Fire / Burn	11	<1	3	<1	14	<1
Other / Unknown	18	<1	5	<1	23	<1

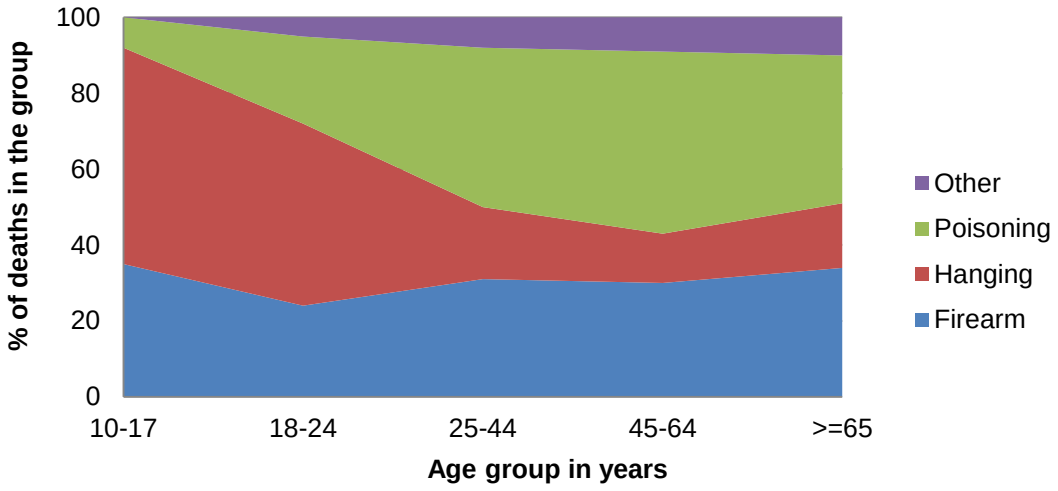
Source: ORVDRS

Figure 5A. Proportion of deaths by mechanism of death among males, by age group, Oregon, 2003-2012



Source: ORVDRS

Figure 5B. Proportion of deaths by mechanism of death among females, by age group, Oregon, 2003-2012



Source: ORVDRS

Non-Hispanic white males had a higher percent of suicide using firearms than other races (62% vs. 45%) and Hispanic ethnicity (62% vs. 44%). Males with Hispanic ethnicity had a higher percent of suicide from hanging/suffocation than non-Hispanic white males (41% vs.18%). No significant differences in the mechanism of death was seen for females among different racial/ethnic groups (Table 3). The small number of deaths among females who were not in the non-Hispanic white category may have contributed to this finding.

Table 3. Mechanism of suicide, by race/ethnicity and sex , Oregon, 2003-2012

Race / Ethnicity	Method	Males	%	Females	%	Total	%
Non-Hispanic White	Firearm	2,770	62	399	31	3,169	55
	Poisoning	565	13	551	43	1,116	20
	Hanging / suffocation	803	18	222	17	1,025	18
	Sharp instrument	81	2	24	2	105	2
	Fall	114	3	33	3	147	3
	Drowning	49	1	30	2	79	1
Hispanic	Firearm	84	44	9	27	93	42
	Poisoning	17	9	10	30	27	12
	Hanging / suffocation	78	41	10	30	88	39
	Sharp instrument	2	1	2	6	4	2
	Fall	4	2	2	6	6	3
	Drowning	4	2	0	0	4	2
Non-Hispanic other races	Firearm	143	45	18	20	161	39
	Poisoning	27	8	25	28	52	13
	Hanging / suffocation	121	38	33	37	154	37
	Sharp instrument	6	2	3	3	9	2
	Fall	8	2	6	7	14	3
	Drowning	8	2	5	6	13	3

Source: ORVDRS

Of 3,340 firearm suicides, 182 cases (5%) did not know the type of firearm involved. Based on available data, 2,342 (74%) involved a handgun, 449 (14%) involved a rifle and 367 (12%) involved a shotgun.

Among 1,172 suicides due to poisoning, more than 60 percent of them resulted from a single substance. The most frequently reported poisoning substance was a prescription medication. Prescription medications were involved in 50 percent of male poisoning suicides and 65 percent of female poisoning suicides (Table 4).

Table 4. Type of substance used among persons who died of poisoning suicide, by sex, Oregon, 2003-2012

	Males (N=595)	%	Females (N=577)	%
Single substance	406	68	346	60
Prescription drug only	179	30	222	38
Antidepressant	39	7	44	8
Opiate	86	14	89	15
Over-counter drug only	20	3	22	4
Carbon monoxide only	131	22	51	9
Alcohol only	5	<1	2	<1
Street / Recreation drug only	9	2	1	<1
Multiple substances	179	30	226	39
Prescription drug	119	20	156	27
Antidepressant	34	6	52	9
Opiate	56	9	79	14
Alcohol	35	6	36	6
Over-counter drug	14	2	21	4
Street / Recreation drug	7	1	6	1
Carbon monoxide	8	1	2	0
Unknown	10	2	5	1

Source: ORVDRS

Circumstances

Many risk factors for suicide are well known. Data from ORVDRS (Table 5) demonstrate the relationships between mental health disorders and suicide. Overall, nearly 70 percent of suicide victims had a diagnosed mental disorder, alcohol and /or substance use problem, or depressed mood at the time of death. Despite the high prevalence of mental health problems, just about one third of victims were receiving treatment at the time of death. Approximately one third of suicide victims had experienced a crisis within two weeks. The most common precipitating circumstances reported surrounding suicide

incidents were a problem with an intimate partner (28%), physical health problems (24%), family stressors (20%), other relationship problem (15%), lost job / job problem (14%), financial problem (13%), crime legal problems (11%) and noncriminal legal problem (6%). More than one third of people who died by suicide had disclosed their intent to kill themselves before they died; 20 percent of them had a history of suicide attempt.

Table 5. Frequencies of circumstances surrounding suicide incidents, by sex, Oregon, 2003-2012

Circumstances	Males (N=4,779)		Females (N=1,366)		All (N=6,145)	
	Count	%	Count	%	Count	%
Mental Health Status						
Mentioned mental health problems *	3,246	68	1,106	81	4,352	71
Diagnosed mental disorder	1,690	35	854	63	2,544	41
Problem with alcohol	1,013	21	250	18	1,263	21
Problem with other substance	574	12	233	17	807	13
Problem with alcohol and other substance	278	6	98	7	376	6
Diagnosed mental disorder and problem with alcohol and /or other substance	566	12	281	21	847	14
Current depressed mood	2,077	43	647	47	2,724	44
Current treatment for mental health problem **	1,374	29	784	57	2,158	35
Interpersonal Relationship Problems						
Intimate partner problem	1,392	29	349	26	1,741	28
Other relationship problem	694	15	251	18	945	15
Victim of interpersonal violence within past month	12	<1	18	1	30	0
Perpetrator of interpersonal violence within past month	230	5	15	1	245	4
Death of family member or friend within past five years	338	7	120	9	458	7
Suicide of family member or friend within past five years	64	1	22	2	86	1
Family stressor(s)***	393	19	150	24	543	20
History of abuse as a child***	11	1	22	4	33	1
Life Stressors						
A crisis in the past two weeks	1,744	36	424	31	2,168	35
Physical health problem	1,116	23	330	24	1,446	24
Financial problem	656	14	147	11	803	13
Lost job / job problem	721	15	145	11	866	14
Recent criminal legal problem	594	12	61	4	655	11
Noncriminal legal problem	266	6	84	6	350	6
School problem	57	1	14	1	71	1
Eviction/Loss of home***	158	8	41	7	199	7
Suicidal Behaviors						
Disclosed intent to die by suicide	1,805	38	534	39	2,339	38
Left a suicide note	1,521	32	568	42	2,089	34
History of suicide attempt	769	16	474	35	1,243	20

* Include diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.
** Includes treatment for problems with alcohol and/or other substance.
*** Data were not collected before 2009.
Source: ORVDRS

Major depression / dysthymia (71%) was the most frequently diagnosed mental health condition, followed by anxiety disorder (15%) and bipolar disorder (15%) (Table 6).

Table 6. Number and percentage* of mental illness among people who died by suicide, by sex, Oregon, 2003-2012

Mental illness	Males (N=1,690)		Females (N=854)		All (N=2,544)	
	Count	%	Count	%	Count	%
Depression / Dysthymia	1,199	71	618	72	1,817	71
Bipolar	221	13	159	19	380	15
Schizophrenia	93	6	33	4	126	5
Anxiety disorder	238	14	152	18	390	15
Posttraumatic stress disorder	44	3	19	2	63	2
Attention deficit disorder / Attention deficit and hyperactivity disorder	25	1	9	1	23	<1
Eating disorder	0	0	2	<1	2	<1
Obsessive compulsive	6	<1	2	0	8	<1
Other	34	2	9	1	43	2
Unknown	92	5	32	4	124	5

* Percentages might exceed 100% because some victims might have more than one mental illness.

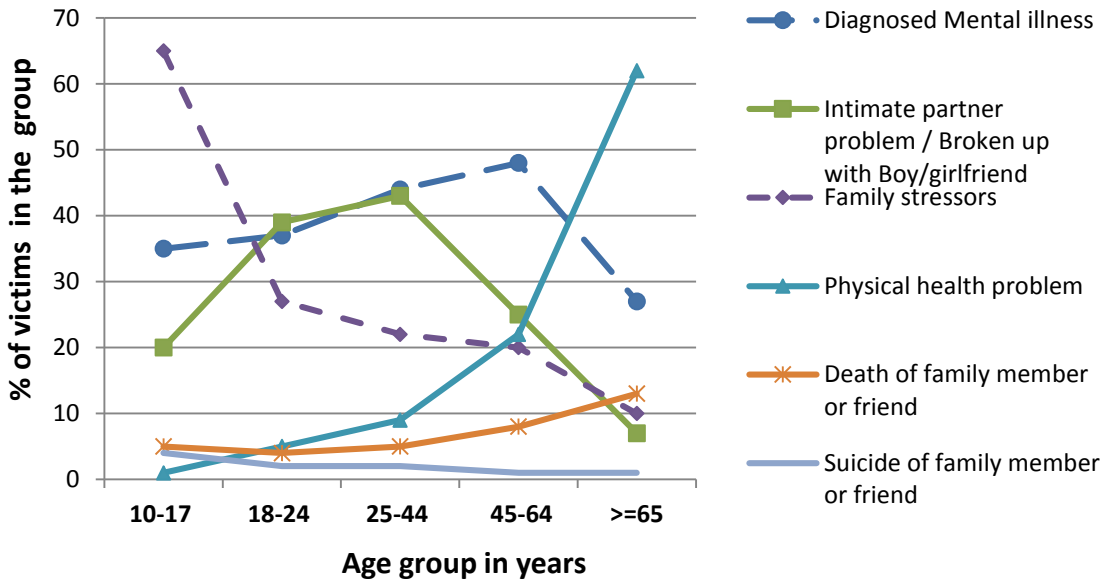
Source: ORVDRS

While some factors and characteristics associated with suicide appear to be universal, there is great variability in these factors between males and females (Table 5). Female victims had more frequent reports of a diagnosed mental disorder, receiving treatment for mental health problems and a previous suicide attempt. Male victims had were more frequent reports of a recent criminal legal problem.

The circumstances surrounding suicide incidents vary across the lifespan. Figure 6 shows the pattern of selected circumstances reported among different age groups. For example, family stressors (poor family relationships) were the most reported circumstance among adolescents aged 10 to 17 years, but were not common among older adults aged 65 years and older. Physical health problems were notable circumstances reported among older adults aged 65 years and older who died by suicide, but were not prevalent among young people aged less than 45 years. Compared to other age groups, young adults aged 18 to 44 years who died by suicide were more likely to have had problems with an intimate partner. A mental illness was commonly reported across all ages; but was most frequently reported for those aged 45 to 64 years. A death of a family member or friend was most frequently reported among older people who died by suicide. A suicide of a family

member or friend was more frequently reported among young people who died by suicide (Figure 6).

Figure 6. Reported suicide circumstances among suicide victims, by age group, Oregon, 2003-2012



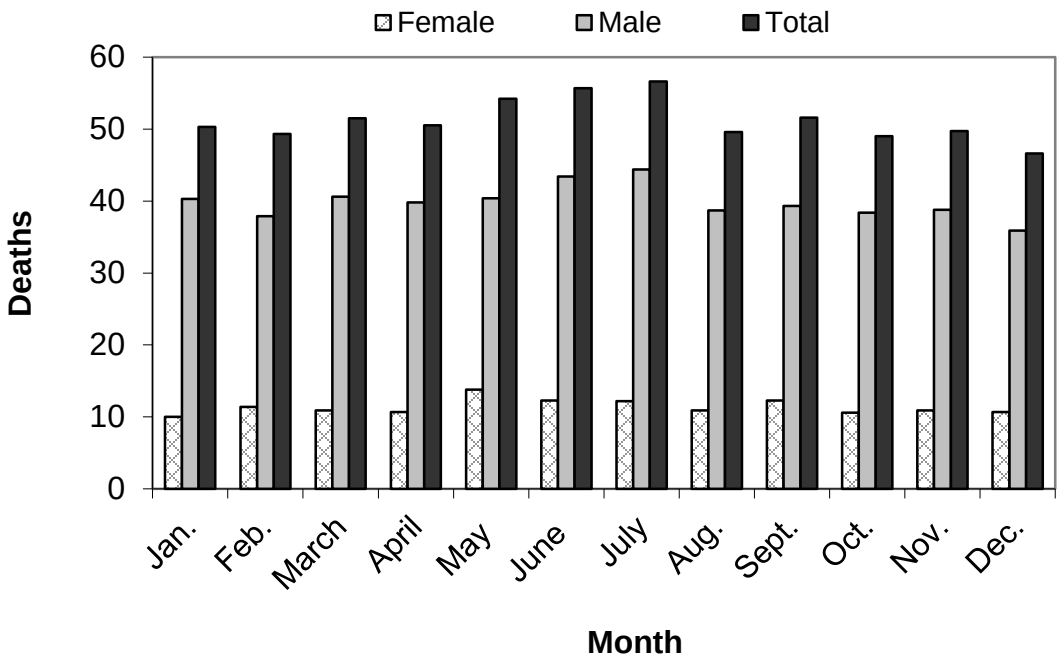
Source: ORVDRS

For specific information by age group, see Tables 5A – 5E on pages 30, 32, 34, 36 and 38.

Death by month

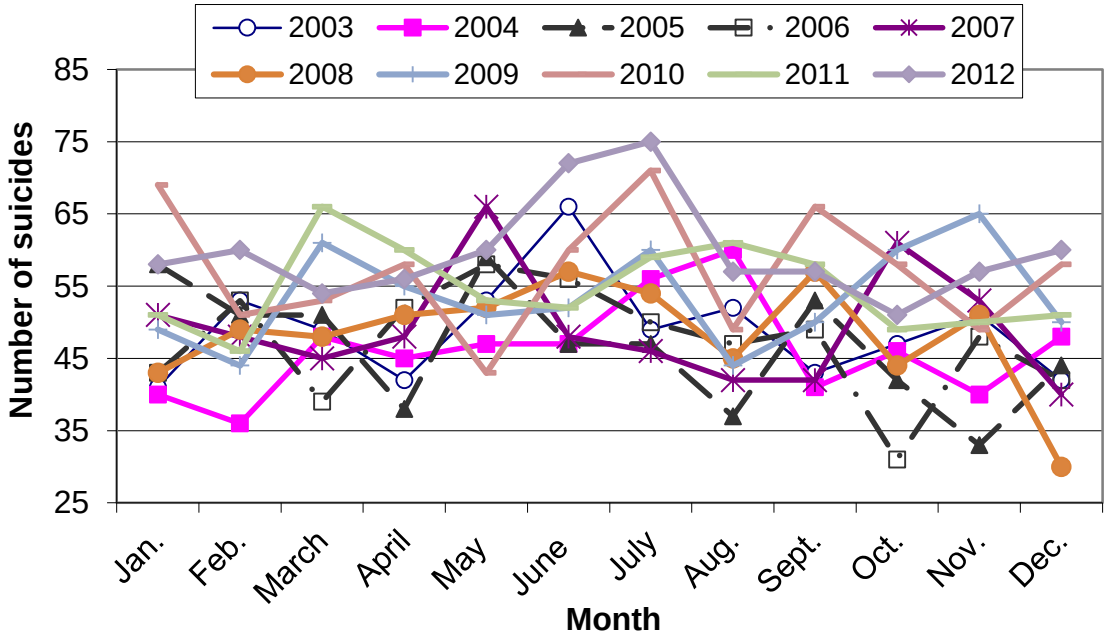
The number of suicides in each month varied. On average there were approximately 51 suicide deaths per month. Overall, the greatest number of suicides occurred in July (Figure 7A), but there was not a clear seasonal pattern (Figure 7B).

Figure 7A. Average number of suicides, by month, Oregon, 2003-2012



Source: ORVDRS

Figure 7B. Number of Suicides, by month and year, Oregon, 2003-2012



Source: ORVDRS

Type of suicide

The majority of suicide incidents in Oregon involved one death. Multiple suicides (suicide pacts) occurred rarely. From 2003-2012, there were five suicide incidents that involved more than one death, which counted for 0.2 percent of total suicide deaths. Eighty-nine suicides (1.4%) were involved a homicide (combined homicide-suicide).

Location of suicide

Suicides occur in a variety of locations; however, four in five suicides occurred at a house or apartment (Table 7).

Table 7. Location of suicide incidents, by sex, Oregon, 2003-2012

Type of location	Males	%	Females	%
House / Apartment	3,539	74	1,097	80
Natural Area (e.g. field, river, woods)	318	7	82	6
Park / Public use area	173	4	39	3
Street / Road	202	4	42	3
Parking lot / Garage	95	2	8	<1
Motor Vehicle	45	<1	10	<1
Motel / Inn /Hotel	84	2	42	3
Jail / Prison	56	1	3	<1
Highway	33	<1	4	<1
Hospital	17	<1	9	<1
Commercial area	23	<1	0	<1
Supervised Resident Facilities	11	<1	4	<1
Railroad	17	<1	2	<1
Bank / Office building	13	<1	1	<1
Industrial or construction areas	15	<1	2	<1
College/University/School	9	<1	1	<1
Abandoned house, building	4	<1	0	<1
Synagogue, Church, Temple	6	<1	0	<1
Farm	6	<1	0	<1
Other	78	2	13	<1
Unknown	35	<1	7	<1

Source: ORVDRS

Suicide by county

Suicide rates among 36 counties in Oregon varied from 9.4 to 36.0 per 100,000 a year from 2003 to 2012. The highest suicide rates among Oregon residents from 2003-2012 occurred primarily in the central coast, southwest region of the state and eastern region of the state. The Portland metropolitan area, except Multnomah County, had the lowest suicide rate. The counties of Baker, Coos, Curry, Douglas, Grant, Harney, Jackson, Josephine, Klamath, Lincoln and Tillamook had a higher than state average suicide rate. The counties of Benton, Clackamas, Hood River, Marion, Polk, Washington, and Yamhill had a lower than state average suicide rate (Figure 8 and Table 8).

Figure 8: Suicide rate by county, Oregon, 2003-2012

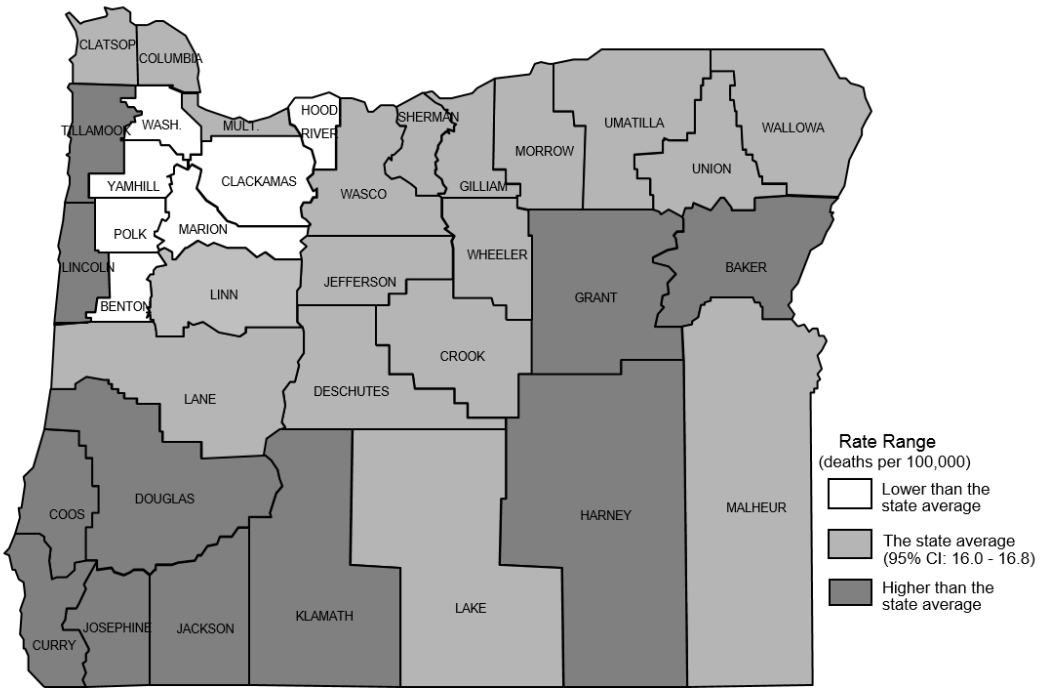


Table 8. Suicide deaths and crude rates, by age group and county, Oregon, 2003-2012

County	All ages		Age group (years)								
			10-17	18-24	10-24	25-44		45-64		>=65	
	Deaths	Rate	Deaths	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
Baker	41	25.5	0	2	7.2	8	25.5	15	29.7	16	45.7
Benton	102	12.5	3	17	7.3	34	19.3	34	17.3	14	15.2
Clackamas	523	13.8	9	42	6.8	168	17.3	222	19.6	82	17.2
Clatsop	61	16.5	1	4	7.1	19	23	25	21.8	12	19.7
Columbia	79	16.1	2	6	8.4	21	16.7	35	23.1	15	25.5
Coos	179	28.4	3	15	16.8	39	29.9	69	34.7	53	40.6
Crook	44	19.3	2	4	14.5	10	18.8	16	23.3	12	32.2
Curry	77	36	1	4	15.8	14	39.4	26	36.2	32	55.2
Deschutes	290	18.6	10	23	11.6	94	22.6	109	24.3	54	25.5
Douglas	227	21.9	3	16	10.3	54	24.6	94	30.2	60	28.7
Gilliam	4	24.1	1	2	119	0	0	1	18	0	0
Grant	22	32.1	1	1	17	5	39.4	6	26.2	9	60.9
Harney	22	32.7	0	0	0	7	51.8	8	38.2	7	54.2
Hood River	20	9.4	1	2	6.8	5	9	5	9.2	7	25.7
Jackson	422	21.2	12	32	11.5	111	23.7	184	32.2	83	24.7
Jefferson	32	15.7	0	7	16.3	14	28.9	6	11.3	5	19
Josephine	186	23	3	12	10.8	35	21.3	91	36.4	45	26.4
Klamath	151	22.7	2	15	12.6	46	29.6	56	30.1	32	30.3
Lake	19	26.4	0	2	15.9	6	39.8	8	35.1	3	21.4
Lane	612	17.7	10	48	7	208	25.3	232	24.5	114	23.3
Lincoln	106	23	2	4	8.2	22	24.5	53	32.7	25	27.4
Linn	173	15.1	4	15	8.8	56	19.6	59	18.9	39	22.1
Malheur	47	15.2	0	8	11.8	15	19.1	12	16.7	12	26.3
Marion	451	14.5	4	51	8.4	150	17.9	161	21.2	85	22.3
Morrow	11	9.7	0	0	0	4	14.8	4	13.2	3	21.8
Multnomah	1,084	15.4	17	88	8.5	406	17.2	446	24.4	127	17.5
Polk	92	12.1	5	4	4.9	32	18.6	30	15.8	21	17.2
Sherman	2	11.9	1	0	32.5	0	0	1	19.4	0	0
Tillamook	57	22.8	1	1	4.9	15	29.7	22	26.9	18	36.3
Umatilla	119	16.3	6	18	15.7	32	16.5	38	21.1	25	27.2
Union	54	21.5	2	4	9.5	19	36.2	16	24.2	13	33.4
Wallowa	17	25	0	1	9.2	4	33.7	11	47.3	1	6.3
Wasco	41	17.2	0	2	4.6	15	28.8	13	18.6	11	26.2
Washington	639	12.2	14	66	7.9	210	12.8	258	19.9	91	18.8
Wheeler	4	29.1	0	0	0	0	0	1	20.2	3	94.3
Yamhill	131	13.5	6	9	7.1	39	15.1	49	19.8	27	22.3
State	*6,145*	*16.4*	*126*	*525*	*8.7*	*1,919*	*19*	*2,418*	*23.7*	*1,156*	*23.2*

Rates are per 100,000.
Use caution when interpreting rates calculated using fewer than 20 deaths, as those rates may not be stable.
Because of small numbers of deaths among those aged 10 to 17 years and those aged 18 to 24 years, the rates for those two groups are not calculated.
Source: ORVDRS

Suspected alcohol use and toxicology

According to medical examiner and/or police reports, approximately 23 percent of suicide victims might have used alcohol in the hours preceding their deaths. Not all suicide deaths were screened for alcohol or drug use. Toxicology tests were done among 19 percent of total cases and showed about 40 percent of tested cases were positive for alcohol and more than 40 percent of tested cases were positive for opiates/opioids and antidepressant among the suicide deaths (Table 9).

Table 9. Number and percentage of suspected alcohol use and toxicology test in suicide deaths, Oregon, 2009-2012

Toxicology variable	Investigated / Screening	Present	Percent positive
Alcohol			
Suspected alcohol use*	2,374	541	23
Blood alcohol test	726	290	40
Amphetamines	505	47	9
Cocaine	505	12	2
Marijuana	506	94	19
Opiate	506	213	42
Marijuana and Opiate	506	37	7
Antidepressant drug	506	219	43

* Based on witness, investigator reports, and/or circumstantial evidence, the person had been drinking alcohol prior to the incident.

Source: ORVDRS

Occupation of victims

Occupation and the industry variables on death certificates were used to group data to examine occupational status among suicide victims. Table 10 lists types of occupation and specific occupations among suicide victims aged 18 to 64 years.

Table 10. Type of occupation among people aged 18 to 64 years who died by suicide, Oregon, 2003-2012

Type of Occupation	Males (N=3,708)	%	Females (N=1,154)	%
Classification				
Agriculture	73	2	6	1
Clerical	128	3	132	1
Craftsmen / Foremen and kindred	843	23	28	2
Laborers	364	10	17	1
Manager / Official	192	5	60	5
Operative	395	1	29	3
Professional technical	682	8	281	4
Service Workers	335	9	171	5
Sales	176	5	78	7
Other	228	6	277	4
Unknown	292	8	75	6
Specific group				
Navy/Army/National Guard officer	50	1	2	0
Housewife/Househusband, Homemaker	6	0	193	7
Police / Firefighter	81	2	8	1
Physician/Dentist/Nurse/Pharmacist	34	1	49	4
Student aged over 18 years	173	5	47	4
Unemployed	119	3	50	4

Source: ORVDRS

Educational level and marital status

Table 11 and Table 12 show educational attainment and marital status of suicide victims. Educational attainment was missing from seven percent of the data (Table 11).

Table 11. Educational attainment among people who died by suicide, by sex, Oregon, 2003-2012

Educational Level	Males		Females	
	Number	%*	Number	%*
8th grade or less	194	4	33	3
9-12th grade	549	12	148	12
High school or GED	1,838	41	443	35
Some college or associate degree	1,116	25	392	31
Bachelor or graduate degree	741	17	263	21
Unknown	341	NA	87	NA

* Percentage is calculated according to available data.

Source: ORVDRS

Table 12. Marital status among people who died by suicide, by sex, Oregon, 2003-2012

Marital status	Males		Females	
	Number	%*	Number	%*
Married	1,627	35	437	33
Never Married	1,506	32	322	24
Divorced	1,240	27	473	35
Widowed	301	6	112	8
Other /Unknown	105	NA	22	NA

* Percentage is calculated according to available data.

Source: ORVDRS

Table 11A. Educational attainment among people who died by suicide, by age group and sex, Oregon, 2003-2012

Educational Level	Aged 18-24 years		Aged 25-44 years	
	%,* males	%,* females	%,* males	%,* females
	(N=420)	(N=77)	(N=1,375)	(N=414)
8th grade or less	3	3	3	1
9-12th grade	21	17	11	11
High school or GED	45	48	46	33
Some college or associate degree	28	26	27	35
Bachelor or graduate degree	3	6	13	20

Educational Level	Aged 45-64 years		Aged >= 65 years	
	%,* males	%,* females	%,* males	%,* females
	(N=1,649)	(N=590)	(N=908)	(N=160)
8th grade or less	2	1	11	4
9-12th grade	9	8	9	9
High school or GED	40	35	40	39
Some college or associate degree	28	32	18	24
Bachelor or graduate degree	21	23	21	24

*Percentage is calculated according to available data.

Source: ORVDRS

Table 12A. Marital status among people who died by suicide, by age group and sex, Oregon, 2003-2012

Marital Status	Aged 18-24 years		Aged 25-44 years	
	%,* males	%,* females	%,* males	%,* females
	N=429	N=79	N=1,446	N=430
Married	5	4	33	36
Never Married	93	86	44	31
Divorced	2	10	22	31
Widowed	0	0	1	2

Marital Status	Aged 45-64 years		Aged>= 65 years	
	%,* males	%,* females	%,* males	%,* females
	N=1,738	N=624	N=973	N=173
Married	38	35	47	33
Never Married	19	12	6	3
Divorced	40	47	22	22
Widowed	3	5	25	42

*Percentage is calculated according to available data.

Source: ORVDRS

Characteristics of different life stages

Adolescents aged 10 to 17 years

Suicide among adolescents accounted for approximately two percent of suicides in Oregon from 2003 to 2012. During this period, the rate of suicide among adolescents was 3.1 per 100,000; the rate ratio between males (4.3 per 100,000) and females (1.9 per 100,000) was 2.3.

Firearms and hanging / suffocation were the most common mechanism of death among males (44% respectively), followed by poisoning (7%). Among females, hanging / suffocation was the most common mechanism (58%), followed by firearms (34%) and poisoning (8%) (Table 2A).

Table 2A. Mechanism of suicide among adolescents aged <=17 years, by sex, Oregon, 2003-2012

Method	Males	%	Females	%	Total	%
Firearm	39	44	13	34	52	41
Poisoning	6	7	3	8	9	7
Hanging / suffocation	39	44	22	58	61	48
Fall	1	1	0	0	1	<1
Sharp instrument	0	0	0	0	0	0
Drowning	0	0	0	0	0	0
Motor Vehicle (MV)	2	2	0	0	2	2
Other MV	2	2	0	0	2	2
Other/Unknown	0	0	0	0	0	0

Source: ORVDRS

Table 5A lists the common circumstances reported among adolescents aged less than 18 years who died by suicide.

Approximately 63 percent had a diagnosed mental disorder, alcohol and /or substance use problems, or depressed mood at time of death. Less than one third of suicide victims were under treatment for mental health problems at time of death. Compared to adult suicide victims aged 25 to 64 years, adolescents who died by suicide had a lower proportion of diagnosed mental illness and treatment for mental health problems.

Other significant circumstances surrounding suicide among adolescents were poor family relationships (family stressors), and school problems.

Nearly one third of adolescents who died by suicide had disclosed their intent to kill themselves before they died.

Table 5A. Frequencies of circumstances surrounding suicide incidents among adolescents aged <= 17 years, by sex, Oregon, 2003-2012

Circumstances	Males (N=89)		Females (N=38)		All (N=127)	
	Count	%	Count	%	Count	%
Mental Health Status						
Mentioned mental health problems *	55	62	25	66	80	63
Diagnosed mental disorder	27	30	18	47	45	35
Problem with alcohol	7	8	1	3	8	6
Problem with other substance	12	13	3	8	15	12
Problem with alcohol and other substance	6	7	0	0	6	5
Diagnosed mental disorder and problem with alcohol and /or other substance	2	2	4	11	6	5
Current depressed mood	42	47	14	37	56	44
Current treatment for mental health problem **	24	27	13	34	37	29
Interpersonal Relationship Problems						
Broken up with boyfriend/girlfriend	19	21	7	18	26	20
Other relationship problem	46	52	26	68	72	57
Victim of interpersonal violence within past month	0	0	0	0	0	0
Perpetrator of interpersonal violence within past month	2	2	0	0	2	2
Death of family member or friend within past five years	4	4	2	9	6	5
Suicide of family member or friend within past five years	3	3	2	5	5	4
Family stressor(s)***	21	58	18	78	39	66
History of abuse as a child***	0	0	5	22	5	8
Life Stressors						
A crisis in the past two weeks	39	44	14	37	53	42
Physical health problem	1	1	0	0	1	1
Financial problem	0	0	0	0	0	0
Lost job / job problem	0	0	0	0	0	0
Recent criminal legal problem	12	13	1	5	13	10
Noncriminal legal problem	1	1	1	3	2	2
School problem	26	72	10	43	36	60
Eviction/Loss of home***	0	0	0	0	0	0
Suicidal Behaviors						
Disclosed intent to die by suicide	27	30	16	42	43	34
Left a suicide note	27	30	19	50	46	36
History of suicide attempt	12	13	12	32	24	19

* Include diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.

** Includes treatment for problems with alcohol and/or other substance.

*** Data were not collected before 2009.

Source: ORVDRS

Young adults aged 18 to 24 years

Suicide among young adults aged 18 to 24 years accounted for approximately 9 percent of suicides in Oregon from 2003 to 2012. During this period, the rate of suicide among youth aged 18 to 24 years was 14.9 per 100,000; the rate ratio between males (24.8 per 100,000) and females (4.7 per 100,000) was 5.3.

Firearms were the most common mechanism of death among males (60%), followed by hanging / suffocation (28%) and poisoning (5%). Among females, hanging / suffocation was the most common mechanism (48%), followed by firearms (24%) and poisoning (23%) (Table 2B).

Table 2B. Mechanism of suicide among young adults aged 18-24 years, by sex, Oregon, 2003-2012

Method	Males	%	Females	%	Total	%
Firearm	264	60	20	24	284	54
Poisoning	20	5	19	23	39	7
Hanging / suffocation	122	28	39	48	161	31
Fall	16	4	2	2	18	3
Sharp instrument	3	<1	1	1	4	<1
Drowning	5	1	1	1	6	1
Motor Vehicle (MV)	3	<1	0	0	3	<1
Other MV	4	<1	0	0	4	<1
Other/Unknown	6	1	0	0	6	1

Source: ORVDRS

Table 5B lists the common circumstances reported among young adults aged 18 to 24 years who died by suicide.

Approximately 77 percent of female victims had a diagnosed mental disorder, alcohol and /or substance use problems, or depressed mood at time of death; 16 percent had alcohol use problem; 26 percent had other substance use problem; 27 percent had co-occurring mental disorder and alcohol/substance use problems; 51 percent of females were under treatment for mental health problems at time of death; 44 percent had previously attempted suicide. In contrast, male victims' mental health problems were likely to be undiagnosed and untreated. Only 33 percent of male victims had a diagnosed mental disorder; less than one fourth of male victims were under treatment for mental health problems; 19 percent had previously attempted suicide. This might be related to under-diagnosis or it may indicate that some suicides occurred impulsively.

The most common reported circumstance among young adults was an interpersonal problem, or a problem with an intimate partner/girlfriend/boyfriend, accounting for 37 percent of male victims and 49 percent of female victims.

Among 525 individuals who died by suicide, 135 (26%) were students, 32 were veterans (8 were Navy/Army/National Guard officers), and 11 were police officers/firefighters.

Nearly 90 percent of suicide victims aged 18 to 24 years were single, never married (Table 12A page 28).

Table 5B. Frequencies of circumstances surrounding suicide incidents among young adults aged 18-25 years, by sex, Oregon 2003-2012

Circumstances	Males (N=443)		Females (N=82)		All (N=525)	
	Count	%	Count	%	Count	%
Mental Health Status						
Mentioned mental health problems *	293	66	63	77	356	68
Diagnosed mental disorder	144	33	48	59	192	37
Problem with alcohol	76	17	13	16	89	17
Problem with other substance	71	16	21	26	92	18
Problem with alcohol and other substance	28	6	7	9	35	7
Diagnosed mental disorder and problem with alcohol and /or other substance	41	9	22	27	63	12
Current depressed mood	168	38	40	49	208	40
Current treatment for mental health problem **	103	23	42	51	145	28
Interpersonal Relationship Problems						
Intimate partner problem	166	37	40	49	206	39
Other relationship problem	97	22	17	21	114	22
Victim of interpersonal violence within past month	2	<1	4	5	6	1
Perpetrator of interpersonal violence within past month	34	8	4	5	38	7
Death of family member or friend within past five years	19	4	2	2	21	4
Suicide of family member or friend within past five years	11	2	1	1	12	2
Family stressor(s)***	45	27	10	31	55	27
History of abuse as a child***	3	2	3	9	6	3
Life Stressors						
A crisis in the past two weeks	168	38	31	38	199	38
Physical health problem	16	4	9	11	25	5
Financial problem	32	7	7	9	39	7
Lost job / job problem	49	11	9	11	58	11
Recent criminal legal problem	67	15	2	2	69	13
Noncriminal legal problem	15	3	1	1	16	3
School problem	18	4	1	3	19	4
Eviction/Loss of home***	14	8	2	6	16	8
Suicidal Behaviors						
Disclosed intent to die by suicide	172	39	29	35	201	38
Left a suicide note	130	29	27	33	157	30
History of suicide attempt	83	19	36	44	119	23

* Include diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.

** Includes treatment for problems with alcohol and/or other substance.

*** Data were not collected before 2009.

Source: ORVDRS

Adults aged 25 to 44 years

Suicides among adults aged 25 to 44 years accounted for approximately 31 percent of suicides in Oregon from 2003 to 2012. During this period, the suicide rate among adults aged 25 to 44 years was 19.2 per 100,000; the rate ratio between males (29.2 per 100,000) and females (8.9 per 100,000) was 3.3.

Firearms were the most common mechanism of suicide among males (51%), followed by hanging / suffocation (28%) and poisoning (13%). Among females, poisoning was the most common mechanism of death (42%), followed by firearms (31%) and hanging / suffocation (19%) (Table 2C).

Table 2C. Mechanism of suicide among adults aged 25-44 years, by sex, Oregon, 2003-2012

Method	Males	%	Females	%	Total	%
Firearm	760	51	136	31	896	47
Poisoning	193	13	183	42	376	20
Hanging / suffocation	417	28	85	19	502	26
Fall	44	3	14	3	58	3
Sharp instrument	27	2	3	1	30	2
Drowning	23	2	10	2	33	2
Motor Vehicle (MV)	7	<1	2	<1	9	<1
Other MV	4	<1	1	<1	5	<1
Other/Unknown	7	<1	3	<1	10	<1

Source: ORVDRS

Table 5C lists the common circumstances reported among adults aged 25 to 44 years who died by suicide.

Mental health problems were prevalent among adults aged 25 to 44 years who died by suicide. Among female victims, 86 percent had a diagnosed mental disorder, alcohol and /or substance use problems, or depressed mood at time of death; 22 percent had alcohol use problem; 23 percent had other substance use problem; 23 percent had co-occurring mental disorder and alcohol/substance use problems; 59 percent were under treatment for mental health problems at time of death; 45 percent had previously attempted suicide. Compared to the same aged females, male victims had a lower proportion of diagnosed mental illness (38% vs.65%) and receiving treatment for mental health problems (29% vs. 59%). This might be related to under-diagnosis.

The other most common reported circumstance surrounding suicide incidents among this age group was a problem with an intimate partner, accounting for 43 percent of suicide victims (44% for males and 38% for females). Other common circumstances were family stressors (22%), other relationship problem (18%), crime legal problems (15%), lost job / job problem (14%), and financial problem (14%).

Over 80 percent of suicide victims graduated from high school (Table 11A page 27).

Over 40 percent of male suicide victims were single, never married (Table 12A on page 28).

Table 5C. Frequencies of circumstances surrounding suicide incidents among adults aged 25-44 years, by sex, Oregon, 2003-2012

Circumstances	Males (N=1,482)		Females (N=437)		All (N=1,919)	
	Count	%	Count	%	Count	%
Mental Health Status						
Mentioned mental health problems *	1,080	73	375	86	1,455	76
Diagnosed mental disorder	556	38	282	65	838	44
Problem with alcohol	379	26	98	22	477	25
Problem with other substance	262	18	99	23	361	19
Problem with alcohol and other substance	117	8	48	11	165	9
Diagnosed mental disorder and problem with alcohol and /or other substance	227	15	99	23	326	17
Current depressed mood	652	44	221	51	873	45
Current treatment for mental health problem **	435	29	258	59	693	36
Interpersonal Relationship Problems						
Intimate partner problem	654	44	166	38	820	43
Other relationship problem	251	17	86	20	337	18
Victim of interpersonal violence within past month	7	<1	11	3	18	1
Perpetrator of interpersonal violence within past month	99	7	7	2	106	6
Death of family member or friend within past five years	59	4	36	8	95	5
Suicide of family member or friend within past five years	22	1	9	2	31	2
Family stressor(s)***	136	20	49	27	185	22
History of abuse as a child***	4	1	5	3	9	1
Life Stressors						
A crisis in the past two weeks	558	38	160	37	718	37
Physical health problem	110	7	65	15	175	9
Financial problem	225	15	50	11	275	14
Lost job / job problem	230	16	48	11	278	14
Recent criminal legal problem	258	17	35	8	293	15
Noncriminal legal problem	110	7	46	11	156	8
School problem	13	1	3	1	16	1
Eviction/Loss of home***	44	7	12	7	56	7
Suicidal Behaviors						
Disclosed intent to die by suicide	601	41	185	42	786	41
Left a suicide note	421	28	176	40	597	31
History of suicide attempt	319	22	197	45	516	27

* Include diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.

** Includes treatment for problems with alcohol and/or other substance.

*** Data were not collected before 2009.

Source: ORVDRS

Adults aged 45 to 64 years

Suicides among adults aged 45 to 64 years accounted for approximately 39 percent of suicides in Oregon from 2003 to 2012. During this period, 46 percent of suicides among females occurred in this age group; the suicide rate among adults aged 45 to 64 years was 24.2 per 100,000; the rate ratio between males (36.3 per 100,000) and females (12.5 per 100,000) was 2.9.

Firearms were the most common mechanism of death among male victims (58%), followed by poisoning (17%), and hanging / suffocation (16%). Among females, poisoning was the most common mechanism of death (48%), followed by firearms (30%) and hanging / suffocation (13%) (Table 2D).

Table 2D. Mechanism of suicide among adults aged 45-64 years, by sex, Oregon, 2003-2012

Method	Males	%	Females	%	Total	%
Firearm	1,036	58	190	30	1,226	51
Poisoning	311	17	305	48	616	25
Hanging / suffocation	288	16	81	13	369	15
Fall	55	3	18	3	73	3
Sharp instrument	41	2	17	3	58	2
Drowning	24	1	17	3	41	2
Motor Vehicle (MV)	5	<1	3	<1	8	<1
Other MV	9	<1	0	0	9	<1
Other/Unknown	14	<1	4	<1	18	<1

Source: ORVDRS

Table 5D lists the common circumstances reported among adults aged 45 to 64 years who died by suicide.

Similar to adults aged 25 to 44 years who died by suicide, mental health problems were prevalent among suicide victims aged 45 to 64 years. Among female victims, 84 percent had a diagnosed mental disorder, alcohol and /or substance use problems, or depressed mood at time of death; 21 percent had alcohol use problem; 17 percent had other substance use problem; 23 percent had co-occurring mental disorder and alcohol/substance use problems; 64 percent were under treatment for mental health problems at time of death; 33 percent had previously attempted suicide. Compared to the same aged female victims, male victims had a lower proportion of diagnosed mental illness (41% vs.68%) and receiving treatment for mental health problems (34% vs. 64%). This might be related to under-diagnosis.

The other common reported circumstances surrounding suicide incidents for this age group were a problem with an intimate partner (25%), physical health problems (22%), family stressors (20%), lost job / job problem (18%), financial problem (18%), and other relationship problems (14%).

Over 50 percent of female suicide victims had at least a college or associate degree, and nearly half female victims were divorced (Table 11A page 27, Table 12A page 28).

Table 5D. Frequencies of circumstances surrounding suicide incidents among adults aged 45-64 years, by sex, Oregon, 2003-2012

Circumstances	Males (N=1,784)		Females (N=635)		All (N=2,419)	
	Count	%	Count	%	Count	%
Mental Health Status						
Mentioned mental health problems *	1,294	73	536	84	1,830	76
Diagnosed mental disorder	725	41	434	68	1,159	48
Problem with alcohol	481	27	132	21	613	25
Problem with other substance	217	12	105	17	322	13
Problem with alcohol and other substance	120	7	42	7	162	7
Diagnosed mental disorder and problem with alcohol and /or other substance	263	15	146	23	409	17
Current depressed mood	812	46	296	47	1,108	46
Current treatment for mental health problem **	610	34	405	64	1,015	42
Interpersonal Relationship Problems						
Intimate partner problem	483	27	130	20	613	25
Other relationship problem	242	14	107	17	349	14
Victim of interpersonal violence within past month	2	0	3	0	5	0
Perpetrator of interpersonal violence within past month	72	4	4	1	76	3
Death of family member or friend within past five years	127	7	56	9	183	8
Suicide of family member or friend within past five years	21	1	8	1	29	1
Family stressor(s)***	150	19	66	22	216	20
History of abuse as a child***	4	<1	7	2	11	1
Life Stressors						
A crisis in the past two weeks	618	35	166	26	784	32
Physical health problem	369	21	163	26	532	22
Financial problem	350	20	78	12	428	18
Lost job / job problem	357	20	75	12	432	18
Recent criminal legal problem	222	12	21	3	243	10
Noncriminal legal problem	120	7	35	6	155	6
School problem	0	0	0	0	0	0
Eviction/Loss of home***	89	11	25	8	114	10
Suicidal Behaviors						
Disclosed intent to die by suicide	642	36	240	38	882	36
Left a suicide note	618	35	277	44	895	37
History of suicide attempt	280	16	209	33	489	20

* Include diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.

** Includes treatment for problems with alcohol and/or other substance.

*** Data were not collected before 2009.

Source: ORVDRS

Older adults aged 65 years and older

Suicides among older adults accounted for approximately 19 percent of suicides in Oregon from 2003 to 2012. During this period, the suicide rate among older adults aged 65 years and older was 22.8 per 100,000; and the rate ratio between males (44.0 per 100,000) and females (6.0 per 100,000) was 7.3, which was the highest among all age groups.

Firearms were the most common mechanism of death among males (84%); poisoning and hanging / suffocation accounted for 7 percent and 6 percent, respectively. Among females, poisoning was the most common mechanism of death (39%), followed by firearms (34%) and hanging / suffocation (17%) (Table 2E).

Table 2E. Mechanism of suicide among older adults aged >= 65 years, by sex, Oregon, 2003-2012

Method	Males	%	Females	%	Total	%
Firearm	823	84	59	34	882	76
Poisoning	65	7	67	39	132	11
Hanging / suffocation	61	6	29	17	90	8
Fall	7	<1	5	3	12	1
Sharp instrument	16	2	6	3	22	2
Drowning	5	<1	7	4	12	1
Motor Vehicle (MV)	3	<1	0	0	3	<1
Other MV	0	<1	0	0	0	<1
Other/Unknown	2	<1	1	<1	3	<1

Source: ORVDRS

Table 5E lists the common circumstances reported among older adults aged 65 years and older who died by suicide.

Approximately 55 percent of older suicide victims age 65 years and older had a diagnosed mental disorder, alcohol and /or substance use problem, or depressed mood at time of death. Compared to other age groups, victims for this age group had a lower proportion of alcohol and/or substance use problems; few older adults had a history of suicide attempt. Only one fifth of male victims were under treatment for mental health problems. This might be related to under-diagnosis.

The notable circumstances reported among this age group were physical health problems, which were reported among 63 percent of males and 53 percent of females, followed by the death of a family member or friend within past five years (13% for males and 14% for females).

Among 713 older adult victims whose physical health problems were the factor associated suicide, 87 percent had declining health; 56 percent had a loss of autonomy or independence; 29 percent had visited a physician within 30 days. The most frequently reported physical illnesses were cancer (22 percent), chronic pain (22 percent), and heart disease (15 percent).

Nearly half of suicide victims who had lost a family member or friend within the past five years had lost their spouse in the past year.

Among older adults who died by suicide, 41 percent of males and 48 percent of females lived alone; 47 percent of males were married; 42 percent of females were widowed (Table 12A page 28).

Table 5E. Frequencies of circumstances surrounding suicide incidents among elder adults aged >= 65 years, by sex, Oregon, 2003-2012

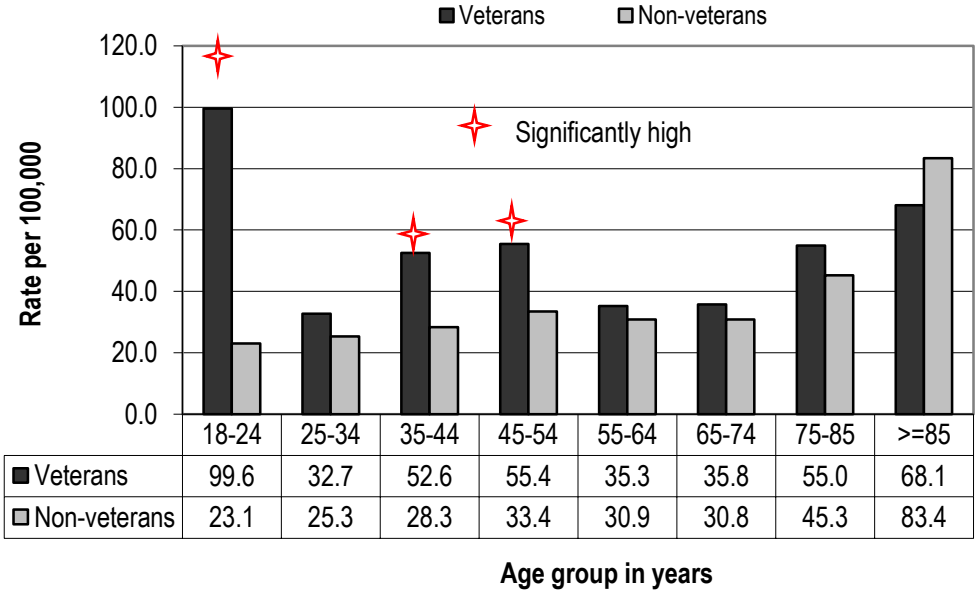
Circumstances	Males (N=982)		Females (N=174)		All (N=1,156)	
	Count	%	Count	%	Count	%
Mental Health Status						
Mentioned mental health problems *	525	53	107	61	632	55
Diagnosed mental disorder	239	24	72	41	311	27
Problem with alcohol	70	7	6	3	76	7
Problem with other substance	12	1	5	3	17	1
Problem with alcohol and other substance	7	1	1	1	8	1
Diagnosed mental disorder and problem with alcohol and /or other substance	33	3	10	6	43	4
Current depressed mood	403	41	76	44	479	41
Current treatment for mental health problem **	203	21	66	38	269	23
Interpersonal Relationship Problems						
Intimate partner problem	70	7	6	3	76	7
Other relationship problem	58	6	15	9	73	6
Victim of interpersonal violence within past month	1	<1	0	0	1	0
Perpetrator of interpersonal violence within past month	23	2	0	0	23	2
Death of family member or friend within past five years	129	13	24	14	153	13
Suicide of family member or friend within past five years	7	1	1	1	8	1
Family stressor(s)***	41	10	7	9	48	10
History of abuse as a child***	1	<1	1	1	2	<1
Life Stressors						
A crisis in the past two weeks	361	37	53	30	414	36
Physical health problem	620	63	93	53	713	62
Financial problem	49	5	12	7	61	5
Lost job / job problem	13	1	2	1	15	1
Recent criminal legal problem	35	4	2	1	37	3
Noncriminal legal problem	20	2	1	1	21	2
School problem	0	0	0	0	0	0
Eviction/Loss of home***	11	3	2	2	13	3
Suicidal Behaviors						
Disclosed intent to die by suicide	363	37	64	37	427	37
Left a suicide note	325	33	69	40	394	34
History of suicide attempt	75	8	20	11	95	8

* Include diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.
** Includes treatment for problems with alcohol and/or other substance.
*** Data were not collected before 2009.
Source: ORVDRS

Suicide among veterans

Approximately 25 percent of suicides occurred among veterans in Oregon during 2003 to 2012. During this period, 97 percent of veteran suicides were male. Based on the estimates of veterans in Oregon,[1] figure 9 shows male suicide rates by age group. There were statistically significant differences in rates of suicide between male veterans and male non-veterans among those aged 18 to 24 years, 35 to 44 years and 45 to 54 years. Overall, male veterans had a much higher suicide rate than non-veteran males (45.5 vs. 29.0 per 100,000). Suicide was the leading cause of death among veterans less than 45 years of age from 2008 to 2012.[2]

Figure 9. Age-specific suicide rates among male veterans and non-veterans, Oregon, 2003-2012



	18-24	25-34	35-44	45-54	55-64	65-74	75-85	>=85
Veterans	99.6	32.7	52.6	55.4	35.3	35.8	55.0	68.1
Non-veterans	23.1	25.3	28.3	33.4	30.9	30.8	45.3	83.4

Source: ORVDRS

Firearms were the most common mechanism of suicide among male veterans, accounting for 74 percent of male suicides; firearms were the mechanism of suicide for 57 percent of non-veteran males.

[1] United States Department of Veteran Affairs. VetPop 2007 State data tables: http://www.va.gov/VETDATA/Veteran_Population.asp Accessed on July 26, 2012.

[2] Shen X, Millet L. Suicides among Oregon veterans, 2008-2012. Oregon Health Authority, Portland, Oregon.

Table 5F lists the common circumstances reported among male veterans who died by suicide.

Approximately 75 percent of male veterans aged 18 to 54 years who died by suicide had a diagnosed mental disorder, alcohol and /or substance use problem, or depressed mood at time of death; 25 percent had alcohol use problem; 17 percent had other substance use problem; 17 percent had co-occurring mental disorder and alcohol/substance use problems; 35 percent were under treatment for mental health problems at time of death; 20 percent of them had previously attempted suicide.

A crisis in the two weeks before death was reported among about 37 percent of victims aged 18 to 54 years. The other common circumstances reported among male veterans were a problem with an intimate partner (41%), lost job / job problem (21%), crime legal problems (17%), financial problem (15%) and physical health problems (14%).

Compared to the young veterans aged 18 to 54 years, older veterans aged 55 year and older were more likely to have had physical health problems (51% vs. 14%), or experienced the death of a family member or friend within the past five years (12% vs. 6%); they were less likely to have had diagnosed mental illness (26% vs.42%), intimate partner relationship problems (12% vs. 41%) and criminal legal problems (5% vs.17%).

The circumstances of suicide among male veterans aged 18 to 54 years were similar to those of non-veterans except for physical health problems (Table 5G on page 42).

Compared to non-veteran males aged 55 years and older, veterans of the same age were more likely to have had physical health problems (51% vs. 42%), but less likely to have diagnosed mental illness, non-criminal legal problem, and job/financial problems (Table 5H on page 43).

Table 5F. Frequencies of circumstances surrounding suicide incidents among male veterans, by age group, Oregon, 2003-2012

Circumstances	Ages 18-54 years (N=516)		Ages >=55 years (N=956)		All (N=1,472)	
	Count	%	Count	%	Count	%
Mental Health Status						
Mentioned mental health problems *	389	75	554	58	943	64
Diagnosed mental disorder	219	42	249	26	468	32
Problem with alcohol	128	25	117	12	245	17
Problem with other substance	86	17	29	3	115	8
Problem with alcohol and other substance	35	7	14	1	49	3
Diagnosed mental disorder and problem with alcohol and /or other substance	89	17	52	5	141	10
Current depressed mood	236	46	417	44	653	44
Current treatment for mental health problem **	180	35	217	23	397	27
Interpersonal Relationship Problems						
Intimate partner problem	209	41	119	12	328	22
Other relationship problem	101	20	71	7	172	12
Victim of interpersonal violence within past month	2	<1	1	0	3	0
Perpetrator of interpersonal violence within past month	40	8	28	3	68	5
Death of family member or friend within past five years	30	6	112	12	142	10
Suicide of family member or friend within past five years	12	2	7	1	19	1
Family stressor(s)***	50	25	38	10	88	15
History of abuse as a child***	0	0	0	0	0	0
Life Stressors						
A crisis in the past two weeks	193	37	336	35	529	36
Physical health problem	71	14	490	51	561	38
Financial problem	75	15	91	10	166	11
Lost job / job problem	110	21	41	4	151	10
Recent criminal legal problem	87	17	48	5	135	9
Noncriminal legal problem	37	7	26	3	63	4
School problem	2	<1	0	0	2	0
Eviction/Loss of home***	21	10	14	4	35	6
Suicidal Behaviors						
Disclosed intent to die by suicide	197	38	349	37	546	37
Left a suicide note	162	31	340	36	502	34
History of suicide attempt	103	20	95	10	198	13

* Include diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.

** Includes treatment for problems with alcohol and/or other substance.

*** Data were not collected before 2009.

Source: ORVDRS

Table 5G. Frequencies of circumstances surrounding suicide incidents among male veterans and non-veterans aged 18-54 years, Oregon 2003-2012

Circumstances	Veterans (N=516)		Non-veterans (N=2,410)	
	Count	%	Count	%
Mental Health Status				
Mentioned mental health problems *	389	75	1,743	72
Diagnosed mental disorder	219	42	919	38
Problem with alcohol	128	25	626	26
Problem with other substance	86	17	394	16
Problem with alcohol and other substance	35	7	188	8
Diagnosed mental disorder and problem with alcohol and /or other substance	89	17	354	15
Current depressed mood	236	46	1,060	44
Current treatment for mental health problem **	180	35	724	30
Interpersonal Relationship Problems				
Intimate partner problem	209	41	915	38
Other relationship problem	101	20	385	16
Victim of interpersonal violence within past month	2	<1	9	0
Perpetrator of interpersonal violence within past month	40	8	141	6
Death of family member or friend within past five years	30	6	130	5
Suicide of family member or friend within past five years	12	2	31	1
Family stressor(s)***	50	25	229	21
History of abuse as a child***	0	0	2	<1
Life Stressors				
A crisis in the past two weeks	193	37	902	37
Physical health problem	71	14	227	9
Financial problem	75	15	366	15
Lost job / job problem	110	21	472	20
Recent criminal legal problem	87	17	383	16
Noncriminal legal problem	37	7	159	7
School problem	2	<1	29	1
Eviction/Loss of home***	21	10	92	9
Suicidal Behaviors				
Disclosed intent to die by suicide	197	38	831	34
Left a suicide note	162	31	697	29
History of suicide attempt	103	20	423	18

* Include diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.

** Includes treatment for problems with alcohol and/or other substance.

*** Data were not collected before 2009.

Source: ORVDRS

Table 5H. Frequencies of circumstances surrounding suicide incidents among male veterans and non-veterans ages >=55 years, Oregon 2003-2012

Circumstances	Veterans (N=956)		Non-veterans (N=760)	
	Count	%	Count	%
Mental Health Status				
Mentioned mental health problems *	554	58	485	64
Diagnosed mental disorder	249	26	267	35
Problem with alcohol	117	12	124	16
Problem with other substance	29	3	48	6
Problem with alcohol and other substance	14	1	33	4
Diagnosed mental disorder and problem with alcohol and /or other substance	52	5	65	9
Current depressed mood	417	44	313	41
Current treatment for mental health problem **	217	23	222	29
Interpersonal Relationship Problems				
Intimate partner problem	119	12	127	17
Other relationship problem	71	7	85	11
Victim of interpersonal violence within past month	1	0	0	0
Perpetrator of interpersonal violence within past month	28	3	19	3
Death of family member or friend within past five years	112	12	62	8
Suicide of family member or friend within past five years	7	1	11	1
Family stressor(s)***	38	10	51	14
History of abuse as a child***	0	0	4	1
Life Stressors				
A crisis in the past two weeks	336	35	264	35
Physical health problem	490	51	316	42
Financial problem	91	10	115	15
Lost job / job problem	41	4	92	12
Recent criminal legal problem	48	5	40	5
Noncriminal legal problem	26	3	95	13
School problem	0	0	0	0
Eviction/Loss of home***	14	4	26	7
Suicidal Behaviors				
Disclosed intent to die by suicide	349	37	258	34
Left a suicide note	340	36	247	33
History of suicide attempt	95	10	73	10

* Include diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.

** Includes treatment for problems with alcohol and/or other substance.

*** Data were not collected before 2009.

Source: ORVDRS

There were differences in marital status between male veterans and non-veterans aged 18 years and older. Compared with non-veterans, veterans who died by suicide were more likely to be married and widowed (Table 12B).

Table 12B. Marital status among males aged >=18 years who died by suicide, by veteran status, Oregon, 2003-2012

Marital status	Veterans		Non-veterans	
	Number	%*	Number	%*
Married	618	43	1,004	32
Never Married	198	14	1,212	39
Divorced	442	31	786	25
Widowed	190	13	109	4
Other /Unknown	24	NA	58	NA

* Percentage is calculated according to available data.
Source: ORVDRS

Suicides among those who died due to firearm injury

Firearms were the mechanism of death in approximately 54 percent of suicides, accounting for 3,340 deaths from 2003 to 2012. During this period, suicide accounted for nearly 80 percent of deaths due to firearm injury; the state rate of suicide due to firearm injury was 8.9 per 100,000; the rate ratio between males (15.7 per 100,000) and females (2.2 per 100,000) was 7.1.

Table 6 lists the common circumstances surrounding suicide incidents among those who died of firearm injury.

Overall, the circumstances and characteristics of suicide appeared to be similar between people who died of firearm injury and those who died of other mechanisms. The notable circumstances were that nearly one in three who died of firearm injury were able to access firearms even when they had been diagnosed with a mental illness and / or were treated for mental health problems; and over 10 percent of them had previously attempted suicide.

Table 6. Frequencies of circumstances surrounding suicide incidents among those who died of firearm injury, by sex, Oregon 2003-2012

Circumstances	Males (N=2,922)		Females (N=418)		All (N=3,340)	
	Count	%	Count	%	Count	%
Mental Health Status						
Mentioned mental health problems *	1,864	64	318	76	2,182	65
Diagnosed mental disorder	885	30	219	52	1,104	33
Problem with alcohol	592	20	78	19	670	20
Problem with other substance	229	8	48	11	277	8
Problem with alcohol and other substance	119	4	22	5	141	4
Diagnosed mental disorder and problem with alcohol and /or other substance	279	10	61	15	340	10
Current depressed mood	1,260	43	206	49	1,466	44
Current treatment for mental health problem **	701	24	202	48	903	27
Interpersonal Relationship Problems						
Intimate partner problem	836	29	120	29	956	29
Other relationship problem	400	14	79	19	479	14
Victim of interpersonal violence within past month	8	0	18	4	26	1
Perpetrator of interpersonal violence within past month	162	6	8	2	170	5
Death of family member or friend within past five years	226	8	40	10	266	8
Suicide of family member or friend within past five years	35	1	6	1	41	1
Family stressor(s)***	237	19	50	28	287	20
History of abuse as a child***	7	1	3	2	10	1
Life Stressors						
A crisis in the past two weeks	1,093	37	128	31	1,221	37
Physical health problem	837	29	101	24	938	28
Financial problem	411	14	40	10	451	14
Lost job / job problem	417	14	46	11	463	14
Recent criminal legal problem	302	10	21	5	323	10
Noncriminal legal problem	151	5	26	6	177	5
School problem	25	1	7	2	32	1
Eviction/Loss of home***	81	6	7	4	88	6
Suicidal Behaviors						
Disclosed intent to die by suicide	1,101	38	156	37	1,257	38
Left a suicide note	883	30	159	38	1,042	31
History of suicide attempt	323	11	110	26	433	13

* Include diagnosed mental disorder, problem with alcohol and/or other substance, and/or depressed mood.

** Includes treatment for problems with alcohol and/or other substance.

*** Data were not collected before 2009.

Source: ORVDRS

Discussion

Suicide is a major public health problem in Oregon. The Oregon Public Health Division has set reducing suicide as a top priority.[1] Traditional suicide prevention strategies are primarily focused on early intervention and referral to treatment. Oregon initiated suicide early intervention efforts targeting youth and young adults in 1998. To date, Oregon's suicide prevention efforts have primarily focused on early intervention - identifying those who suffer and connecting them with resources. Heath care reform will complement and build on these efforts as integrating behavioral health and primary care is a priority in transforming healthcare delivery in Oregon. However, early intervention with individuals and referral for mental health treatment alone will not reduce the problem of suicide.[1,2] Recent research has demonstrated that the risk for suicide is established early in life as children experience adverse familial, social, and environmental conditions. Suicide attempts could be attributed to having had several adverse childhood experiences. Prevention research has proven that preventing or mitigating the impact of adverse familial and social conditions can reduce a range of serious and costly co-occurring psychological, behavioral, and physical health problems.[2,3] One example – first grade implementation of the Good Behavior Game can prevent suicidal ideation, substance use problems, smoking, antisocial personality disorder, delinquency, and incarceration for violent crimes through the age of 21 years.[4] To prevent suicide, upstream, primary prevention is needed.[1-4]

Recommendations

- Develop a new statewide suicide prevention strategy that prioritizes:

    a. A system of comprehensive primary prevention that implements evidence-based, upstream, primary prevention strategies that foster successful development and prevent psychological and behavioral problems, examples of such nurse family partnership, Paxis Good Behavior Game, Communities that Care, evidence-based parenting programs, mindfulness practice, and other evidence-based practices.

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[1] Oregon Public Health Division Strategic Plan 2012-2017. Oregon Health Authority. It is available at http://public.health.oregon.gov/about/documents/phd-strategic-plan.pdf

[2] U.S. Department of Health and Human Services (HHS) Office of the Surgeon General and National Action Alliance for Suicide Prevention. 2012 National Strategy for Suicide Prevention: Goals and Objectives for Action. Washington, DC: HHS, September 2012.

[3] O'Connell M.E., Boat T., and Warner K.E., Editors. Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities. 2009. The National Academies Press, Washington, D.C.

[4] Biglan A., Flay B.R., Embry D.D., Sandler I.N. The Critical Role of Nurturing Environments for Promoting Human Well-Being. American Psychologist. 2012, 67(4):257-272

b. Identify and implement evidence-based and culturally-appropriate practices that address depression and suicidality among adult males to:

    i. enable males to identify depression as a manageable health condition, and
    ii. promote community, business, family and individual tools to support successful self-management.

c. Develop integrated behavioral health and primary care solutions to address depression and suicidal thoughts and behaviors among older adults.

- Complete statewide implementation of comprehensive suicide prevention in high schools.
- Expand training in suicide intervention skills that will have an impact on adults, particularly males and veterans throughout Oregon.
- Ensure that all mental health providers are trained to assess and manage suicidal persons.
- Ensure follow-up care for persons who have been seen for suicidal behaviors in the emergency department and inpatient psychiatric units.
- Restrict access to the most common lethal means / firearms for individuals at risk for suicide.
- Encourage health systems to adopt a Zero Suicide initiative as an aspiration goal.[1]

1. National Acton Alliance: Zero Suicide in Health & Behavioral Health Care

Resources

2012 National Strategy for Suicide Prevention: Goals & Objectives for Action

The state prevention program recommends three intervention skills training programs:

1. QPR (Question, Persuade, Refer)
2. ASIST (Applied Suicide Intervention Skills Training)
3. safeTALK (Safe Tell, Ask, Listen, and KeepSafe)

For all mental health providers who treat suicidal patients, the state recommends Assessing & Managing Suicide Risk: Core Competencies for Mental Health Professionals (AMSR Training)

High Schools are encouraged to implement a comprehensive suicide prevention program known as RESPONSE.

Crisis lines can be useful tools if those suffering acute crisis know how to reach them. The state prevention program recommends broad dissemination of crisis line information. There is a national lifeline and there are county crisis contacts.

1. National Suicide Prevention Lifeline
2. Oregon County Crisis Lines

National organizations provide a wide variety of information, consultation, training, advocacy, research, program evaluation, and other support. There are five organizations that specialized services in suicide prevention:

1. Suicide Prevention Resource Center (SPRC)
2. National Acton Alliance: Zero Suicide in Health & Behavioral Health Care
3. American Association of Suicidology (AAS)
4. American Foundation for Suicide Prevention (AFSP)
5. Make Connection – shared experiences and support for veterans

For moving suicide prevention upstream and for the interconnections in behaviors, risk, and protective factors, see these resources:

1. Connecting the Dots: An Overview of the Links Among Multiple Forms of Violence

2. Preventing Mental, Emotional and Behavioral Disorders Among Young People

3. Steps to Create Safe, Stable, and Nurturing Relationships - CDC

The state Public Health Division Injury and Violence Prevention Program collects, analyzes, and disseminates data on suicide, suicide attempts, and suicide ideation from a variety of sources. The program epidemiologist and research analyst are good resources for communities and individuals who have questions about incidence, prevalence, and risk factors associated with suicide among Oregon populations. These technical scientists maintain a variety of data resources and they publish reports about suicide on the program website.

The state data reports can be found on the program web pages:

1. Oregon Violent Death Reporting System

2. Oregon Healthy Teen Survey

3. Student Wellness Survey

The youth suicide prevention program provides a listserv, Youth Suicide Prevention Network (YSPNetwork) that members use to disseminate new research, data reports, make announcements about training, education, new resources, and other program efforts, and query the group. To subscribe to the list: YSPNetwork.

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.

Atypical antipsychotic drugs: A group of antipsychotic tranquilizing drugs used to treat psychiatric conditions such as schizophrenia. Atypical antipsychotics include drug such as Clozapine, Olanzapine, Quetiapine, Risperidone and Ziprasidone.

Benzodiazepines: A class of drugs used to treat anxiety, insomnia, and seizures. Benzodiazepines include drug such as Alprazolam, Clonazepam, Diazepam, and Lorazepam.

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.

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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 (2010).

[3] Shen X, Millet L. Violent Deaths in Oregon: 2012. Oregon Health Authority, Portland, Oregon.

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).

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.

Eviction: A suicide circumstance in which the victim had recently been, was in the process of being evicted or foreclosed on, or was confronted with an eviction, foreclosure, or other loss of housing, and this appears to have contributed to the death.

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

Family stressors: A suicide circumstance in which the victim was experiencing significant problems related to family home environment involving more than an intimate partner or family members other than intimate partners.

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 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.

Opioids/Opiates: A group of psychoactive chemicals that work by binding to opioid receptors. Opioids include prescription drugs (Codeine, Fentanyl, Hydrocodone, Methadone, Morphine, and Oxycodone) and illicit drug (Heroin).

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.