Violent Deaths *in Oregon*: 2003

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Suggested citation: Shen X, Millet L, Kohn M. 2005. Violent Deaths in Oregon: 2003. Oregon Department of Human Services, Portland, Oregon.

This publication was supported by Cooperative Agreement No. U17/CCCU022393 from the Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official view of the CDC.

October 2005

Acknowledgements

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Special thanks to the Oregon Violent Death Reporting System Technical Advisory Committee for their assistance and support:

Jim Bixby, Oregon Crime Lab
Beth Carpenter, Oregon Crime Lab
Karen Gunson, MD, State Medical Examiner
Jennifer Woodward, PhD, State Registrar
David Yandell, Oregon State Police
Dave Schmierbach, Oregon State Police
Terry O'Connell, Oregon State Police

We deeply appreciate the contributions of Oregon's law enforcement professionals who investigate and document cases. The support and assistance of the Oregon State Police, the Department of Justice, local law enforcement records staff, the Oregon Association Chiefs of Police, the Sheriff's Association, and the Oregon District Attorney's Association make the Oregon Violent Death Reporting Data System possible.

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Violent Deaths *in Oregon*: 2003

Executive Summary

The Oregon Violent Death Reporting System (OVDRS) was established in 2003. It is part of National Violent Death Reporting System (NVDRS). The goals of this system are to generate public health information on violent deaths and to develop violence prevention strategies. OVDRS has been collecting data from Oregon Medical Examiners' reports, Oregon Crime Lab reports, Oregon Law Enforcement Data System and Death Certificates since 2003. Violent deaths are defined as homicides, suicides, unintentional firearm deaths, legal interventions, and undetermined deaths. This report describes data collected in the first surveillance year.

Overview

In 2003, 787 Oregonians died by violent death. Violent deaths accounted for 2.6% of deaths in Oregon. The rate of violent death was 22.1 per 100,000, which was higher than the national average. In 2003, 588 (74.7%) died by suicide, 93 (11.8%) died by homicide, 95 (12.1%) died by undetermined manner, seven died by legal intervention and four died by unintentional firearm discharge. Nine incidents involved more than one death; five of which were homicide-suicides.

Findings

- Almost 75% of violent death was due to suicide. Oregon's suicide rate of 16.5 per 100,000 was 57% higher than the national rate. Males were more than four times more likely to die by suicide than females.
- Approximately 80% of adults aged 65+ who died by suicide had physical health problems.
- Almost 12% of violent death was due to homicide. African Americans had the highest homicide rate. Most homicides involved one victim and a single suspect. The majority of suspects were young males aged 15 to 44. Most suspects killed someone they knew. Intimate partner violence (IPV) related homicide was documented in 24% of homicides.
- Suffocation was a common cause of death among female homicide victims.
- Behavioral and physical health problems were commonly reported among young adults whose deaths were undetermined. Many of these deaths could be suicides.
- Alcohol use was suspected in approximately 28% of the suicides, 32% of the undetermined deaths, and 41% of the homicides.

Recommendations

- Use primary care to implement older adult suicide intervention.
- Increase toxicological testing of suicide cases.
- Teach public safety and community members skills to use with persons who are exhibiting suicidal behavior.
- Activities should be developed to prevent suicide among those aged 25-64.
- Interventions that prevent intimate partner violence are needed.
- Implement evidence based violence prevention for high-risk African American males.

Violent Deaths *in Oregon*: 2003

Background

Violence is a major public health problem. The World Health Organization estimated that 1.6 million people lost their lives to violence worldwide in 2000 alone; nearly half of those deaths (815,000) were suicides and 552,000 were homicides.[1] In the United States, homicide and suicide claim about 50,000 lives each year. Homicide and suicide are among the top five leading causes of death among young people aged 1 to 44 and rank the second and third leading cause of death among people aged 15 to 34.[2] Oregon has the highest suicide rate among three west coast states (Washington, Oregon and California). The suicide is the ninth leading cause of death in Oregon. More Oregonians died by suicide than died by motor-vehicle crash.[3] Despite the magnitude of the problem, little data on violent deaths beyond that found in death certificates has been available for analysis to better understand violent death. Vital statistics data provide demographic characteristics of violent deaths, but the data do not provide the details needed to accurately assess the risk factors surrounding violent deaths. For instance, vital statistics data do not link victim to suspect and could not capture multiple homicides or a combined homicide-suicide. In addition, vital statistics do not document why persons died by suicide and nor do they identify risk factors related to suicide. The Centers for Disease Control and Prevention (CDC) launched a new surveillance system, the National Violent Death Reporting System (NVDRS) in 2003. NVDRS is a state-based, active surveillance system that collects detailed information from many data sources and compiles incident-based case information on violent deaths. The goals of NVDRS are to generate public health information on violent deaths and to develop violence prevention strategies. The system captures all homicides, suicides, deaths of undetermined manner, deaths resulting from legal intervention, and deaths related to unintentional firearm injuries.[4] Oregon was one of the first six states funded by CDC to initiate the violent death reporting system. As part of NVDRS, the Oregon Violent Death Reporting System (OVDRS) is built on the same methodology and standard as other states. OVDRS is collaborating with multiple state and local agencies as well as with other injury prevention programs. OVDRS currently collects data from: Oregon medical examiners' reports (ME reports), Oregon crime lab reports, Oregon law enforcement data system, uniform crime reports, homicide incident tracking system, local police reports and death certificates. OVDRS has been collecting data since 2003. This report describes data collected during the first year of data collection.

Case Definition

OVDRS collects data from various sources. Occasionally data sources may record a different determination on the manner of death. In this report, violent deaths were identified according to International Classification of Diseases, Tenth Revision (ICD-10) codes for the underlying cause of deaths on death certificates. Manner of death was coded according to ICD-10 classification and categorized as suicide, homicide, legal intervention, unintentional firearm discharge, or undetermined (Table 1).[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 data collection and this report**.

Table 1. Violent death by manner

Manner	ICD-10 code
Suicide	X60-X84, Y87.0
Homicide	X85-X99, Y00-Y09, Y87.1
Undetermined	Y10-Y34, Y87.2, Y89.9
Legal intervention excluding execution (Y35.5)	Y35.0-Y35.4, Y35.6-Y35.7, Y89.0
Unintentional Firearm Fatality	W32-W34, Y86 determined to be due to firearm

Rate calculation

Rates were calculated using bridged-race postcensal estimates of the July 1, 2003 released by the National Center for Health Statistics (NCHS).[5] The age-adjusted rate was adjusted to the 2000 standard million. Because of limited death counts in some races, age groups and/or intents, some rates might not be statistically reliable or stable; use caution with regard to those categories with less than 21 deaths.

Data Summary

Magnitude of Violent Death

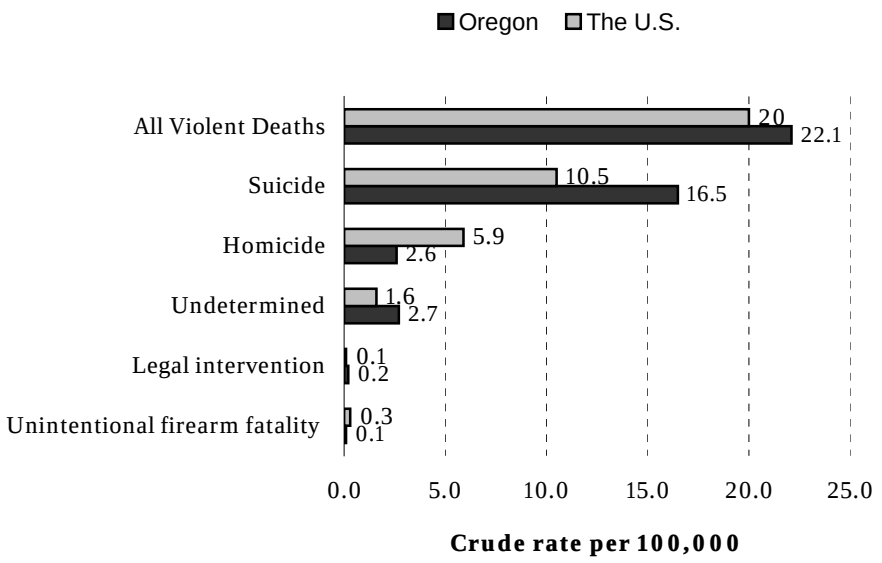
In 2003, there were 777 violent death incidents resulting in 787 deaths among Oregon residents. The violent death rate was 22.1 per 100,000 (age-adjusted rate = 21.6 per 100,000). Of 777 incidents, 768 incidents involved one death; nine incidents involved more than one death and those incidents resulted in a total 19 deaths. Among the nine incidents involving multiple deaths, five were homicide-suicides (Table 2).

Table 2. Number of violent death incidents and deaths, OR 2003

Type of Incident	# Incidents	# Deaths
Unintentional Firearm Injury	4	4
Shot by self	*3*	*3*
Shot by other	*1*	*1*
Homicide	85	87
Single Homicide	*83*	*83*
Multiple Homicides	*2*	*4*
Suicide	581	583
Single Suicide	*579*	*579*
Multiple Suicides	*2*	*4*
Combined Homicide-Suicide	5	11
Legal Intervention	7	7
Undetermined	95	95
Total	777	787

Violent deaths accounted for 36.3% of the total injury deaths and 2.6% of total deaths.[3] Among the violent deaths, 588 died by suicide with a rate of 16.5 per 100,000; 93 died by homicide (2.6 per 100,000); 94 died by undetermined manner (2.7 per 100,000); seven died by legal intervention (0.2 per 100,000) and four died by unintentional firearm injury (0.1 per 100,000). Compared with the nation, Oregon has a higher violent death rate. Oregon's higher rate of violent death can be attributed to deaths due to suicide. The state's suicide rate is 57% higher than the national average, whereas the homicide rate is 56% lower than the national average. The rates of undetermined death and legal intervention in Oregon are slightly higher than the national average. The unintentional firearm death rate is lower in Oregon than in the nation[6] (Figure 1).

Figure 1. Violent death rates in Oregon and US 2003



Race, Ethnicity and Gender

Among the violent deaths, 743 (94.4%) were white; 21 (2.7%) were black; 13 (1.7%) were American Indian/Native Alaskan; eight (1.0%) were Asian/Pacific Islander; two were other race and 38 were Hispanic origin. Six hundred and thirteen were males and 174 were females. The ratio of male to female was 3.5:1. Suicide was the predominant type of violent deaths among both males and females. Among men, suicides accounted for 78% of male violent deaths; homicides and undetermined deaths counted for approximately 10% respectively. Among women, suicides accounted for 63% of female violent deaths; homicides for 16% and undetermined deaths for 20% (Table 3).

Table 3. Number, proportion and rate of violent deaths by manner of death, OR 2003

Manner of death	Gender				Total		
	Male	%	Female	%	All	%	Crude rate
Suicide	478	78.0	110	63.2	588	74.7	16.5
Homicide	65	10.6	28	16.1	93	11.8	2.6
Unintentional firearm fatality	4	0.7	0	0.0	4	0.5	0.1
Legal intervention	6	1.0	1	0.6	7	0.9	0.2
Undetermined	60	9.8	35	20.1	95	12.1	2.7
Total	613		174		787		22.1

Mechanism of Death

Firearms were used in 50.2% of violent deaths. Other common mechanisms of death included poisoning (21.3%), suffocation (14.4%), sharp instruments (3.3%), and fall (2.3%) (Table 4).

Table 4. Violent deaths by mechanism, OR 2003

Mechanism	Number	% of Total
Firearm	395	50.2
Poisoning	169	21.5
Hanging, Strangulation, Suffocation	113	14.4
Sharp instrument	26	3.3
Fall	18	2.3
Personal weapons (fist, feet, hand)	11	1.4
Blunt instrument	10	1.3
Drowning	9	1.1
MV, including buses, motorcycles	5	0.6
Other transport vehicle (trains, boats)	4	0.5
Fire or Burns	3	0.4
Shaking (shaken baby syndrome)	1	0.1
Other	5	0.6
Unknown	18	2.3

Place of Violent Incident

Of 787 violent deaths, 760 (97%) occurred in Oregon and 27 (3%) occurred outside of the state (Table 5).

Table 5. Number of violent deaths among Oregonians by state of occurrence

State	Number of Deaths	Percent
Oregon	760	96.57
Washington	6	0.76
District of Columbia	2	0.25
South Dakota	2	0.25
Other/Unknown	17	2.16

Regardless of the manner of death, over 60% victims were injured at home (Table 6).

Table 6. Location of injury by intent, OR 2003

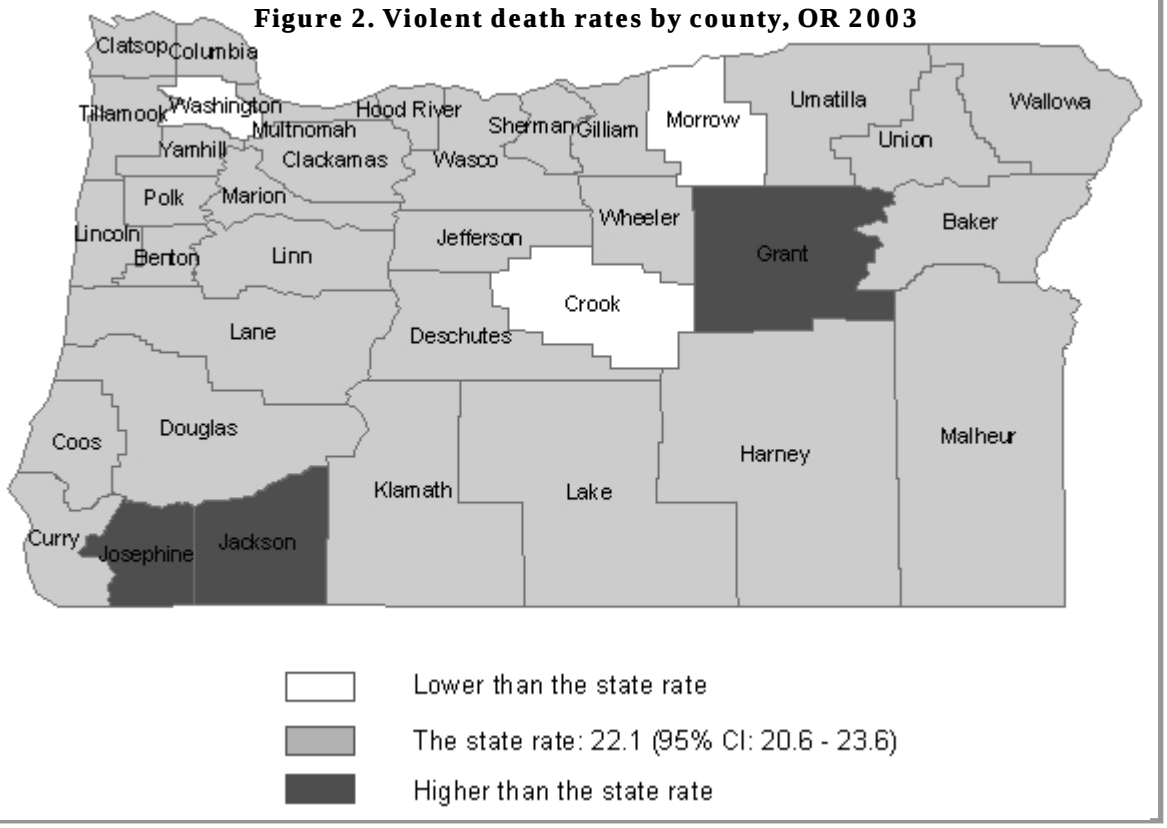
Location Type	Suicide		Homicide		Undetermined	
	No.	%	No.	%	No.	%
House / Apartment	409	70	59	63	64	67
Motor Vehicle	41	7	6	6	0	0
Natural Area	33	6	1	1	3	3
Motel / Inn /Hotel	13	2	0	0	3	3
Street / Road	17	3	8	9	4	4
Park / Public use area	14	2	1	1	2	2
Jail	6	1	1	1	0	0
Highway	5	1	4	4	1	1
Supervised Resident Facilities	2	0	2	2	3	3
Unknown	18	3	4	4	1	1

Over one half of the violent deaths occurred in four counties: Multnomah, Lane, Marion and Clackamas; each of them had at least 75 cases (Table 7). Rural counties had a high proportion of suicide and the urban counties had a high proportion of homicide. Several counties had a disproportional high percentage of undetermined deaths. The violent death rates in the most counties were at the state average level (Figure 2).

Table 7. Number and proportion of violent deaths by manner and county, OR 2003

County	Violent Death	Suicide		Homicide		Undetermined	
	Total	No.	%	No.	%	No.	%
Baker	7	7	100.0	0	0.0	0	0.0
Benton	10	10	100.0	0	0.0	0	0.0
Clackamas	75	66	88.0	5	6.7	4	5.3
Clatsop	9	7	77.8	0	0.0	2	22.2
Columbia	7	7	100.0	0	0.0	0	0.0
Coos	15	11	73.3	2	13.3	2	13.3
Crook	1	1	100.0	0	0.0	0	0.0
Curry	9	6	66.7	1	11.1	2	22.2
Deschutes	23	21	91.3	1	4.3	1	4.3
Douglas	23	16	69.6	4	17.4	3	13.0
Gilliam	0	0	*NA*	0	*NA*	0	*NA*
Grant	5	4	80.0	0	0.0	0	0.0
Harney	4	4	100.0	0	0.0	0	0.0
Hood River	2	1	50.0	1	50.0	0	0.0
Jackson	64	47	73.4	6	9.4	9	14.1
Jefferson	4	1	25.0	3	75.0	0	0.0
Josephine	30	25	83.3	2	6.7	3	10.0
Klamath	12	9	75.0	0	0.0	3	25.0
Lake	3	2	66.7	0	0.0	1	33.3
Lane	91	58	63.7	10	11.0	21	23.1
Lincoln	10	9	90.0	0	0.0	1	10.0
Linn	19	16	84.2	2	10.5	1	5.3
Malheur	5	5	100.0	0	0.0	0	0.0
Marion	76	50	65.8	15	19.7	9	11.8
Morrow	0	0	*NA*	0	*NA*	0	*NA*
Multnomah	160	109	68.1	27	16.9	22	13.8
Polk	10	9	90.0	0	0.0	1	10.0
Sherman	1	1	100.0	0	0.0	0	0.0
Tillamook	9	7	77.8	2	22.2	0	0.0
Umatilla	13	9	69.2	4	30.8	0	0.0
Union	4	4	100.0	0	0.0	0	0.0
Wallowa	1	1	100.0	0	0.0	0	0.0
Wasco	4	3	75.0	1	25.0	0	0.0
Washington	64	49	76.6	5	7.8	8	12.5
Wheeler	0	0	*NA*	0	*NA*	0	*NA*
Yamhill	14	12	85.7	1	7.1	1	7.1
Unknown	3	1		1		1	
Statewide	**787**	**588**	***74.7***	**93**	***11.8***	**95**	***12.1***

Figure 2. Violent death rates by county, OR 2003

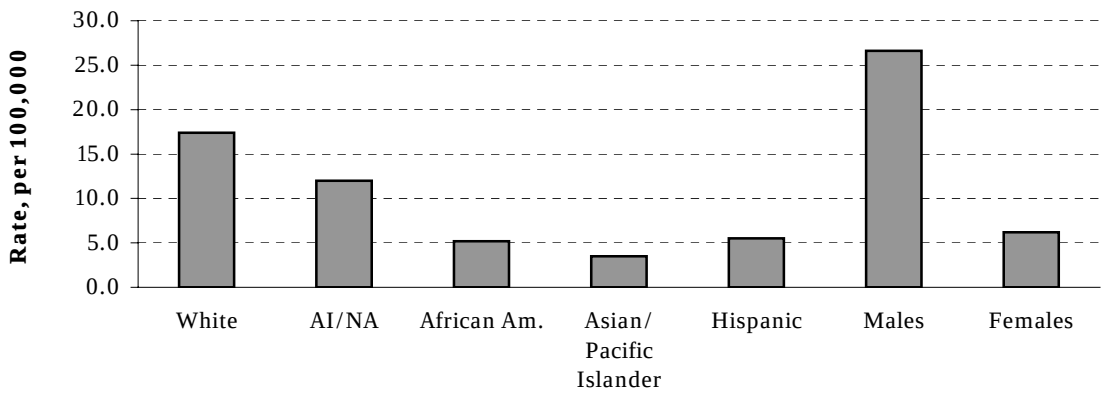


Suicides

Race, Ethnicity and Gender

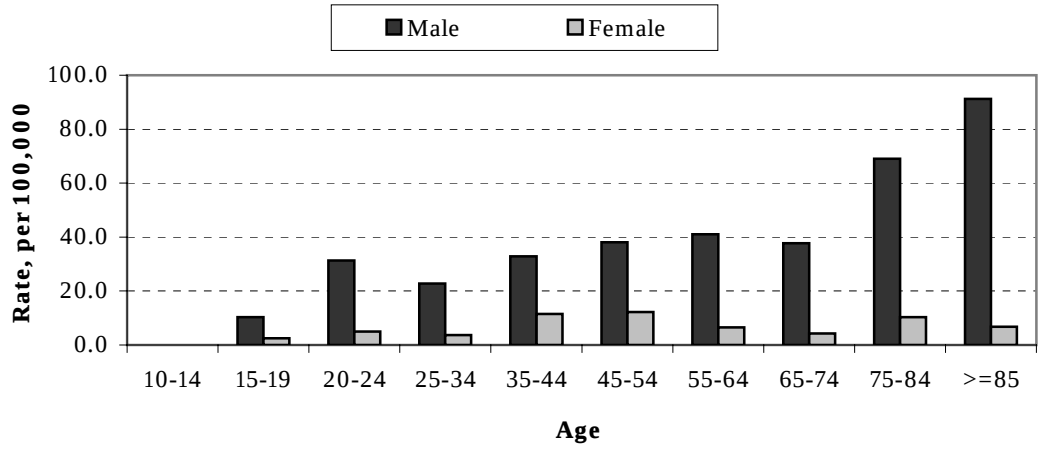
Suicide accounted for nearly 75% of violent deaths in 2003. Of 588 suicides, 478 (81%) occurred among males and 110 (19%) occurred among females; 572 (97%) were white; seven were American Indian/Native Alaskan; five were Asian/Pacific Islander; four were African American and 18 (3%) were Hispanic. Males were 4.29 times more likely to die by suicide than females. The suicide rate was 16.5 per 100,000 overall; 17.4 per 100,000 among whites; 12.0 per 100,000 among American Indians and Native Alaskans; 5.5 per 100,000 among African Americans; 3.5 per 100,000 among Asians/Pacific Islanders and 6.5 per 100,000 among the people with Hispanic ethnicity (Figure 3).

Figure 3. Suicide by race/ethnicity and gender, OR 2003



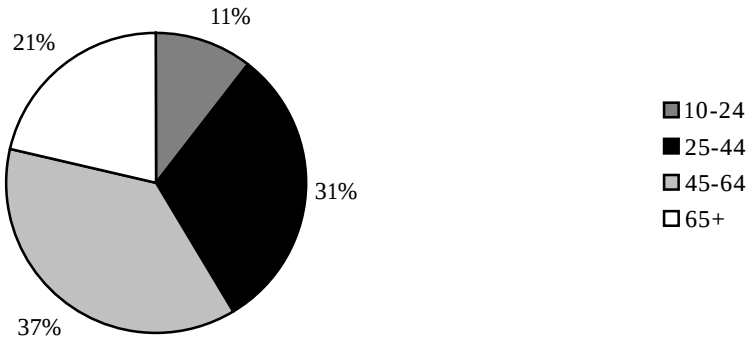
Overall, suicide rates increase with age. The age-specific rate of suicide among males rises sharply after the age of 15 years and reaches the first peak between the ages of 20 and 24; the rate is slightly down at the ages of 25 to 34, then rises again and reaches the second peak between the ages of 55 to 64. The rates rise dramatically with age after age 65 years and the highest rate occurs at the ages of 85 and over. The highest suicide rate among females occurs at the ages 45 to 54 (Figure 4).

Figure 4. Suicide by race/ethnicity and gender, OR 2003



The majority of suicides (68%) occurred among those aged 25-64 (Figure 5). Youth aged 10 to 24 accounted for 11% (N=62) of the suicides; adults aged 25 to 44 accounted for 31% (N=182); adults aged 45 to 64 accounted for 37% (N=219); and older adults aged 65 years and older accounted for 21% (N=125).

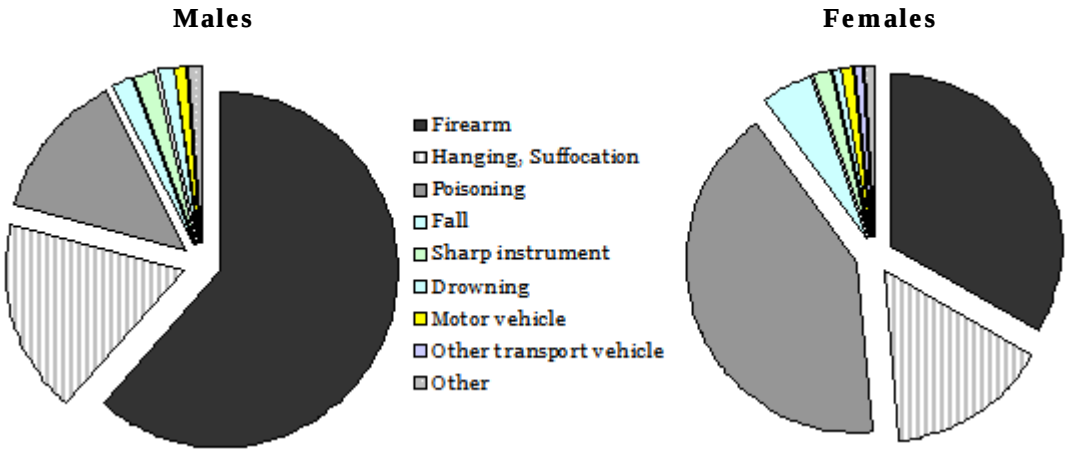
Figure 5. Percentage of suicides by age group, OR 2003



Mechanism of Death

Firearms, suffocation (hanging) and poisoning were common mechanisms of suicides. Gender differences on mechanisms were observed. Firearms were involved in as many as 60% of deaths among males compared to 41% of the deaths among females. Suffocation claimed 18% of males and 15% of females. Poisoning was the mechanism of death among only 13% of males but killed 41% of females (Figure 6).

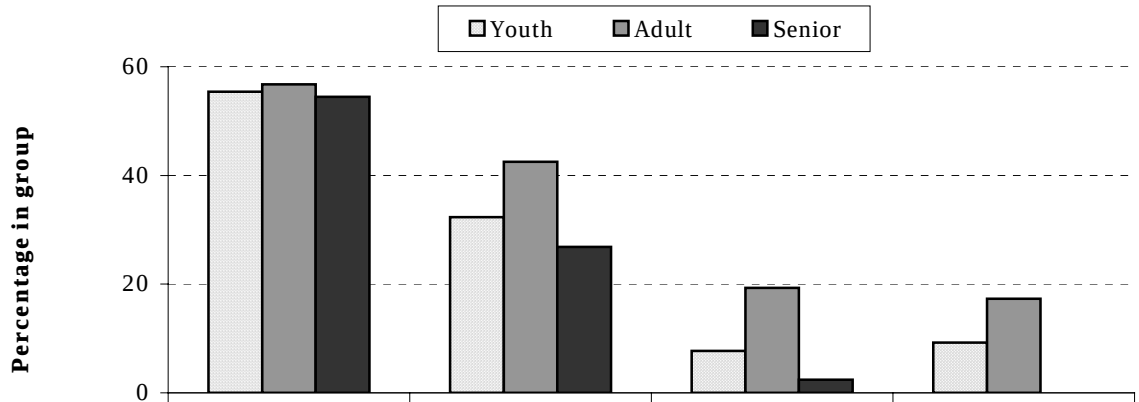
Figure 6. Mechanism of suicide by gender, OR 2003



Circumstances

Analysis of circumstances surrounding suicides shows that regardless of age, nearly 60% of people who died by suicide had experienced a recent depressed mood, and about 30% had a documented mental illness. Approximately 10% of youth aged 10 to 24 and 20% of young adults aged 25 to 64 had documented alcohol and/or substance dependence, whereas very few older adults (aged 65 and older) who died by suicide were reported to have alcohol and/or other substance abuse problem (Figure 7).

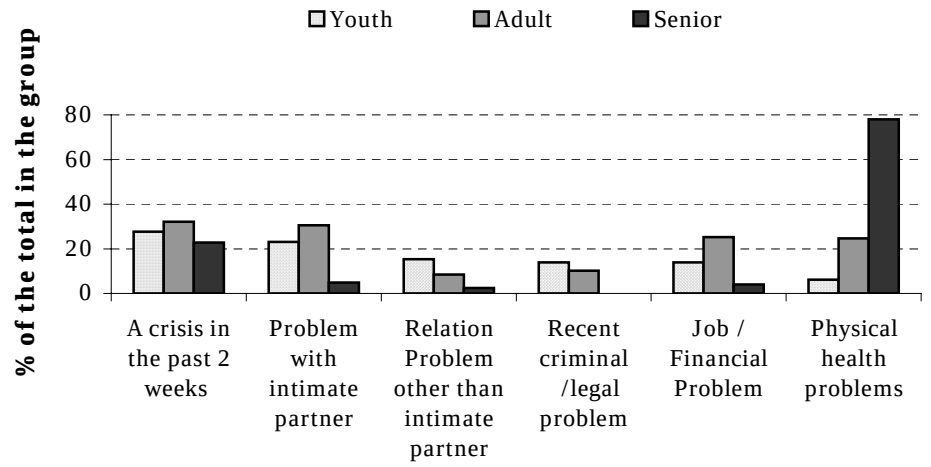
Figure 7. Behavioral health status among suicide victims by age group, OR 2003



	Current depressed mood	Current mental illness	Alcohol dependant	Substance abuse
Youth	55	32	8	9
Adult	57	42	19	17
Senior	54	27	2	0

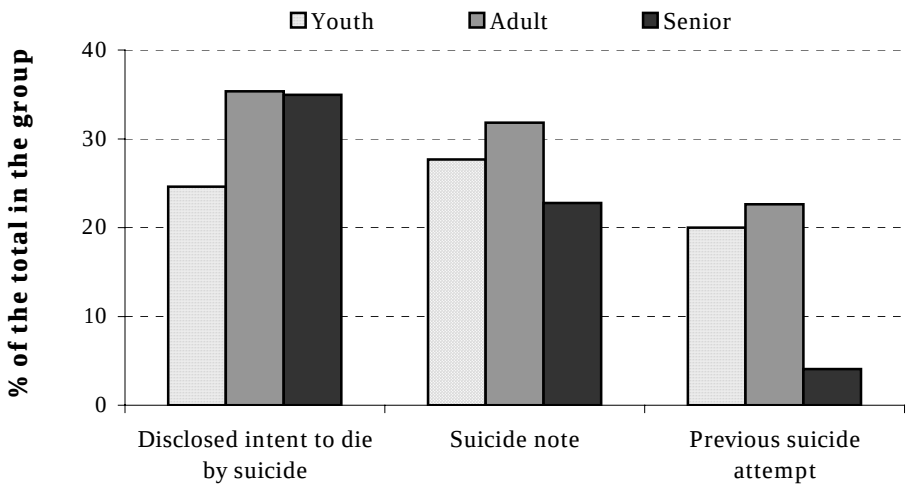
One in four persons who died by suicide had experienced at least one crisis event within 2 weeks of death. The most frequently reported precipitating events among youth aged 10 to 24 were: an interpersonal relationship problem with intimate partner or other, recent criminal or legal issue, and loss a job or financial difficulty. The most frequently reported precipitating events among young adults aged 25 to 64 were: a problem with intimate partner, loss a job or financial difficulty, physical health problems and recent criminal or legal issue. Among older adults aged 65 and older, physical health problems such as declined health status, chronic pain and illness were the most frequently reported factor associated with suicide (Figure 8).

Figure 8. Circumstances associated with suicide by age group, OR 2003



Twenty-five percent of youth and nearly 35% of young adults who died by suicide had disclosed suicide threats or ideation prior to their deaths. One third left a suicide note. Only about 4% of the older adults who died by suicide had a reported history of previous suicide attempt, while one out of five aged 10 to 64 who died by suicide had a reported previous attempt (Figure 9).

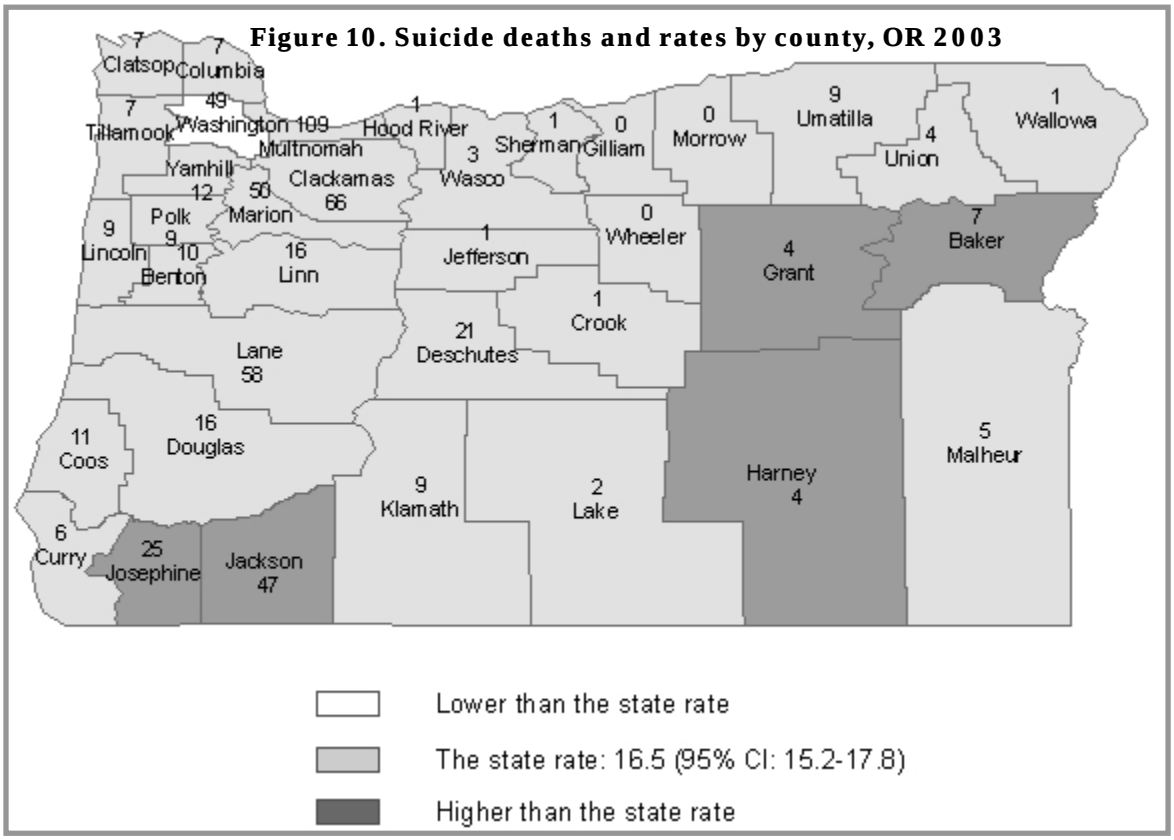
Figure 9. Suicidal behavior by age group, OR 2003



Number of suicides and suicide rates by county

The number of suicide deaths occurring in Oregon counties ranged from 0 to 109 deaths. The suicide rates in most counties were not statistically significant different from the state rate. The rates in Baker, Grant, Harney, Josephine and Jackson were significantly higher compared with the state rate (Figure 10).

Figure 10. Suicide deaths and rates by county, OR 2003

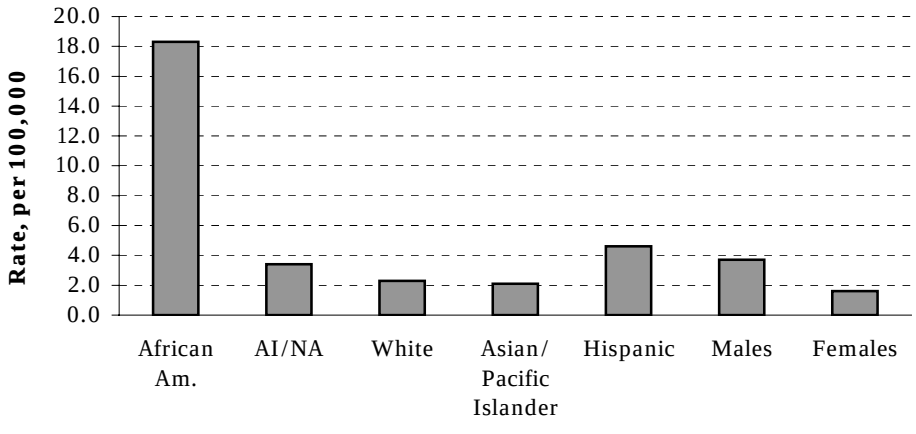


Homicides

Race, Ethnicity and Gender

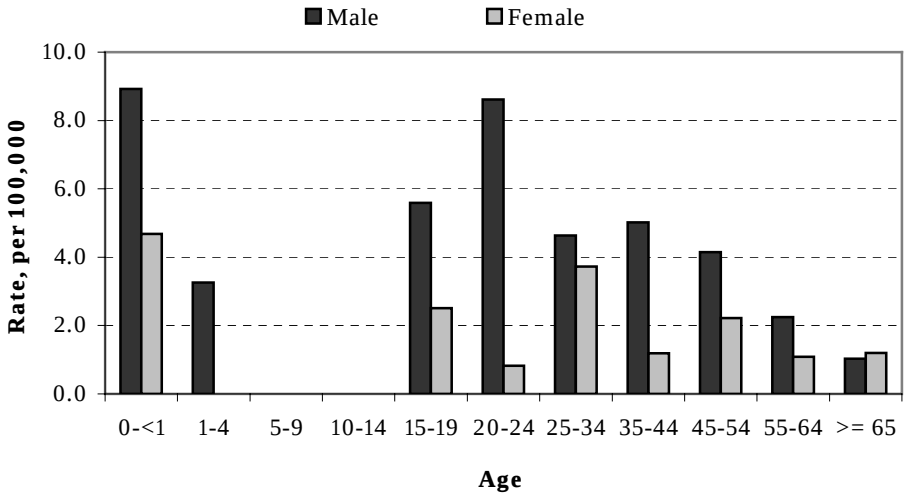
Homicide accounted for nearly 12% of violent deaths in 2003. Of the 93 homicides, 65 of the victims (70%) were male and 28 (30%) were female; 74 (80%) were white; 14 (15%) were African American; two were American Indian/Native Alaskan; three were Asian/Pacific Islander; and 15 (16%) were Hispanic. Males were 2.3 times more likely to die by homicide than females. The homicide rate was 2.6 per 100,000 overall; 18.3 per 100,000 among African Americans; 3.4 per 100,000 among American Indians and Native Alaskans; 2.3 per 100,000 among whites; 2.1 per 100,000 among Asians/Pacific Islanders and 4.6 per 100,000 among the people with Hispanic ethnicity (Figure 11).

Figure 11. Homicide rate by race/ethnicity and gender, OR 2003



The distribution of age-specific rates of homicide is 'u' shaped. The first peak occurs among infants and the second peak occurs among males aged 20 to 24 and among females aged 25 to 34 (Figure 12). Of the total number of homicides, six (6%) were children aged less than 15 years; 22 (24%) were youth aged 15 to 24; 37 (40%) were young adults aged 25 to 44; 23 (25%) were adults aged 45 to 64 and 5 (5%) were older adults aged 65 years and over.

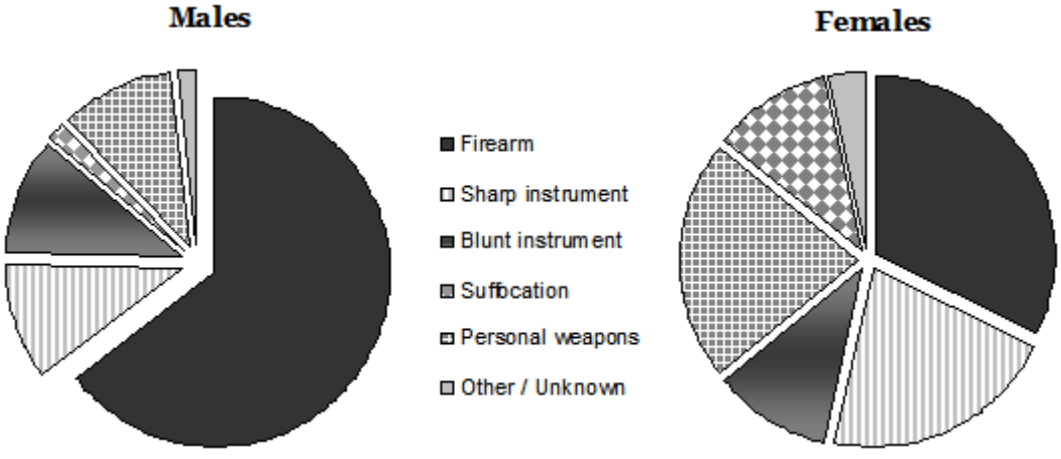
Figure 12. Homicide rates by age group and gender, OR 2003



Mechanism of Death

Firearms were involved in 62% of male homicides and 32% of female homicides. Sharp instruments were used in 10% of male and 21% of female homicides. Blunt instruments and personal weapons (fist, feet and hand) accounted for 10% of male and 10% of female homicides. Suffocation was common among female homicides, accounting for 21% (Figure 13).

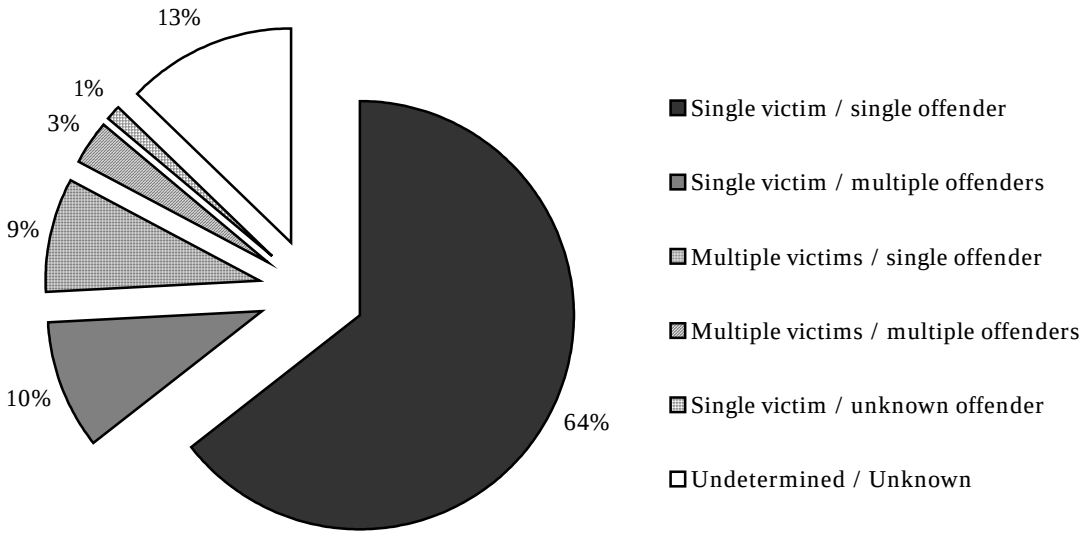
Figure 13. Mechanism of homicide by gender, OR 2003



Circumstance

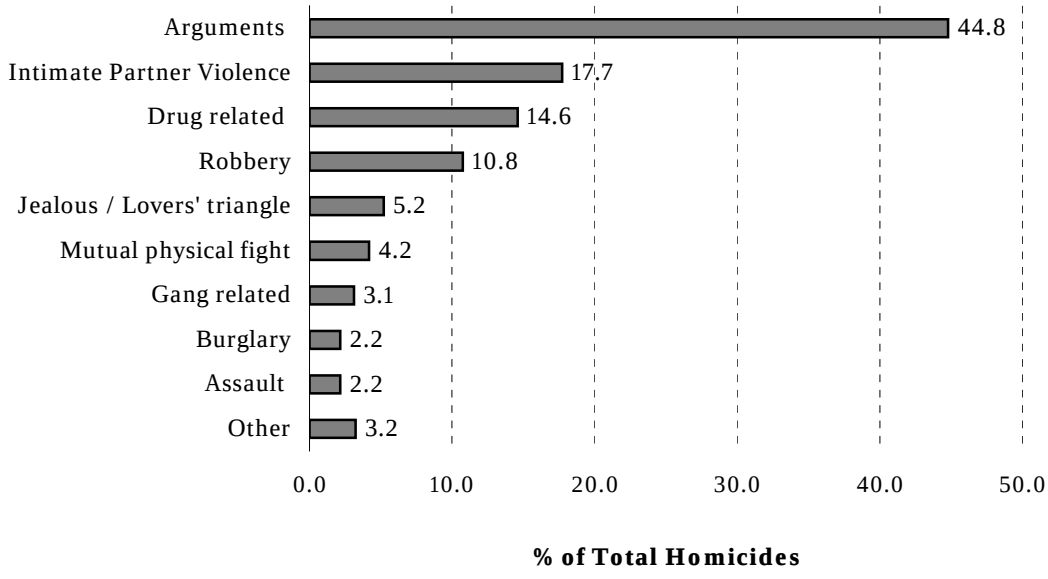
Most homicide victims (64%) were killed in an incident that involved one victim and one suspect; 10% in an incident that involved one victim and multiple suspects; and 9% in an incident that involved multiple victims and a single suspect (Figure 14).

Figure 14. Type of homicide, OR 2003



Analysis of circumstances surrounding homicides shows that arguments (45%) were the most common, followed by intimate partner violence (18%), drug trade or drug related issue (15%), robbery (11%), jealous/lovers' triangle (5%), mutual physical fight (4%), gang related violence (3%), burglary (2%) and assault (2%) (Figure 15).

Figure 15. Circumstances related to homicide, OR 2003



Homicide Suspect Information

Based on available information on suspects, young males aged 20 to 44 were more likely to be involved in homicide incidents. African Americans were represented disproportionately among suspects (Table 8). Most homicide suspects killed victims they knew. The suspects were the victim's spouse, parents, children, friends, acquaintances, boyfriends, girlfriends or former boyfriends/girlfriends (Table 9).

Table 8. Demographics of suspects, OR 2003

	Single Suspect		Multiple Suspects		OR Population
Gender	**No.**	**%**	**No.**	**%**	**%**
Male	54	82	13	45	49.7
Female	7	11	5	17	50.3
Unknown	5	8	11	38	
Race/Ethnicity					
White	45	68	12	41	90.8
Black	8	12	2	7	1.8
Asian	2	3	0	0	3.4
Other	2	3	0	0	4
Unknown	9	14	15	52	
Hispanic	4	6	2	7	9.1
Hispanic, Unknown	9	14	14	59	
Age Group					
15-19	7	13	3	27	6.9
20-24	12	22	3	27	7
25-29	8	15	2	18	7
30-34	8	15	1	9	7
35-44	5	9	2	18	14.4
45-54	8	15	0	0	15
55-64	3	6	0	0	10.2
>65	3	6	0	0	12.7
Age Range (yr)	17-86		18-41		
Median Age (yr)	30		23		36.8
Unknown	11		18		

Table 9. Relationship between victim and suspect, OR 2003

Type of Relationship	**Single Suspect**		**Multiple Suspects**	
Victim to suspect	**No.**	**%***	**No.**	**%***
Spouse or ex-spouse	6	9	--	--
Parent	5	8		
Child	3	5		
Other family member	2	3		
Girlfriend/Boyfriend or Ex	8	12	--	--
Acquaintance/Friend	30	45	15	52
Stranger	8	12	9	31
Other	4	6	5	17

* Percentage is based on the cases with information on relationship.

Intimate Partner Violence (IPV)-related Homicides

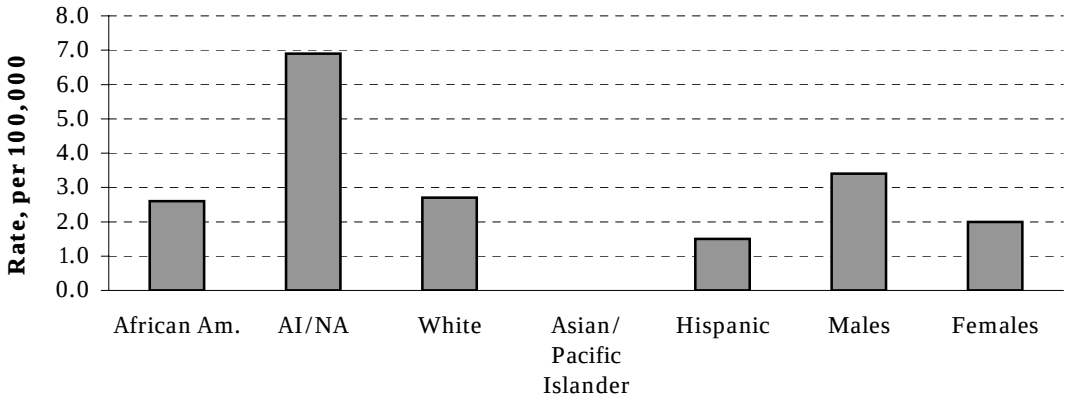
A total of 26 IPV-related homicides occurred among Oregon residents in 2003. Of those victims, 14 were killed by an intimate partner, seven were killed by their lover's current or ex-partners, four IPV perpetrators were killed by police officers during the course of a domestic disturbance call, and one was killed by an IPV perpetrator when the person tried to confront the perpetrator over domestic violence. Among persons who died by IPV-related Homicide, 13 were male and 13 were female. The age range was from 18 to 86 years with an average age of 35 years. Twenty-five were whites and three were Hispanic. For more information on IPV-related homicides in Oregon, please refer the report of "Intimate Partner Homicide in Oregon, 1997-2003."[7]

Undetermined Deaths

Race, Ethnicity and Gender

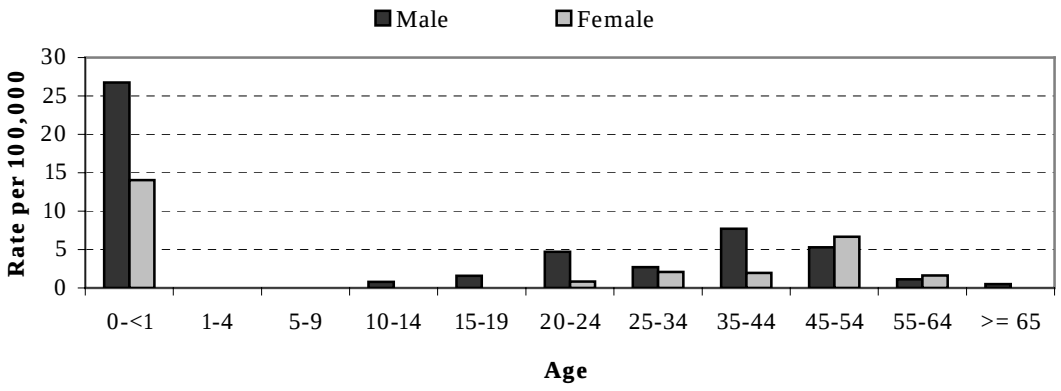
Undetermined deaths accounted for nearly 12% of violent deaths in 2003. Of the 95 deaths, 60 (63%) were male and 35 (37%) were female; 88 (84%) were white; four (4%) were American Indian/Native Alaskan; two (2%) were African American; one was other race; and five (5%) were Hispanic. Males were 1.7 times more likely to have the manner of death listed as undetermined than females. The undetermined death rate was 2.7 per 100,000 overall; 6.9 per 100,000 among American Indians and Native Alaskans; 2.7 per 100,000 among whites; 2.6 per 100,000 among African Americans and 1.5 per 100,000 among Hispanics (Figure 16).

Figure 16. Undetermined death rates by race/ethnicity and gender, OR 2003



Infants and young adults had the highest rates of undetermined death (Figure 17). Infant accounted for 9% (N=9) of the deaths and adults aged 20 to 64 accounted for 85% (N=81). It should be noted that undetermined manner among adults generally means that the death could not be determined whether the person died by unintentional injury (accidental overdose) or suicide. Some of these 81 undetermined deaths among adults may be suicides. The majority of undetermined deaths among infants are deaths that once were categorized as sudden infant death syndrome as the cause of death. Due to changes in documentation by medical examiners some of these deaths are now recorded as undetermined.

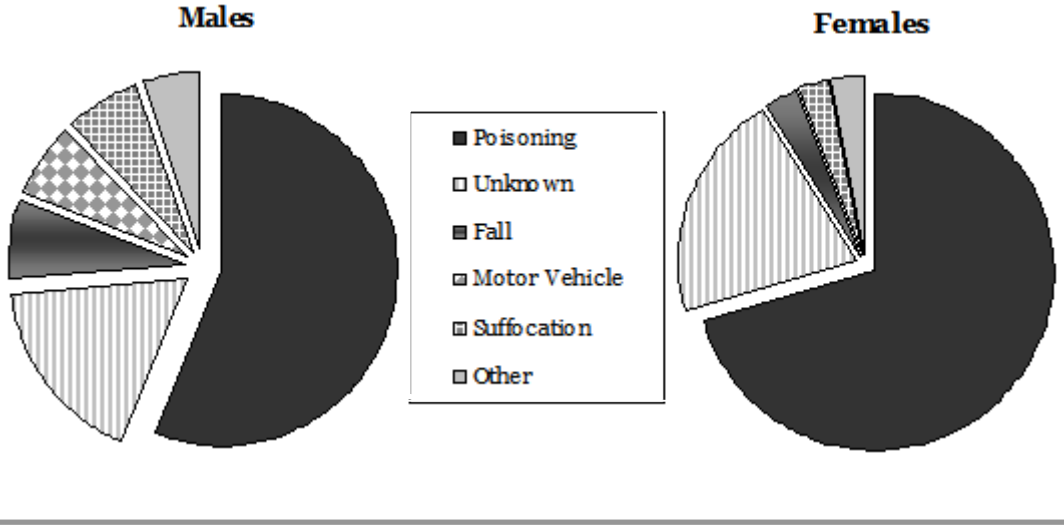
Figure 17. Undetermined death rate by age, OR 2003



Mechanism of Death

Poisoning accounted for 56% of the undetermined deaths among males and 71% among females. In nearly 20% of undetermined deaths, the mechanism of death was unknown (Figure 18).

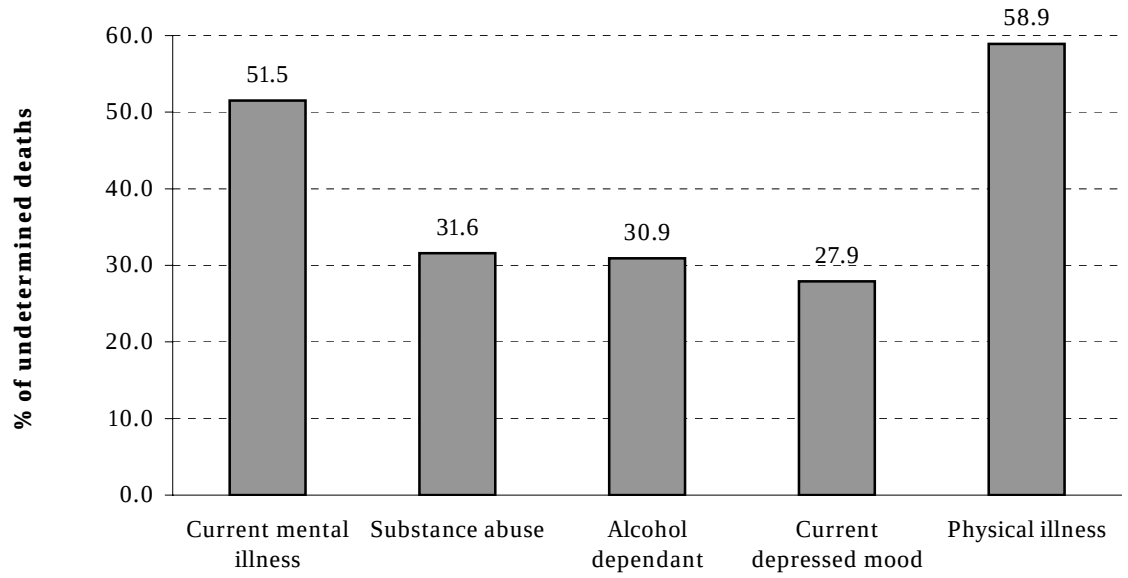
Figure 18. Mechanism of undetermined death by gender, OR 2003



Circumstance

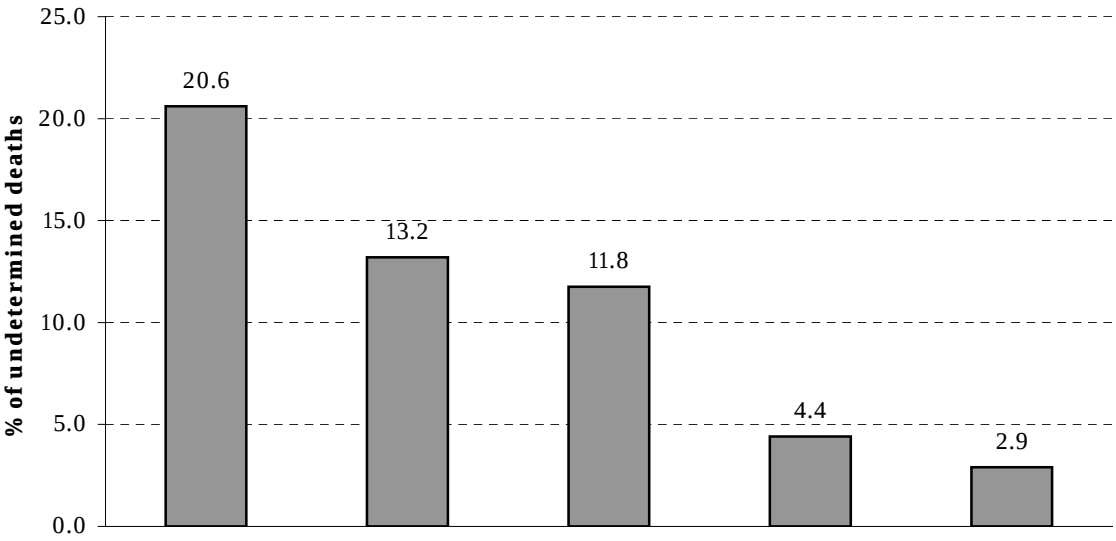
Analysis of circumstances surrounding undetermined deaths demonstrated that 51.5% of adults aged 20 to 64 had a mental illness and 58.9% had a physical illness; over 30% were substance and/or alcohol abusers and 28% had experienced a recent depressed mood (Figure 19).

Figure 19. Mental and physical status among undetermined deaths aged 20 to 64, OR 2003



The life events documented in undetermined deaths aged 20 to 64 included: a crisis event within two weeks of death (21%), loss a job or financial difficulty (13%), and a problem with intimate partner (12%) (Figure 20).

Figure 20. Circumstances documented in undetermined deaths among adults aged 20 to 64, OR 2003



Other

Since there were only seven cases on legal intervention and four cases on unintentional firearm deaths, we are unable to provide the details on those violent deaths in this report.

Toxicology Testing

Alcohol and/or substance (drug) use was commonly identified in data sources. Death scene investigations indicated that alcohol use was suspected in 28% of persons who died by suicide, in 41% of homicide victims, and in 32% of undetermined deaths (Table 10A). Not all victims were tested for blood alcohol level due to limited resources, however, among victims who were tested for alcohol, alcohol was present in blood more often than was expected by investigators (Table 10B).

Table 10A. Summary of suspected alcohol use among victims in violent deaths, OR 2003

Manner	**Suicide**	**Homicide**	**Undetermined**
# of cases with death scene investigated	554	88	84
# of cases suspected alcohol use	157	36	27
% of cases suspected alcohol use	28.3	40.9	32.1

Table 10B. Summary of victim toxicology tests documented in violent deaths, OR 2003

Alcohol / Substance / Drugs	**Suicide** (n=588)			**Homicide** (n=93)			**Undetermined** (n=95)		
	# Cases screened	Present	% Present	# Cases Screened	Present	% Present	# Cases screened	Present	% Present
Alcohol presented in the blood	199	79	39.7	77	34	44.2	71	24	33.8
Amphetamines	91	16	17.6	65	10	15.4	58	5	8.6
Cocaine	88	6	6.8	65	6	9.2	58	2	3.4
Marijuana	84	12	14.3	63	9	14.3	58	4	6.9
Opioid	92	31	33.7	65	5	7.7	60	36	60.0
Antidepreesant drug	65	36	55.4	16	1	6.3	37	21	56.8
Other substances (drug)	65	51	78.5	19	2	10.5	43	34	79.1

Among cases where toxicology tests are completed and results documented, these tests showed different patterns of substance use among victims. Amphetamines were found in 15% of the persons who died by suicide or homicide victims but in only 9% of the undetermined deaths. Cocaine use was more common among homicide victims (9%) than among the persons who died by undetermined manner (3.4%). Marijuana was found in 14% of both the persons who died by suicide and homicide victims, but in only 7% of the persons who died by undetermined manner. Opioids were seen often among the undetermined deaths (60%) and among persons who died by suicide (33%), but opioids were less common among homicide victims (8%). More than one half of people who died by suicide or undetermined manner had at least one antidepressant drug. Anti-depressants were found less than 10% in homicide victims. Toxicology tests were not performed on every violent death. Most tests were performed solely on the need for forensic evidence, therefore many suicide case investigations do not include toxicological testing. The results listed in the table 10B do not reflect a whole picture of substance use among people who died by violent death.

Conclusion

Violent death is a leading cause of death in Oregon. Given that 75% of violent deaths in Oregon are due to suicide, it is essential to prevent suicide to reduce violent deaths in Oregon. OVDRS provides new information on violent death and could be used to develop and implement strategies to reduce violent deaths in Oregon. OVDRS will continue to collect data and monitor the trend of violent deaths in Oregon. A limitation of this first year report is the inability to conduct analysis of same variables due to the small number of occurrences particularly among the homicide and undetermined incidents. Future reports will compile data from multiple years. Combining data in this way will provide the opportunity to conduct additional analysis not possible in a single year report. We will provide special reports on suicide, IPV-related deaths, combined homicide-suicides, and violent deaths among infants in the future.

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Oregon Department of Human Services, Office of Disease Prevention and Epidemiology

Glossary

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.

Blunt instrument: A mechanism of death resulting from being struck by or crushed by blunt instruments such as clubs and bats.

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.

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.

Firearm: A mechanism of death resulting from a penetrating force injury by a bullet or other projectile shot from a powder-charged gun, including handguns, shotguns, hunting rifles, and military firearms.

Homicide: A manner of death resulting from one or more persons causing death to another.

Incident: One or more deaths committed by a person or group of persons acting at the same time and place.

Legal intervention: Deaths resulting from a lawful act by police or other legal authorities (including security guards).

Manner of death and cause (or mechanism) of death matrix: Injury deaths are classified by the manner and cause of death. Example: poisoning can be the mechanism of death in all manners of death including: homicide, suicide, unintentional, and undetermined.

Personal weapons: Deaths resulting from beating by using personal fists, feet, or hands.

Poisoning: A mechanism of death resulting from intentional or unintentional ingestion of a lethal amount of drugs, toxins, or chemical substances.

Motor vehicle: Deaths involving any motorized vehicle.

Rate: An expression of the frequency with which an event occurs in a defined population.

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.

Suffocation: A mechanism of death resulting from suffocation such as hanging, strangulation.

Sharp instrument: A mechanism of death resulting from a cut and/or pierce from instruments such as knives, razors, chisels, or broken glass.

Suicide: A manner of death resulting from an act of self-harm.

Unintentional firearm death: Deaths resulting from gunshot wounds inflicted by the victim or another person unintentionally.

Undetermined manner of death: Information available is insufficient to investigating authorities to determine the manner of death.