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# Violent Deaths *in Oregon: 2004*

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Office of Disease Prevention and Epidemiology*

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# Violent Deaths *in Oregon*: 2004

## *Executive Summary*

The Oregon Violent Death Reporting System (OVDRS) 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. The goals of this system are to generate public health information on violent deaths and to work with partners to develop violence prevention strategies. Since 2003 OVDRS has been collecting data from: Oregon medical examiners' reports (ME reports), local police reports, death certificates, Oregon crime lab reports, the Oregon Law Enforcement Data System, and the Homicide Incident Tracking System. This report describes data collected during the second year of data collection.

### *Overview*

In 2004, 771 Oregonians (21.4 per 100,000) died by violent death. Among 771 violent deaths, 550 (71.3%) died by suicide (15.3 per 100,000); 111 (14.4%) died by homicide (3.1 per 100,000); 92 (11.9%) died by undetermined manner (2.6 per 100,000); 10 (1.3%) died by legal intervention and eight (1.0%) died by unintentional firearm injury. Seven incidents involved more than one death; six of which were homicide-suicides.

### *Findings*

- The number of violent deaths declined slightly to 771 in 2004 from 787 in 2003. The reduction is mainly due to a reduction in suicide deaths, these declined to 550 from 588. However, in 2004, 22 more women died by violent injuries; 18 more Oregonians died by homicides; four more people died by unintentional firearm-related deaths; and three more persons died by legal intervention.
- As in 2003, suicide remains a serious public health problem in Oregon. Suicide accounted for 71.3% of violent deaths. The highest suicide rate of 24.6 per 100,000 occurred among white males. Mental health problems, interpersonal relationship problems among young people and physical health problems among older adults were frequently reported circumstances in the lives of suicide victims.
- Homicide deaths increased by 19.4 percent in 2004. The increases in homicides were attributed to an increase in homicides among males. African American males had the highest homicide rate, 29.3 per 100,000. 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.
- Twenty-seven deaths were related to intimate partner violence (IPV) in 2004. IPV related homicide counted for 23% of homicides.
- Firearms were the most common mechanism in suicide deaths, accounting for 55 percent of deaths; followed by poisoning (21%) and hanging (19%). The leading lethal weapon among homicide deaths were firearms (60%), sharp instruments (17%), blunt instruments (5%) and personal weapons (5%).

### *Recommendations*

- Implement suicide interventions through primary care to reduce older adult suicide.
- Increase toxicological testing of suicide cases.
- Improve documentation of suspected alcohol, drug use, and mental health status by police and medical examiners in suicide cases.
- Develop a focused plan for reducing 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.
- Examine and evaluate the collaboration among public health, law enforcement and medical examiners that creates OVDRS.

### *Conclusion*

Oregon's second year of violent death data are relatively consistent with the first year data with some differences that include a slight reduction of the numbers of suicide deaths and increased numbers of homicide deaths. A number of important activities are being stimulated by OVDRS data.

- Examination of the circumstances and mental health profile of adults who died undetermined deaths compared to adults who died by suicide reveal striking similarities. Further examination of these deaths conducted with partners might provide important additional information.
- The state is taking significant steps to address older adult suicide. These steps have been and will continue to be informed by OVDRS. As partners learn more about the richness of the data system we expect that it's usefulness to the state will increase.
- The OVDRS is the result of a high level of collaboration among public health, law enforcement officials and medical examiners in the state. There is a need to examine and evaluate this collaboration from the perspective of those that provide data and those that use the data to create the data system. In addition, the state should examine the types of missing data by data source and by type of death. These activities should be conducted with partners across the state.

We anticipate that broader dissemination of OVDRS data spurred by partners sharing results with their constituents will generate increased use of these data for a variety of purposes.

# Violent Deaths *in Oregon*: 2004

The Oregon Violent Death Reporting System (OVDRS) 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. Since 2003 OVDRS has collected data from: Oregon medical examiners' reports (ME reports), local police reports, Oregon crime lab reports, the Oregon Law Enforcement Data System, the Homicide Incident Tracking System, and death certificates. This report describes data collected during the second year of data collection.

## *Case Definition*

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).<sup>1</sup> Occasionally data sources may record a different determination on the manner of death.

**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.**

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, 2004 released by the National Center for Health Statistics (NCHS).<sup>2</sup> 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

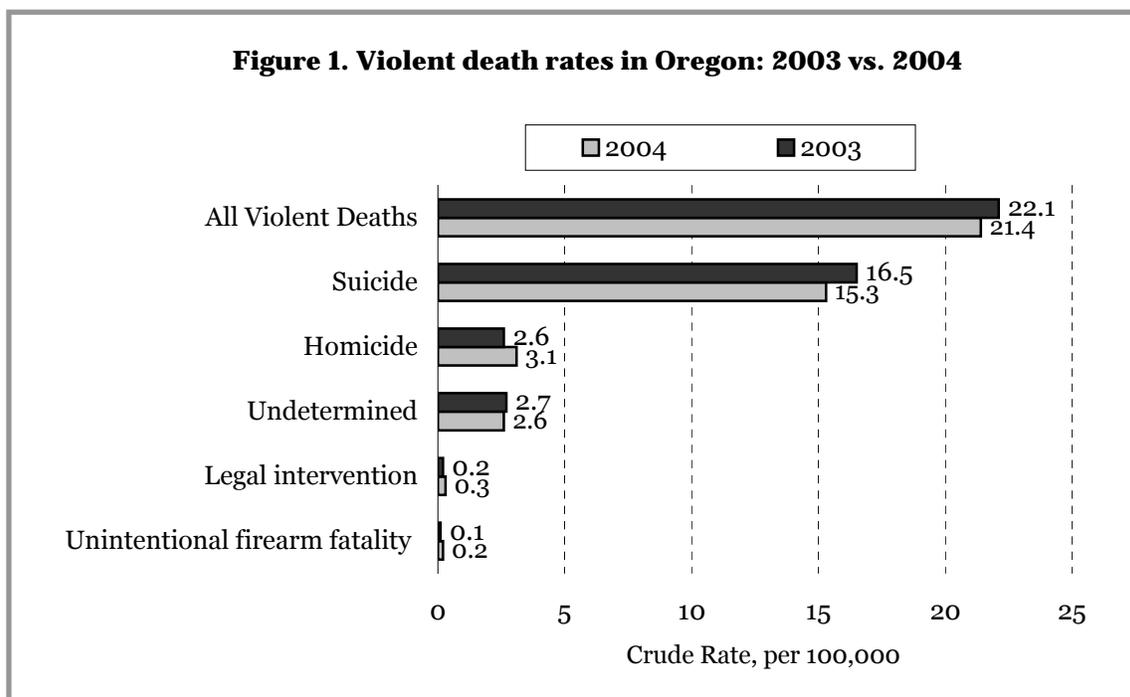
### Magnitude of Violent Death

In 2004, there were 764 violent death incidents resulting in 771 deaths among Oregon residents. The violent death rate was 21.4 per 100,000 (age-adjusted rate = 21.0 per 100,000). Of 764 incidents, 757 incidents involved one death; seven incidents involved more than one death and those incidents resulted in a total 14 deaths. Among the seven incidents involving multiple deaths, six were homicide-suicides (Table 2).

Table 2. Number of violent death incidents and deaths, Oregon 2004

Type of Incident	# Incidents	# Deaths
Unintentional Firearm Injury	8	8
<i>Shot by self</i>	5	5
<i>Shot by other</i>	3	3
Homicide	104	105
<i>Single Homicide</i>	103	103
<i>Multiple Homicides</i>	1	2
Suicide	544	544
<i>Single Suicide</i>	544	544
<i>Multiple Suicides</i>	0	0
Combined Homicide-Suicide	6	12
Legal Intervention	10	10
Undetermined	92	92
Total	764	771

Among the violent deaths, 550 died by suicide with a rate of 15.3 per 100,000; 111 died by homicide (3.1 per 100,000); 92 died by undetermined manner (2.6 per 100,000); ten died by legal intervention (0.3 per 100,000) and eight died by unintentional firearm injury (0.2 per 100,000). Compared with the previous year, the number of violent deaths slightly declined from 787 in 2003 to 771 in 2004. This is mainly due to a reduction in suicide deaths among men. In contrast, eighteen more Oregonians died by homicide; four more people died by unintentional firearm-related deaths; three more persons died by legal intervention. Twenty-two more women died by violent injuries. The state's suicide rate was slightly decreased, whereas the homicide rate was increased by 19.2 per cent.<sup>3</sup> (Figure 1)



Race, Ethnicity and Gender

Among the violent deaths, 727 (94.3%) were white; 24 (3.1%) were black; eight (1.0%) were American Indian/Native Alaskan; nine (1.2%) were Asian/Pacific Islander; and three were other race /unknown. Forty-eight were of Hispanic ethnicity. Five hundred and seventy-five (75%) were males and 196 were females. The ratio of males to females was 2.9:1. Suicide was the predominant type of violent death among both males and females. Among men, suicides accounted for 72% of violent deaths; homicides accounted for 15% and undetermined deaths accounted for approximately ten percent. Among women, suicides accounted for 69% of violent deaths, homicides for 12% and undetermined deaths for 18% (Table 3).

Table 3. Number, proportion and rate of violent deaths by intent, Oregon 2004

Intent	Gender				Total		
	Male	%	Female	%	All	%	Crude rate
Suicide	414	72.0	136	69.4	550	71.3	15.3
Homicide	88	15.3	23	11.7	111	14.4	3.1
Unintentional firearm fatality	8	1.4	0	0.0	8	1.0	0.2*
Legal intervention	9	1.6	1	0.5	10	1.3	0.3*
Undetermined	56	9.7	36	18.4	92	11.9	2.6
Total	575		196		771		21.4

Age-adjusted violent death rate for both genders and all races was 21.0/100,000.

\* Be cautious in using these rates because the rate is calculated from small numbers.

Mechanism of Death

Firearms were used in 50.1% of violent deaths. Other common mechanisms of death included poisoning (21.4%), suffocation (15.0%), sharp instruments (3.3%), and fall (1.9%) (Table 4).

Table 4. Violent deaths by mechanism, Oregon 2004

Mechanism	Number	% of Total
Firearm	386	50.1
Poisoning	165	21.4
Hanging, Strangulation, Suffocation	115	15.0
Sharp instrument	28	3.6
Fall	15	1.9
Blunt instrument	8	1.0
Drowning	7	0.9
Personal weapons (fist, feet, hand)	6	0.8
Fire or Burns	5	0.6
Other transport vehicle (trains, boats)	4	0.5
MV, including buses, motorcycles	3	0.4
Shaking (shaken baby syndrome)	3	0.4
Other	7	0.9
Unknown	19	2.5

*Place of Violent Incident*

Of 771 violent deaths, 742 (96%) occurred in Oregon and 29 (4%) occurred outside of the state (Table 5).

State	Number of Deaths	%
Oregon	742	96.2
South Dakota	3	0.4
Texas	2	0.3
Other/Unknown	24	3.1
Total	771	100.00

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

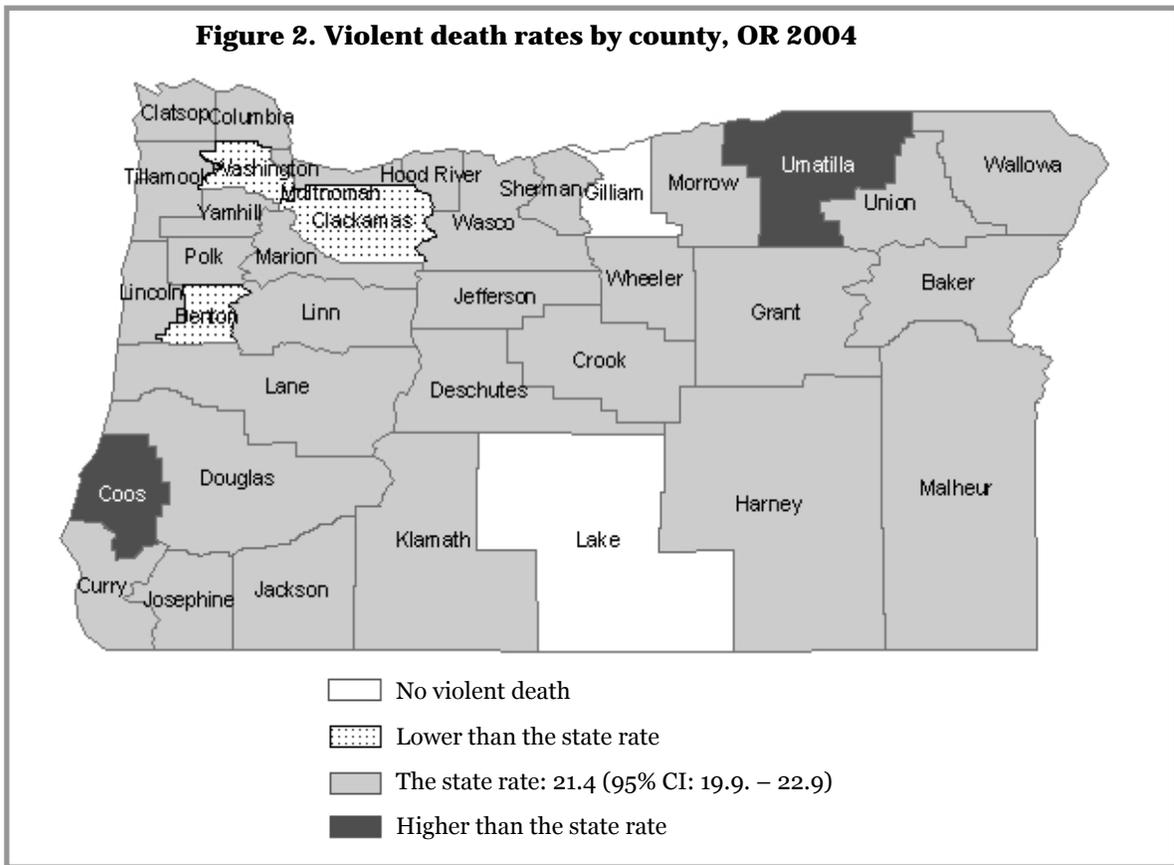
Location Type	Suicide		Homicide		Undetermined	
	No.	%	No.	%	No.	%
House /Apartment	405	74	65	59	69	75
Motor Vehicle	6	1	2	2	1	1
Nature Area	31	6	3	3	5	5
Motel/Inn/Hotel	9	2	0	0	0	0
Street/Road	17	3	14	13	2	2
Park/Public use area	12	11	10	9	0	0
Jail	8	1	0	0	2	2
Highway	4	1	1	1	0	0
Supervised Resident Facilities	3	1	2	2	0	0
Unknown	26	5	5	5	7	8

Over one half of the violent deaths occurred in five counties: Multnomah, Lane, Marion, Washington and Jackson; each of them had at least 50 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 disproportionately high percentage of undetermined deaths. The violent death rates in most counties were equal to or greater than the state rate (Figure 2).

Table 7. Number and proportion of violent death by intent and county, OR 2004

County	Violent Death		Suicide		Homicide		Undetermined	
	Total		No.	%	No.	%	No.	%
Baker	2		1	50.0	0	0.0	0	0.0
Benton	5		3	60.0	1	20.0	1	20.0
Clackamas	48		33	68.8	5	10.4	8	16.7
Clatsop	6		5	83.3	1	16.7	0	0.0
Columbia	17		11	64.7	2	11.8	3	17.6
Coos	26		24	92.3	1	3.8	0	0.0
Crook	3		3	100.0	0	0.0	0	0.0
Curry	6		6	100.0	0	0.0	0	0.0
Deschutes	29		24	82.8	4	13.8	1	3.4
Douglas	22		18	81.8	4	18.2	0	0.0
Gilliam	0		0	NA	0	NA	0	NA
Grant	2		2	100.0	0	0.0	0	0.0
Harney	2		2	100.0	0	0.0	0	0.0
Hood River	1		1	100.0	0	0.0	0	0.0
Jackson	50		41	82.0	4	8.0	5	10.0
Jefferson	4		1	25.0	2	50.0	1	25.0
Josephine	23		14	60.9	8	34.8	0	0.0
Klamath	20		13	65.0	5	25.0	2	10.0
Lake	0		0	N/A	0	N/A	0	N/A
Lane	73		57	78.1	8	11.0	7	9.6
Lincoln	13		10	76.9	1	7.7	1	7.7
Linn	18		14	77.8	3	16.7	1	5.6
Malheur	7		5	71.4	1	14.3	0	0.0
Marion	69		48	69.6	9	13.0	10	14.5
Morrow	3		2	66.7	0	NA	0	NA
Multnomah	173		96	55.5	37	21.4	37	21.4
Polk	10		7	70.0	1	10.0	1	10.0
Sherman	1		0	0.0	1	100.0	0	0.0
Tillamook	11		11	100.0	0	0.0	0	0.0
Umatilla	27		19	70.4	6	22.2	2	7.4
Union	6		5	83.3	1	16.7	0	0.0
Wallowa	4		4	100.0	0	0.0	0	0.0
Wasco	4		4	100.0	0	0.0	0	0.0
Washington	68		52	76.5	6	8.8	8	11.8
Wheeler	1		0	0.0	0	0.0	1	100.0
Yamhill	17		14	82.4	0	0.0	3	17.6
Statewide	771		550	71.3	111	14.4	92	11.9

**Figure 2. Violent death rates by county, OR 2004**

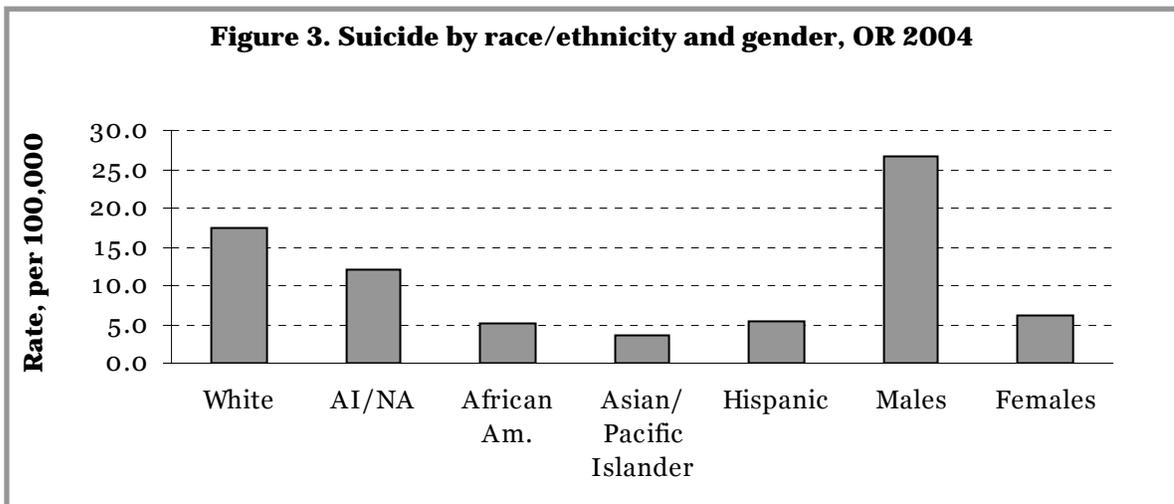


*Suicides*

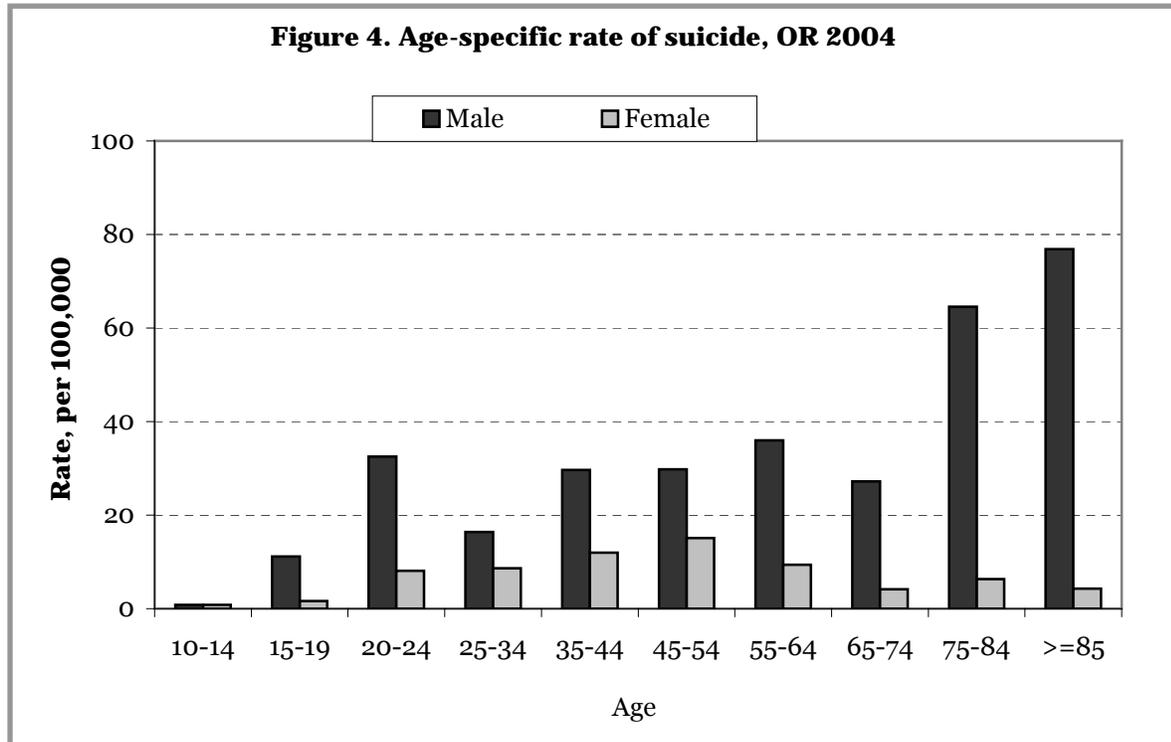
Race, Ethnicity and Gender

Suicide accounted for nearly 71% of violent deaths in 2004. Of 550 suicides, 414 (75%) occurred among males and 136 (25%) occurred among females; 532 (97%) were white; seven were Asian/Pacific Islander; six were African American and five were American Indian/Native Alaskan. Twenty-one (4%) were of Hispanic ethnicity. Males were 3.1 times more likely to die by suicide than females. The suicide rate among females was 7.5 per 100,000 and the rate among males was 23.2 per 100,000. The suicide rate was 15.3 per 100,000 overall; 16.0 per 100,000 among whites; 8.6 per 100,000 among American Indians and Native Alaskans; 7.7 per 100,000 among African Americans; and 4.9 per 100,000 among Asians/Pacific Islanders. The rate among people with Hispanic ethnicity was 6.1 per 100,000 (Figure 3). The highest rate was observed among white males (24.6 per 100,000).

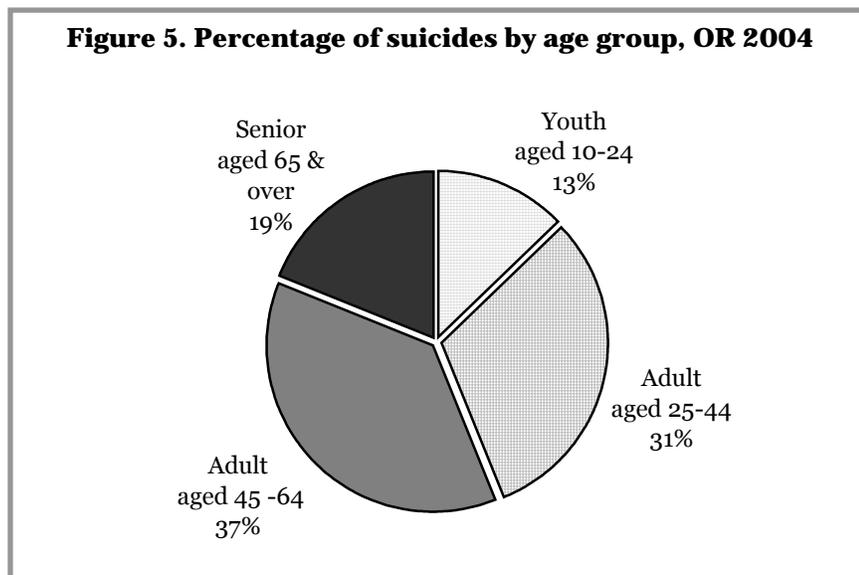
**Figure 3. Suicide by race/ethnicity and gender, OR 2004**



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 decreases slightly 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 among those aged 85 and over. The highest suicide rate among females occurs among women aged 45 to 54 (Figure 4).

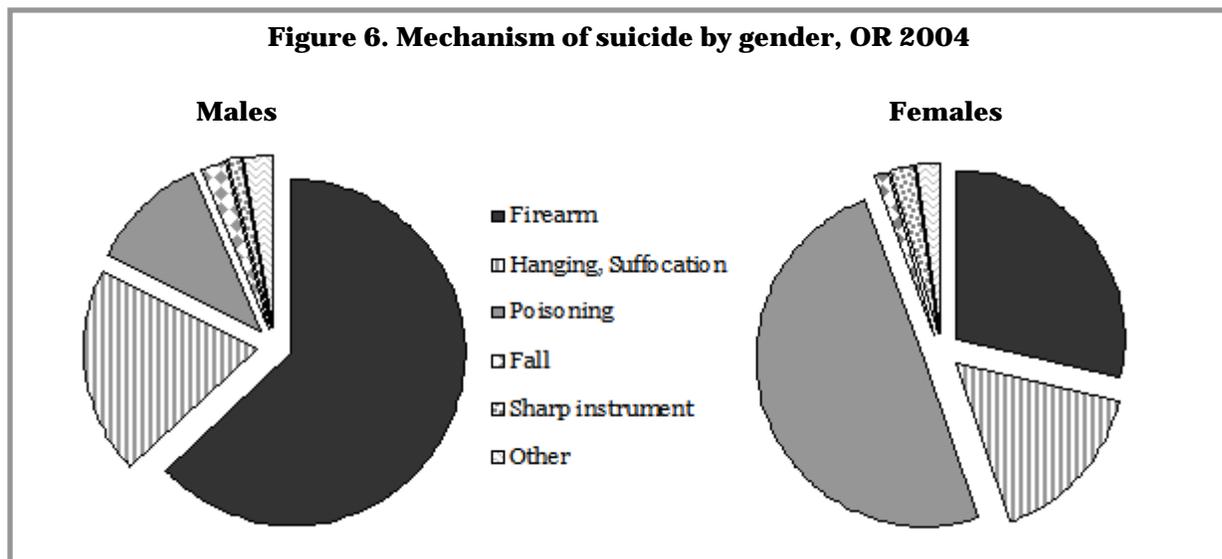


The majority of suicides (68%) occurred among those aged 25-64 (Figure 5). Youth aged 10 to 24 accounted for 13% (N=70) of the suicides; adults aged 25 to 44 accounted for 31% (N=171); adults aged 45 to 64 accounted for 37% (N=205); and older adults aged 65 years and older accounted for 19% (N=104).



### Mechanism of Death

Firearms, suffocation (hanging/strangulation) and poisoning were the most frequently observed mechanisms of suicides. Gender differences in mechanisms of death were observed. Firearms were involved in as many as 63% of deaths among males compared to 29% of the deaths among females. Suffocation was the mechanism of death among 20% of males and 16% of females. Poisoning was the mechanism of death among only 11% of males but caused 49% of deaths among females (Figure 6). Of 300 firearm suicides, 198 (66%) involved a handgun. Among 113 suicide deaths caused by poisoning, 71 cases (64%) involved only one substance. The substances most frequently reported were prescription medications or over-the-counter drugs, which accounted for 64%; narcotics and antidepressants were respectively reported in 26% and 13% of deaths. Another 17 (24%) suicide deaths were related to carbon monoxide (automobile exhausted gas) or other vapor. Forty-one in 113 cases (36%) involved more than one substance; narcotics were involved in 46% of them and antidepressants in 37%.

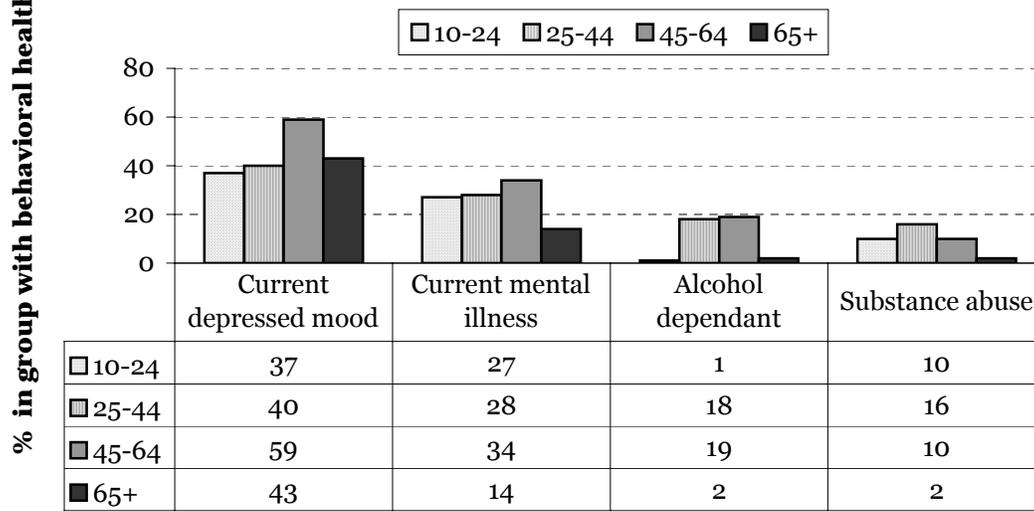


### Circumstances

Analysis of reports concerning circumstances surrounding suicides shows that regardless of age, nearly 40% of people who died by suicide were reported to have experienced a recent depressed mood, and about 30% were reported to have a mental illness. Those percentages were even higher among suicide victims aged 45 to 64. Approximately 20% of young adults aged 25 to 64 were reported to have alcohol dependence; 10 to 16% of youth and young adults under age 65 were reported to have 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 problems (Figure 7).

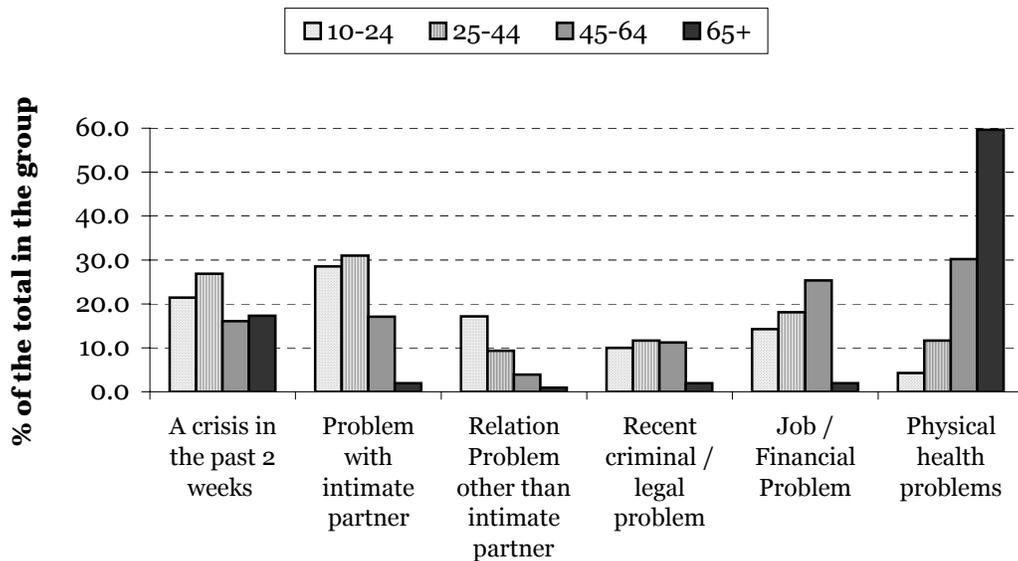
Among suicide victims with mental disorders, the most frequently reported mental health problems were depression/dysthymia (71%), bipolar disorder (17%), anxiety disorder (16%), and schizophrenia (7%).

**Figure 7. Behavioral health status among suicide victims by age group, OR 2004**



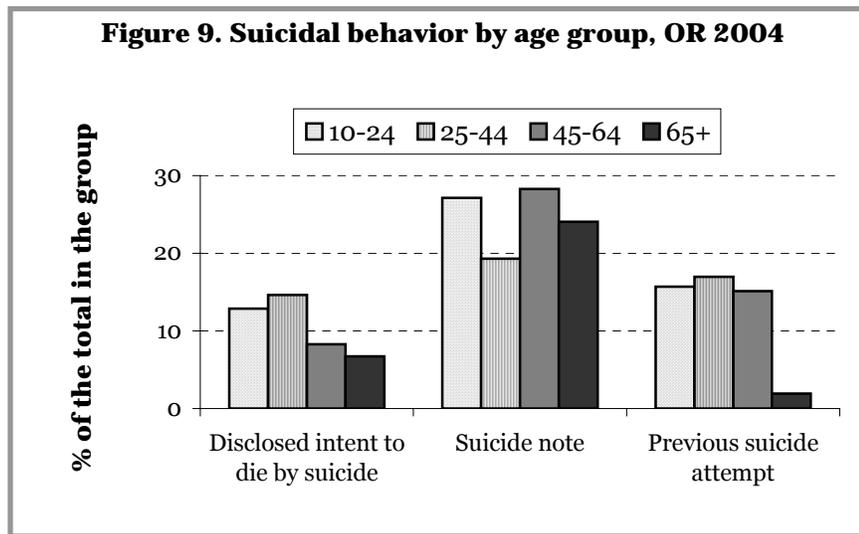
One in five persons who died by suicide had experienced at least one crisis event within 2 weeks of death. Some suicide victims might experience more than one stressor. The most frequently reported precipitating events among youth aged 10 to 24 were: an interpersonal relationship problem with an intimate partner or other, recent criminal or legal issue, and loss of a job or financial difficulty. The most frequently reported precipitating events among young adults aged 25 to 64 were: a problem with an intimate partner, loss of 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 declining health status, chronic pain and illness were the most frequently reported factors associated with suicide (Figure 8).

**Figure 8. Circumstances associated with suicide by age group, OR 2004**



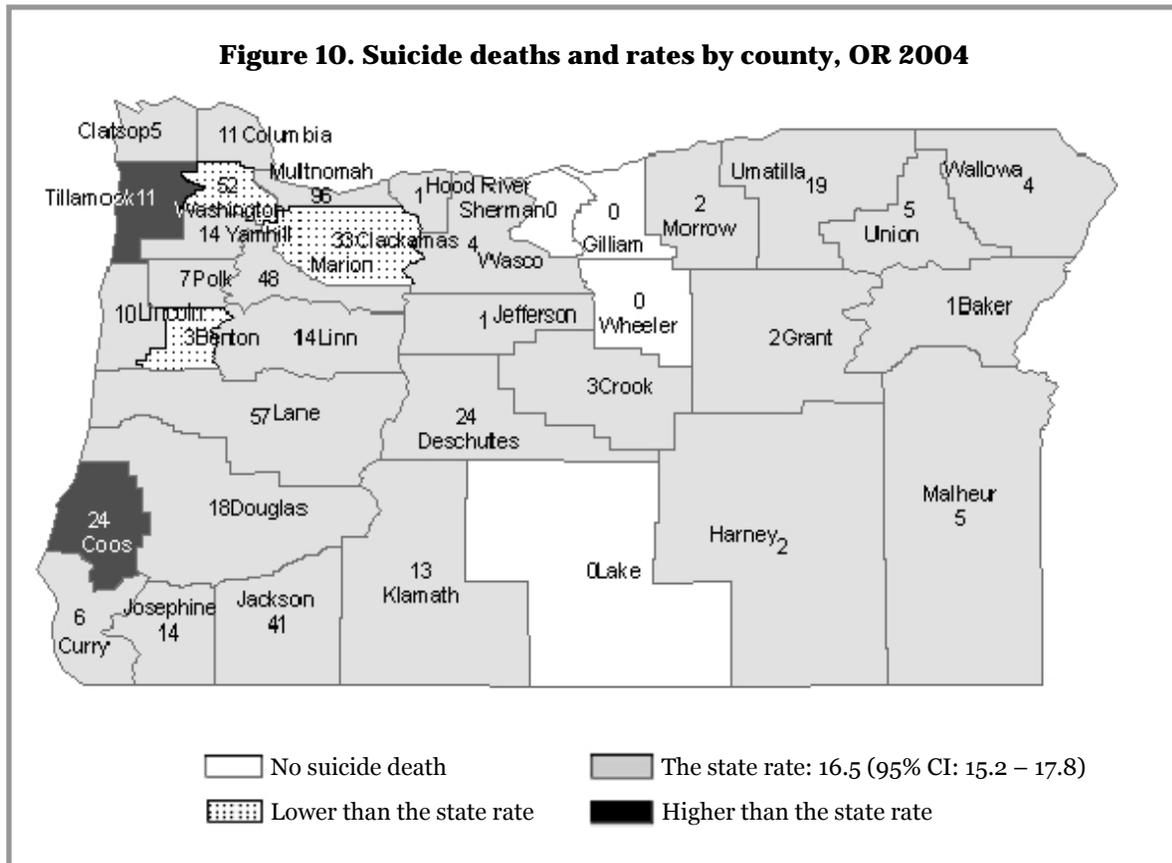
Among 104 older adults aged 65 and older who died by suicide, 97 suicide victims (93%) were documented to have at least one medical condition. Twenty-five percent of them visited a physician within 30 days. The most frequently reported physical illnesses were chronic pain (21%), cancer (16%), heart disease (16%), chronic respiratory disease (12%) and diabetes (10%). Forty-five of 97 (46%) suicide victims with physical illnesses were reported to have depressed mood, 14 of them (14%) were diagnosed with mental disorders (13 diagnosed as depression/dysthymia and one as anxiety disorder), and 12 (12%) were reported to be receiving treatment for their mental illness.

Approximately 15% of youth and young adults less than 45 who died by suicide had disclosed suicide threats or ideation prior to their deaths. One fourth left a suicide note. Only about 2% of the older adults who died by suicide had a reported history of a previous suicide attempt, while one out of six aged 10 to 64 who died by suicide had a reported previous attempt (Figure 9).



Number of suicides and suicide rates by county

The number of suicide deaths in Oregon’s 36 counties ranged from 0 to 96 deaths. The suicide rates in most counties were not statistically different from the state rate. The rates in Coos county and Tillamook county were significantly higher compared with the state rate (Figure 10).



Veteran status

In 2004, 159 (29%) suicides occurred among veterans; 156 of them (98%) were male. Examination of OVDRS data from 2003 and 2004 reveal that the proportion of veterans who died by suicide among male residents is similar to the proportion of veterans who died of all causes among male residents except a couple of young age groups (Table 8). Analysis of 2003 and 2004 mortality data didn't show the suicide rate among veterans aged 65 years and over was significantly different from the non-veterans. However, considering approximately 70% of older males are veterans (2000 census) and over 50% of suicide victims aged 65 and older are veterans, suicide prevention should address the veteran population.

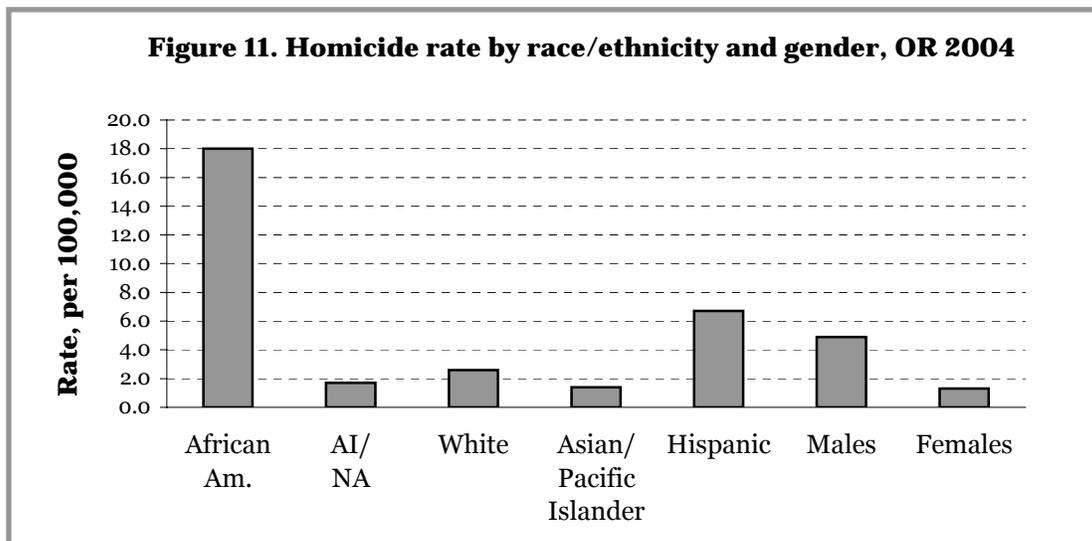
**Table 8. Suicide deaths and total deaths among male residents and veterans, OR**

Age	Suicides in 03-04			All Cause Deaths in 04		
	Residents	Veterans	% Veterans	Residents	Veterans	% Veterans
15-19	27	0	0.0	88	0	0.0
20-24	82	6	7.3	155	6	3.9
25-34	102	8	7.8	268	16	6.0
35-44	162	44	27.2	575	108	18.8
45-54	180	56	31.1	1333	401	30.1
55-64	140	65	46.4	1840	940	51.1
65-74	68	46	67.6	2573	1718	66.8
75-84	92	69	75.0	4301	3470	80.7
85+	38	20	52.6	3449	1717	49.8

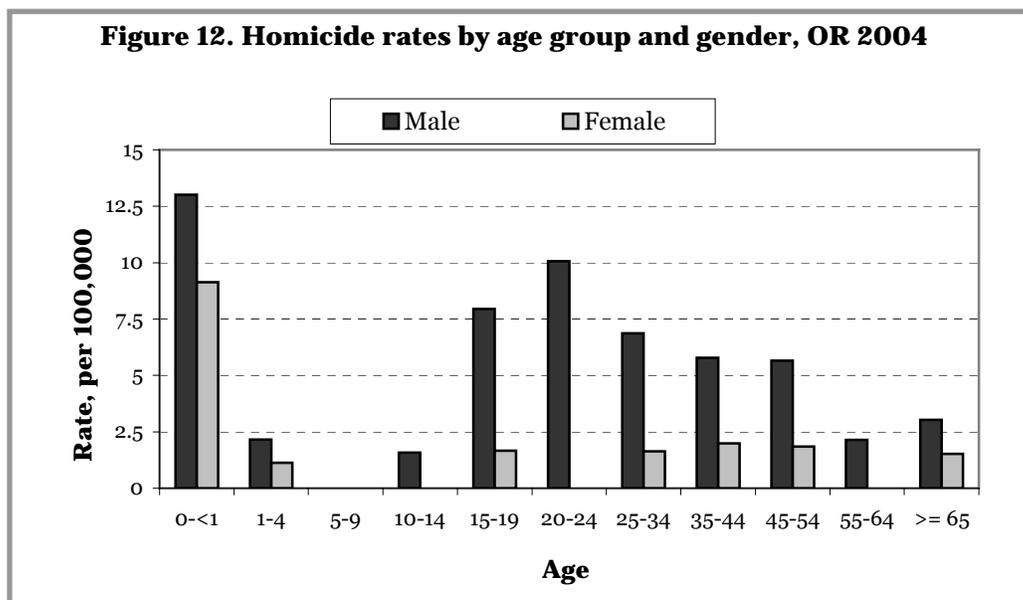
## Homicides

### Race, Ethnicity and Gender

Homicide accounted for nearly 14% of violent deaths in 2004. Of the 111 homicides, 88 (79%) were male and 23 (21%) were female; 92 (83%) were white; 14 (13%) were African American; one was American Indian/Native Alaskan; and two were Asian/Pacific Islanders. Twenty three (21%) were of Hispanic ethnicity. Males were 3.8 times more likely to die by homicide than females. The homicide rate was 3.1 per 100,000 overall; 18.0 per 100,000 among African Americans; 2.6 per 100,000 among whites; 1.7 per 100,000 among American Indians and Native Alaskans; and 1.4 per 100,000 among Asians/Pacific Islanders. The homicide rate was 6.7 per 100,000 among persons with Hispanic ethnicity (Figure 11). The highest homicide rate was observed among African American males (29.3 per 100,000).

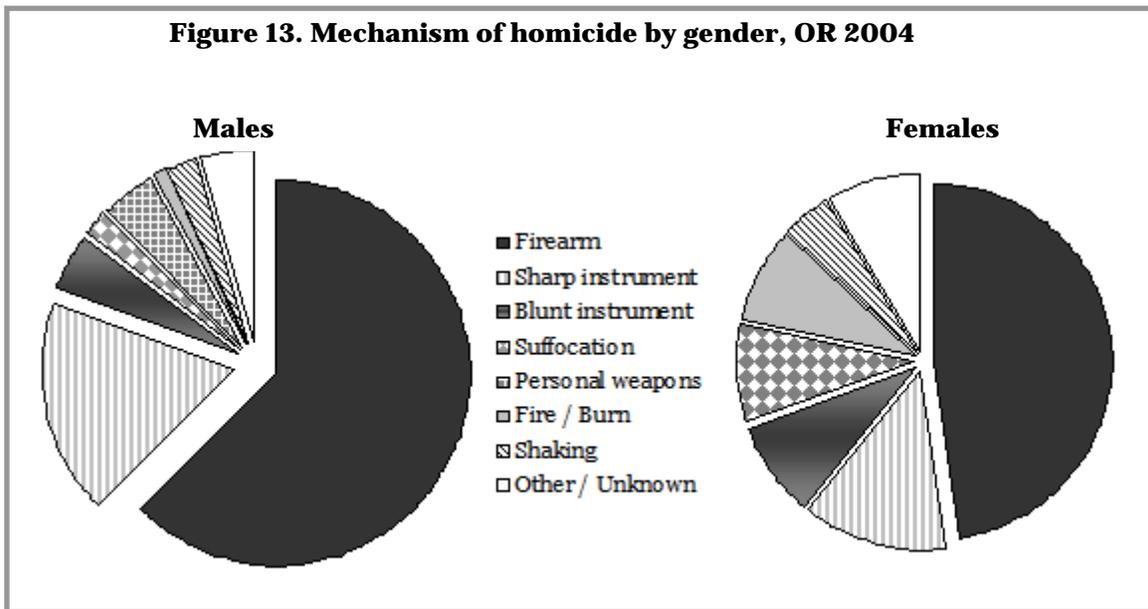


The distribution of age-specific rates of homicide is 'u' shaped. The first peak occurs among infants and the second peak occurs among males aged 20 to 24 and among females aged 25 to 54 (Figure 12). Of the total number of homicides, 10 (9%) were children aged less than 15 years; 25 (23%) were youth aged 15 to 24; 42 (38%) were young adults aged 25 to 44; 24 (22%) were adults aged 45 to 64 and 10 (9%) were older adults aged 65 years and over.



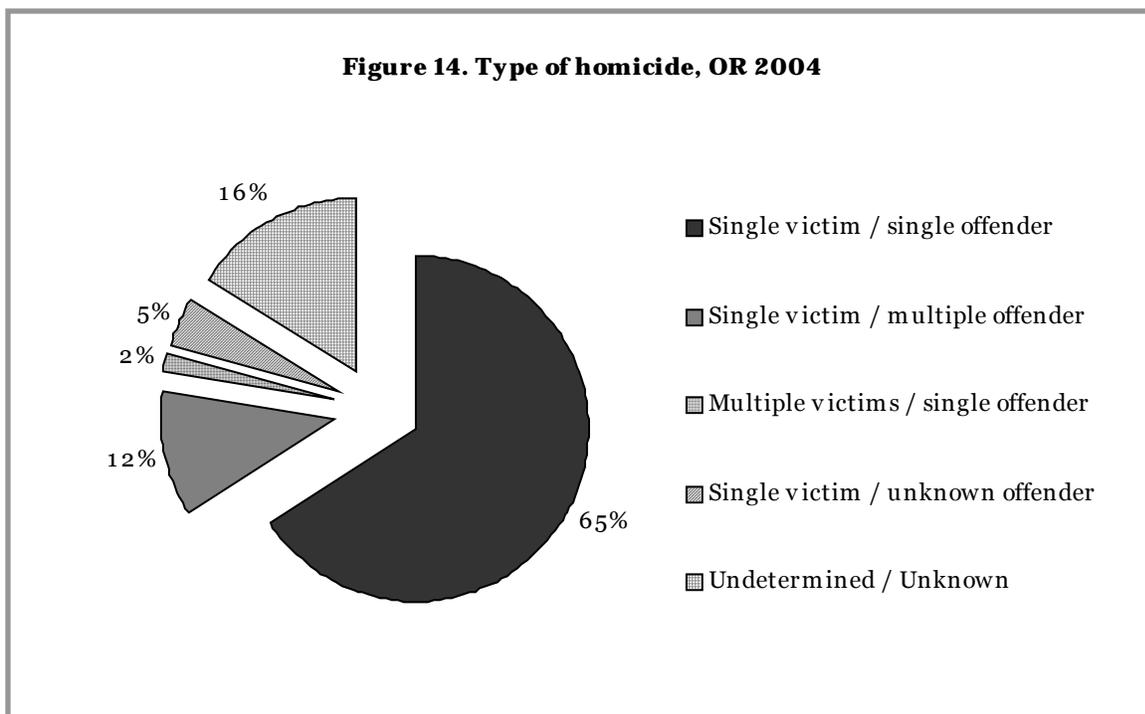
Mechanism of Death

Firearms were involved in 63% of male homicides and 48% of female homicides. Sharp instruments were used in 18% of male and 13% of female homicides. Blunt instruments and personal weapons (fist, feet and hand) accounted for 9% of male and 17% of female homicides. (Figure 13).

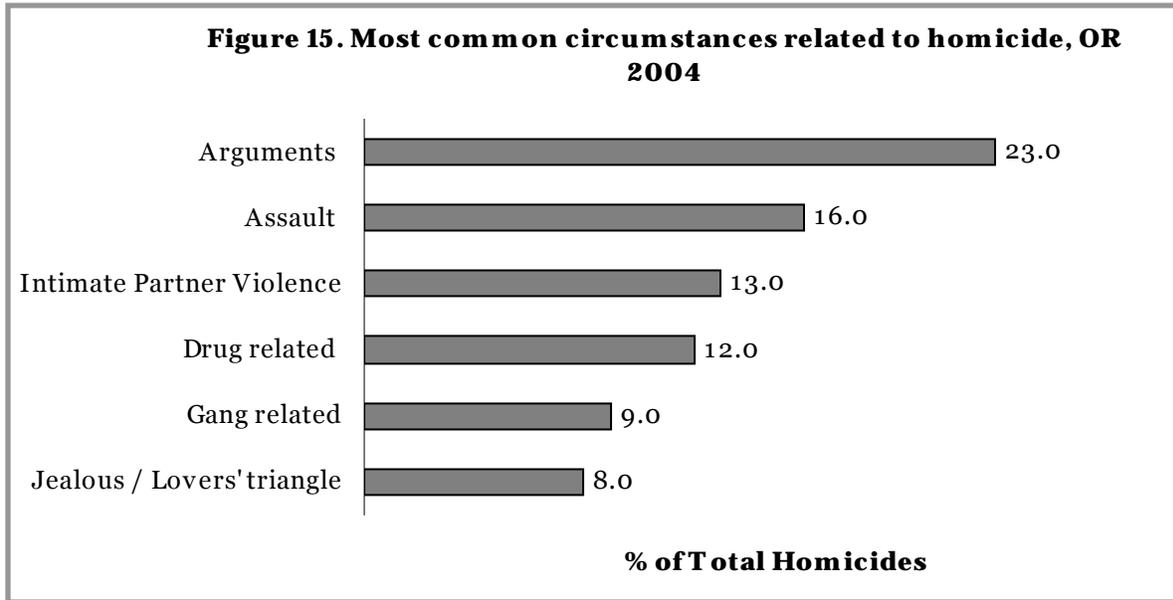


Circumstance

Most homicide victims (65%) were killed in an incident that involved one victim and one suspect; 12% died in an incident that involved one victim and multiple suspects; and 2% died in an incident that involved multiple victims and a single suspect (Figure 14).



Analysis of circumstances surrounding homicides shows that arguments (23%) were the most common, followed by assault (16%), intimate partner violence (13%), drug trade or drug related issue (12%), gang related violence (9%) and jealous/lovers' triangle (5%) (Figure 15).



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 and people with Hispanic ethnicity were represented disproportionately among suspects (Table 9).

Gender	Single Suspect		Multiple Suspects		OR Population
Race/Ethnicity	No.	%	No.	%	%
Male	56	88	26	84	49.7
Female	4	6	4	13	50.3
Unknown	4	6	1		
White	42	66	13	42	90.9
Black	3	5	5	16	1.8
Asian	0	0	1	3	3.4
Am. Indian / Native	1	2	0	0	1.4
Unknown	5	8	12		
Hispanic	14	22	3	10	9.5
Hispanic, Unknown	13	20	28	90	
<b>Age Group</b>					
15-19	7	19	7	26	6.8
20-24	11	30	7	26	7
25-29	12	32	7	26	7
30-34	3	8	1	4	7
35-44	12	32	5	19	14.2
45-54	4	11	0	0	14.9
55-64	4	11	0	0	10.5
>65	4	11	0	0	12.8
Age Range (yr)	15-84		15-40		
Median Age (yr)	28		24		36.8
Unknown	7		4		

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 10).

Table 10. Relationship between suspect and victim, OR 2004

Type of Relationship	Single Suspect		Multiple Suspects	
	No.	%	No.	%
Victim to suspect				
Spouse or ex-spouse	7	11	--	--
Parent	3	5	--	--
Child	3	5	1	3
Other family member	3	5	2	6
Girlfriend / Boyfriend or Ex	3	5	0	0
Acquaintance / Friend	31	48	19	61
Stranger	7	11	2	6

#### *Intimate Partner Violence (IPV)-related Homicides*

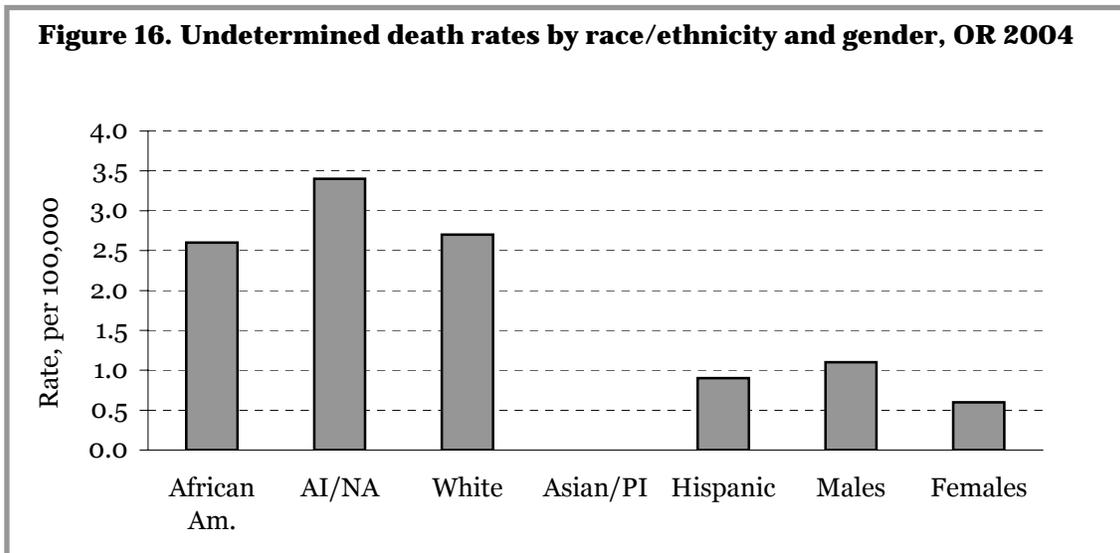
A total of 27 IPV-related homicides occurred among Oregon residents in 2004. These deaths occurred among perpetrators (primary aggressors) of IPV, victims of IPV, and the relative of an IPV victim. Overall, 16 persons were killed by an intimate partner, seven were killed by their intimate partner’s current or ex-partners, one IPV perpetrator was killed by police officers during the course of a domestic disturbance call, two deaths were related to jealousy or suspicion of the relationship between their partner and another person, and one relative of an intimate partner was killed when the perpetrator set his partner’s residence on fire. Among persons who died by IPV-related homicide, 13 were male and 14 were female. The age range was from 19 to 86 years with an average age of 42 years. Twenty-five were white and two were African American. Two were of Hispanic ethnicity.

#### *Undetermined Deaths*

##### *Race, Ethnicity and Gender*

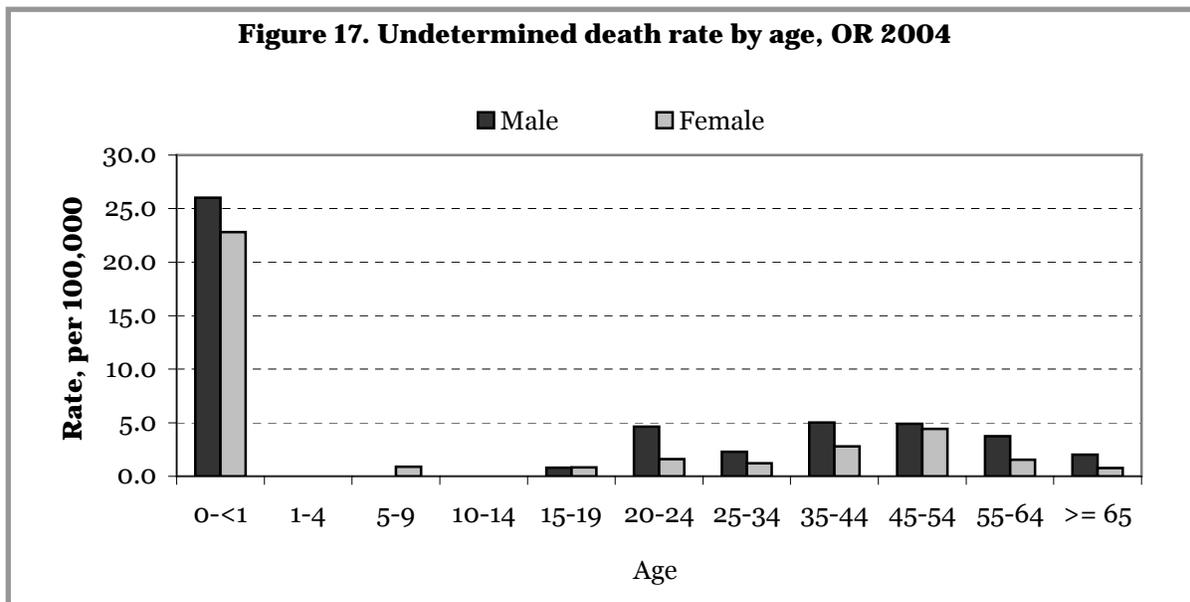
Undetermined deaths accounted for nearly 12% of violent deaths in 2004. Of the 92 undetermined deaths, 56 (61%) were male and 36 (39%) were female; 87 (95%) were white; two (2%) were American Indian/Native Alaskan; two (2%) were African American; and one was of unspecified race. Three (3%) were of Hispanic ethnicity. Males were 1.8 times more likely to have the manner of death listed as undetermined than females. The undetermined death rate was 2.6 per 100,000 overall; 3.4 per 100,000 among American Indians and Native Alaskans; 2.7 per 100,000 among whites; and 2.6 per 100,000 among African Americans. The undetermined death rate was 0.9 per 100,000 among persons with Hispanic ethnicity (Figure 16).

**Figure 16. Undetermined death rates by race/ethnicity and gender, OR 2004**



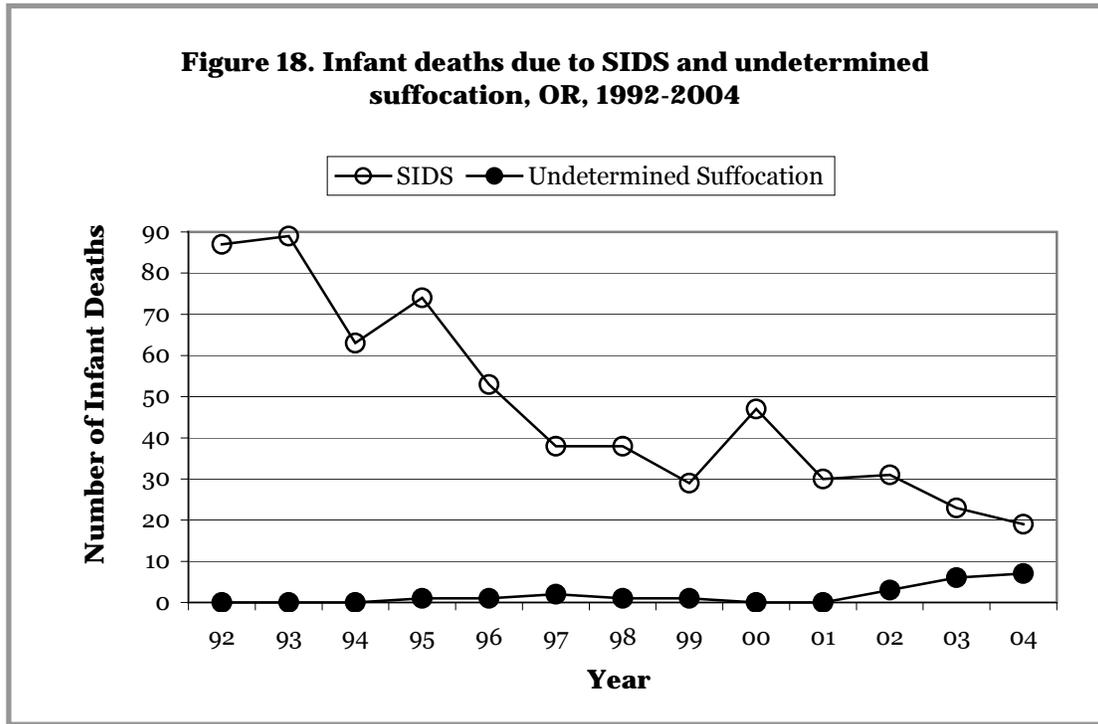
Infants and young adults had the highest rates of undetermined death (Figure 17). Infant deaths accounted for 12% (N=11) of the deaths and adults aged 20 to 64 accounted for 78% (N=72). It should be noted that undetermined manner among adults means that investigators could not determine whether the person died by unintentional injury (accidental overdose), or homicide or suicide. As many as one third of these undetermined deaths among adults may be suicides.

**Figure 17. Undetermined death rate by age, OR 2004**



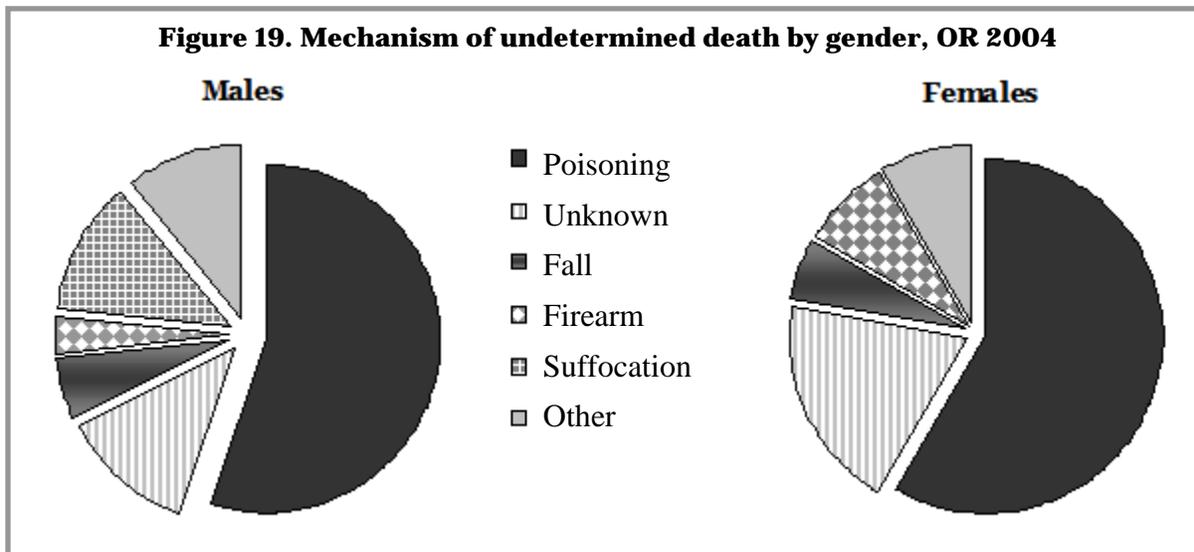
The majority of undetermined deaths among infants are deaths that once were categorized as Sudden Infant Death Syndrome (SIDS) as the cause of death. Due to changes in documentation by medical examiners, possible positional asphyxiation is documented as the cause of death and the manner is categorized as undetermined. From 1993 to 2001 SIDS death rates dropped dramatically in most part due to a national campaign that taught parents to put infants on their backs to sleep. Since 2001 it appears that the rate reduction due to this preventive measure has leveled off. In 2002 medical examiners began using the diagnosis of possible positional

asphyxiation of undetermined manner. This diagnostic drift from SIDS of natural manner to possible positional asphyxia of undetermined manner has been increasing in Oregon since 2002 (figure 18).<sup>4, 5</sup>



Mechanism of Death

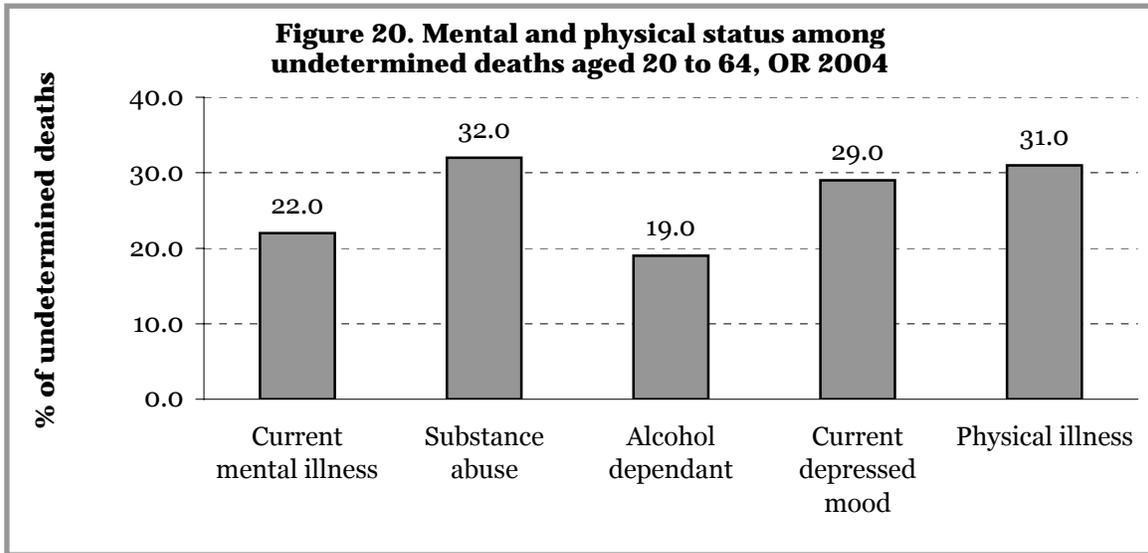
Poisoning accounted for 54% of the undetermined deaths among males and 62% among females. In nearly 15% of undetermined deaths, the mechanism of death was unknown (Figure 19).



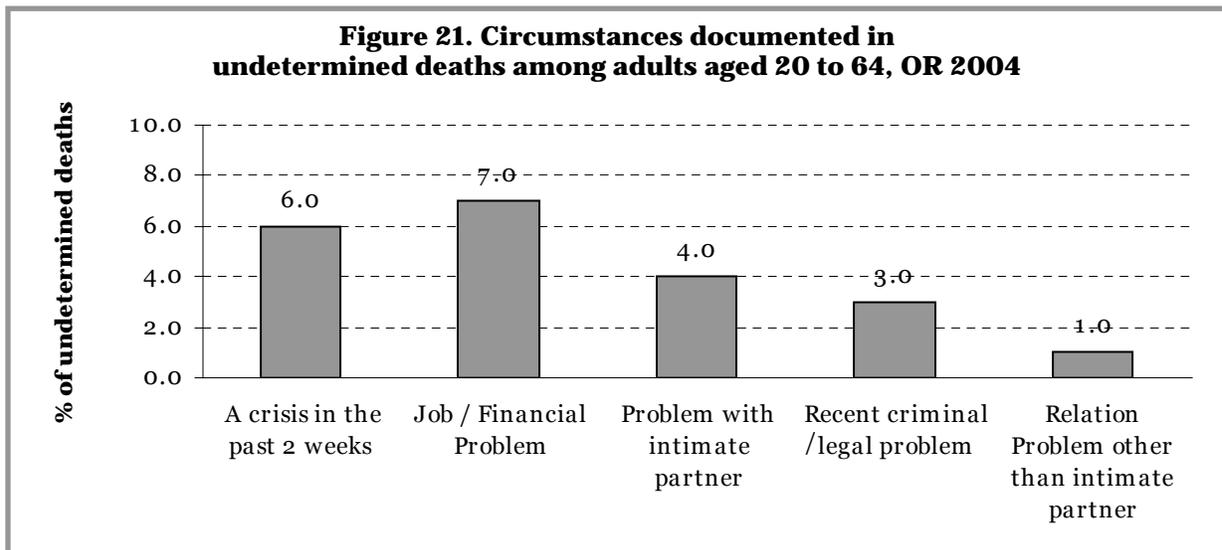
In 52 undetermined poisoning deaths, 32 cases (62%) involved one substance; narcotics were predominantly reported, accounting for 59%. Twenty in 52 cases (38%) involved more than one substance; narcotics were involved in 75% of them and antidepressants were in 60%; both narcotic and antidepressant were involved in 11 deaths. Methadone was reported in 21 deaths.

Circumstance

Analysis of circumstances surrounding undetermined deaths demonstrated that 22% of adults aged 20 to 64 had a mental illness and 31% had a physical illness; over 30% were substance abusers, nearly 20% were alcohol dependant, and 29% had experienced a recent depressed mood (Figure 20).



The life events documented in undetermined deaths aged 20 to 64 included: a crisis event within two weeks of death (6%), loss a job or financial difficulty (7%), and a problem with intimate partner (4%) (Figure 21).



## Other

There were ten legal intervention deaths and eight unintentional firearm deaths in 2004. Due to small number of cases, we are unable to provide the details on those violent deaths in this report.

## Toxicology Testing

Alcohol and/or substance (drug) use was identified for some cases in data sources. Death scene investigations indicated that alcohol use was suspected in 20% of suicide victims, in 32% of homicide victims, and in 14% of undetermined deaths (Table 11A). 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 11B).

Table 11A. Summary of suspected alcohol use in violent deaths, OR 2004

<b>Manner</b>	<b>Suicide</b>	<b>Homicide</b>	<b>Undetermined death</b>
# of cases with death scene investigated	469	89	71
# of cases suspected alcohol use	95	29	15
% of cases suspected alcohol use	20.3	32.3	14.3

Table 11B. Summary of toxicology test in violent deaths, OR 2004

<b>Alcohol / Substance / Drugs</b>	<b>Suicide</b>			<b>Homicide</b>			<b>Undetermined deaths</b>		
	<b>Screening</b>	<b>Present</b>	<b>%</b>	<b>Screening</b>	<b>Present</b>	<b>%</b>	<b>Screening</b>	<b>Present</b>	<b>%</b>
Alcohol presented in the blood	123	44	35.8	50	20	40.0	51	10	19.6
Amphetamines	70	16	22.9	45	11	24.4	37	5	13.5
Cocaine	61	2	3.3	44	5	11.4	38	4	10.5
Marijuana	62	10	16.1	44	7	15.9	37	2	5.4
Opioid	68	24	35.3	43	0	0.0	38	16	42.1
Antidepressant drug	64	12	18.8	34	1	2.9	36	4	11.1
Other substances (drug)	76	39	51.3	36	2	5.6	39	23	59.0

Among cases where toxicology tests are completed and results documented, these tests showed different patterns of substance use among victims. Amphetamines were found in nearly 25% of the persons who died by suicide or homicide but in only 14% of the undetermined deaths. Cocaine use was more common among homicide victims and the undetermined deaths (11%) than among the persons who died by suicide (3%). Marijuana was found in 16% of both the persons who died by suicide and by homicide, but in only 5% of the persons who died by undetermined manner. Opioids were seen often among the undetermined deaths (42%) and among suicide victims (35%), but opioids were rarely found among homicide victims. One in five who died by suicide or undetermined manner had at least one antidepressant drug. Antidepressants were found in less than 5% 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*

There are few differences in violent death reported in 2004 as compared with 2003. Data presented on health related circumstances among older adult suicide victims point toward the need to integrate physical and behavioral health care services for this population. The shift in diagnosis of unexpected infant deaths from natural deaths to undetermined death needs further examination. Finally, homicide data indicate that prevention of deaths due to intimate partner violence and deaths among young adult African American males are of primary importance.

A number of important activities are being stimulated by OVDRS data.

- Examination of the circumstances and mental health profile of adults who died undetermined deaths compared to adults who died by suicide reveal striking similarities. Further examination of these deaths conducted with partners might provide important additional information.
- The state is taking significant steps to address older adult suicide. These steps have been and will continue to be informed by OVDRS. As partners learn more about the richness of the data system we expect that it's usefulness to the state will increase.
- The OVDRS is the result of a high level of collaboration among public health, law enforcement officials and medical examiners in the state. There is a need to examine and evaluate this collaboration from the perspective of those that provide data and those that use the data to create the data system. In addition, the state should examine the types of missing data by data source and by type of death. These activities should be conducted with partners across the state.

We anticipate that broader dissemination of OVDRS data spurred by partners sharing results with their constituents. This should generate increased use of these data for a variety of purposes in the future.

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## *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.



