National Violent Death Reporting System

NVDRS

OREGON

Public Health Division

Suicides in Oregon: Trends and Risk Factors

-2012 Report-

Oregon Violent Death Reporting System

Injury and Violence Prevention Program

Center for Prevention and Health Promotion

Oregon Health Authority

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Executive Summary

Suicide is one of Oregon's most persistent yet largely preventable public health problems. Suicide is the second leading cause of death among Oregonians ages 15-34, and the 8th leading cause of death among all Oregonians in 2010. 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 that can inform prevention programs, policy, and planning. We analyzed mortality data from 1981 to 2010 and 2003 to 2010 data of the Oregon Violent Death Reporting System (ORVDRS). This report presents findings of suicide trends and risk factors in Oregon.

Key Findings

In 2010, the age-adjusted suicide rate among Oregonians of 17.1 per 100,000 was 41 percent higher than the national average.

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

Suicide rates among adults ages 45-64 rose approximately 50 percent from 18.1 per 100,000 in 2000 to 27.1 per 100,000 in 2010. The rate increased more among women ages 45-64 than among men of the same age during the past 10 years.

Suicide rates among men ages 65 and older decreased approximately 15 percent from nearly 50 per 100,000 in 2000 to 43 per 100,000 in 2010.

Men were 3.7 times more likely to die by suicide than women. The highest suicide rate occurred among men ages 85 and over (76.1 per 100,000). Non-Hispanic white males had the highest suicide rate among all races / ethnicity (27.1 per 100,000). Firearms were the dominant mechanism of injury among men who died by suicide (62%).

Approximately 26 percent of suicides occurred among veterans. Male veterans had a higher suicide rate than non-veteran males (44.6 vs. 31.5 per 100,000). Significantly higher suicide rates were identified among male veterans ages 18-24, 35-44 and 45-54 when compared to non-veteran males. Veteran suicide victims were reported to have more physical health problems than non-veteran males.

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, less than one third of male victims and about 60 percent of female victims were receiving treatment for mental health problems at the time of death.

Eviction/loss of home was a factor associated with 75 deaths by suicide in 2009-2010.

Investigators suspect that one in four suicide victims had used alcohol in the hours preceding their death.

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

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

Recommendations

1. 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 (i.e. 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 men 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.

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

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

Introduction

Suicide is an important public health problem in Oregon. Health surveys conducted in 2008 and 2009 show that approximately 15 percent of teens and four percent of adults ages 18 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 2010, there were 685 Oregonians who died by suicide and more than 2,000 hospitalizations due to suicide attempts[3,4]. Suicide is the second leading cause of death among Oregonians ages 15-34, and the 8th leading cause of death among all ages in Oregon[3]. The cost of suicide is enormous. In 2010 alone, self-inflicted injury hospitalization charges exceeded 41 million dollars; and the estimate of total lifetime cost of suicide in Oregon was over 680 million dollars [3,4,5]. The loss to families and communities broadens the impact of each death.

The cost $

"Suicide is a multidimensional, multi-determined, and multi-factorial behavior. The risk factors associated with suicidal behaviors include biological, psychological, and social factors"[6]. This report provides the most current suicide statistics in Oregon, provides suicide prevention programs and planners a detailed description of suicide, examines risk factors associated with suicide and generates public health information and prevention strategies. We analyzed mortality data from 1981 to 2010 and 2003 to 2010 data from the Oregon Violent Death Reporting System (ORVDRS). This report presents findings of suicide trends and risk factors in Oregon.

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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, 2010. Oregon Heath Authority.

[4] Wright D., Millet L., et al, Oregon Injury and Violence Prevention Program Report for 2011 Data year. Oregon Heath Authority.

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

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

Methods, data sources and limitations

Suicide is a death resulting from the intentional use of force against oneself. In this report, suicide deaths are identified according to International Classification of Diseases, Tenth Revision (ICD-10) codes for the underlying cause of deaths on death certificates. Suicide was considered with code of X60-84 and Y87.0[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 2010 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 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 on proportion (percentage) in the studying 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 Sept 26, 2012.

[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

Cohort-specific rates by age group (in five-year intervals) were calculated from the data that were obtained from WISQARS[1]. Six cohorts (period of birth: from 1965-1969 to 1991-1995) and six age groups (15-19 through 40-44) were used to assess suicide risk by birth cohort among white males in Oregon[2].

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[3].

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

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[1] The Centers for Disease control and Prevention. WISQARS. http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html. Accessed on Sept 26, 2012.

[2] Murphy GE, Wetzel RD, Suicide risk by birth cohort in the United States, 1949 to 1974. Arch Gen Psychiatry, 1980; 37:519-523.

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