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# Mortality

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As Oregon's population both ages and increases, the annual number of deaths generally trends upward. In 2017, the number of deaths increased to 36,640, up from 35,799 the previous year.\* The crude death rate† increased from 878.2 per 100,000 population in 2016 to 884.8 in 2017 (see Figure 6-1 and Table 6-3). The age-adjusted death rate also increased from 702.6 to 707.0 (see Table 6-47t).

In 2016, the most recent year for which final U.S. data are available (1), Oregon's age-adjusted death rate was 3.1% lower than the U.S. rate and ranked 38th (first being highest) among the states and the District of Columbia (see Table 6-55). During the past 25 years, the greatest difference between the United States and Oregon age-adjusted death rates occurred in 1991 when Oregon's rate was 6.8% lower than the U.S. rate (859.6 versus 921.9) and ranked 36th among the states and the District of Columbia.

Oregon's age-adjusted, cause-specific death rates ranked among the 10 highest in the states and the District of Columbia‡ for four causes: viral hepatitis (fourth highest), alcohol-induced deaths (fifth), Parkinson's disease (seventh) and hypertension (eighth). At the same time, Oregon was among the 10 states with the lowest rates for eight causes: septicemia and influenza/pneumonia (both were third lowest); heart disease; HIV/AIDS; nephritis/nephrosis and perinatal conditions (each of which was fifth lowest); atherosclerosis (ninth lowest); and homicide (10th lowest).

## Life expectancy at birth

The longest living Oregonian ever recorded was a Siberian-born man who died in 1999 at 117 years of age. Most of the state's residents have much shorter lives, but the long-term trend is for increasing life expectancy. Since 1960, the life expectancy of Oregonians at the time of their birth has increased from 70.9 years to 79.7 in 2017 (see Table A).

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\* State vital records offices within the United States maintain an inter-jurisdictional exchange agreement to provide a copy of the death record, or electronic equivalent, to the vital records office of the decedent's residence state if the person dies outside his or her home state. This exchange is highly dependent on the capacity of the state in which the death occurred to provide those files to Oregon.

† Unless otherwise specified, references to death rates mean crude death rates. See Appendix B for further discussion of crude and age-adjusted rates.

‡ This excludes states with unreliable data for each cause.

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**Oregon's age-adjusted death rate increased from 702.6 to 707.0.**

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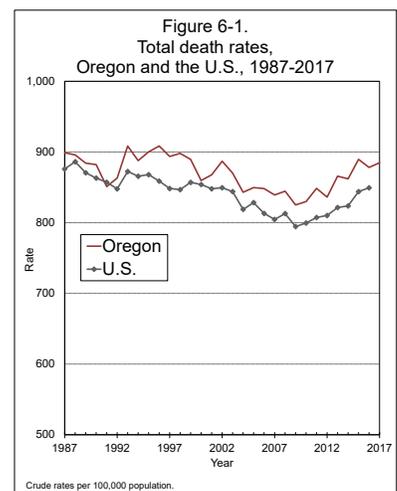
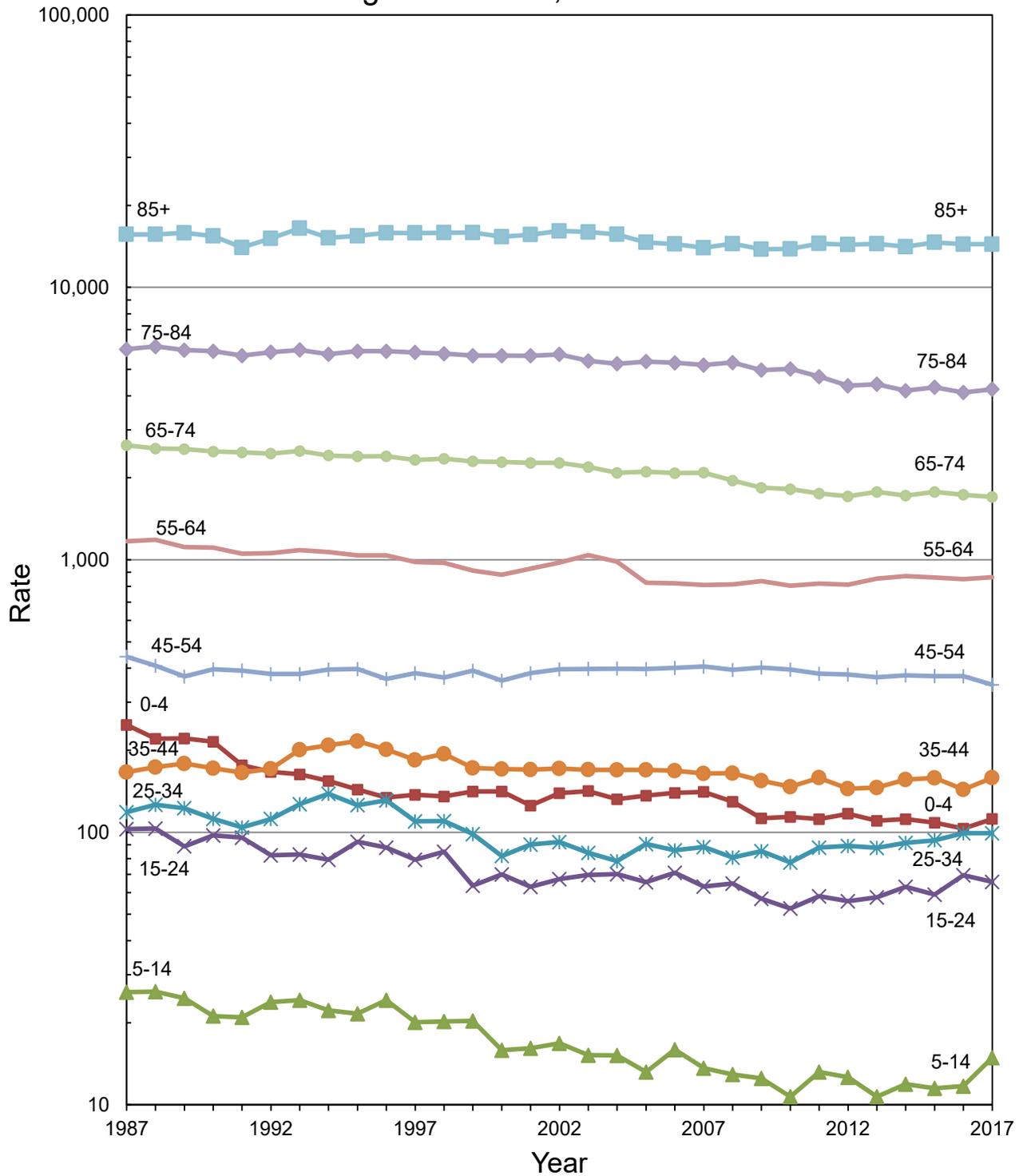


Figure 6-2.  
Age-specific death rates,  
Oregon residents, 1987-2017



Rates per 100,000 population.  
Note: A logarithmic scale is used for the vertical axis.

Table A - Life expectancy, Oregon and the United States, 1960-2017						
Year	Oregon			United States		
	Total	Male	Female	Total	Male	Female
1960	70.9	N.A.	N.A.	69.7	66.6	73.1
1970	72.1	68.4	76.2	70.8	67.1	74.7
1980	75.0	71.4	78.8	73.7	70.0	77.4
1990	76.7	73.3	80.1	75.4	71.8	78.8
2000	78.0	75.6	80.4	76.8	74.1	79.3
2010	79.5	77.4	81.6	78.7	76.2	81.0
2015	79.6	77.3	81.8	78.8	76.3	81.2
2016	79.8	77.4	82.2	78.6	76.1	81.1
2017	79.7	77.3	82.0	N/A	N/A	N/A

2016 is the most recent year for which final U.S. data are available. U.S. data source: National Center for Health Statistics. Deaths: Final Data for 2016. National Vital Statistics Reports, Vol 67 no 5. ([www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67\\_05.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_05.pdf))

Life expectancy is a hypothetical construct representing the average number of years a group of infants would live if they were to experience, throughout their lives, the age-specific death rates present at the time of their birth. Such factors as the environment, the economy, health behaviors and changing medical technology affect life expectancy.

The life expectancy of Oregonians was similar in 2016 (79.8 years) and 2017 (79.7). Using a five-year average from 2013 through 2017, life expectancy varied by 7.3 years among Oregon's counties (see Table 6-57). Six counties had a life expectancy significantly longer than the state average (79.7): Benton (83.4), Washington (82.3), Grant (81.7), Hood River (81.5), Clackamas (80.9) and Deschutes (80.6). The 16 counties with significantly shorter life expectancies than the state average were Curry (76.1), Coos (76.5), Josephine and Klamath (76.9), Douglas and Jefferson (77.4), Lincoln (77.7), Clatsop and Linn (77.9), Wasco (78.0), Malheur (78.2), Crook (78.5), Tillamook (78.7), Jackson and Umatilla (78.9), and Multnomah (79.2).

## Demographic characteristics

### Sex

Between 2016 and 2017, the mortality rate increased for both males and females, resulting in an overall increase in Oregon's crude death rate (see Table 6-1). The male rate increased 0.1% (914.2 per 100,000 population in 2016 compared to 915.0 in 2017), and the female rate increased 1.4% (843.1 in 2016 compared to 855.2 in 2017).

<b>Table B - Age-adjusted death rates by county of residence, 2017</b>	
<b>County</b>	<b>Rate</b>
<b>Oregon total</b>	<b>707.0</b>
Baker	712.4
Benton**	529.5
Clackamas**	621.6
Clatsop*	807.8
Columbia	714.3
Coos*	937.6
Crook	744.7
Curry*	835.6
Deschutes**	664.2
Douglas*	810.3
Gilliam	561.4
Grant	646.7
Harney	610.3
Hood River	630.0
Jackson*	741.2
Jefferson	737.1
Josephine*	811.6
Klamath*	895.4
Lake	562.7
Lane*	734.8
Lincoln*	828.1
Linn*	819.8
Malheur*	796.3
Marion*	736.6
Morrow**	545.2
Multnomah*	730.9
Polk	717.3
Sherman	591.9
Tillamook	745.1
Umatilla	743.4
Union	662.8
Wallowa	638.1
Wasco*	796.6
Washington**	574.5
Wheeler	533.6
Yamhill*	763.7
Rates per 100,000 population.	
* Significantly higher than the state rate.	
** Significantly lower than the state rate.	

During 2017, the female crude death rate was lower than the male rate. While this was typical during the 20th century, the female rate has occasionally been higher than the male rate in recent years (see Table 6-1). Increases in female crude death rates vis-à-vis male rates seen over the past decade are largely due to the changing age distribution within these two groups, rather than a decline in the health status of females. There are simply more elderly women than men, and the elderly — even under the best of circumstances — are more likely to die than their younger counterparts are. Despite recent fluctuations in crude death rates, the age-adjusted death rates for males have consistently been higher than for females. In 2015–2017, the male age-adjusted death rate was 38.0% higher than the female rate — 833.8 compared to 604.4 (see Table 6-48m and Table 6-48f).\*

### Age

Compared with Oregon rates in 2010, age-specific death rates have increased for four of the six age groups shown in Table 6-1. The exceptions are Oregonians 0–4 years of age, where the rate decreased by 1.8%, and those aged 65 years and older, where the rate decreased 14.6%. Those aged 5–14 years saw the greatest increase (39.3%). (See Figure 6-2 and Figure 6-3.)

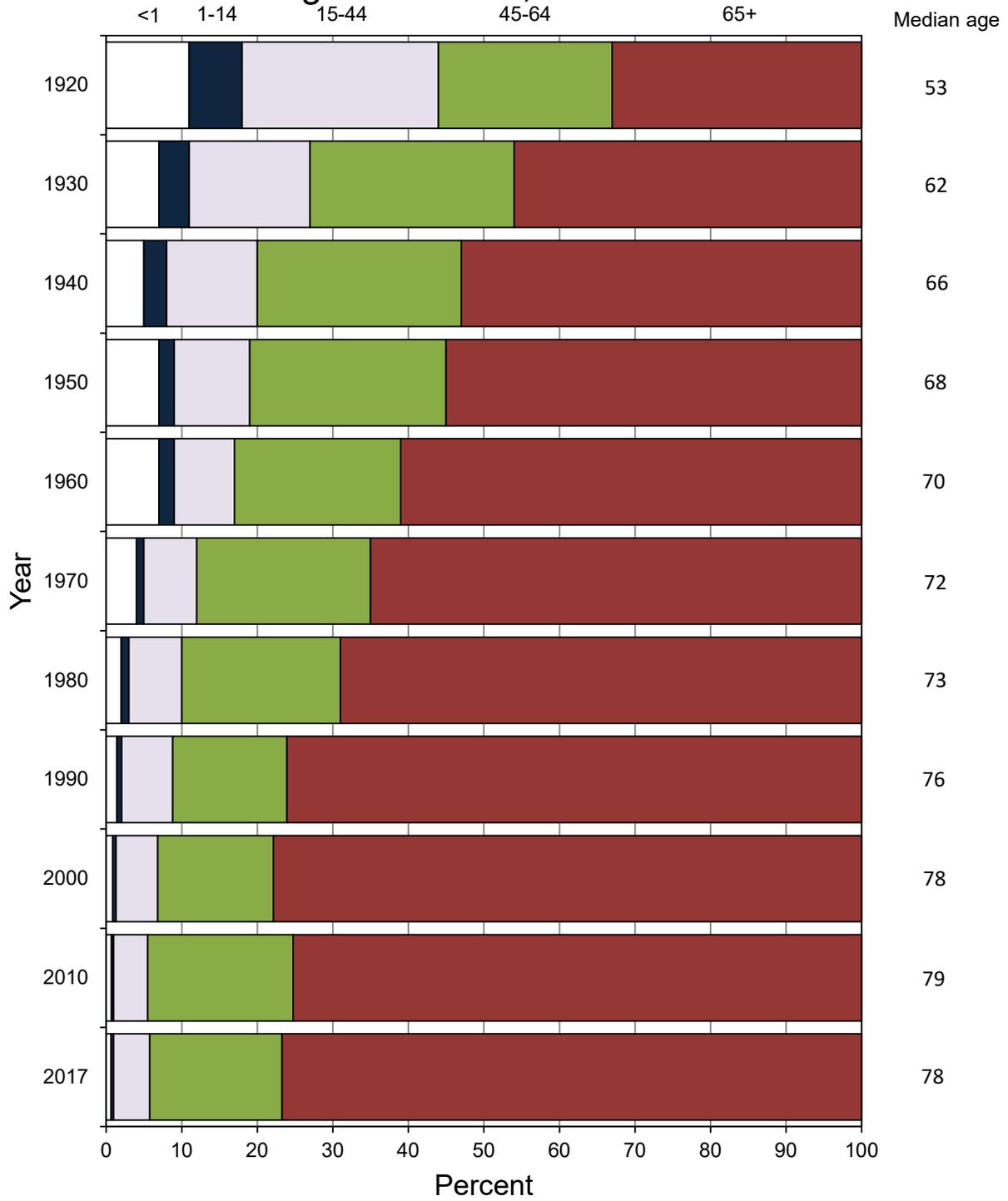
Table 6-1 shows the disparity in age-specific death rates by sex. Male rates are higher than female rates in all six age categories. The age-specific death rate for males 15–24 years old was more than twice as high as the rate for women in the same age group — 92.4 versus 38.1 (per 100,000). The median age at death for both sexes combined was 78 years, which is unchanged since 2013 (see Table 6-15). The median ages at death for each sex were unchanged from the previous year — 74 years for males, and 81 years for females.

### County of residence

In 2017, the state age-adjusted death rate was 707.0 per 100,000 population. Fifteen counties had significantly higher age-adjusted rates, while five counties had significantly lower rates (see Table B). Simply residing in a particular county will not necessarily increase or

\* See Appendix B for further information about age-specific and age-adjusted death rates.

Figure 6-3.  
 Proportion of deaths by selected age groups,  
 Oregon residents, 1920-2017



Race group*	Number	Percent
Total multiple race	275	100.0
White	247	89.8
African American	34	12.4
American Indian	187	68.0
Asian <sup>1</sup>	63	22.9
Hawaiian & Pacific Islander <sup>2</sup>	27	9.8

\* Decedents of Hispanic ethnicity may belong to any race. Columns will not add to total due to multiple race selections.

<sup>1</sup> Includes Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, and other Asian.

<sup>2</sup> Includes Native Hawaiian, Guamanian, Samoan, and other Pacific Islander.

decrease one's chance of dying in a given year. Mortality is a consequence of many factors including socioeconomic status, education, employment, smoking, other individual health behaviors, environmental exposure, availability and quality of medical care, and heredity.

## Race and Hispanic ethnicity

There are six major race categories: White, Black or African American, American Indian/Alaska Native, Asian, Hawaiian or Pacific Islander, and Other Specified. Beginning in 2006, multiple race and ethnicity categories may be reported for a single decedent. There are four Hispanic ethnicity choices based on the country or countries of origin: Mexican, Cuban, Puerto Rican and Other Hispanic. A person of Hispanic ethnicity may belong to any race category.

The data collected for the Asian categories allow for differentiation by Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese and Other Asian. Among Pacific Islanders, the data collected allow for differentiation among Hawaiian, Guamanian, Samoan and Other Pacific Islander. However, the counts in these more specific race categories are too small for reliable statistical reporting.

Most (91.7%) decedents are reported as non-Hispanic White only. Multiple race categories were marked on the death records of 275 decedents (0.8%) in 2017 (see Table 6-9 and Table C). Among decedents recorded as having multiple race categories, 89.8% were identified as White and 68.0% as American Indian, each in combination with other categories. Allowing multiple race selections raises the mortality counts for all race categories. For instance, when looking at single-mention race categories, the count of American Indian decedents in 2017 was 389 (see Table 6-9). This count increased by 48.1% to 576 when also including multiple-race decedents identifying in part as American Indian, in combination with other races (see Table 6-10). Other databases such as birth, youth surveys and adult telephone surveys are now also collecting multiple race categories. The younger participants in those databases more frequently report multiple races.

## Leading causes of death<sup>\*†</sup>

### Overview

During the 20th century, with the notable exception of the great influenza pandemic of 1918–1919, heart disease was consistently the leading cause of death among Oregonians. In the 21st century, however, cancer has emerged as the leading cause of death. In 2001, for the first time, more Oregonians died from cancer, also referred to as malignant neoplasms, than from diseases of the heart. During 2017, 8,084 Oregonians died from cancer while 6,945 died from heart disease.

The first and second leading causes of death during 2017 were malignant neoplasms and heart disease; combined, they accounted for 41.0% of all deaths. Malignant neoplasms resulted in almost twice as many years of potential life lost as heart disease, reflecting the younger ages of cancer patients (see Table 6-14). The apparent increasing risk of cancer vis-à-vis heart disease during the 21st century is not the result of an increasing cancer death rate, but rather a declining heart disease death rate. In fact, the malignant neoplasm death rate has trended downward in the past 25 years, but the heart disease death rate has fallen more rapidly.

Causes of death varied by age group. Among infants, perinatal conditions were most common. Unintentional injuries ranked first for Oregonians aged 1 through 44. From age 45 through 84, cancer was the leading cause of death. Among residents 85 or older, heart disease ranked first (see Table 6-4 and Figure 6-4).

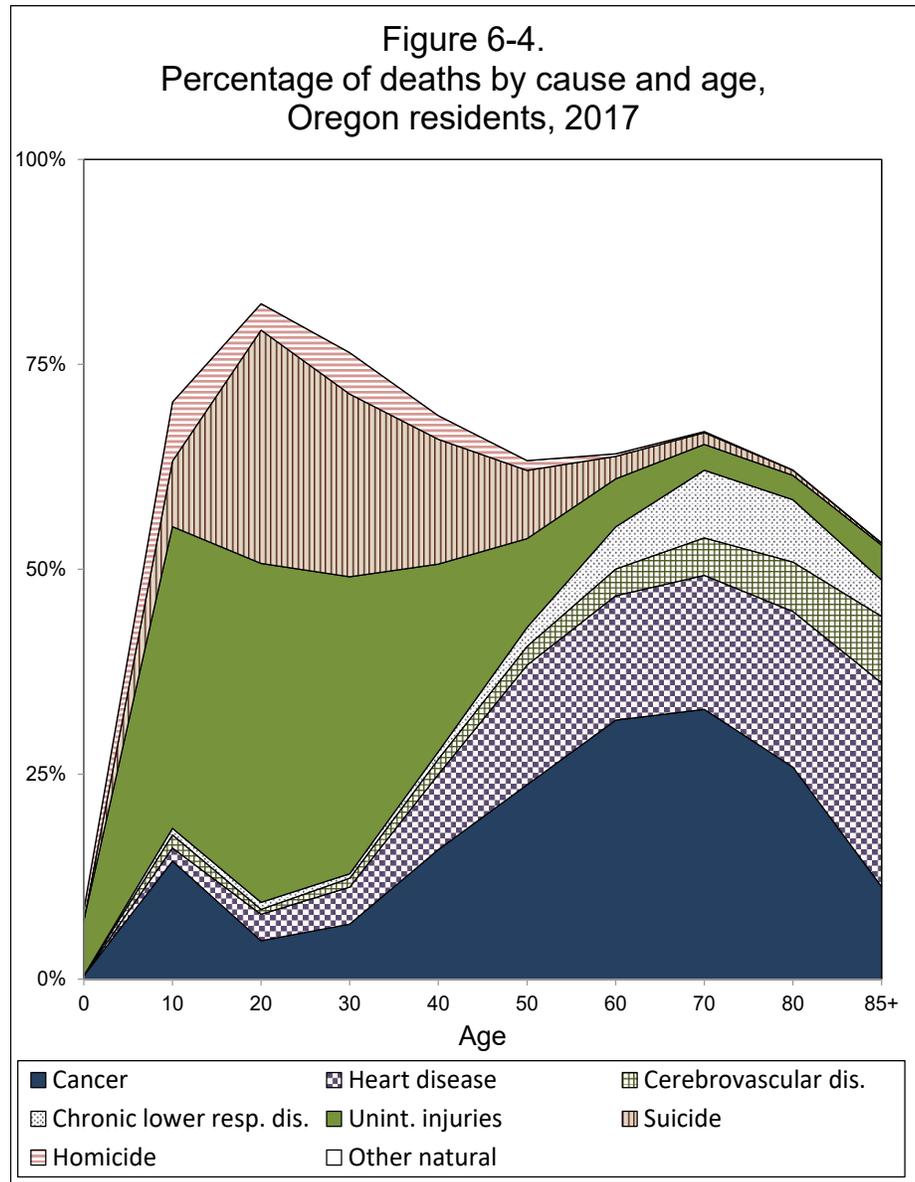
### Years of potential life lost

Mortality rates alone do not show the full impact upon society of certain causes of death. The deaths of young people are a greater cost to society in terms of years of potential life lost (YPLL) than are the deaths of older people. The YPLL yardstick quantifies premature mortality

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\* Statewide records of cause of death were first collected in 1908.

† The International Classification of Diseases is periodically revised. The 10th revision was implemented in 1999. It had considerably greater detail for some diseases and less for others; shifts of inclusion in terms and titles from one category, section or chapter to another; regrouping of diseases; new titles in sections; and modification of the coding rules. As a result, serious breaks in the comparability occurred for several causes of death. Readers wishing to compare numbers of deaths or rates for 1999 and subsequent years to prior years should use the final comparability ratios described in Appendix B. Table 6-3 data apply final comparability ratios.

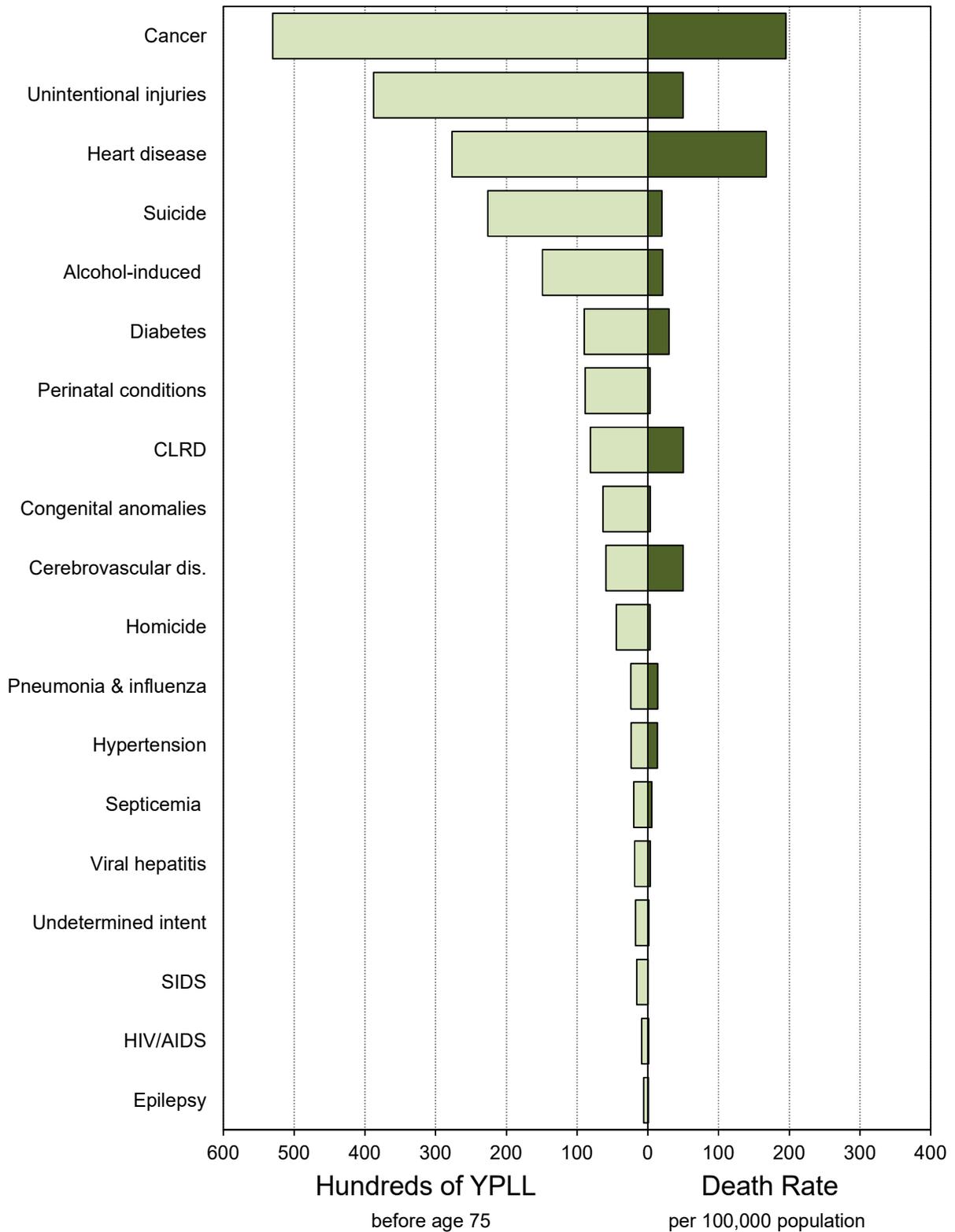


occurring in younger age groups by measuring the number of years between age at death and a set standard age. With the standard set at 75 years, a death at age 21 years results in 54 years lost. The numbers of YPLL for all decedents are then totaled. Figure 6-5 shows the disparity between death rates and the years of potential life lost. In all references to YPLL in this report, the standard is 75 years unless otherwise noted. Use of YPLL measures in Figure 6-5 highlights the impact of death due to unintentional injuries.

### Cancer

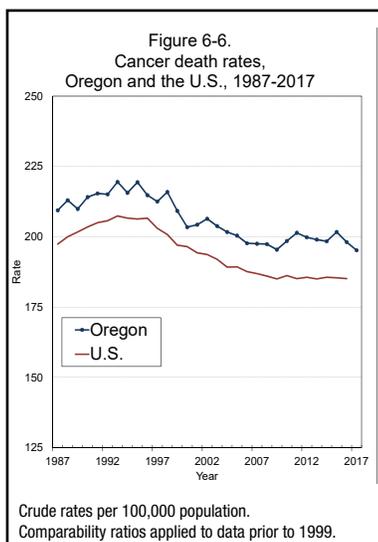
During 2017, cancer was the leading cause of death among Oregonians, claiming 8,084 lives. Malignant neoplasms were also a contributing factor, but not the underlying

Figure 6-5.  
 Leading causes of years of potential life lost and corresponding death rates, Oregon residents, 2017



Year	Ratio
1965	5.5
1975	3.6
1985	2.0
1995	1.2
2005	1.2
2015	1.0
2017	1.0

***Lung cancer claimed the lives of almost twice as many women as did breast cancer.***



cause, in another 1,114 deaths. The cancer crude death rate increased for many decades before hitting a plateau in the 1990s. The rate then trended downward for several years but has remained relatively stable for the last decade (see Figure 6-6). From 2016 to 2017, the crude death rate decreased from 198.1 per 100,000 population to 195.2 (see Table 6-3). The age-adjusted death rate also decreased, from 154.9 per 100,000 population to 152.1 (see Table 6-47t).

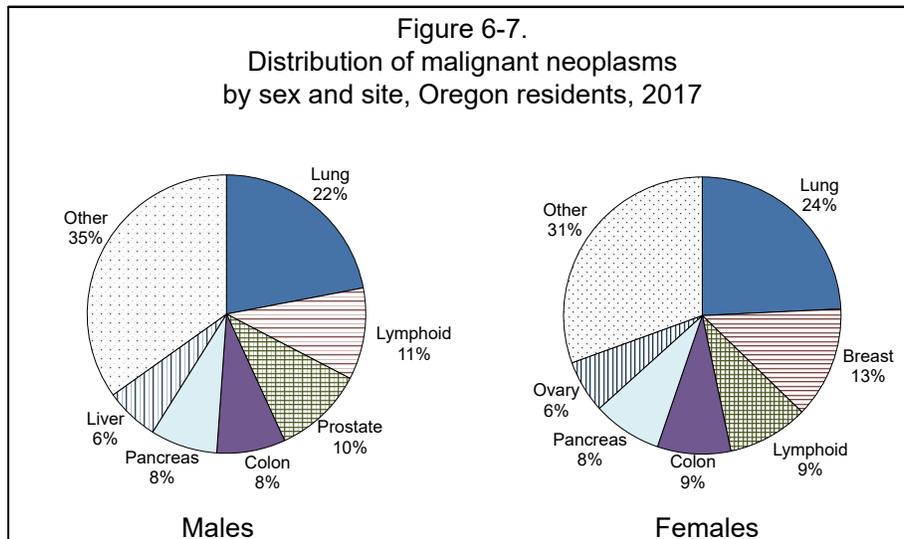
Malignant neoplasms were the leading cause of death for both sexes, and the difference in death rates between males and females has narrowed during the past two decades. During 2017 the crude death rate for cancer was 10.7% higher for males than females — 205.3 versus 185.4 (see Table 6-4). The disparity was far greater when comparing age-adjusted death rates: 175.7 for males versus 134.6 for females, a 30.5% difference (see Table 6-47m and Table 6-47f).

Cancer was one of the five leading causes of death among Oregonians of all ages except infants; it was the leading cause of death for residents aged 45 through 84 years. The median age at death from cancer in 2017 was 73 years, unchanged from 2016. Malignant neoplasms were the leading cause of premature death and accounted for 53,022 years of potential life lost (see Table 6-13).

During 2015–2017, 10 Oregon counties had age-adjusted cancer death rates significantly higher than the state rate (155.4): Coos (191.8), Crook (190.2), Tillamook (187.4), Curry (184.8), Lincoln (184.4), Josephine (176.2), Linn (175.3), Douglas (174.5), Klamath (173.0) and Marion (163.1). Seven counties recorded significantly lower rates than the state rate: Grant (101.9), Wallowa (113.1), Harney (114.4), Benton (120.4), Washington (132.0), Deschutes (143.5) and Clackamas (146.4).

Prior to 2001, Oregon's age-adjusted cancer death rate was typically lower than the U.S. rate but has since trended higher. In 2016, Oregon's rate was only 0.1% higher than the nation's (155.9 compared to 155.8) and ranked 32nd (from highest to lowest) among the states and District of Columbia (see Table 6-55) (1).

The most common fatal cancer for both sexes is bronchus/lung cancer, which rarely occurs in the absence of smoking.



In the past, smoking rates have been much higher in men than women, resulting in higher lung cancer rates for men; in 1965, there were 5.5 male deaths due to lung cancer for every female death. However, as smoking among women increased, so did their mortality rates from lung cancer; by 2015, there was one male death for every female death (see Table D). Breast cancer is more often in the public eye; however, during 2017, lung cancer claimed the lives of almost twice as many women as breast cancer did: 943 versus 506, respectively (see Table 6-6 and Figure 6-7).

### Heart disease

Despite the long-term downward trend in its crude death rate, heart disease was the leading cause of death in Oregon during most of the 20th century. In 2001, for the first time, more deaths resulted from cancer than from heart disease. During 2017, heart disease was the second leading cause of death; 6,945 Oregonians succumbed to it — 1,139 fewer than from malignant neoplasms. The crude death rate from heart disease decreased slightly from 171.0 in 2016 to 167.7 in 2017 (see Figure 6-8), while the age-adjusted death rate decreased from 134.3 per 100,000 population to 131.5. By comparison, the age-adjusted death rate was 264.2 in 1990, 100.9% higher than the 2017 rate. An additional 7,439 death records listed heart disease as a contributing factor in decedents' deaths, but not the underlying cause.

The 2017 crude death rate for heart disease was 21.4% higher for males than for females (184.1 versus 151.7). The age-adjusted death rate for heart disease was 66.1% higher

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***The age-adjusted  
heart disease death  
rate decreased  
slightly in 2017.***

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for males than for females (168.8 versus 101.6), reflecting the younger ages at which men are more likely than women to die from heart disease (see Table 6-47m and Table 6-47f).

Heart disease was the leading cause of death for Oregonians age 85 years or older and one of the five leading causes among Oregonians age 35 years and older. It was the second leading cause of death for residents aged 45–84 years (see Table 6-4). The median age at death from heart disease was 82 years in 2017 (see Table 6-15). The relatively older ages at which Oregonians died from heart disease lower its rank among the causes of premature death. In 2017, heart disease resulted in 27,675 years of potential life lost, making heart disease the third leading cause of premature death, following cancer and unintentional injuries (see Table 6-13).

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**Oregon's 2016 age-adjusted heart disease death rate was the fifth lowest nationally.**

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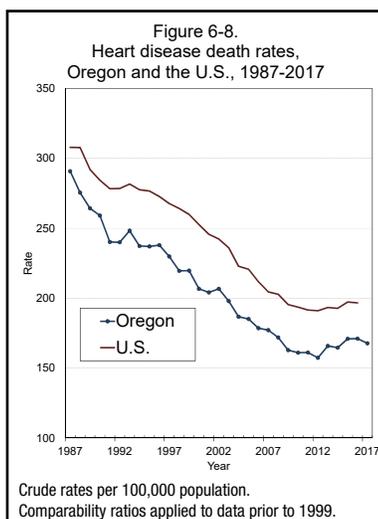
During 2015–2017, 12 Oregon counties had age-adjusted heart disease death rates significantly higher than the state's (133.7): Sherman (220.9), Malheur (185.1), Curry (177.7), Coos (169.7), Wasco (168.4), Linn (167.3), Clatsop (165.6), Crook (165.4), Klamath (163.4), Columbia (160.3), Yamhill (149.3) and Multnomah (143.6). Five counties had significantly lower rates: Benton (102.9), Washington (114.0), Clackamas (114.8), Lane (125.1) and Jackson (126.5).

In 2016, the state's age-adjusted heart disease death rate was 18.4% lower than the U.S. rate, and Oregon ranked 47th (fifth lowest) among the states and the District of Columbia (see Table 6-55) (1). Oregon's heart disease death rate has long been lower than the U.S. rate, even as the United States has seen a striking downward trend in the overall age-adjusted heart disease death rate. In 2006, the U.S. age-adjusted rate was 200.2, compared to 165.5 in 2016 (see Table 6-58).

### Chronic lower respiratory disease

Chronic lower respiratory disease (CLRD) includes a variety of conditions including emphysema, chronic obstructive pulmonary disease (COPD), bronchitis and asthma.

Oregon's CLRD crude death rates increased steadily for several decades, reaching a record high of 54.9 per 100,000 population in 1996. Increased smoking, particularly by women, drove the rising death rate. CLRD is now the third leading cause of death, with 15 more deaths than unintentional injuries. Since 2000, the rate varied little, ranging between 48.9 and 52.8 per 100,000 (see Table 6-3



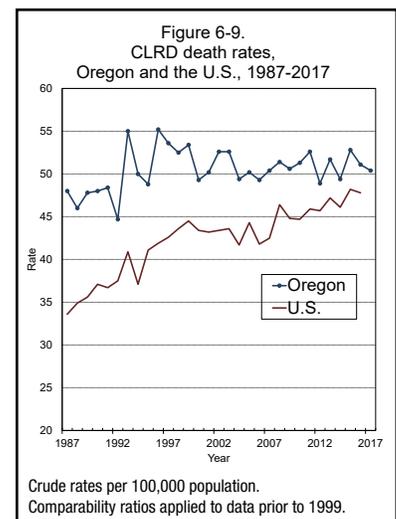
and Figure 6-9). The crude death rate for CLRD decreased from 51.1 per 100,000 in 2016 to 50.4 in 2017. The age-adjusted death rate also decreased from 40.0 to 39.0 (see Table 6-47t). CLRD was the underlying cause of death for 2,088 of Oregon's residents, but it contributed to an even larger number of deaths (2,662), for which it was not the underlying cause (see Table 6-6 and Table 6-51).

In 2017, more females than males died from CLRD (1,139 versus 949), and the crude rate was also higher for females than for males (54.3 versus 46.5). However, the age-adjusted death rate was slightly higher for males: 40.5 per 100,000 population versus 38.0 for females, a 6.6% difference (see Table 6-47m and Table 6-47f). For most of the 20th century, far more males succumbed to CLRD than did females, but since 1999 this pattern has generally reversed (with the exceptions of 2002 and 2008). The increasing number of women dying from CLRD reflects the higher numbers of older women than older men in Oregon. Even in years when more females than males died of CLRD, the age-adjusted death rates were still higher for males than females.

CLRD is the fifth leading cause of death for Oregonians aged 85 and older, and third for decedents aged 65 to 84. Residents aged 75 to 84 had the largest number of CLRD deaths with 660 (see Table 6-4). Although the third most common cause of death overall, chronic lower respiratory disease ranked eighth in the number of years of potential life lost (8,150). The median age at death was 77 in 2017, unchanged from the previous year (see Table 6-13 and Table 6-15).

During 2015–2017, 13 counties had CLRD age-adjusted death rates significantly higher than the state's (40.2): Lake (68.5), Klamath (65.5), Grant (62.5), Tillamook (58.9), Baker (58.3), Curry (57.3), Umatilla (56.6), Douglas (55.9), Union (54.6), Josephine and Coos (52.8), Linn (48.5), and Jackson (47.1). Excluding those with fewer than 20 CLRD deaths, four counties with 20 or more CLRD deaths had significantly lower rates: Washington (24.4), Benton (25.4), Clackamas (31.7) and Polk (32.7).

Oregon's age-adjusted CLRD death rate has long been higher than the U.S. rate, but the disparity has abated in recent years. The greatest disparity occurred in 1987, when Oregon's rate was 26.8% higher and ranked 11th among



the states and District of Columbia. During 2016, the state's rate was 0.5% lower than the nation's rate and ranked 30th (see Table 6-55) (1).

### **Unintentional injuries**

Unintentional injury mortality\* is a broad category that includes car crashes, falls, and drug overdose deaths and other causes. Oregon's unintentional injury crude death rate decreased from 51.7 in 2016 to 50.1 in 2017 (see Table 6-3 and Figure 6-10). Fatal unintentional injuries claimed the lives of 2,073 Oregonians and contributed to the deaths of another 648 residents (see Table 6-51). The age-adjusted death rate decreased from 46.0 in 2016 to 44.5 in 2017. Unintentional injuries were Oregon's fourth leading cause of death.

A strong dichotomy exists in unintentional injury deaths between sexes. The crude death rate was 61.7% higher for males than for females (62.1 versus 38.4). The disparity in age-adjusted death rates was even greater; the male rate was 96.4% higher than the female rate: 59.7 versus 30.4 (see Table 6-47m and Table 6-47f).

Unintentional injuries were the leading cause of death among children and adults aged 1–44 years (see Table 6-4). While age-specific rates vary little from the mid-teens until middle age, the oldest age groups have a greatly increased unintentional injury death rate largely due to the increased risk of falling (see Table 6-7t and Figure 6-11). Although it was the fourth leading cause of death in 2017, unintentional injuries ranked second in years of potential life lost at 38,787, a 3.4% decrease from 2016 (see Table 6-13 and Figure 6-5). This reflects unintentional injuries' role as the most common cause of death of young Oregonians. Despite this, the median age at death from unintentional injuries has trended upward, to 63 in 2017. By comparison, the median age at death in 2002 was 54 (see Table 6-15).

During 2015–2017, nine counties had age-adjusted unintentional injury death rates significantly higher than the state rate (44.9): Grant (76.8), Jefferson (74.9), Curry (71.2), Josephine (67.1), Coos (66.4), Lincoln (61.3), Douglas

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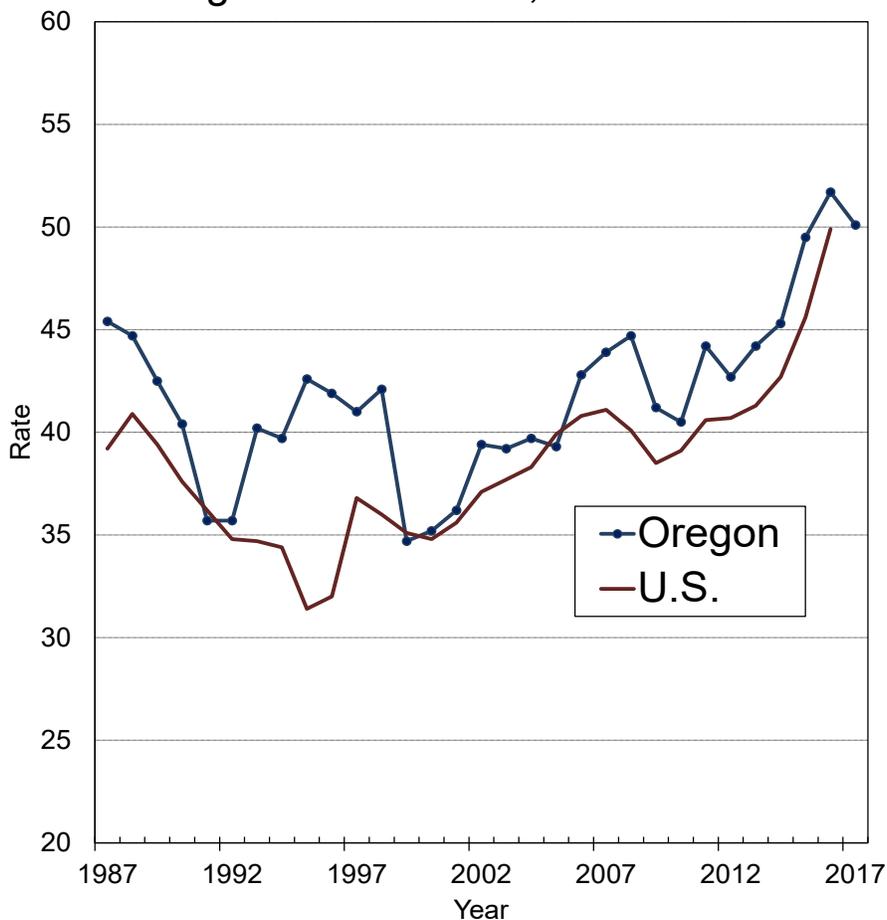
\* The public health community prefers “unintentional injuries” to the term “accidents.”

(60.8), Lane (57.3) and Linn (56.4). Three counties had significantly lower rates: Washington (26.5), Benton (33.8) and Clackamas (38.4).

During most of the past several decades, Oregon's unintentional injury death rate has been higher than the nation's. However, in 2016 the state's age-adjusted death rate from unintentional injuries was 3.0% below the national rate and ranked 34th among the states and District of Columbia (1).

In 2017, 56 work-related deaths occurred in Oregon to both residents and non-residents. The victims were overwhelmingly male (54 males versus two females), with motor vehicle crashes being the most common cause of death from unintentional work-related injuries (see Table 6-50).

Figure 6-10.  
Unintentional injury death rates,  
Oregon and the U.S., 1987-2017



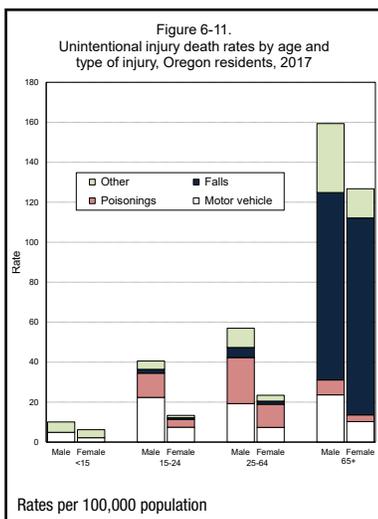
Crude rates per 100,000 population.  
Comparability ratios applied to data prior to 1999.

Just as the leading cause of death varies by age, so does the type of fatal unintentional injury (see Figure 6-11). Unintentional injury deaths among children under 5 years of age most commonly resulted from suffocation or airway obstruction. Transportation-related injuries were the most common unintentional injury cause among decedents aged 5–24. Among those aged 25–54, poisoning (usually of drugs used in an illicit or inappropriate manner) was the most common cause of unintentional injury death. Transportation-related injuries were the most common unintentional injury cause among decedents aged 55–64, and falls were the most common type among Oregonians 65 or older (see Table 6-27).

**Falls.** Falls were the state’s most common type of fatal unintentional injury in 2017. Falls claimed the lives of 764 Oregonians, most of whom (89.8%) were 65 or older (see Table 6-27). Most falls occurred on the same level of ground or flooring (512, or 67.0%). For falls not occurring on the same level, 38 falls involved stairs, 26 involved a wheelchair and 25 were from bed (see Table 6-28). The age-adjusted death rate for fatal falls among males was 36.0% higher than among females (17.0 versus 12.5) (see Table 6-47m and Table 6-47f). The age-adjusted death rate for falls increased 10.6% since 2013, from 13.2 per 100,000 population to 14.6 per 100,000 in 2017 (see Table 6-47t).

**Transportation and related fatalities.** Transportation-related injuries accounted for the second largest number of unintentional injury deaths (553) among Oregon residents, with motor vehicle traffic accidents accounting for 85.5% of all transportation injury deaths (see Table 6-27). Of the 473 motor vehicle traffic accidents, 70.6% occurred among males. The age-adjusted motor vehicle traffic accident death rate for males was more than twice as high as the rate for females (15.8 per 100,000 population versus 6.2) (see Table 6-47m and Table 6-47f). Although teens and young adults aged 15–24 years accounted for 15.9% of all motor vehicle traffic accident fatalities, age-specific death rates were highest among adults over 85 (33.2 per 100,000 population) (see Table E and Table 6-7t).

In most land-transport motor-vehicle deaths occurring in Oregon, the fatalities occurred among persons traveling by car (203), foot (103), unspecified vehicle (72), motorcycle (64), or pickup or van (61). Less common were the deaths of



those traveling by all-terrain vehicle (20), pedal cycle (18), heavy transport vehicle (4) or agricultural vehicle (2). Of all fatalities among persons in cars, 27.1% resulted from non-collisions (e.g., rollovers following loss of control); among fatalities of persons in pickups or vans, 32.8% occurred in non-collisions (see Table 6-29).

**Overdoses and poisonings.** Unintentional poisonings involving drugs/medications, most often by narcotics and hallucinogens, ranked third among the types of fatal unintentional injuries, claiming the lives of 450 Oregonians in 2017 (see Table 6-27). The 2017 age-adjusted death rate for poisonings is 12.6% higher than the age-adjusted rate 10 years ago (10.7 in 2017 versus 9.5 in 2007). As with most other types of unintentional injuries, age-adjusted poisoning death rates were far higher for males than females (14.4 versus 7.0) (see Table 6-47m and Table 6-47f). The death rate peaked among residents aged 45–54 (20.2 per 100,000) (see Table 6-7t). More than 60% of this year’s unintentional poisoning deaths involved opioids (see Table 6-35).

Although 450 deaths were attributed to unintentional poisonings, they alone do not account for all deaths resulting from overdoses and poisonings. Depending on how the fatality was reported on the death record, a death could be attributed to an unintentional injury or to a mental/behavioral disorder (see Table 6-35, footnote 1).

**Suffocation or obstruction.** Ranking fourth among fatal unintentional injuries, suffocation or airway obstruction (including hanging and strangulation) accounted for the deaths of 95 Oregon residents (see Table 6-27). Of these deaths, 35 (36.8%) involved inhalation or ingestion of objects or substances other than food or gastric contents. Oregonians aged 85 years and older accounted for the highest number of suffocation or obstruction deaths (25 or 26.3%), followed by those 75–84 years old (18 or 18.9%).

**Drownings.** Ranking fifth among causes of death from unintentional injuries, drownings (including those involving watercraft) accounted for the deaths of 49 Oregon residents (see Table 6-27). Fifty-nine Oregon residents and non-residents drowned in Oregon during 2017; most of these deaths did not involve watercraft. Thirty-six drownings were in natural water, six deaths in bathtubs or hot tubs and six in swimming pools. Eight deaths involved watercraft (see Table 6-32).

Age group	Rate
85+	20.0
75-84	19.0
65-74	12.3
55-64	15.3
45-54	9.6
35-44	11.6
25-34	13.3
15-24	14.5
5-14	2.6
1-4	3.3
< 1	2.3

Crude rates per 100,000 population.

## Cerebrovascular disease

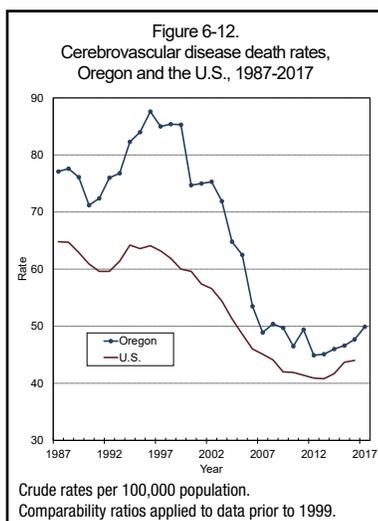
Accounting for 5.6% of all deaths, cerebrovascular disease (i.e., stroke) was the fifth leading cause of mortality among Oregonians. The number of deaths attributed to cerebrovascular disease increased from 1,944 in 2016 to 2,066 in 2017. The number of deaths in which this disease was a contributing factor also increased, from 1,713 deaths in 2016 to 1,847 deaths in 2017 (see Table 6-3 and Table 6-51). The crude death rate for this cause trended downward during 1996–2012\*, but has increased each of the last five years. Between 2016 and 2017, the crude death rate increased from 47.7 to 49.9 per 100,000 population (see Figure 6-12). The age-adjusted death rate also increased from 37.5 in 2016 to 39.0 in 2017 (see Table 6-47t).

More females than males died from cerebrovascular disease, and the male crude death rate was 22.1% lower than the female rate (43.6 versus 56.0, see Table 6-2). However, the age-adjusted rate for males was 7.2% higher than the rate for females (40.3 versus 37.6) (see Table 6-47m and Table 6-47f).

Fatal cerebrovascular disease was uncommon before age 65 years, but it was the fourth most common cause of death among Oregon residents aged 65 and older (see Table 6-4). Despite its relatively high frequency of occurrence, cerebrovascular disease ranked 10th by years of potential life lost (5,950), a consequence of the older ages of decedents compared to the relatively younger ages at death for many other causes (see Table 6-13). Nearly three-fourths of the deaths occurred after age 74 years, and the median age at death in 2017 held steady from the previous year at 84 years (see Table 6-6 and Table 6-15).

The age-adjusted cerebrovascular disease death rates for two counties during 2015–2017 were significantly higher than the state rate (37.9): Crook (56.1) and Multnomah (43.0). Two counties had a significantly lower rate: Benton (28.7) and Washington (33.6).

Oregon’s cerebrovascular disease death rate typically exceeds the rate for the United States as a whole. In 2016, the age-



\* For trend analysis, researchers should be aware of a coding change that occurred in 2005 when the National Center for Health Statistics altered the cause of death classification methodology. In prior years, “multi-infarct dementia” and “vascular dementia” were coded as forms of cerebrovascular disease (163.9 and 167.9, respectively). Beginning in 2005, these diseases were coded as forms of organic dementia (F01.1 and F01.9, respectively). This coding change resulted in a drop in the number and rate of deaths attributed to cerebrovascular disease.

adjusted death rate was 1.3% higher than the nation's, ranking 25th among the states and the District of Columbia (see Table 6-55) (1).

Intracerebral hemorrhages and cerebral infarctions are two forms of cerebrovascular disease, but the more general term “stroke” appears most commonly on death records.

### **Alzheimer's disease**

Historically, the number of deaths from Alzheimer's disease has mirrored the aging of Oregon's population. Deaths from Alzheimer's disease fluctuated little in prior years but are now on the rise; they have increased from 1,786 in 2016 to 1,850 in 2017 — a record high for the fourth year in a row. The crude death rate from Alzheimer's disease increased 2.1%, from 43.8 per 100,000 in 2016 to 44.7 in 2017 (see Table 6-3).

The age-adjusted death rate from Alzheimer's disease also increased, from 34.5 in 2016 to 35.0 in 2017 (see Table 6-47t). The age-adjusted death rate from Alzheimer's disease held relatively steady during the past decade, but the 2017 age-adjusted rate is 117.4% higher than the 1990 rate (16.1). This is the largest increase seen among the 10 leading causes of death. Alzheimer's disease also contributed to 488 deaths of which it was not the underlying cause.

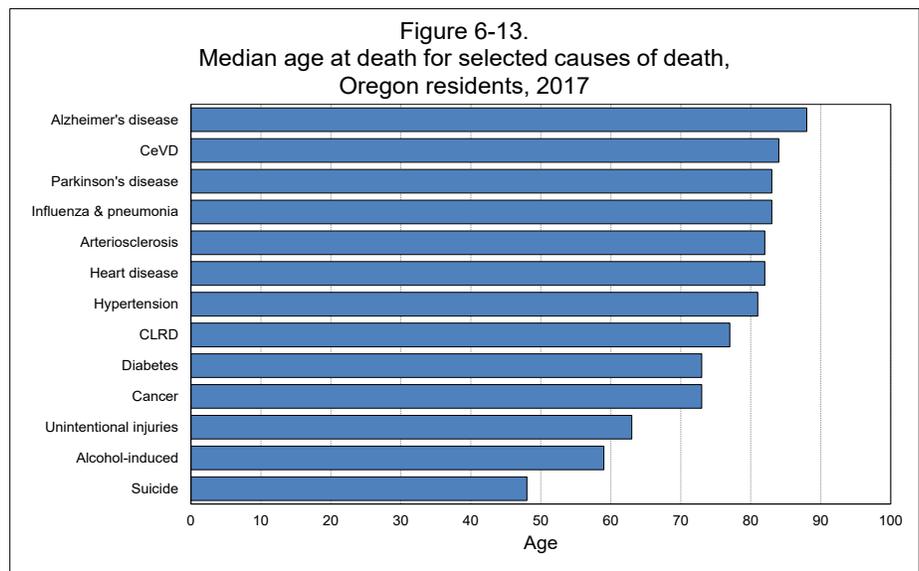
Women are at greater risk of dying from Alzheimer's disease, in part because they are less likely to die from causes that most commonly lead to death at younger ages. The age-adjusted Alzheimer's disease death rate for women was 40.6% higher than that for men (39.5 versus 28.1) (see Table 6-47m and Table 6-47f). Alzheimer's disease was the ninth leading cause of death among men but third among women (see Table 6-2).

People with Alzheimer's disease tend to die at an older age than people who die from other causes. In 2017, 92.5% of Alzheimer's deaths occurred after the decedent's 75th birthday (see Table 6-6). The median age at death from Alzheimer's disease was 88 years, unchanged from 2016 and the highest median age at death among Oregon's most common causes of death (see Table 6-15 and Figure 6-13). Alzheimer's disease was the sixth leading cause of death overall.

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***Deaths due to Alzheimer's disease set a record high for the fourth consecutive year.***

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Five counties had significantly higher age-adjusted death rates from Alzheimer's disease than the state (34.1) during 2015–2017: Lane (49.5), Malheur (45.8), Coos (43.4) and Linn (41.2). Excluding those with fewer than 20 Alzheimer's deaths, five counties had significantly lower rates: Crook (18.2), Curry (22.2), Josephine (23.8), Marion (26.8) and Douglas (27.8).

Oregonians have long had higher rates than other U.S. residents of death from Alzheimer's disease. In 2016, the state's age-adjusted death rate was 14.9% higher than the nation's (34.8 and 30.3, respectively) and ranked 20th among the states and District of Columbia (see Table 6-55) (1).

Although this report counts deaths resulting from Alzheimer's disease, it does not count deaths attributed to dementia, organic dementia, presenile dementia, multi-infarct dementia and vascular dementia. ICD-10 codes F00 (dementia in Alzheimer's disease), F01 (vascular dementia) and F03 (unspecified dementia) include these causes (see Table 6-6).

As noted in the section on cerebrovascular disease, a coding change beginning in 2005 resulted in an increase in the number of deaths attributed to organic dementia and a decline in deaths from cerebrovascular disease (see Table 6-6, footnote 10 for more information). During 2017, the deaths of 2,138 Oregonians were attributed under the rubric "organic dementia" (ICD codes F01 and F03). Together, organic dementia and Alzheimer's disease/dementia accounted for

3,988 deaths, surpassing the third leading cause of death, chronic lower respiratory disease (2,088).

**Diabetes mellitus**

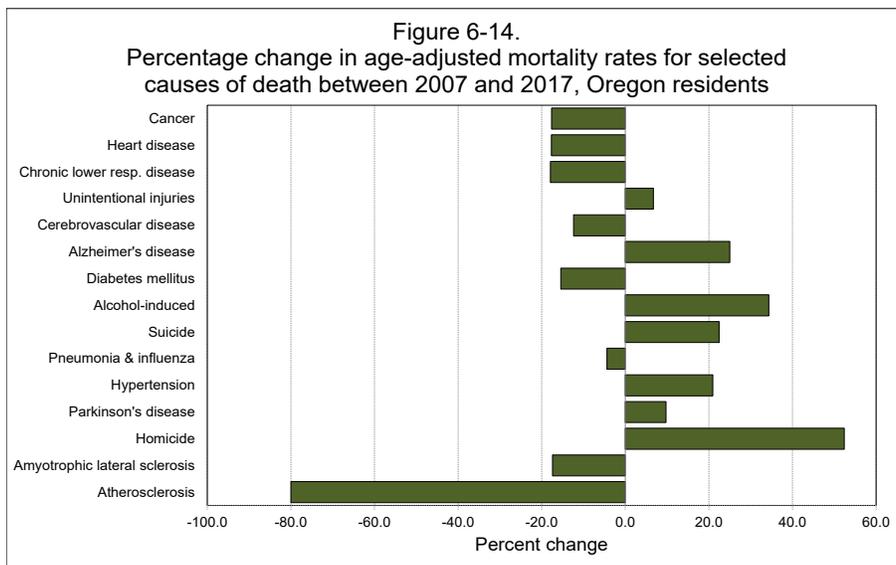
During 2017, diabetes mellitus was the seventh leading cause of mortality in Oregon. The crude death rate for diabetes rose throughout most of the 1980s and 1990s, reaching a high of 31.1 per 100,000 population in 2005. The rate has since inched downward. The rate decreased slightly from 30.4 in 2016 to 30.0 in 2017 (see Table 6-3). The age-adjusted rate in 2017 (23.6) was 37.2% higher than the rate in 1990 (17.2) and 19.5% lower than 2005’s record high (29.3) (see Figure 6-14 and Figure 6-15). Diabetes was a contributing factor more often than it was the underlying cause of death: 3,300 versus 1,243, respectively (see Table 6-51).

The diabetes crude death rate for males was 35.7% higher than the rate for females (34.6 versus 25.5) (see Table 6-2). The difference between male and female rates was even larger when looking at age-adjusted rates. The age-adjusted death rate for males was 61.3% higher than the rate for females (30.0 versus 18.6) (see Table 6-47m and Table 6-47f).

Most diabetes deaths (89.5%) occurred after age 54 years, and only three Oregonians younger than 25 years old died from diabetes in 2017. It was the fifth leading cause of death among Oregonians aged 55–74 years (see Table 6-4). The median age at death was unchanged from 2016 at 73 years (see Table 6-15). Diabetes resulted in a loss of 8,993 years of potential life (see Table 6-13).

Table F - Diabetes age-adjusted death rates and state ranking		
Year	U.S.	Oregon
1982	17.2	12.2
Percent difference: -29.1		
Rank: Lowest		
2016	21.0	24.0
Percent difference: +14.3		
Rank: 11th highest		

***Oregon’s 2016 age-adjusted diabetes death rate went from 21st to 11th highest, nationally.***



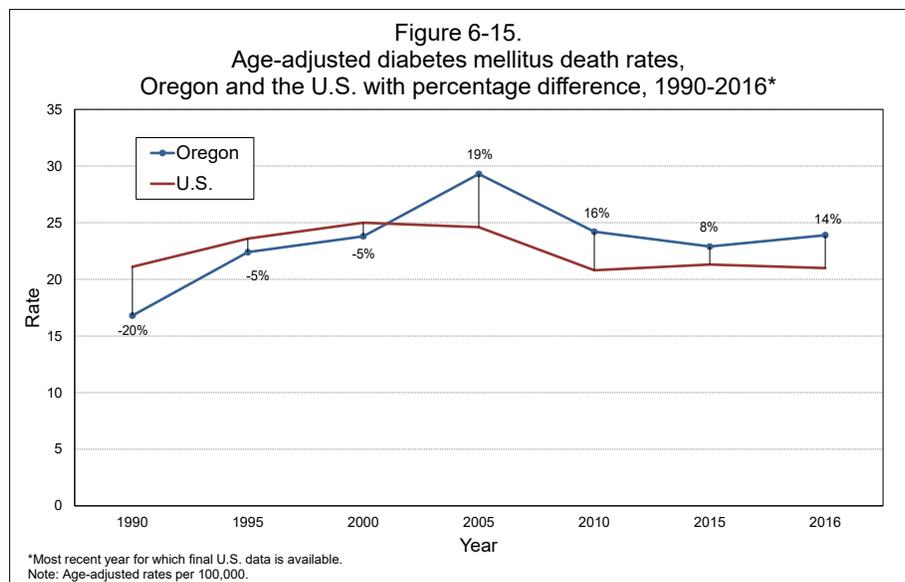
Six counties had significantly higher age-adjusted diabetes death rates compared to the state during 2015–2017 (23.5): Jefferson (40.5), Umatilla (34.9), Douglas (33.4), Linn (32.3), Coos (31.4) and Marion (30.0). Four counties had a significantly lower rate: Benton (15.8), Deschutes (16.1), Washington (18.6) and Clackamas (19.9).

Prior to 1987, Oregon’s age-adjusted diabetes death rate was consistently 25% to 30% lower than the national rate. Oregon’s rate exceeded the U.S. rate for the first time in 1998 (13.7 per 100,000 population, versus 13.6). In 2016, Oregon’s age-adjusted rate was 14.3% higher than the U.S. rate (24.0 per 100,000 population versus 21.0), ranking 11th among the states and District of Columbia (see Table 6-55 and Table F) (1).

### Alcohol-induced deaths\*

The alcohol-induced deaths category summarizes alcohol-related deaths but excludes alcohol-related injury deaths. The National Center for Health Statistics’ taxonomy does not typically report alcohol-related injury as a “leading cause of death.” However, when alcohol conditions are combined, it becomes the eighth leading cause of death in Oregon. This category comprises alcohol-related disorders from multiple organ systems, with alcoholic liver disease accounting for the greatest number of deaths (59.5%,

\* Chronic liver disease and cirrhosis, as well as nephritis, were not discussed as leading causes in the narrative section, although they would be ranked respectively as the ninth and 13th leading causes of death under the NCHS rubric. Most of these deaths were counted as alcohol-induced deaths in the narrative section.



see Table G). If the category included intentional and unintentional injury deaths in which alcohol was a factor (e.g., motor vehicle crashes and homicides), the count would be considerably higher. Death records rarely report the role, if any, of alcohol in injury deaths.

Alcohol-induced deaths claimed the lives of 878 Oregonians during 2017 (see Table 6-6). Alcohol was a contributing factor but not the direct cause in another 708 deaths (see Table 6-51). The crude death rate increased to 21.2 per 100,000 population in 2017 from 20.3 during 2016, and the age-adjusted death rate increased from 16.9 in 2016 to 17.6 in 2017 (see Table 6-47t).

Fatal alcohol abuse was the eighth leading cause of death among men and the 10th leading cause among women, but the difference was greater when age-adjusted. The age-adjusted death rate for males was 2.5 times the rate for females — 25.6 versus 10.2, respectively (see Table 6-47m and Table 6-47f).

Age-specific alcohol-induced death rates ranked third among the leading causes of death for residents aged 55–64 years (see Table 6-4 and Figure 6-16). This category was the fourth leading cause of death among residents aged 25–34 years and 45–54 years, and the fifth leading cause among those aged 35–44 years. The median age at death increased by one year — to age 59 — in 2017 (see Table 6-15). Oregonians are dying at markedly younger ages from this cause than they were in 1988, when the median age of alcohol-induced death was 62 years. In 2017, alcohol-

Diagnosis	Count
Alcoholic liver disease	522
Mental/behavioral disorders	292
Poisoning, accidental	35
Cardiomyopathy	11
Acute or chronic pancreatitis	7
Nervous system degeneration	4
Poisoning, suicide	3
Poisoning, undetermined intent	3
Gastritis	2

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**Oregon's 2016 age-adjusted alcohol-induced death rate was the fifth highest nationally.**

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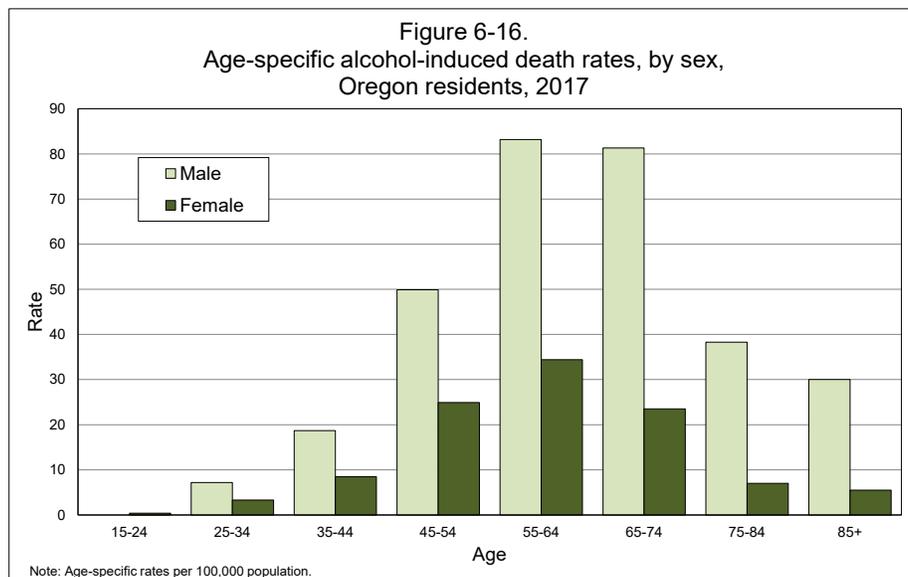


Table H - Number of times more likely a male Oregonian was to die by suicide than a female, by age, 2013-2017	
5-14	1.5
15-24	3.6
25-34	4.0
35-44	3.2
45-54	2.4
55-64	3.2
65-74	3.7
75-84	6.6
85+	12.3

induced death was the fifth leading cause of years of potential life lost (1,895; see Table 6-13).

Excluding counties with fewer than 20 deaths in this category, seven counties had age-adjusted alcohol-induced death rates significantly higher than the state's rate (17.7) during 2015–2017: Coos (41.0), Jefferson (32.9), Klamath (32.2), Wasco (31.2), Lincoln (31.0), Josephine (28.9) and Douglas (24.6). Rates were significantly below the state rate in four counties: Benton (11.0), Washington (11.1), Yamhill (12.4) and Clackamas (14.6).

The Oregon alcohol-induced death rate has long been higher than that for the United States. In 2016, Oregon's age-adjusted rate was 77.9% higher than the nation's and ranked fifth among the states and the District of Columbia (1). However, at least part of the difference between Oregon's and the national rate likely results from a reporting artifact; Oregon Center for Health Statistics staff ask physicians for more information when causes listed on death records (e.g., esophageal varices) suggest alcohol use, while many states do not.

### **Suicide**

Suicide was reported as the manner of death for 825 Oregonians during 2017, increasing from 771 deaths the previous year. The crude death rate reached a record high of 19.9 per 100,000 in 2017, up from 18.9 in 2016 (see Table 6-3). The age-adjusted death rate also saw a record high in 2017, increasing from 17.8 to 19.1 (see Table 6-47t).

Males are more likely than females to die from suicide, with age-adjusted death rates of 29.7 and 9.1, respectively (see Table 6-47m and Table 6-47f). Sex-specific rate differences were greatest among the elderly (see Table H).

Overall, suicide rates peak among the elderly, but this masks a dichotomy between the sexes: Females were more likely to die by suicide in middle age, where the crude rate peaked at 19.1 among those 45 to 54 years old. In contrast, rates among males generally increased with age, with the highest crude rate (83.4) recorded among those aged 85 years and older (see Table 6-7t, Table 6-7m and Table 6-7f). Although suicide death rates are high among the elderly, 61.9% of deaths occurred before age 55, resulting in the fourth-largest number of years of potential life lost (22,602) by cause (see

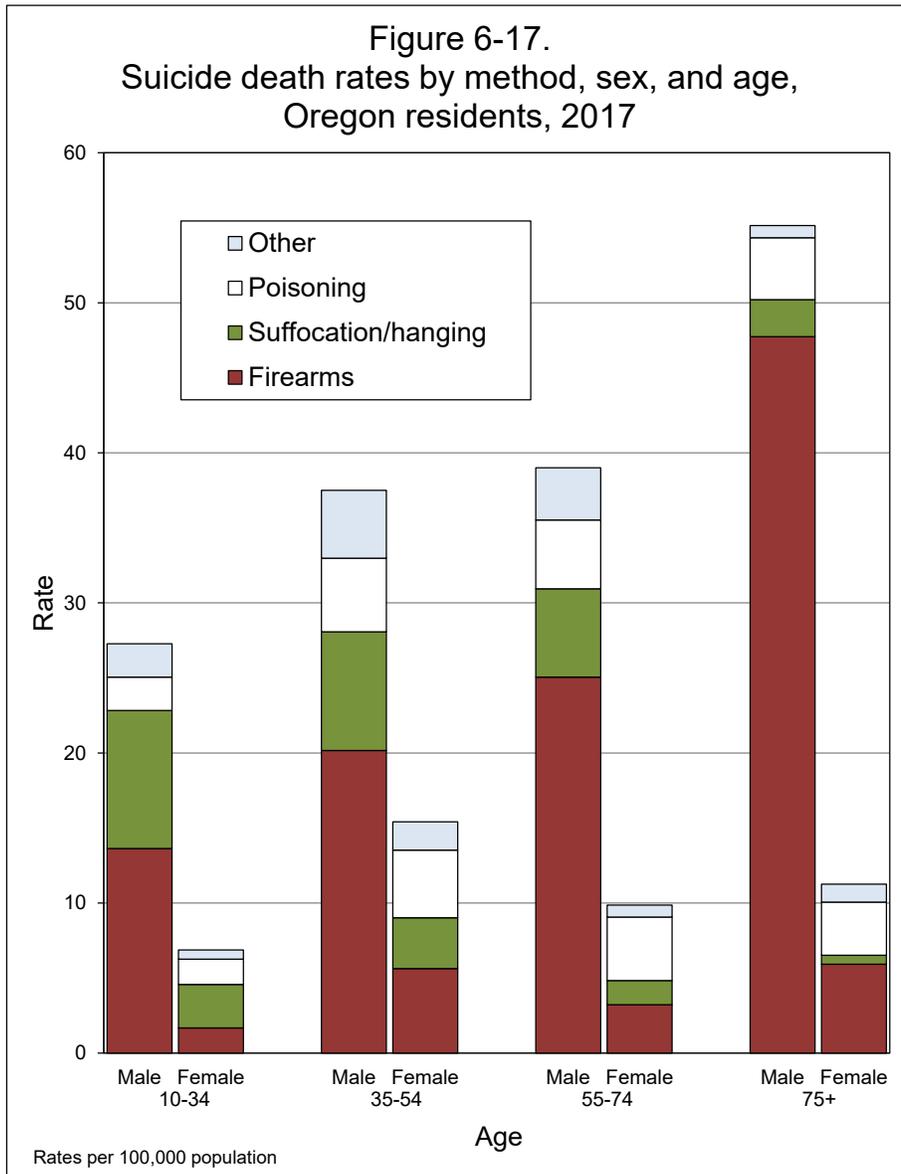
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***Oregon's suicide death rate reached a record high in 2017.***

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Table 6-13). Suicide was the second leading cause of death among residents between the ages of 15 and 34 years; it was the third leading cause among those aged 5–14 years and 35–44 years, and fifth among those aged 45–54 years (see Table 6-4). The median age at death from suicide decreased from 50 to 48 years during 2017 (see Table 6-15). The youngest person to die by suicide was an 11-year-old male and the oldest a 96-year-old female.

Eight Oregon counties had age-adjusted suicide death rates significantly higher than the state's rate (18.2) during 2015–2017: Curry (43.9), Lincoln (31.3), Klamath and Tillamook (30.1), Josephine (28.1), Douglas (25.7), Jackson (23.4) and Deschutes (22.3). Three counties had significantly lower rates: Polk (10.7), Washington (12.9) and Multnomah (15.2). See Table I for more information.



Age	Metro <sup>1</sup>	Coastal <sup>2</sup>	Other
<25	11.6%	10.9%	14.0%
25-64	70.0%	64.1%	61.0%
65+	18.4%	25.0%	25.0%
Method	Metro <sup>1</sup>	Coastal <sup>2</sup>	Other
Poison	15.2%	18.8%	15.7%
Hanging/suff.	26.0%	14.1%	20.5%
Firearm	45.1%	60.9%	56.8%
Other	13.7%	6.3%	7.0%

<sup>1</sup> Metro counties: Clackamas, Multnomah, and Washington.  
<sup>2</sup> Coastal counties: Clatsop, Coos, Curry, Lincoln, and Tillamook.

Oregonians have long had higher suicide rates than residents of most other states. In 2016, Oregon's age-adjusted suicide rate was 31.9% higher than the nation's and ranked 16th among the states and District of Columbia (1).

The method of suicide varied by age and sex but, overall, more than half of suicide deaths (53.2%) resulted from fatal gunshot injuries (see Table 6-33 and Figure 6-17). Firearms were the most common method of suicide for males (59.1%) and for females (34.4%). Handguns were used in 73.6% of firearm suicides.

Hanging/suffocation was the second most common method of suicide (21.8%). A higher proportion of females than males died by suicide in this manner (23.6% and 21.3%, respectively), although the method was the second most common for males and third most for females (see Table 6-33).

Poisoning was the third most common method of suicide overall (15.8%) and more common among females. The proportion of suicides among females from poisoning was approximately three times that among males (31.8% versus 10.7%). Drugs and medications were the most common method of suicide by poisoning for both females (83.9%) and males (56.7%) (see Table 6-33 and Table 6-35).

### Influenza and pneumonia

In 1918, influenza spread across the United States in less than a week and around the world in three months. The pandemic persisted into 1919, with influenza the leading cause of death in Oregon during both years. In 1918 alone, the pandemic claimed the lives of 2,105 Oregonians at a time when Oregon's population was much smaller than it is today.

During 2017, influenza and pneumonia was the 10th leading cause of death for Oregonians, claiming 573 lives, up from 452 a year earlier. The crude death rate increased from 11.1 in 2016 to 13.8 in 2017 (see Table 6-3). In addition, the age-adjusted rate increased from 8.8 to 10.9 (see Table 6-47t). Influenza and pneumonia contributed to 1,076 deaths — nearly twice as many deaths as they directly caused (see Table 6-51).

Although more women than men died from these two infectious diseases in 2017 (291 versus 282, respectively, see Table 6-2), age-adjusted death rates revealed the greater risk

for males (12.8 per 100,000 population versus 9.4) (see Table 6-47m and Table 6-47f). Although these two related types of respiratory infections caused deaths across age groups, 69.3% of the deaths occurred after age 74. The median age at death increased from 80 in 2016 to 83 in 2017 (see Table 6-15).

Two counties had an age-adjusted influenza and pneumonia death rate significantly higher than the state rate (9.6) during 2015–2017: Coos (14.1) and Multnomah (11.6). Excluding those with fewer than 20 deaths in this category, one county had a rate significantly lower than that of the state: Washington (7.3).

In recent years, Oregon's age-adjusted death rate for influenza and pneumonia has been markedly lower than the rates for most other states. In 2016, Oregon's age-adjusted death rate (8.9) was 34.1% lower than the U.S. rate (13.5) and the third-lowest of all states and the District of Columbia (see Table 6-55) (1).

### **Hypertension**

During 2017, 561 Oregonians died as a consequence of hypertension (including hypertensive renal disease, see Table 6-6), making it the 11th leading cause of death. However, the number of deaths attributed to hypertension does not include all deaths related to this cause because many have been classified to more specific manifestations of cardiovascular disease. The crude hypertension death rate decreased slightly — from 13.7 in 2016 to 13.5 in 2017 (see Table 6-3), which is 2.7 times higher than the 1990 rate of 5.0. The age-adjusted death rate also decreased slightly from 10.5 in 2016 to 10.4 in 2017 (see Table 6-47t).

The hypertension crude death rate for females was slightly higher than that for males (13.8 versus 13.3). However, the age-adjusted death rate for males was higher than the rate for females — 11.8 versus 9.2 (see Table 6-47m and Table 6-47f).

Deaths from hypertension are rare among middle-aged and younger Oregonians, but by age 55 years, the number of deaths begins to increase sharply. Age-specific hypertension death rates are 13.0 times as high among residents 85 years or older as among those aged 65–74 years (289.3 versus 22.3; see Table 6-7t).

Four counties had age-adjusted hypertension death rates significantly higher than the state rate (10.7) from 2015–2017: Wasco (18.6), Josephine and Douglas (14.6), and Linn (14.4).

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***Oregon's 2016 age-adjusted influenza and pneumonia death rate was the third lowest in the nation.***

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Two counties had rates significantly lower than that of the state: Deschutes (6.6) and Clackamas (8.6).

Oregon's age-adjusted hypertension death rate was markedly lower than the U.S. rate through 1985, but this trend has since reversed. In 2016, Oregon's age-adjusted hypertension death rate was 23.3% higher than the U.S. rate (10.6 versus 8.6) and ranked eighth nationally (see Table 6-55) (1).

### Parkinson's disease

Ranking 12th among causes of death during 2017, Parkinson's disease claimed the lives of 465 Oregon residents. The crude death rate increased slightly to 11.2 per 100,000 population from 11.1 in 2016 (see Table 6-3). The 2017 age-adjusted death rate increased slightly from 8.9 in 2016 to 9.0 in 2017 (see Table 6-47t). While the mortality rates for many causes fell in recent decades, the rate for this neurological disorder continues to trend upward, despite short-term fluctuations (see Table 6-3). The age-adjusted Parkinson's death rate among males was 2.8 times as high as that among females (14.4 versus 5.2) (see Table 6-47m and Table 6-47f).

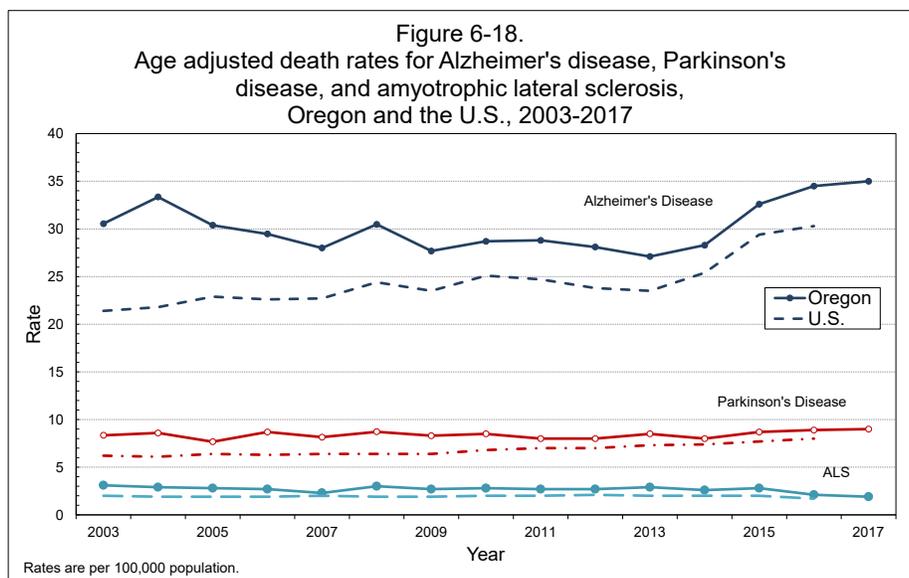
Parkinson's disease most often kills persons age 55 or older (see Table 6-6). The median age at death has fluctuated little during the previous decade, ranging between 82 and 84 years. The median age of death decreased slightly to 83 years, down from 84 years in 2016 (see Table 6-15).

Only one county had an age-adjusted rate significantly higher than the state rate (8.9) during 2015–2017: Deschutes (14.1). No counties had an age-adjusted rate significantly lower than the state rate.

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***Oregon's 2016 age-adjusted Parkinson's disease death rate was the seventh highest nationally.***

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Oregon's age-adjusted Parkinson's disease death rate has long been higher than the nation's, as have those of two other neurological disorders: Alzheimer's disease and amyotrophic lateral sclerosis (see Table 6-55 and Figure 6-18). During 2016, Oregon's age-adjusted Parkinson's disease death rate of 9.1 was 13.8% higher than the U.S. rate of 8.0 and ranked seventh among the states and District of Columbia (1).

### Viral hepatitis

Viral hepatitis deaths\* peaked in 2013 with 234 deaths. Since that time, viral hepatitis deaths have declined each year and totaled 139 deaths in 2017 (see Table 6-3). The age-adjusted death rate also declined from 4.6 per 100,000 population to 2.6 over the same period (see Table 6-47t). Viral hepatitis ranked as the 19th leading cause of death among Oregonians in 2017 and resulted in 1,864 years of potential life lost. Consistent with previous years, more than 90% of viral hepatitis deaths (95.7% in 2017) were due to the hepatitis C virus.

There are large disparities by sex and age when looking at risk of death from viral hepatitis because it most often claims middle-aged males (see Figure 6-19). The male age-adjusted rate during 2013–2017† was more than twice the female rate (4.9 and 2.2, respectively; see Table 6-47m and Table 6-47f).

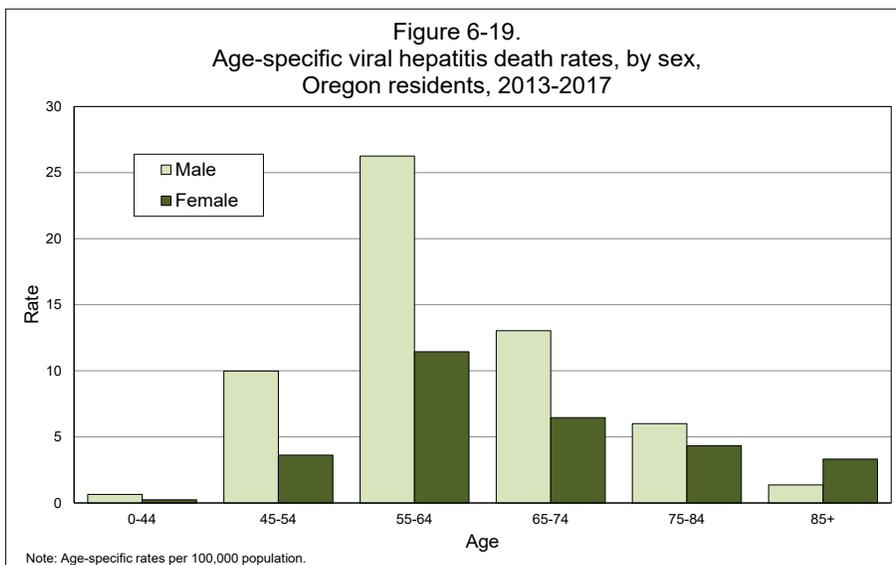
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**Oregon's 2016 age-adjusted viral hepatitis death rate was the fourth highest nationally.**

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\* This analysis is based on deaths where viral hepatitis was the underlying cause of death. Other data sources (e.g., CDC) use both the underlying and contributing causes of death to identify viral hepatitis deaths. As a result, CDC estimates will be higher than the estimates in this report.

† Data for five years were aggregated for this analysis because rates based on multiple years' data yield more representative values than those based on the relatively small numbers recorded for any single year.



The median age at death from viral hepatitis has increased over time, from 59 in 2012 to 62 in 2017 (see Table 6-13).

In 2017, viral hepatitis was a contributing cause in 393 deaths, in addition to the 139 deaths where it was the underlying cause. Viral hepatitis is often associated with chronic liver disease and appeared as a contributing cause in 30.9% of liver cancer deaths and 8.0% of deaths from other liver diseases.

From 2013 to 2017, only six counties had 50 or more deaths due to viral hepatitis. Two of these counties had age-adjusted death rates significantly higher than the state rate (3.5): Jackson (4.9) and Multnomah (4.3). Two counties had rates significantly lower than the state rate: Washington (1.8) and Clackamas (2.3).

Oregon's viral hepatitis age-adjusted death rate is one of the highest in the nation. In 2016, it was 81.3% higher than the national rate and ranked fourth among 48 states and the District of Columbia (see Table 6-55) (1).

### **Homicide**

Oregon's homicide rate decreased in 2017 from 3.2 per 100,000 population in 2016 to 3.1 (see Table 6-3). With 128 victims, homicide was the 20th leading cause of death. Only two counties – Multnomah and Marion – had more than 10 residents die from homicide in 2017 (see Table 6-36).

Every year, more males than females are murdered, and 2017 was no exception. The male age-adjusted death rate increased from 4.6 per 100,000 population in 2016 to 4.8 in 2017, while the female rate decreased from 1.9 to 1.5. The total (both sexes) age-adjusted rate was 3.2 in 2017, unchanged from last year (see Table 6-47t, Table 6-47m and Table 6-47f).

Infants had higher homicide death rates than Oregonians in any other age category. During 2013–2017,\* infants' homicide rate was 5.3 per 100,000 population. The group with the second-highest homicide death rate was aged 25–

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\* Data for five years were aggregated for analysis because rates based on multiple years' data yield more representative values than those based on the relatively small numbers recorded for any single year.

34 (4.6). Children between the ages of 5 and 14 years had a homicide death rate of 0.6, the lowest of all age groups during this period (see Figure 6-20).

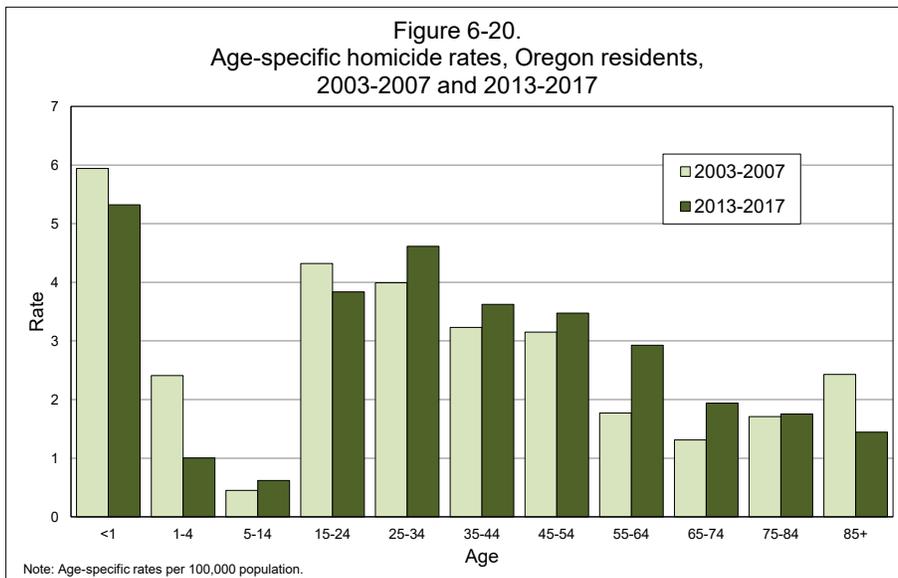
The median age at death for homicide victims in 2017 was 39 years, which was an increase from the median age of 34 years in 2016 (see Table 6-15). However, homicide continues to have the lowest median age at death among the leading causes (except for causes associated with infancy). With 4,472 years of potential life lost, homicide was the 11th leading cause (see Table 6-13).

Excluding counties with fewer than 20 deaths in this category, one county had an age-adjusted homicide rate significantly higher than the state rate (3.3) during 2015–2017: Douglas (11.2). This is due in large part to a single shooting incident at Umpqua Community College on Oct. 1, 2015. One county had a significantly lower rate than the state: Washington (1.5).

Historically, Oregon’s homicide death rate has been markedly lower than the nation’s. During 2016, the state’s rate was 46.8% lower and ranked 37th among 47 states and the District of Columbia (see Table 6-55) (1).

Firearms were the most common implement of homicide, accounting for 74 (57.8%) of the homicide deaths in 2017 (see Table 6-33 and Table J).

Method	Count
Firearms	74
Sharp Objects	16
Hanging/Strang./Suff.	4
Smoke/Fire/Flames	4
Blunt Objects	2
Bodily Force	2



## Drug-induced deaths

During 2017, fewer deaths were attributed to drug-related causes than to alcohol — 671 versus 878 (see Table 6-6). Drug-induced death is not considered a leading cause due to considerable overlap with other cause-of-death categories. Nevertheless, with a crude death rate of 16.2 per 100,000 population, drugs represented a significant cause of mortality among Oregonians (see Table 6-7t). The drug-induced death rate has trended up recently, and this year's rate is another record high, breaking the previous one (15.9) set in 2016.

Males were more likely than females to die from drug-induced causes (see Figure 6-21). Their age-adjusted death rate was 19.4 per 100,000 population compared to 11.6 for females. More than half of all drug-induced deaths (58.7%) occurred among residents aged 35–64.

Excluding counties with fewer than 20 deaths in this category, four counties had age-adjusted rates significantly higher than the state rate (14.8) from 2015–2017: Curry (27.5), Josephine (21.0), Lane (20.9) and Multnomah (19.1). Three counties had rates significantly lower than that of the state: Benton (8.8), Washington (9.1) and Clackamas (11.3).

This category consists of ICD codes included in other cause-of-death rubrics, with most deaths categorized as mental disorders, unintentional injuries and suicide.

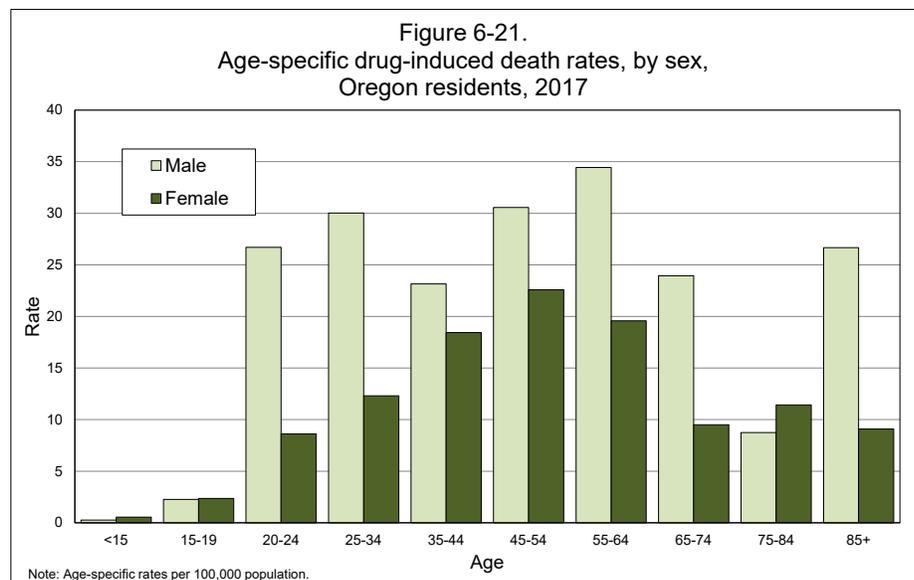
## Maternal deaths

Before 2006, the category for maternal death (ICD10 codes O00–O99) included only fatalities where the female was

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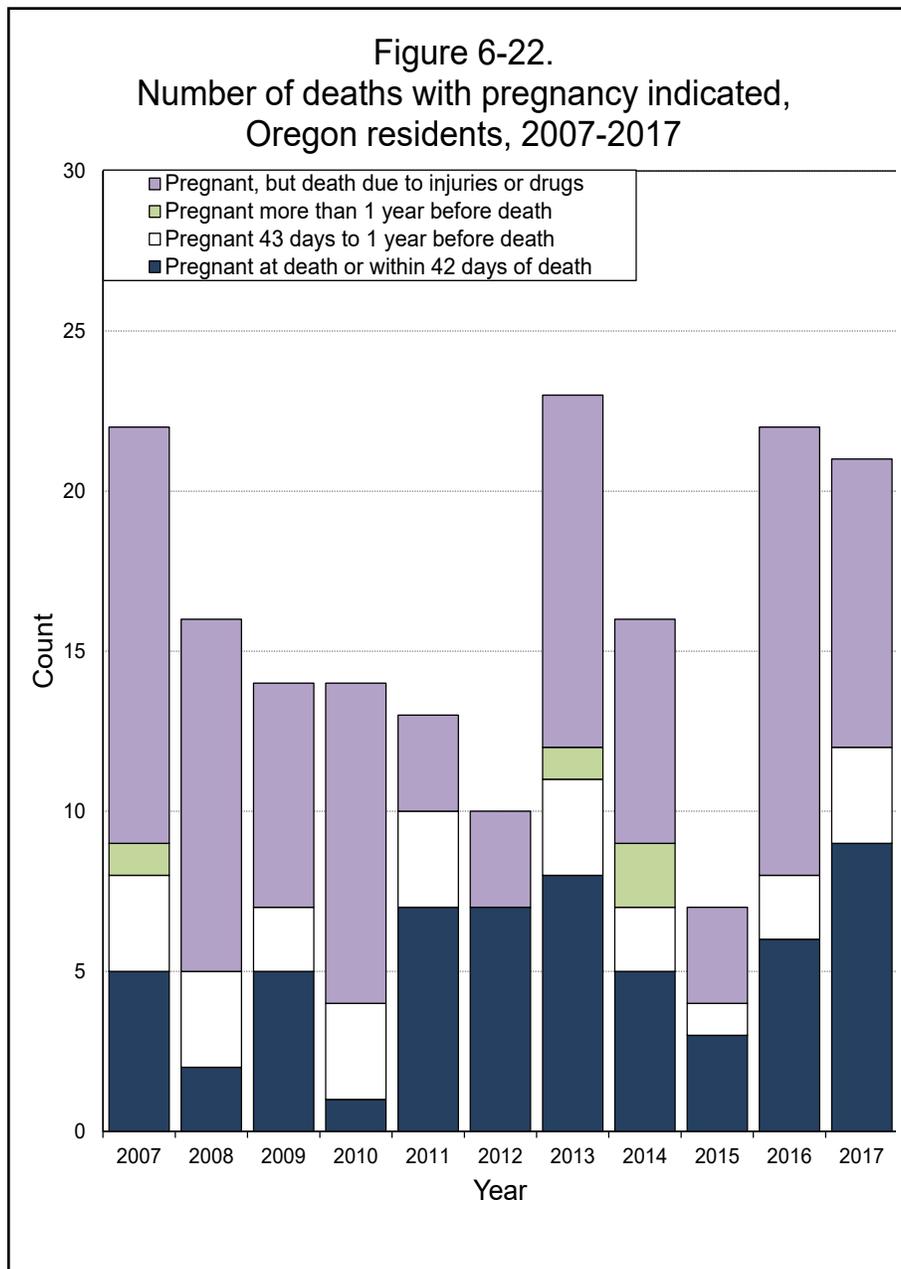
***For the second consecutive year, Oregon's drug-induced death rate reached a record high in 2017.***

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either pregnant at the time of death or pregnant within 42 days before death. In addition, for every death of a female between 17 and 44 attributable to such causes as infections, cerebrovascular disease, digestive diseases or ill-defined unknown causes, the Center for Health Statistics re-contacted the physician and asked whether the woman was pregnant at the time of death or within 42 days before death. These queries might typically yield one additional maternal death record. However, the records queried were small in number.

Beginning in 2006, Oregon modified the reporting of maternal deaths by adding to the death record an item-specific checkbox under the section for causes of death.



For all female decedents 10–60 years of age, the medical certifier must now indicate whether the decedent was pregnant at death, pregnant within 42 days before death or pregnant before one year of death. As shown in Figure 6-22, the addition of this question has increased the count of maternal deaths. Under this expanded definition, 2017 saw 12 maternal deaths in Oregon.

### **Male veteran deaths**

In 2017, there were 9,439 deaths among veterans — 331 women and 9,108 men. Due to the small number of female veterans in Oregon, throughout this section of the report the terms “non-veterans” and “veterans” refer only to males aged 18 and older. Table 6-22 contains cause-of-death information for veterans and non-veterans. Male veteran population estimates for rate calculations came from the U.S. Department of Veteran Affairs, VetPop 2017 State Data Tables (2), and those shown in Appendix A, Table A-3.

The death rate for veterans in 2017 was almost five times as high as the rate for non-veterans (3,274.0 per 100,000 population versus 707.6), but much of this difference was due to a larger number of veterans in the older age groups. While the age-specific death rates for veterans exceeded those for non-veterans in all age groups, the difference was significant only among those aged 55–74 (2,012.8 versus 1,299.2) and aged 75 and up (8,955.5 versus 5,707.9). Rate differences for those aged 18–34 (186.5 versus 126.3) and aged 35–54 (312.5 versus 297.9) were not significant (see Table 6-22).

The top two causes of both veteran and non-veteran deaths in 2017 were heart disease and cancer. The third most cited cause of death was chronic lower respiratory disease (CLRD) for veterans and unintentional injuries for non-veterans (see Table 6-22). Because there are more veteran deaths than non-veteran deaths in the oldest age group, veteran death rates for causes seen primarily in older persons (e.g., CLRD) tend to be higher for veterans than for non-veterans.

### **Male veterans and suicide**

Suicide is the ninth leading cause of death for veterans and the fourth leading cause of death for non-veterans. However, the overall veteran suicide rate was almost 70% higher than for non-veterans (57.2 versus 34.3). The suicide rates for

veterans were higher than the rates for non-veterans in all age groups. The difference in rates was greatest among those 18–34, where the veteran suicide rate is almost three times higher than the rate for non-veterans (88.4 versus 32.4) (see Table 6-22). The second greatest difference in rates was in the 35–54 age group, in which the veteran suicide rate was almost twice as high as the rate for non-veterans (63.6 versus 34.0) (see Table 6-22).

Among veterans who died from suicide between 2015 and 2017\*, 32.0% had been in combat and 56.5% were non-combat veterans (combat status was unknown for 11.5% of veterans). Combat veterans aged 18–49 had a higher percentage of deaths due to suicide than non-combat veterans (37.1% versus 29.4%), while combat veterans aged 50 or older's percentage was similar to non-combat veterans (1.2% versus 1.5%).

### **Deaths due to military operations**

The Oregon vital statistics data files do not include deaths among Oregon residents who died in military operations outside the United States. Death records of military personnel are registered with the U.S. Department of Defense, which does not forward the records to the decedents' state of residence. However, these deaths (with each decedent's name, date of death, home city, age and sex) are posted weekly on the Department of Defense's website.† In 2017, no Oregon residents died in military operations.

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\* Data for three years were aggregated for analysis because statistics based on multiple years' data yield more representative values than those based on the relatively small numbers recorded for any single year.

† Counts of Oregon residents who died in military operations outside the United States were obtained from U.S. Department of Defense: <https://www.dmdc.osd.mil/dcas/pages/casualties.xhtml>. Accessed Sept. 7, 2018.

## Endnotes

1. Centers for Disease Control and Prevention. CDC WONDER database. [cited 2019 Feb 26.] Available at: <http://wonder.cdc.gov/mortSQL.html>.

These data are from the federal Centers for Disease Control and Prevention's (CDC) WONDER online database. 2016 was the last year of available mortality data when this report was compiled Oregon mortality data from the WONDER database may vary slightly from Oregon data presented elsewhere within this annual report due to different file closure dates, different population estimate methodologies, out-of-state reporting by other states to CDC and incorporation of Oregon's physician query results.

2. U.S. Department of Veteran Affairs, Table 6L: VetPop2016 living veterans by state, age group, gender, 2015–2045 [cited 2018 June 16.] Available at: [www.va.gov/vetdata/Veteran\\_Population.asp](http://www.va.gov/vetdata/Veteran_Population.asp).

Male veteran population estimates for calculating crude death rates were obtained from this table.