
Mortality

Among all societies, one of the most important constituents of the quality of life is the health of its members. Perhaps the most fundamental measure of health is the life-death dichotomy. The following presents detailed information describing the mortality patterns of Oregonians.

As Oregon's population has both aged and increased, the annual number of deaths has also trended upward. During 2005, the number of deaths increased to 30,854, up from 30,201 the year before.¹ The crude death rate increased from 843.0 per 100,000 population in 2004 to 849.6 in 2005. (Figure 6-1, Table 6-3). (Unless otherwise specified, references to death rates mean crude death rates; see the Appendix for further discussion of crude and age-adjusted rates.) Nonetheless, the age-adjusted death rate declined from 814.8 to 791.4, a 2.9 percent drop, and a continuation of the somewhat uneven but persistent long-term downward trend seen since 1985.

During 2004 (the most recent year for which final U.S. data are available), Oregon's age-adjusted death rate was 2.9 percent lower than the U.S. rate and ranked 28th highest among the states and District of Columbia.² (Table 6-51). During the past quarter century, the greatest difference between the rates occurred during 1982 when Oregon's rate was 7.7 percent lower than the U.S. rate (909.4 versus 984.9) and sixth lowest among the states and District of Columbia.

Oregon's age-adjusted cause-specific death rates ranked among the top 10 states (including the District of Columbia) for six causes: cerebrovascular disease (10th highest), Alzheimer's disease (seventh), alcohol-induced deaths (fourth), Parkinson's disease (fourth), amyotrophic lateral sclerosis (fourth), and viral hepatitis (second). At the same time, Oregon was among the states with the 10 lowest rates for five causes: heart disease (fifth lowest), influenza/pneumonia (fifth), nephritis/nephrosis (sixth), septicemia (seventh), and perinatal conditions (seventh).²

Two new tables are included in this report: the first shows life expectancy at birth and remaining years at selected ages by county and sex (Table 6-53); the second includes historical age-adjusted death rates for Oregon and the United States, with the percentage difference, for 18 selected causes of death (Table 6-54).

The age-adjusted death rate fell to a record low in 2005.

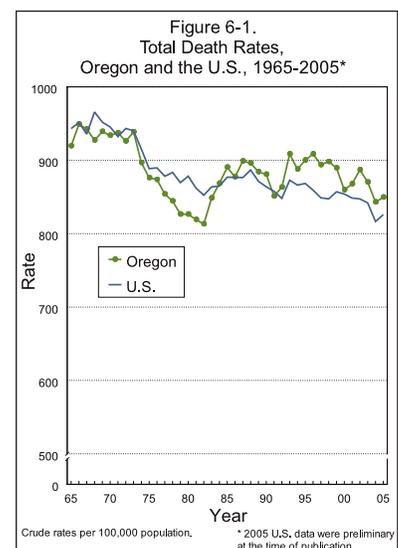
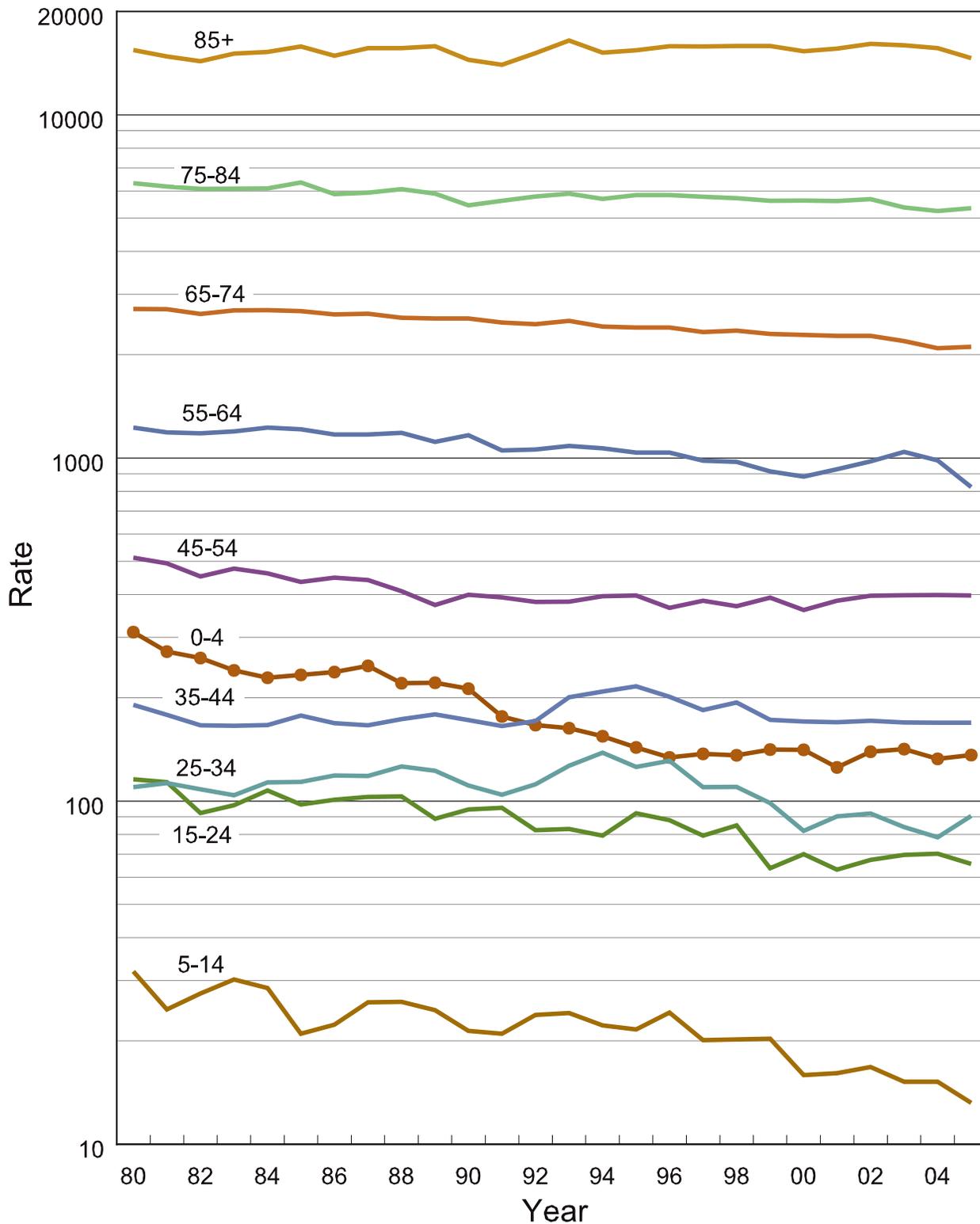


Figure 6-2.
Age-specific Death Rates,
Oregon Residents, 1980-2005



Rates per 100,000 population.

Note: A logarithmic scale is used for the vertical axis.

Life expectancy

The longest life span of an Oregonian ever recorded was that of a Siberian-born man who died in 1999 at 117 years of age. Most of the state's residents have far shorter lives, but the long-term trend is for an increasing life expectancy. Since 1960, the life expectancy of Oregonians has increased from 70.9 years at birth to 78.5 in 2005.

Life expectancy is a theoretical construct that represents 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 times of their births. It is affected by such factors as the environment, the economy, health behaviors, and changing medical technology.

Oregon's life expectancy increased between 2004 and 2005, from 78.1 to 78.5 years, a record high. Life expectancy increased for both males (from 75.7 to 76.3) and females (from 80.4 to 80.7). Both rates were record highs.

Life expectancy varied by nearly six years among Oregon's counties. (Table 6-53). The five counties where life expectancy was longest during 2001-2005 were: Wheeler (81.5), Benton (81.2), Wallowa (81.0), Polk (80.1), and Washington (79.8). The five counties where life expectancy was shortest were: Jefferson (75.3), Coos (75.4), Klamath (75.5), Lake (76.3), and Douglas (76.3). Compared to the overall life expectancy for the state (78.0), all of the above differences were statistically significant.

Throughout most of the latter half of the 20th century, Oregon's life expectancy exceeded the nation's by 1.2-1.3 years. By the year 2000, the difference slipped to 1.0 year and by

**The United States
ranks 45th in life
expectancy.**

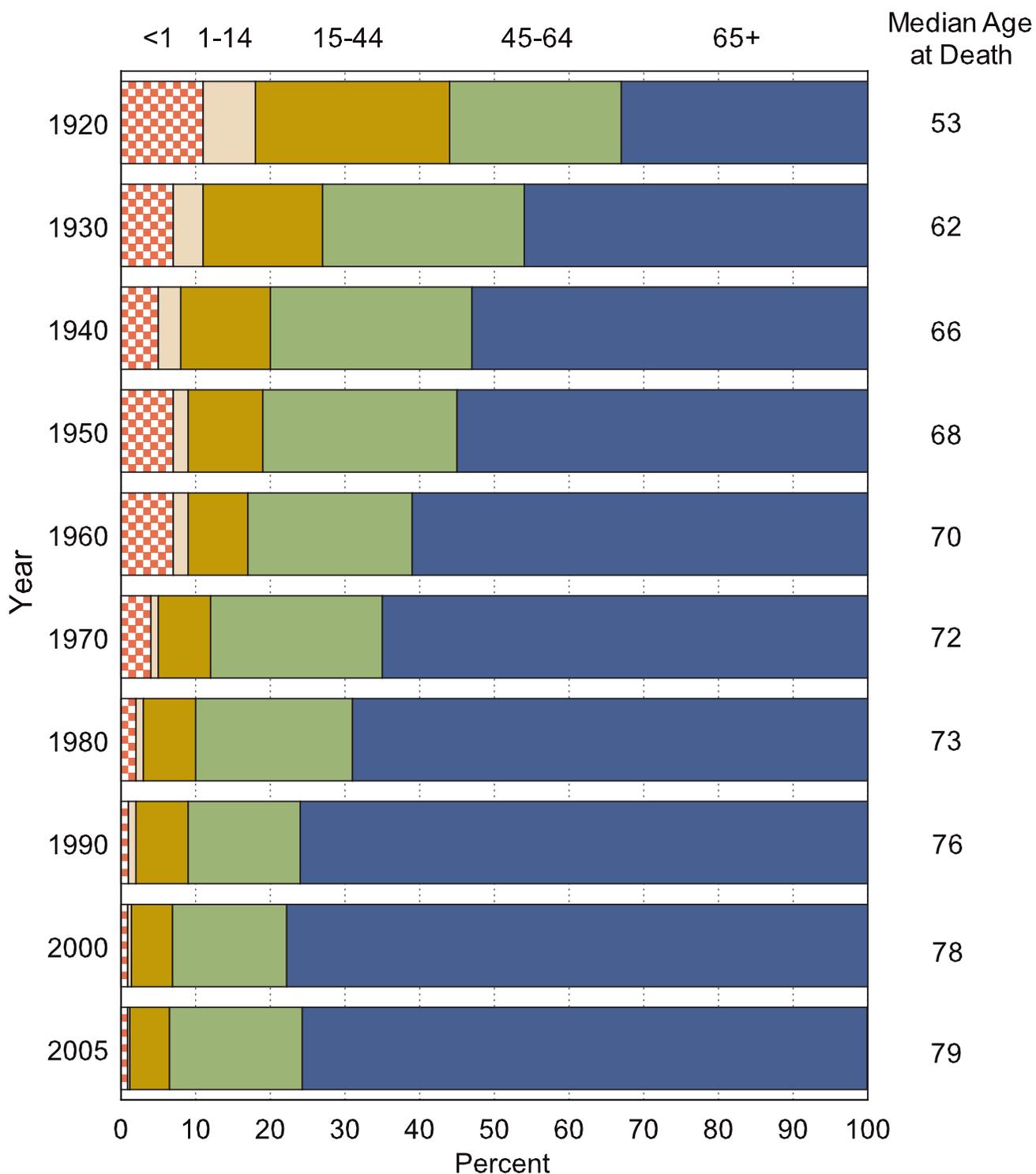
**Life expectancy
varied by nearly
six years among
Oregon Counties.**

Life Expectancy, Oregon and the United States, 1960-2005

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	77.0	74.3	79.4
2001	77.9	75.6	80.1	77.2	74.4	79.8
2002	77.6	75.2	79.8	77.3	74.7	79.9
2003	77.7	75.3	80.1	77.6	74.8	80.1
2004	78.1	75.7	80.4	77.8	75.2	80.4
2005	78.5	76.3	80.7	77.9	75.2	80.4

U.S. data sources: National Center for Health Statistics. Health, United States, 2006. Hyattsville, Maryland. 2006. (ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/Health_US/hus06tables/)
Kung HC, Hoyert DL, Xu J, Murphy SL. Deaths: Preliminary data for 2005. Health E-Stats. Sept 2007. (<http://www.cdc.gov/nchs/products/pubs/pubd/hestats/prelimdeaths05/prelimdeaths05.htm>)

Figure 6-3.
Proportion of Deaths by Selected Age Groups,
Oregon Residents, 1920-2005



2004 had fallen to 0.3 years. During 2005, however, the difference increased to 0.6 years. Oregon males had a life expectancy 1.1 years longer than their counterparts nationally while Oregon females could expect to live 0.3 years longer. Relative to the United States, Oregon's life expectancy has risen more slowly since 1960; while the state's life expectancy has increased 10.7 percent, the nation's has increased 11.8 percent.

Among the nations of the world, the United States ranked 45th in life expectancy, ranking below countries such as Spain, Jordan, and Liechtenstein. The life expectancy of Americans was only slightly longer (0.4 years) than that for Albanians. Life expectancy was longest in Andorra (83.5 years) and shortest in Swaziland (32.2).

Demographic characteristics

Gender

The increase in Oregon's overall crude mortality rate between 2004 and 2005 was a consequence of an increasing female mortality rate. (Table 6-1). While the male rate was essentially unchanged (837.5 per 100,000 population in 2004 compared to 837.6 in 2005), the female rate increased 1.6 percent (848.4 compared to 861.6). Throughout the 20th century, crude death rates were higher for males than females, but during the 21st century the converse has been true. Nonetheless, the true risk of death, as manifested by age-adjusted death rates, continues to be greater for males than females. During 2005, the male age-adjusted death rate was 33.2 percent higher than the female rate, 915.7 compared to 687.7. The increase in female crude death rates vis-à-vis male rates seen over the past decade is largely due to the changing age distribution within these two groups, rather than a decline in the health status of the former. Proportionately, there are simply larger numbers of elderly women than men, and the elderly, even under the best of circumstances, are more likely to die than are their younger counterparts. (See Appendix B for further information about age-specific and age-adjusted death rates.)

Age

Since 1995, age-specific death rates have declined for five of the six groups shown in Table 6-1, the exception being Oregonians 65 or older where the rate increased 1.9 percent. Age-specific death rates fell by more than a quarter among Oregonians aged 5-44, with the greatest decline (38.9 percent) seen among those aged 5-14.

Table 6-1 shows the disparity in age-specific death rates by gender: the rates for males are uniformly higher than the rates for females. Most striking is the threefold greater risk of death among males aged 15-24 than among similarly aged females, 98.2 per 100,000 population versus 31.4. For both sexes

The oldest Oregonian to die in 2005 was a 109 year-old man.

Age-adjusted death rates by county of residence, 2005	
County	Rate
State Total	791.4
Baker*	995.0
Benton [§]	630.8
Clackamas	802.8
Clatsop	804.3
Columbia	837.4
Coos*	948.9
Crook	783.4
Curry	683.7
Deschutes [§]	703.1
Douglas*	851.1
Gilliam	727.9
Grant	698.1
Harney	757.1
Hood River	693.2
Jackson	757.8
Jefferson	896.9
Josephine	830.1
Klamath*	977.8
Lake	913.1
Lane	797.2
Lincoln	825.4
Linn*	853.9
Malheur	789.7
Marion	787.6
Morrow	664.4
Multnomah*	859.6
Polk [§]	637.7
Sherman	522.8
Tillamook	858.9
Umatilla	760.2
Union	856.5
Wallowa	655.1
Wasco	783.3
Washington [§]	680.6
Wheeler	618.7
Yamhill*	867.0

Rates per 100,000 population.

* Statistically significantly higher than the state rate.

[§] Statistically significantly lower than the state rate.

combined, the median age at death remained unchanged in 2005 at 79 years, but this masked a change by gender. While the female median age at death increased from 81 years to 82 during 2005, the male median age at death slipped from 76 years to 75 years.

County

During 2005, the state age-adjusted death rate was 791.4 per 100,000 population with individual county rates ranging from 34.9 percent below the state rate to 25.7 percent above the state rate. The five counties with the highest rates were: Baker (995.0), Klamath (977.8), Coos (848.9), Lake (913.1), and Jefferson (896.9). Those with the lowest rates were: Sherman (522.8), Wheeler (618.7), Benton (630.8), Polk (637.7), and Wallowa (655.1). However, not all of the differences between the counties and state were statistically significant (see adjacent table). Simply residing in a particular county will not necessarily increase or reduce one's chance of dying in a given year. Mortality is a consequence of a multitude of factors including: availability and quality of medical care, environmental exposure, smoking and other personal health behaviors, socioeconomic status, and heredity. Elevated age-adjusted death rates do not necessarily indicate that residing within one county is in itself apt to cause a reduction in longevity. For example, persons with chronic debilitating diseases may move, in disproportionate numbers, to an area with a lower cost of living or to an area with medical facilities that can provide specialized care.

Leading causes of death^{4,5}

Overview

During the 20th century, with the notable exception of the great influenza pandemic of 1918-19, heart disease was the leading cause of death of Oregonians. The 21st century, however, has been marked by the emergence of cancer as the leading cause of death. In 2001, for the first time, more Oregonians died from malignant neoplasms than diseases of the heart, with the difference increasing 100-fold from 2001 to 2005 (five deaths compared to 556 deaths). During 2005, 7,277 Oregonians died from cancer while 6,721 died from heart disease.

Together, malignant neoplasms and heart disease accounted for nearly half (45.4 percent) of all deaths during 2005. Although the number of deaths resulting from these causes were similar, malignant neoplasms resulted in the loss of nearly twice as many years of potential life (see box on page 6-6), a reflection of the younger ages of cancer's victims (Table 6-12). The apparent increasing risk of cancer vis-à-vis heart disease during the 21st century is not a 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 during the past decade, but the heart disease death rate has fallen more rapidly.

Some causes of death have become increasingly common, with their rates displaying a significant upward trend during recent years. Age-adjusted death rates were at record highs for the following causes: diabetes mellitus (from 16.8 in 1990 to 29.3 in 2005); hypertension and hypertensive renal disease (from 4.9 to 10.6); and drug-induced deaths (from 5.9 to 13.6). A record number of Oregonians (19) died as a result of legal intervention (law enforcement involvement) during 2005, although the test for trend was just shy of statistical significance ($P = 0.07$).

Although record high age-adjusted death rates were established for several causes of death during 2005, the death rates for many more causes fell to record lows: cancer of the colon, rectum and anus (from 21.2 in 1990 to 17.1 in 2005); breast cancer (from 17.3 to 12.3); prostate cancer (from 36.9 to 26.8); heart disease (from 255.5 to 169.5); coronary heart disease (213.0 to 110.1); acute myocardial infarctions (from 73.5 to 36.1); arteriosclerotic cardiovascular disease (from 18.8 to 7.3); cerebrovascular disease (from 69.4 to 57.3); asthma (from 2.9 to 1.2); peptic ulcer (from 3.4 to 1.2); motor vehicle traffic accidents (from 18.9 to 12.5); and exposure to smoke and fires (from 1.1 to 0.6).

Causes of death varied by age group. Among infants, perinatal conditions were most common, but unintentional injuries⁶ ranked first for Oregonians aged 1-44. From age 45 through 84, cancer was the leading cause of death. Among residents 85 or older heart disease ranked first. Until 2003, heart disease had been the leading cause of death beginning at age 75.

Together, cancer and heart disease accounted for nearly one-half of all deaths.

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 than the deaths of older people in terms of years of potential life lost (YPLL). The YPLL yardstick quantifies premature mortality occurring in younger age groups by measuring the number of years between age at death and a set standard. With the standard set at 65 years, for example, a death at age 21 results in 44 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 65 years, unless otherwise noted.)

Cancer

During 2005, cancer was the preeminent cause of death among Oregonians, claiming 7,277 lives. It also was a contributing factor, but not the underlying cause, in another 889 deaths. For many decades, the cancer crude death rate increased inexorably, but by the mid-1990s it had plateaued; since then, the rate has trended downward. In 2005, the crude death rate was 200.4 per 100,000 population compared to 201.7 a year earlier. Age-adjusted death rates trended lower as well, falling from 196.7 in 2004 to 189.4 in 2005.

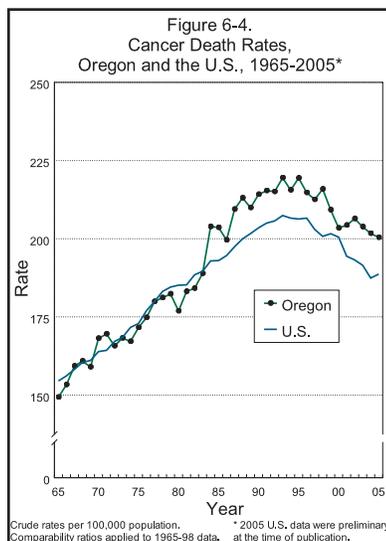
Malignant neoplasms were the leading cause of death for both sexes, but the difference in death rates between males and females has narrowed greatly during the past two decades. During 2005, the crude death rate for cancer was 9.9 percent higher for males than females, 209.9 versus 191.0. (Table 6-2). Nonetheless, the disparity was far greater when age-adjusted death rates were compared, 225.5 versus 163.4, a 38.0 percent difference. (Table 6-43m and Table 6-43f).

Cancer was one of the five leading causes of death among Oregonians of all ages, except infants, and was the leading cause of death for residents aged 45 through 84. The median age at death declined from 74 years in 2004 to 73 years in 2005. Malignant neoplasms were the leading cause of premature death, accounting for 22,833 years of potential life lost.

During the 10-year period 1996-2005, six Oregon counties had age-adjusted rates statistically significantly higher than the state rate (200.0). The five highest were: Coos (236.7), Columbia (226.9), Josephine (218.0), Lincoln (215.5), and Douglas (214.1). Although all of the preceding counties had significantly elevated rates for cancer of the trachea, bronchus, and lung, Coos County was notable in having a rate 40.7 percent higher than the state rate, 80.9 versus 57.5. Coos County also had an esophageal cancer death rate that was significantly higher than the state rate (7.0 versus 5.0). Six counties recorded statistically significantly lower malignant neoplasm rates. The five lowest were: Malheur (163.9), Benton (164.4), Polk (174.0), Jefferson (175.7), and Washington (181.7).

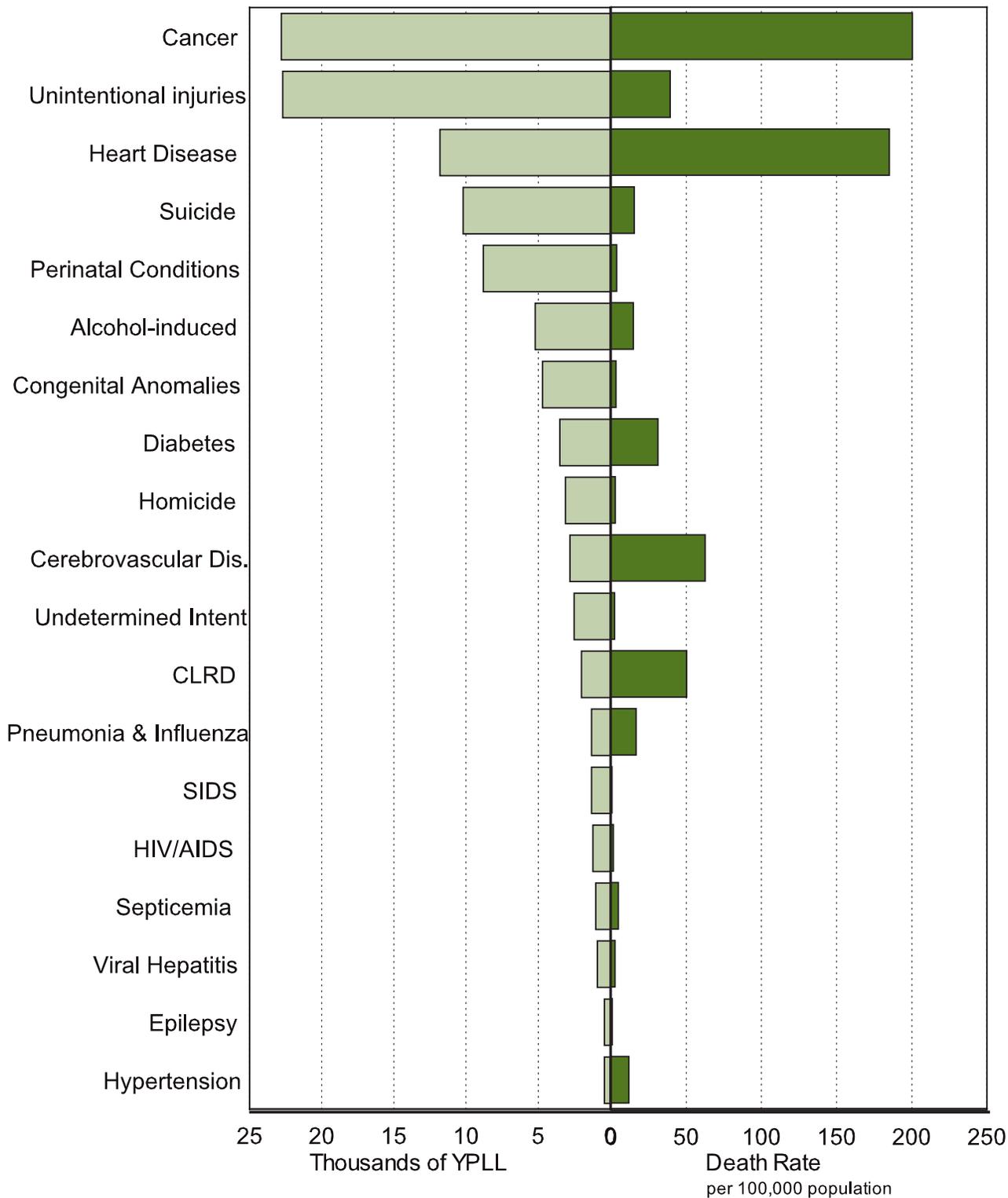
A quarter of a century ago, Oregon's age-adjusted death rate was typically a little lower than the U.S. rate, but more recently the rate has been slightly higher; in 2004, the rate was 2.0 percent higher than that of the nation's and ranked 24th among the states and District of Columbia.² (Table 6-51). Every 72 minutes, on average, cancer claimed the life of an Oregonian.

Although the state's overall 2004 cancer age-adjusted death rate was little different from the national rate, the rates for two types of cancer were among the highest in the nation: non-Hodgkin's lymphoma, 18.6 percent higher (8.3 versus



Oregon's non-Hodgkin's lymphoma death rate was the highest among the states.

Figure 6-5.
 Leading Causes of Years of Potential Life Lost
 and Corresponding Death Rates, Oregon Residents, 2005



CLRD = Chronic Lower Respiratory Disease

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

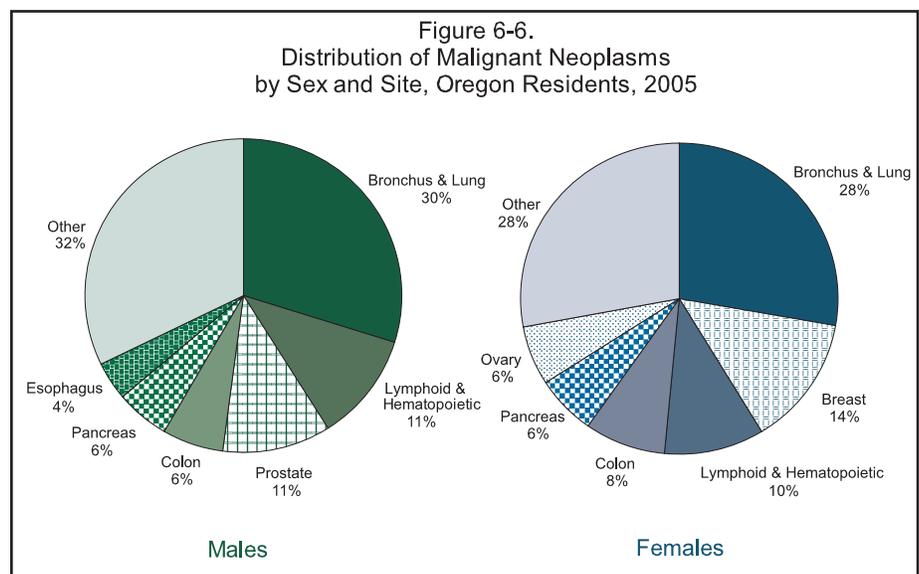
Lung cancer deaths, ratio of males to females	
1965	5.5
1975	3.6
1985	2.0
1995	1.2
2005	1.2

7.0); and, ovarian cancer, 14.3 percent higher (5.6 versus 4.9). Oregon’s non-Hodgkin’s lymphoma rate was the highest nationally while the ovarian cancer rate ranked second highest.

The most common fatal cancer for both sexes is lung cancer, a cause that would be rare in the absence of smoking. (Figure 6-6). The increasing prevalence of smoking among men after World War II and women during the 1960s and 1970s drove the decades-long increase in the overall malignant neoplasm death rate. In 1960, there were 5.6 male deaths due to lung cancer for every female death, but by 2005, the ratio was 1.2:1.0. The age-adjusted lung cancer (including the trachea and bronchus) death rate for males peaked in 1984 at 90.0 and has since declined to its lowest level during the past generation (67.2) while the rate for women appears to have peaked in 2002 at 49.9 before declining to 46.3 in 2005.⁷

Although more often in the public eye than lung cancer, breast cancer claimed about half the number of women, 966 versus 471, respectively. Ranking third and fourth were lymphoid/hematopoietic cancer and colon cancer. Among males, lymphoid/hematopoietic cancer ranked second, followed by prostate and colon cancer.

The age-adjusted death rates for many cancers have fallen since 1990, with many exhibiting statistically significant declines. During 2005, record low age-adjusted death rates were recorded for several types of cancer showing statistically significant downward trends, including: cancer of the colon, rectum, and anus (from 21.2 in 1990 to 17.1 in 2005), female breast cancer (from 30.8 to 22.1), and prostate cancer (from 36.9 to 26.8). Although not at record highs during 2005, other malignant neoplasm rates have demonstrated statistically significant upward trends, including: esophageal cancer (4.1 to 5.2), liver cancer (2.2 to 4.7), and bladder cancer (4.6 to 5.3).



Heart disease

Despite the long-term downward trend in its crude death rate, heart disease had been the leading cause of death of Oregonians during most of the 20th century.⁸ In 2001, for the first time, more deaths (five) resulted from cancer than from heart disease. During 2005, 6,721 of the state's residents succumbed to heart disease, 556 fewer than from malignant neoplasms. The crude death rate fell from 186.7 in 2004 to 185.1 during 2005, while the age-adjusted death rate fell from 179.2 per 100,000 population to 169.5, a 5.4 percent decline and a record low. By comparison, the age-adjusted death rate was 255.5 in 1990, 50.7 percent higher. Heart disease was listed on 4,490 death certificates as a contributing factor in the decedent's death, but not the underlying cause.

The 2005 crude death rate for heart disease was 7.0 percent higher for males than females (191.4 versus 178.8). However, age-adjusted death rates for heart disease showed that the risk of death from this cause was actually far greater among males than females, 213.8 compared to 135.0, a 58.4 percent difference. (Table 6-43m and Table 6-43f).

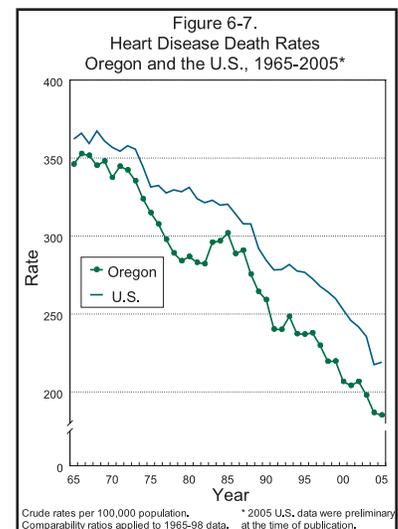
Heart disease was the leading cause of death for Oregonians 85 or older and one of the top five causes among Oregonians of all ages except for children less than five years of age. It was the second-leading cause of death for residents aged 45-84. For the second year in a row, the median age at death rose to a record high, increasing from 82 years during 2004 to 83 years during 2005. (Table 6-13). Reflecting the relatively older ages at which Oregonians died from heart disease was this cause's rank among the causes of premature death; 11,773 years of potential life were lost, making it the third leading cause of premature death following cancer and unintentional injuries. (Table 6-11).

The age-adjusted death rates for 10 Oregon counties during 1996-2005 were statistically significantly higher than the rate for the state (199.1). The five counties with the highest rates were: Coos (236.7), Clatsop (231.7), Crook (229.5), Josephine (229.0), and Curry (223.4). Statistically significantly low rates were recorded for four counties: Polk (165.0), Benton (169.9), Washington (180.4), and Lane (182.0).

Oregon's death rate has long been lower than the U.S. rate; in 2004, the state's age-adjusted death rate was 22.0 percent lower and ranked 47th among the states and District of Columbia.² (Table 6-51). Every 1.3 hours, on average, a resident died from heart disease.

The heart disease category includes a number of conditions, but among the most common, and accounting for the majority of heart disease deaths, were myocardial infarctions and other forms of ischemic heart disease, such as coronary

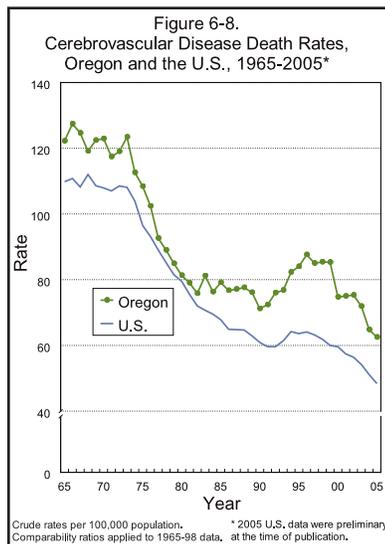
The heart disease death rate fell to a record low during 2005.



artery disease. (Table 6-6). The age-adjusted death rates for most types of heart disease have demonstrated long-term downward trends, with record low rates recorded in 2005 for coronary artery disease (from 213.0 in 1990 to 110.1); acute myocardial infarctions (from 73.5 to 36.1); and arteriosclerotic cardiovascular disease (from 18.8 to 7.3). Unlike most cardiovascular diseases, the age-adjusted death rate for hypertension (including hypertensive renal disease) has more than doubled since 1990, increasing from 4.9 to 10.6.

Cerebrovascular disease

Accounting for 7.4 percent of all deaths, cerebrovascular disease was the third leading cause of mortality among Oregonians. For more than a quarter of a century, the crude death rate for this cause has trended downward and during 2005 fell to a record low 62.5 per 100,000 population, down from 64.8 in 2004. (Figure 6-8). The age-adjusted death rate fell to a record low of 57.3, a decline of 7.4 percent compared to the previous year's 61.9 and more than a 40 percent decline from its level a quarter of a century earlier. The number of deaths attributed to cerebrovascular disease declined from 2,322 in 2004 to 2,268 in 2005 and at the same time the number of deaths where this disease was a contributing factor fell from 1,449 to 1,341. However, this year-to-year decline is a reporting artifact. During 2005, the National Center for Health Statistics altered the cause of death classification methodology; without this change, neither the number nor rate of cerebrovascular disease deaths would have fallen. In prior years, "multi-infarct dementia" was coded to I63.9 (cerebral infarction, unspecified) and "vascular dementia" as I67.9 (cerebrovascular disease, unspecified). Beginning in 2005, "multi-infarct dementia" is assigned to code F01.1 and "vascular dementia" to F01.9. Therefore, certain deaths formerly attributed to the cerebrovascular disease rubric are now counted as forms of organic dementia. (See Table 6-6, footnote 10 for additional information.)



More females than males died from cerebrovascular disease, and although the female crude death rate was 57.9 percent higher than the rate for males (76.4 versus 48.4), the age-adjusted rates revealed that males were at only a slightly lower risk of dying from cerebrovascular disease than females, 55.3 versus 58.1. (Table 6-43m and Table 6-43f).

Fatal cerebrovascular disease was uncommon before age 45, but by age 75 it was the third most common cause of death among Oregon residents. Despite the frequency with which it occurred, it ranked 10th by years of potential life lost (2,828), a consequence of the older ages of decedents (compared to relatively younger ages at death for many other causes). As in past years, four-fifths of the deaths occurred after age 74. The median age at death remained unchanged at 84 years in 2005.

During the past decade (1996-2005), the age-adjusted death rates for three counties were statistically significantly higher than the state rate (72.3): Marion (92.2), Polk (81.3), and Multnomah (75.5). Ten counties had rates significantly lower than the state rate; the five lowest rates occurred among the residents of Crook (47.9), Union (50.9), Curry (55.9), Baker (58.2), and Douglas (61.5) counties.

The cerebrovascular disease death rate has long been higher in Oregon than in the U.S. as a whole. In 2004, the age-adjusted death rate was 16.2 percent higher and 10th highest among the states, including the District of Columbia.² Every 3.9 hours, on average, a resident died from cerebrovascular disease.

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

Chronic lower respiratory disease

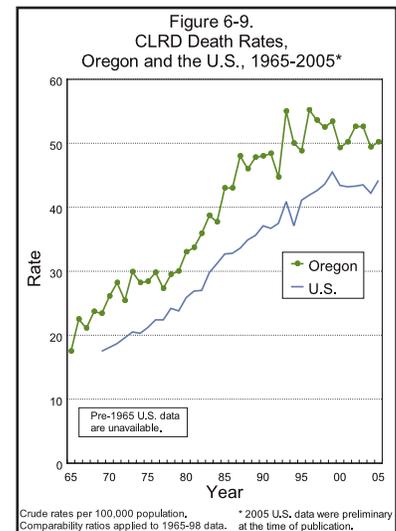
The chronic lower respiratory disease (CLRD) crude death rate increased inexorably for several decades, reaching a record high of 54.9 per 100,000 population in 1996. Increased smoking, particularly by women, drove the rising death rate and resulted in CLRD becoming the fourth most common cause of death beginning in 1987. Since 2000, the rate has varied little, ranging between 49.4 and 52.6. (Figure 6-9). During 2005, the crude death rate rose to 50.2 per 100,000 population, up from 49.4 the preceding year, but the age-adjusted death rate fell from 48.1 to 47.8. CLRD was the underlying cause of death for 1,822 of the state’s residents, but it contributed to an even larger number of deaths where it was not the underlying cause: 1,923.

For most of the 20th century, far more males succumbed to CLRD than did females, but in 1999 this pattern reversed for the first time. In 2005, 983 females and 839 males died from this disease. Although females appear to be at greater risk than males, this is a reflection of the age distribution of Oregon’s population. The 2005 age-adjusted death rates showed that males were at a greater risk from CLRD than females, 52.3 versus 45.2.

CLRD is the third leading cause of death for Oregonians aged 55-74, but the largest number of CLRD deaths occurred to residents 75-84 where CLRD ranked fourth. (Table 6-4). Although the fourth most common cause of death overall, chronic lower respiratory disease ranked 12th in the number of years of potential life lost (1,950). The median age at death was 78, unchanged from the previous year.

During the 10-year period 1996-2005, eight counties had age-adjusted death rates statistically significantly higher than the

**Oregon’s
cerebrovascular
disease death rate
ranked tenth highest
among the states.**



**Both Klamath and
Wasco counties had
age-adjusted CLRD
death rates two times
higher than the rate for
Polk County.**

**Both Oregon's asthma
and bronchitis death
rates fell to record lows
during 2005.**

state's (49.6). The five highest were: Klamath (72.3), Wasco (71.1), Baker (63.6), Tillamook (61.9), and Douglas (61.6). Six counties had significantly lower rates. The five lowest were: Polk (34.4), Benton (38.6), Curry (39.8), Washington (39.8), and Clatsop (41.7).

Oregon's age-adjusted CLRD death rate has long been higher than that of the nation's, but the difference has abated somewhat in recent years. The greatest disparity occurred in 1982 when Oregon's rate was 26.6 percent higher and ranked 10th among the states, including the District of Columbia.² During 2004, the state's rate was 13.4 percent higher than the nation's and ranked 15th.

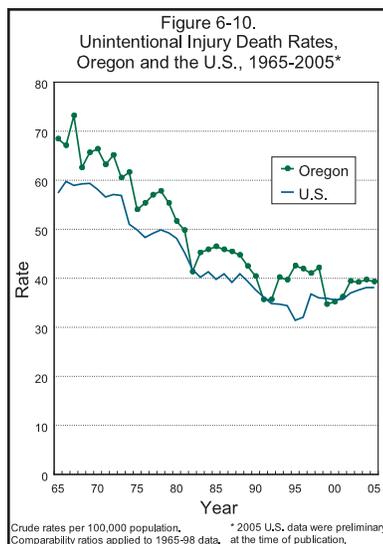
Chronic lower respiratory disease includes a variety of conditions including emphysema, chronic obstructive pulmonary disease (COPD), bronchitis, and asthma. The latter two are noteworthy for the sharp declines in their age-adjusted death rates since 1990 with bronchitis falling 87.5 percent (from 0.8 to 0.1) and asthma falling 58.6 percent (from 2.9 to 1.2). Both 2005 rates represented record lows.

Unintentional injuries⁶

The unintentional injury crude death rate changed little during 2005, slipping from 39.7 per 100,000 population in 2004 to 39.3, remaining essentially unchanged since 2002. (Table 6-3 and Figure 6-10). Fatal unintentional injuries claimed 1,427 Oregonians, and contributed to the deaths of another 587 residents.⁹ The age-adjusted death rate was 37.6 compared to 38.8 a year earlier. Unintentional injuries were the fifth leading cause of death of Oregonians.

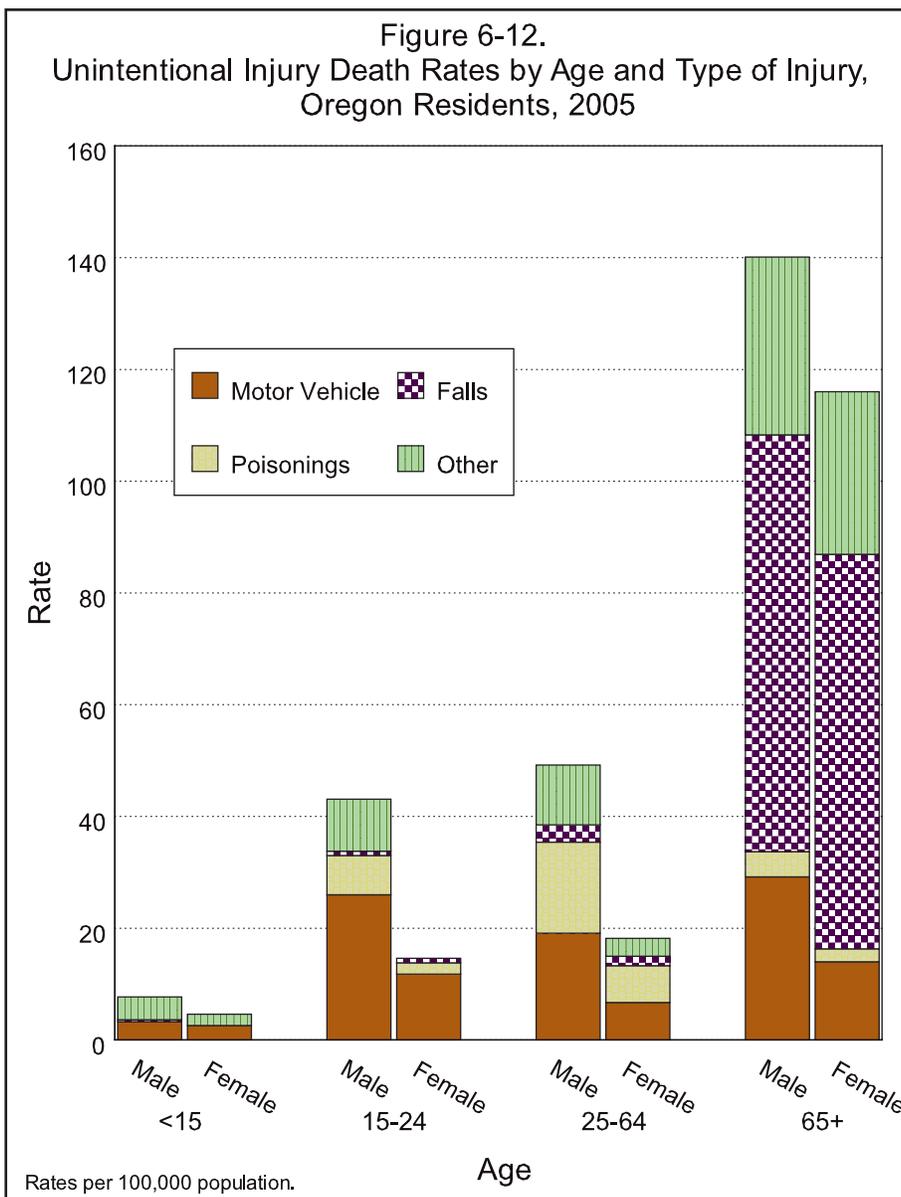
A strong gender dichotomy exists in unintentional injury deaths with the crude death rate for males nearly twice that of females (49.8 versus 28.9). The disparity in age-adjusted death rates was even greater, with the male rate more than twice that of the female rate (51.3 versus 24.7). (Table 6-43m and Table 6-43f).

Unintentional injuries were the leading cause of death among children and adults aged 1-44 years (Figure 6-11) with the age-specific rates relatively invariant from the mid-teens until middle age. During the "golden years," however, the risk of falling led to a greatly increased unintentional injury death rate. (Figure 6-12). Although the fifth leading cause of death, unintentional injuries accounted for very nearly as many years of potential life lost (22,740) as cancer (22,833), reflecting its role as the most common killer of young Oregonians. The median age at death rose from 52 years to 54 years, tying the record high established in 2002. By comparison, the median age at death in 1995 was 42.



Of the 60 Oregonians who died on the job in 2005, all but four resulted from unintentional injuries. The victims were overwhelmingly male (52 versus 4 females) with motor vehicle crashes and falls accounting for most of the deaths. (Table 6-46).

Just as the leading cause of death varies within different age groups, so does the type of fatal unintentional injury. (Figure 6-12). Unintentional injury deaths occurring to children under five years of age most commonly resulted from motor vehicle crashes and suffocation. Among residents aged 5-74 (with one exception), motor vehicle crashes predominated; the exception occurred among 35- to 44-year-olds where poisoning (usually of drugs used in an illicit manner) was most common. Oregonians 75 or older were most vulnerable to falls. (Table 6-23).



Transportation-related fatalities. Motor vehicle accidents/crashes (MVAs/MVCs) posed the greatest risk of fatal injuries to Oregon residents. In fact, transportation-related injuries accounted for 37.4 percent of all unintentional injury deaths with nine out of 10 of these resulting from motor vehicle crashes. (Table 6-23). Of the 469 MVCs, more than two-thirds occurred among males with the age-adjusted death rates revealing that the risk of a fatal MVC for males was more than twice that for females (18.8 per 100,000 population versus 7.5 for females). Although teens and young adults aged 15-24 accounted for one-fifth of all MVC fatalities, age-specific death rates were highest among the elderly. In rank order, the MVC death rates were highest for residents aged 85+, 75-84, and 65-74. (Table 6-7t).

In most deadly Oregon traffic accidents, the fatalities occurred among persons traveling by car (272), pickup truck/van (91), or foot (64). (Table 6-25). Less common were the deaths of motorcyclists (53) and pedal cyclists (14). Interestingly, while approximately one in five (18.8 percent) of all fatalities occurring among persons in cars resulted from non-collisions (i.e., rollovers following loss of control), one in three (33.0 percent) of the fatalities occurring among persons in pickups or vans involved non-collisions. Although the overall motor vehicle traffic accident age-adjusted death rate has fallen significantly since 1990, from 18.9 to 12.5 (a 33.9 percent decline), the age-adjusted death rate for persons riding motorcycles has trended up significantly, increasing from 0.8 to 1.3. The age-adjusted death rates for 13 counties, all but one of which were coastal or east of the Cascades, were statistically significantly higher than the state rate (13.9) during 1996-2005. The five counties with the highest rates were: Jefferson (49.8), Harney (38.4), Gilliam (36.6), Lake (33.8), and Klamath (24.7). Four counties had rates significantly lower than the state's: Washington (8.7), Multnomah (9.5), Benton (10.4), and Clackamas (11.7).

Falls. The second most common type of fatal unintentional injury, falls, claimed 381 Oregonians, most of whom (80.1 percent) were 75 or older. (Table 6-23). Falls commonly occurred on the same level (56.4 percent), most often from slipping or tripping. Twenty-one involved falls from stair/steps, 17 from beds, and 13 from ladders. Among adults 75 or more years of age, falls were the most common type of unintended fatal injury. (Table 6-23). The age-adjusted death rates revealed that males were at a 40.2 percent greater risk of suffering a fatal fall than were females (Table 6-43m and Table 6-43f). The age-adjusted death rate for falls has more than doubled since 1990, increasing from 4.2 per 100,000 population to 9.6 in 2005, a statistically significant trend. During 1996-2005, one county's age-adjusted death rate was significantly higher than the state's—Multnomah, at 9.3—while two counties had

Males are twice as likely as females to die as a consequence of a motor vehicle crash.

Falls account for two-thirds of all unintentional injury fatalities among the elderly.

Males were more than twice as likely to die from an overdose/poisoning than were females.

significantly lower rates—Hood River at 3.1, and Marion, at 6.1. The state rate was 7.8.

Overdoses and poisonings. Unintentional poisonings, most often by narcotics and hallucinogens, ranked third among the types of fatal unintentional injuries with the age-adjusted death rate increasing significantly between 1990 and 2005 (from 2.6 per 100,000 population to 7.1). As with most other types of unintentional injuries, age-adjusted poisoning death rates were far higher for males than females (10.2 versus 4.1). (Table 6-43m and Table 6-43f). The death rate peaked among residents aged 45-54. (Table 6-7t). No children under 15 years of age died from poisoning. Although 262 deaths were attributed to this category, it alone does not account for all deaths resulting from overdoses/poisonings; depending on how the fatality was reported on the death certificate, a death could be attributed to an unintentional injury or to a mental/behavioral disorder (see the first footnote of Table 6-31). Additional poisoning deaths are classified as suicides or of undetermined intent.

Compared to the state age-adjusted death rate (5.6), three counties had significantly high rates during the past decade: Clatsop (11.0), Multnomah (10.0), and Lane (7.1). Eight counties had rates significantly lower than the state's. The five lowest were: Benton (2.5), Washington (3.0), Columbia (3.1), Polk (3.2), and Deschutes (3.3).

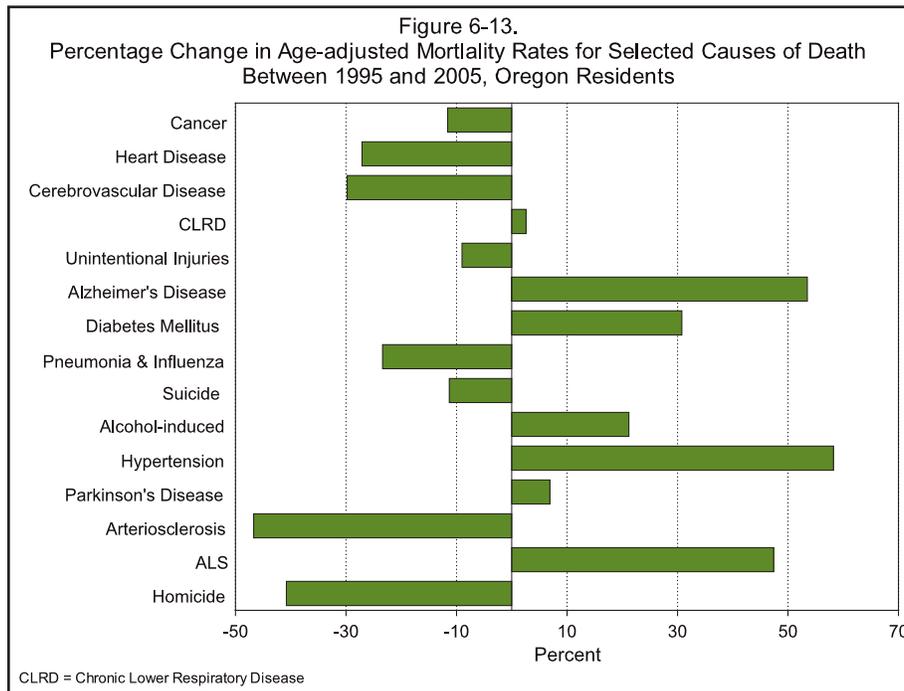
Drownings. Ranking fourth, drownings (including those involving watercraft) accounted for the deaths of 68 residents. (Table 6-41). In Oregon, drownings not involving watercraft were most common with 46 deaths occurring in natural water. Deaths involving watercraft numbered 13, while eight deaths occurred in bathtubs/hot tubs and another four occurred in swimming pools. (Table 6-28).

Alzheimer's disease

Mirroring the aging of Oregon's population has been the seemingly relentless rise in the number of deaths resulting from the tangles and plaques arising from Alzheimer's disease. The number of deaths declined slightly in 2005, from a record high 1,263 in 2004 to 1,231 with the crude death rate slipping from 35.3 per 100,000 population to 33.9. Nonetheless, the age-adjusted death rate has doubled since 1990, increasing from 15.2 in 1990 to 30.4 in 2005, an increase second only to hypertension among the leading causes of death. Alzheimer's disease also contributed to the deaths of 466 residents (where it was not the underlying cause).

Women have long been at greater risk of dying from this disease, in part because they are less likely to die from causes that most commonly lead to death at younger ages. The age-adjusted death rate for women was 41.3 percent higher than

The age-adjusted death rate for Alzheimer's disease has doubled since 1990.



that for men (34.2 versus 24.2). Alzheimer's disease was the ninth leading cause of death among men but fifth among women.

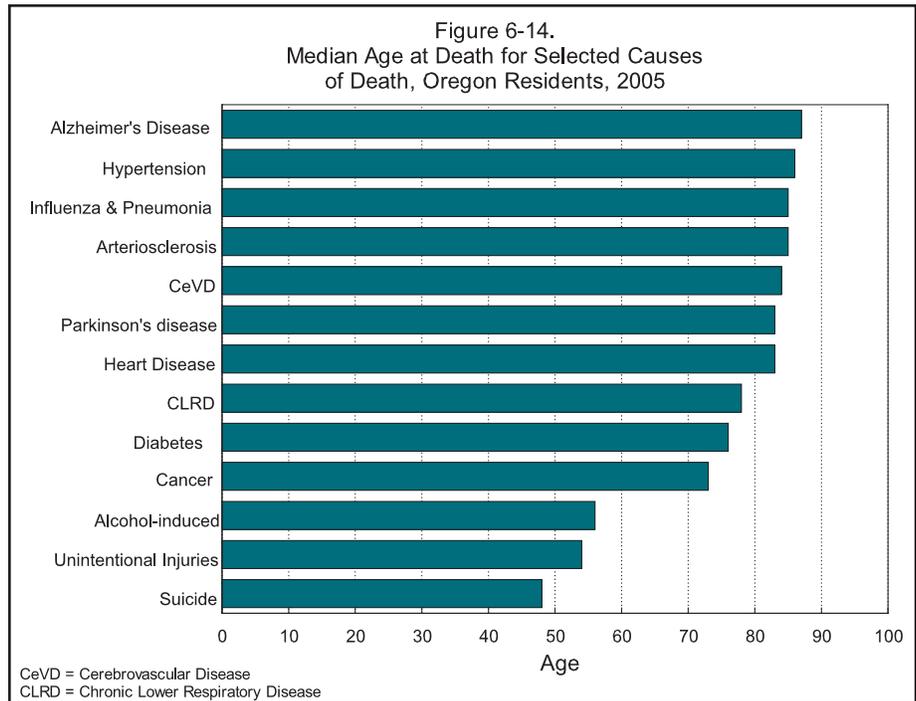
This devastating disorder takes years to claim its victims' lives; nearly 19 in 20 of the deaths occurred after the decedent's 75th birthday. (Table 6-6). The median age at death increased to a record high of 87 years in 2005 and concomitant with this was the small number (131) of years of potential life lost. Alzheimer's disease was the fifth leading cause of death among residents aged 75-84 and the fourth leading cause among those 85 or older.

Residents of five counties were statistically significantly more likely to die from Alzheimer's disease during the 10-year period 1996-2005: Wasco (39.7), Jackson (37.8), Coos (35.9), Klamath (33.1), and Washington (30.2). The age-adjusted death rate for the state was 26.4. Seven counties had significantly lower rates. The lowest five were: Crook (14.0), Jefferson (14.9), Baker (17.6), Union (17.9), and Josephine (18.7).

Oregonians have long been more likely to die from Alzheimer's disease than most other U.S. residents. In 2004, the state's age-adjusted death rate was 40.4 percent higher than the nation's and ranked seventh highest among the states and District of Columbia.² (Table 6-51). On average, Alzheimer's disease claimed an Oregonian every 7.1 hours.

***Oregon's Alzheimer's
disease death rate
ranked seventh highest
among the states.***

Although deaths resulting from Alzheimer's disease and Alzheimer's dementia are counted here, deaths attributed to dementia, organic dementia, presenile dementia, multi-infarct dementia and vascular dementia are included in ICD-10 codes F01 (vascular dementia) and F03 (unspecified dementia).



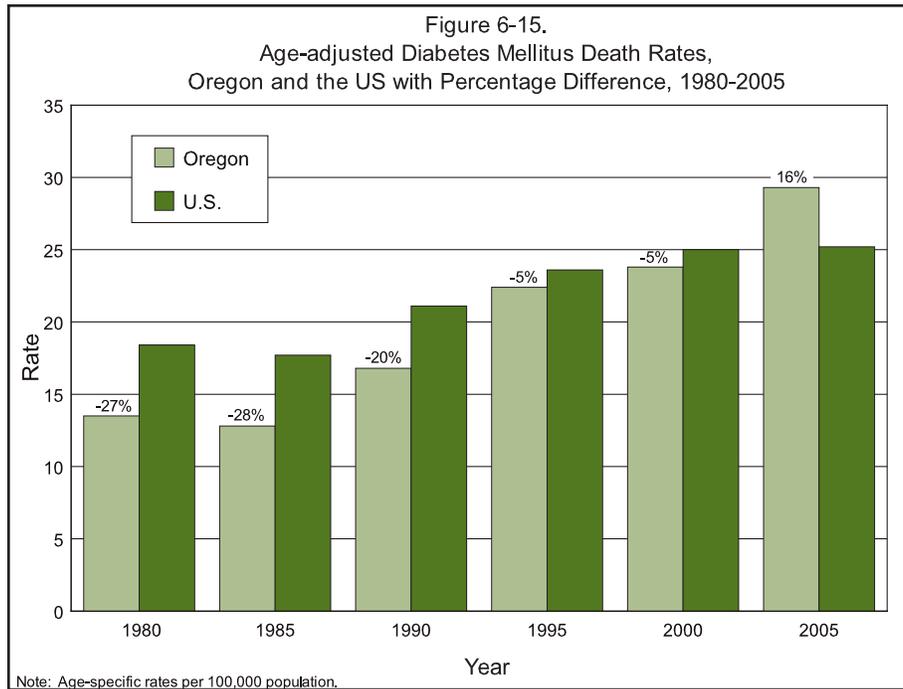
Beginning in 2005, the National Center for Health Statistics changed the way in which certain types of dementia were classified, resulting in an increase in the number of deaths attributed to vascular dementia (F01) and a decline in the number of deaths counted in the cerebrovascular disease category; see Table 6-6, footnote 10, for additional information. During 2005, the deaths of 978 Oregonians were attributed to the rubric “organic dementia” (ICD codes F01 and F03). Together, organic dementia and Alzheimer’s disease/dementia accounted for 2,209 deaths, nearly the same as for the third leading cause of death, cerebrovascular disease (2,268).

Diabetes mellitus

During 2005, diabetes mellitus was the seventh leading cause of mortality. Although the death rate for diabetes increased nearly every year during 1985-2001, it changed little during 2002-2004, before increasing 4.0 percent over the 2004 rate to 31.1 per 100,000 population, up from 29.9. The age-adjusted death rate has nearly doubled since 1990, increasing from 16.8 to 29.3, and, like the crude death rate, a record high. Diabetes was a contributing factor more often than it was the underlying cause of death, 2,274 versus 1,131.

Although the crude death rates for males and females were similar, age-adjusted death rates showed that males were at a 23.1 percent greater risk of death from diabetes (32.5 versus 26.4). (Table 6-43m and Table 6-43f). Diabetes was the sixth leading cause of death for each sex.

Two Oregonians younger than 25 died from diabetes, but 88.4 percent of all deaths occurred after age 54. It was the fourth leading cause of death among Oregonians aged 55-74. The



The Oregon diabetes death rate rose to a record high and continues to worsen vis-a-vis the U.S. rate.

median age at death remained at 76, unchanged from the previous year, and one of the lowest ages recorded among the natural causes of death (excluding causes related to infancy). (Table 6-13). Diabetes resulted in a loss of 3,510 years of potential life.

During the 10-year period 1996-2005, five counties had statistically significantly high age-adjusted death rates compared to the state (26.7): Klamath (34.8), Coos (32.8), Douglas (32.3), Multnomah (30.4), and Marion (29.2). Four counties had significantly lower rates: Polk (19.1), Deschutes (20.0), Josephine (20.2), and Jackson (22.9).

A generation ago, the state's age-adjusted diabetes death rate was consistently 25 percent to 30 percent lower than the nation's. (Figure 6-15). The Oregon advantage gradually diminished thereafter, and in 1997, for the first time, Oregon's rate exceeded the U.S. rate (by 3.1 percent). The gap has continued to widen, and in 2004 Oregon's rate was 13.5 percent higher than the U.S. rate, ranking 14th among the states and District of Columbia, up from 21st in 2003.² Every 7.7 hours, on average, an Oregonian died from diabetes.

Influenza and pneumonia

During 2005, influenza/pneumonia claimed 606 Oregonians compared to 554 a year earlier, increasing from the ninth leading cause of death to the eighth. The crude death rate increased from 15.5 per 100,000 population to 16.7 and the age-adjusted rate from 14.7 to 15.1. Despite this increase, the long-term trend for influenza/pneumonia has been positive, with the age-adjusted death rate falling from 23.7 in 1990, a 36.3 percent decline. Influenza/pneumonia contributed to almost three times as many deaths as it directly caused: 1,723.

Diabetes death rates and state ranking		
Year	U.S.	Oregon
1982	17.2	12.2
Percent Difference: -29.1		
Rank: Lowest*		
2004	24.5	27.8
Percent Difference: +13.5		
Rank: 14th highest		

*Excluding Alaska, which had unreliable data.

Oregon's age-adjusted influenza and pneumonia rate was the fifth lowest nationally.

Although more females than males died from these infectious diseases in 2005 (353 versus 253), age-adjusted death rates revealed that males were still at a greater risk (16.0 per 100,000 population versus 14.4). (Table 6-43m and Table 6-43f). Influenza/pneumonia ranked eighth among the leading causes of death for females and 10th for males.

These two related types of pulmonary infections claimed Oregonians in every age group, but nearly eight in 10 of the deaths occurred after age 74. Along with an increase in the number of deaths during 2005 was a decrease in the median age at death; it dropped from 86 in 2004 to 85 in 2005.

During the past decade, age-adjusted death rates were statistically significantly higher than the state's rate (17.6) in four counties: Clatsop (26.7), Lincoln (22.4), Yamhill (21.2), and Clackamas (19.9). Three counties recorded significantly lower rates: Polk (10.6), Deschutes (14.1), and Josephine (14.4).

In recent years, Oregon's age-adjusted death rate has been markedly lower than the rates for most other states. In 2004, Oregon's age-adjusted death rate was 30.8 percent lower than the nation's and ranked 47th (i.e., fifth lowest, including the District of Columbia).² Every 14.5 hours, on average, influenza or pneumonia claimed the life of an Oregonian.

In 1918, influenza spread across America 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.

Suicide

Suicide¹⁰ claimed the lives of 559 Oregonians during 2005, edging up from 555 deaths the year before.¹¹ At the same time, the crude death rate slipped slightly from 15.5 per 100,000 population to 15.4. Oregon's highest suicide rate was recorded during 1998: 17.4. The age-adjusted death rate was 14.9 during 2005, down from 15.2 the year before, and a 13.4 percent decrease compared to the record high of 17.2 in 1998. The downward trend is statistically significant.

Males have long been at a far greater risk than females; with age-adjusted death rates of 24.5 and 6.0, respectively, males were 4.1 times more likely to die by suicide, with gender-specific rate differences typically greatest among the elderly (see sidebar). (Table 6-7m and Table 6-7f). Suicide was the seventh leading cause of death among males and 12th among females.

Overall, suicide rates peak among the elderly, but this masks a gender-based dichotomy: females were more likely to die by suicide in middle age where the rate peaked at 15.9 among 45- to 54-year-olds, while rates among males increased sharply beginning at age 65, with the highest rate (74.2) recorded among those 85 or older. Although the overall suicide rate is

Oregon's suicide rate is 38 percent higher than the nation's.

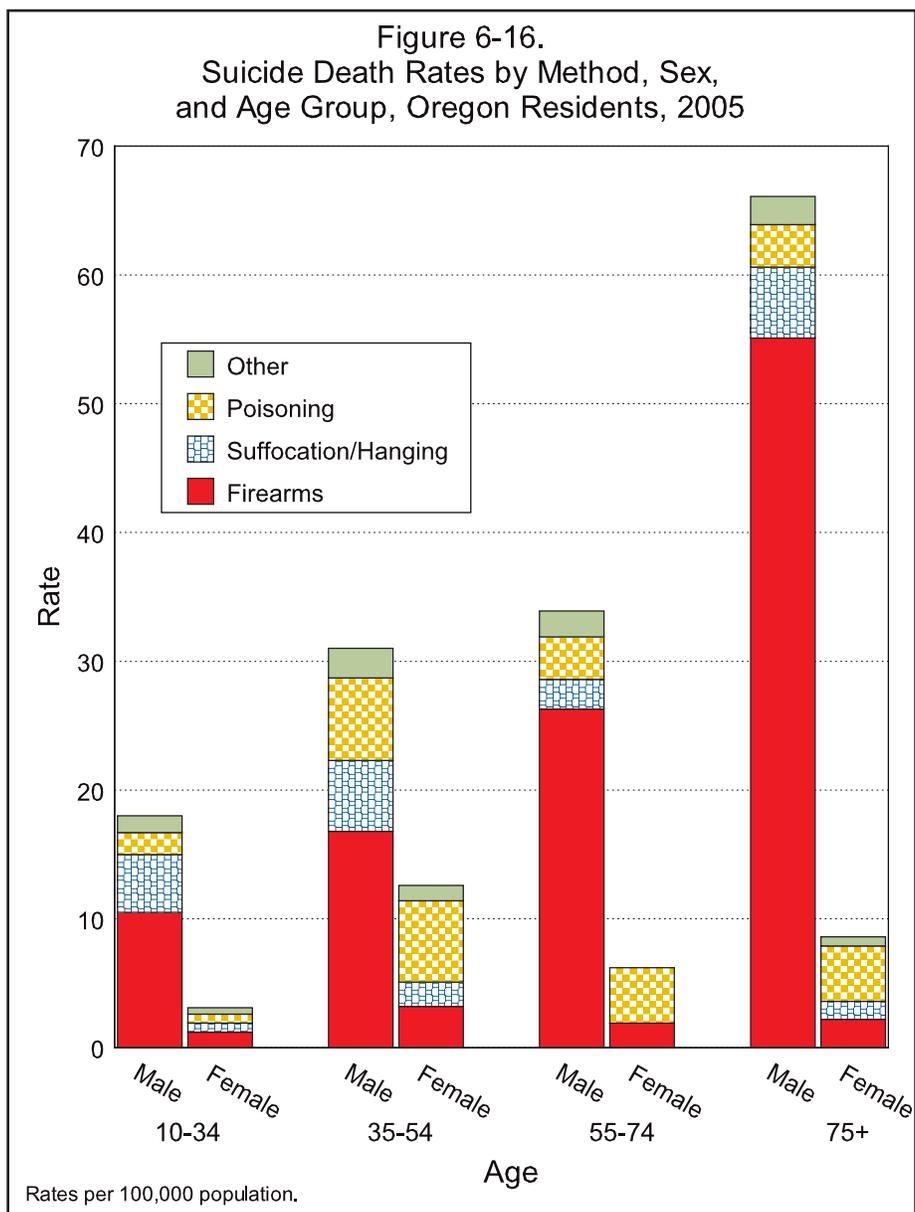
Number of times a male Oregonian was more likely to die by suicide than were females, by age, 2001-2005	
5-14	1.5
15-24	6.1
25-34	4.1
35-44	3.1
45-54	2.6
55-64	4.0
65-74	8.3
75-84	9.5
85+	11.3

highest among the elderly, most deaths (64.9 percent) occurred before age 55, resulting in the fourth largest number of years of potential life lost (10,218) by cause. Suicide was the second leading cause of death among residents aged 15-34, fourth among those aged 35-44, and fifth among those aged 45-54. The median age at death was 48 during 2005, up from 47 the previous year. The youngest person to die by suicide was a 10-year-old boy who hanged himself and the oldest a 99-year-old man who shot himself with a rifle.

Nine Oregon counties had age-adjusted death rates that were statistically significantly higher than the state's rate (15.5) during the past decade. Of these, the top five were: Curry (29.4), Clatsop (23.8), Baker (23.4), Klamath (22.7), and Lincoln (22.6). Four counties had significantly lower rates: Benton (10.3), Polk (11.2), Washington (11.6), and Clackamas (13.3).

The Curry County suicide rate was nearly three times higher than the Benton County rate.

Oregonians have long had higher suicide rates than residents of most other states. In 2004, Oregon's age-adjusted suicide



rate was 37.6 percent higher than the nation's and ranked 11th highest among the states and District of Columbia.² On average, an Oregonian died by suicide every 15.7 hours during 2005.

Suicide characteristics by region			
Age	Metro	Coastal	Other
<25	10%	5%	13%
25-64	74%	59%	65%
65+	16%	37%	23%
Method	Metro	Coastal	Other
Firearm	49%	59%	62%
Hanging/ Suff.	22%	7%	13%
Poison	21%	25%	20%
Other	9%	9%	6%

Metro counties: Clackamas, Multnomah and Washington.

Coastal counties: Clatsop, Coos, Curry, Lincoln, and Tillamook.

The method of suicide varied by sex and age, but overall most deaths (57.2 percent) resulted from fatal gunshot injuries. (Table 6-29 and Figure 6-16). Although most suicides were a result of gunshot wounds, there was a considerable dichotomy by sex: almost two-thirds (64.8 percent) of males used firearms, but only three-tenths (28.4 percent) of females did so. (Seven of every 10 gunshot fatalities resulted from the use of handguns.) Females were more likely to use poison (49.1 percent) than firearms, while males were much less likely to die by poisoning (13.1 percent). Moreover, there was a difference by gender in the type of poison used: 89.5 percent of all poisoning deaths by females involved medications compared to 77.6 percent of the poisoning deaths among males. Overall, one in five suicides (20.6 percent) involved poisoning. Hanging/suffocation was the third most common method of suicide (15.4 percent) with only a small difference in the proportion of males and females using this method. Despite the overall decline in the age-adjusted suicide death rate since 1990, suicide by suffocation/hanging has trended upward to a significant degree, increasing from 1.5 in 1990 to 2.4 in 2005.

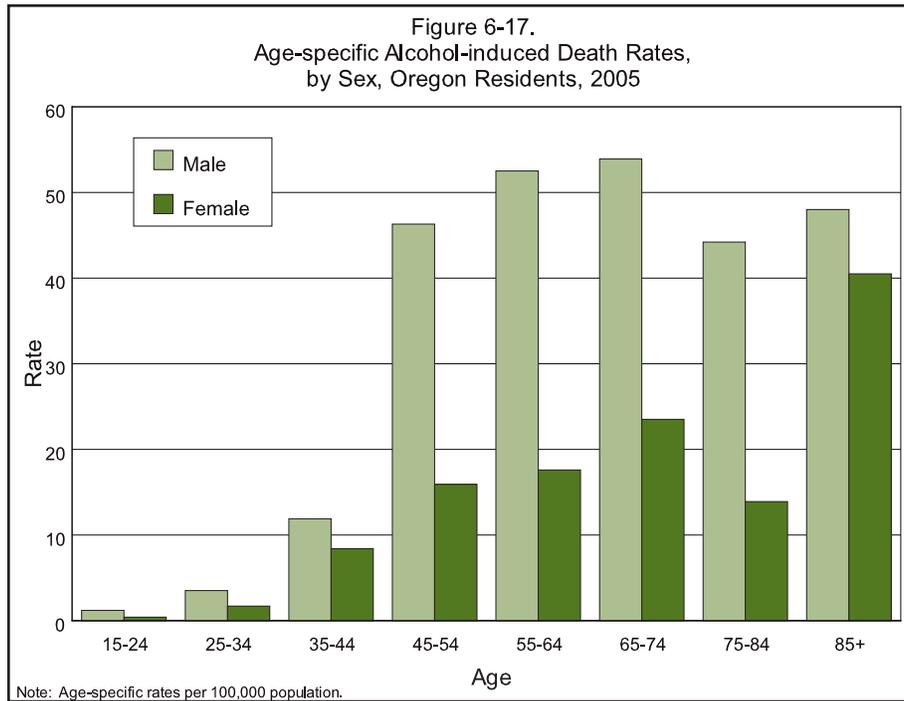
Alcohol-induced deaths

Alcoholism, including related disorders and alcohol poisonings, claimed 536 Oregonians during 2005, making it the 10th leading cause of death.¹² Alcohol was a factor in no fewer than 382 deaths, but did not directly cause the death. (Table 6-47). Although the crude death rate reached a record high 14.8 per 100,000 population during 2005, the age-adjusted death rate slipped from 13.8 in 2004 to 13.7.

Fatal alcohol abuse was the eighth leading cause of death among men and 10th leading cause among women, but the difference is greater than this would suggest: the age-adjusted death rate for males was more than twice that for females, 19.7 versus 8.1, respectively.

Age-specific alcoholism rates typically peak among residents aged 55-64, but during 2005, age-specific death rates were highest among 65- to 74-year-olds. (Figure 6-17). This disorder was the fourth leading cause of death among residents aged 45-54 years and the fifth leading cause of death among those aged 35-44 years and 55-64 years. The median age at death increased from 55 years during 2004 to 56 during 2005; even so Oregonians were still dying at markedly younger ages than they were a generation ago when the median age at death was 62. Alcoholism and related disorders was the sixth leading cause of premature death, accounting for 5,239 years of potential life lost.

**Men were twice as likely
as women to die from
alcoholism.**



During the 10-year period 1996-2005, six counties had rates statistically significantly higher than the state's rate (12.2). The five highest were: Jefferson (28.5), Klamath (19.3), Lincoln (19.1), Clatsop (17.4), and Coos (16.6). Rates were significantly below the state average in: Yamhill (6.9), Benton (7.6), Washington (8.2), Clackamas (9.6), and Marion (9.7) counties.

The Oregon alcohol-induced age-adjusted death rate has long been higher than that for the United States. In 2004, Oregon's rate was 92.9 percent higher than the nation's and ranked fourth among the states and the District of Columbia.² However, at least part of the difference between the state and the nation likely results from a reporting artifact: while Oregon queries physicians for additional information when causes listed on death certificates are suggestive of alcohol use, such as esophageal varices, many states do not.⁵ Oregonians succumbed to alcohol-related causes every 16.3 hours, on average.

This category is comprised of alcohol-related disorders from multiple organ systems with cirrhosis of the liver accounting for the greatest number of deaths (58.2 percent). If intentional and unintentional injury deaths where alcohol was a factor (e.g., motor vehicle crashes and homicides) were included in this category, the count would be considerably higher. (The role, if any, of alcohol in injury deaths is rarely reported on death certificates.)

Hypertension

Age-adjusted death rates for relatively few causes are increasing: hypertension is one of them. During 2005, 429 Oregonians died as a consequence of hypertension (including

Alcohol-induced deaths by diagnoses	
Diagnosis	Count
Alcoholism	187
Cardiomyopathy	14
Gastritis	1
Fatty Liver	1
Hepatitis	25
Liver Cirrhosis	201
Hepatic Failure	34
Unspecified Liver Dis.	51
Chronic Pancreatitis	14
Unintent. Poisoning	7
Poisoning of Undetermined Intent	1

The age-adjusted death rate for hypertension has more than doubled since 1990.

hypertensive renal disease), 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 since many have been classified to more specific manifestations of cardiovascular disease.) The crude death rate increased from 10.0 per 100,000 population in 2004 to 11.8 in 2005. Since 1990, the age-adjusted death rate for hypertension has more than doubled, increasing from 4.9 to 10.6 in 2005, a record high and an 11.6 percent increase over the 2004 rate of 9.5.

Although the crude death rate for females was more than half again that for males (14.5 versus 9.1), age-adjusted death rates showed little difference by gender in the risk of death from this cause, 10.5 versus 10.3, respectively.

Deaths from hypertension are rare among middle-aged and younger Oregonians, but by age 65 the numbers begin to increase sharply. Age-specific death rates were more than 20 times higher among residents 85 or older compared to those aged 65-74 (15.4 versus 342.0). During 2005, the median age at death increased to 86 years, second only to the 87 years recorded for Alzheimer's disease.

Two counties had significantly elevated age-adjusted death rates compared to the state rate (8.3) during the past decade: Klamath (12.5) and Multnomah (9.7). Another two had significantly lower rates: Deschutes (5.4) and Washington (6.4).

A quarter century ago, Oregon's hypertension death rate was markedly lower than the U.S. rate, but since then that relationship has reversed. During 2004, the state's age-adjusted death rate was 14.3 percent higher than the U.S. rate (8.8 versus 7.7) and ranked 11th highest nationally.² Every 20.4 hours, an Oregonian died from hypertension.

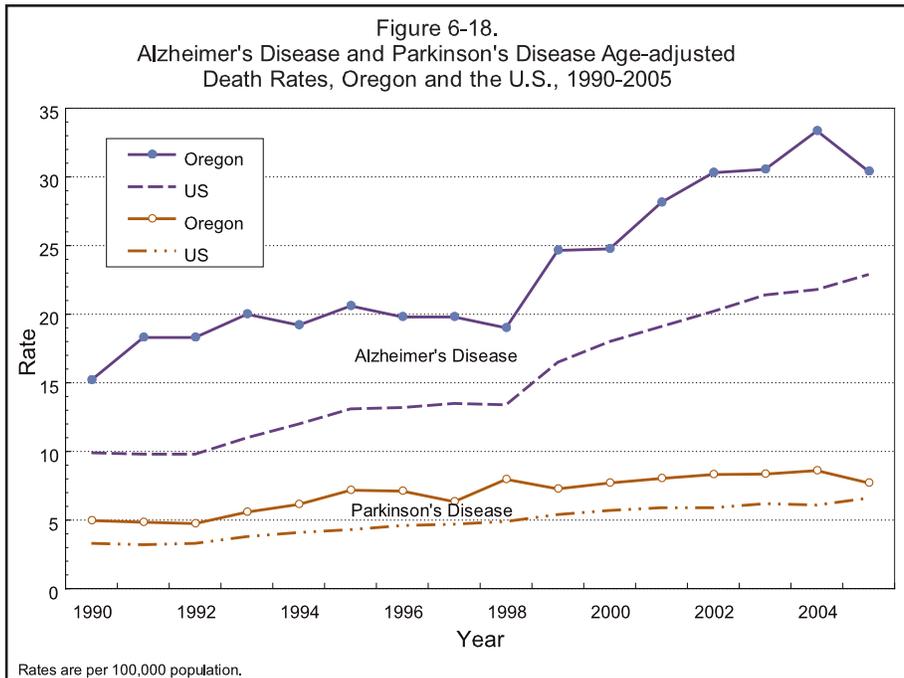
Parkinson's disease

Ranking 13th among the leading causes of death during 2005, Parkinson's disease claimed 298 Oregon residents, 23 fewer than the year before. The crude death rate dropped from its record high of 9.0 per 100,000 population in 2004 to 8.2 in 2005 while the age-adjusted death rate fell from a record high 8.6 to 7.7. Nonetheless, while the mortality rates for many causes have fallen in recent decades, the rate for this neurological disorder has trended upward significantly, although not at the pace seen in earlier years.

The risk of death among males from Parkinson's disease was more than twice that of females; the age-adjusted death rates were 12.0 and 4.9, respectively. (Table 6-43m and Table 6-43f). Parkinsonism was the 11th leading cause of death among men and the 13th among women.

Parkinson's disease claims almost exclusively persons 55 or older, although two younger Oregonians did die from the dis-

Men were more than twice as likely to die from Parkinson's disease than were women.



order during 2005. (Table 6-6). The median age at death has shown no clear trend during the previous decade, varying between 82 and 83 years; it remained unchanged at 83 years in 2005. As with many other causes with a high median age at death, the number of years of potential life lost were few: just 38 in 2005.

During 1996-2005, Hood River (13.1) and Multnomah (9.1) counties had significantly elevated age-adjusted death rates compared to the state (7.8). Three counties had significantly lower rates: Baker (2.6), Lincoln (4.8), and Polk (5.4).

Oregon's age-adjusted Parkinson's disease death rate has long been higher than the nation's, as have two other neurological disorders, Alzheimer's disease, and amyotrophic lateral sclerosis. (Table 6-51, Figure 6-18). During 2004, Oregon's death rate was 34.4 percent higher than the U.S. rate and ranked fourth highest among the states and District of Columbia.² Every 29.4 hours, on average a resident died from this disorder.

Arteriosclerosis

The statistically significant decades-long trend of declining arteriosclerosis mortality paused in 2005 when the crude death rate increased from 4.9 per 100,000 population in 2004 to 5.3 in 2005. At the same time, the age-adjusted death rate increased from 4.6 to 4.8, but was still the second lowest rate ever recorded. By comparison, the rate was 11.3 in 1990. With 191 deaths, arteriosclerosis was the 15th leading cause of death in 2005. However, the number of deaths attributed to arteriosclerosis does not include all deaths related to this cause since many have been classified to more specific manifestations of cardiac and cerebral disease.

Oregon's Parkinson's disease death rate was 34 percent higher than the U.S. rate and ranked fourth highest among the states.

The age-adjusted arteriosclerosis death rate has fallen by more than half since 1990.

Each year, more women than men die from arteriosclerosis; however, age-adjusted death rates showed that males were at a 33.3 percent greater risk of dying from this disease (5.6 versus 4.2) in 2005. (Table 6-43m and Table 6-43f). Arteriosclerosis was the 16th leading cause of death among males and 15th among females.

More than four-fifths (82.7 percent) of the deaths occurred among those 75 or older. The median age at death was 85 years, unchanged from 2004. Only Alzheimer's disease (87) and hypertension (86) had higher median ages at death. Because most deaths attributed to arteriosclerosis do not occur until age 65 or older, the number of years of potential life lost is typically very small; in 2005, just 60 years were lost.

During 1996-2005, seven counties had arteriosclerosis death rates that were statistically significantly higher than the state rate (5.8). The five highest were: Crook (70.3),¹³ Hood River (13.0), Lincoln (11.4), Baker (10.9), and Tillamook (9.9). Rates were significantly lower in eight counties. The lowest five were: Union (1.6), Klamath (2.6), Jackson (3.2), Umatilla (3.2), and Josephine (3.3).

Oregon's age-adjusted arteriosclerosis death rate had long been notably higher than the nation's, but this difference has diminished in the past decade. During 2004, the rate was 7.7 percent higher and ranked 18th among the states and District of Columbia.² A resident died from arteriosclerosis every 1.9 days, on average.

The national homicide rate is twice as high as Oregon's.

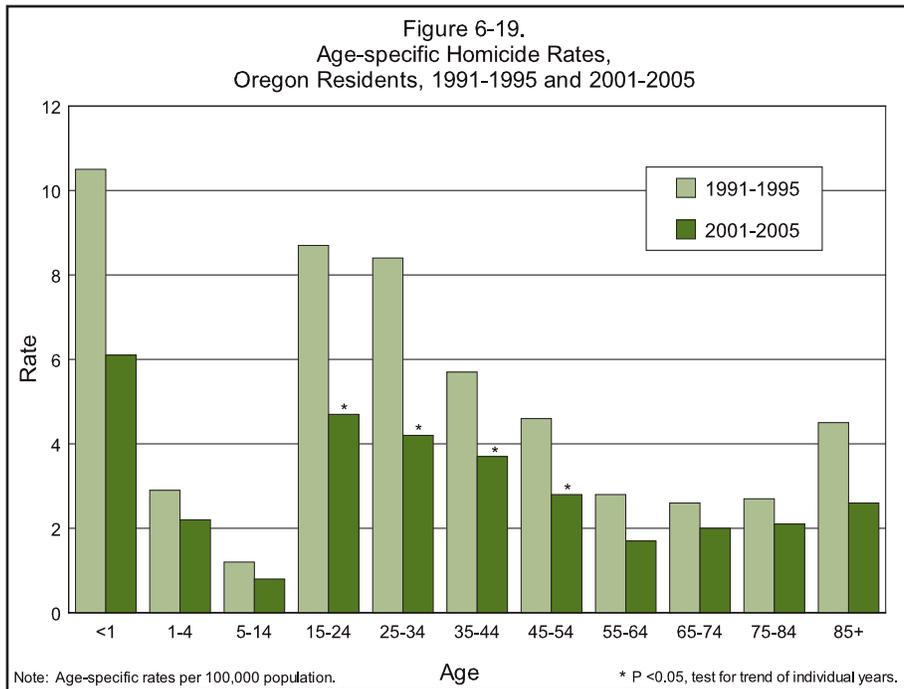
Homicide

Oregon's homicide rate fell from 3.1 per 100,000 population in 2004 to 2.8 in 2005, the third lowest rate during the past generation and 58.8 percent lower than the record high rate (6.8) recorded in 1986.¹⁴ With 103 victims, homicide was the 22nd leading cause of death during 2005.¹⁵ Two victims were fatally shot while at work.

Every year, more males than females are murdered — and 2005 was no exception. The male age-adjusted death rate (3.7) was 94.7 percent higher than the rate recorded for females (1.9). (Table 6-43m and Table 6-43f). The age-adjusted rate for both genders was 2.9.

The age group with the highest homicide rate: infants.

By age, infants were more likely to be homicide victims than Oregonians in any other age group; during 2001-2005, their homicide rate was 6.1 per 100,000 population compared to 4.7 for 15- to 24-year-olds and 4.2 for 25- to 34-year-olds.¹⁵ (Rates based on multiple years yield more representative values than those based on the relatively small numbers recorded for any single year.) Although infants were more likely to be murdered than other residents, the risk has declined during the past decade (1991-95 versus 2001-05) with the rate falling 41.2



percent. Homicide was one of the five leading causes of death among residents aged 1-4, 15-24, and 25-34. The median age at death for homicide victims was 34 years, unchanged from the previous year and the lowest among the leading causes (except for causes associated with infancy). With 3,116 years of potential life lost, homicide was the ninth leading cause of premature death.

Five counties had homicide rates significantly higher than the overall state rate (3.3) during the 10-year period 1996-2005: Jefferson (7.6), Wasco (6.7), Umatilla (6.0), Josephine (5.7), and Multnomah (4.9). Four counties had rates significantly lower than the state's rate: Benton (0.8), Polk (1.6), Washington (2.0), and Clackamas (2.2).

Historically, Oregon's homicide death rate has been markedly lower than the nation's. During 2004, the state's rate was 47.5 percent lower and ranked 35th among the states and District of Columbia.² (Table 6-51). Although Oregon's homicide rate is significantly lower than the U.S. rate, its legal intervention (law enforcement involved) death rate is significantly higher. During 2000-2004, the national legal intervention (excluding legal executions) death rate was 1.1 per million population, but for Oregonians the rate was 2.5. Oregon's rate ranked fifth highest among the states and District of Columbia.² A record high 19 Oregonians died as a consequence of legal intervention (excluding legal executions) during 2005 compared to a median of 7 annually since 1990. For the five year-period 2001-2005, Oregon's legal intervention rate was 3.2 per million population.

Temporally, the number of homicides peaked during July (16), about twice the monthly mean (8.6) and on Saturdays

The Jefferson County homicide rate was over nine times higher than the Benton County rate.

Five leading methods of homicide	
Firearms	45
Sharp Objects	19
Blunt Objects	7
Bodily Force	5
Strangulation/ Suffocation	4

(20.4 percent of the total), almost half again higher than the daily mean (14.3 percent). Nearly two-thirds (63.2 percent) of homicides occurred during the 12-hour period 4:00 p.m. to 3:59 a.m.¹⁶ Six of every 10 homicides took place in the home. During 2005, an Oregonian was murdered every 3.5 days, on average.

Firearms are unrivaled as an implement of homicide, accounting for more than half of all such deaths, and of those, handguns outnumbered long guns two to one.

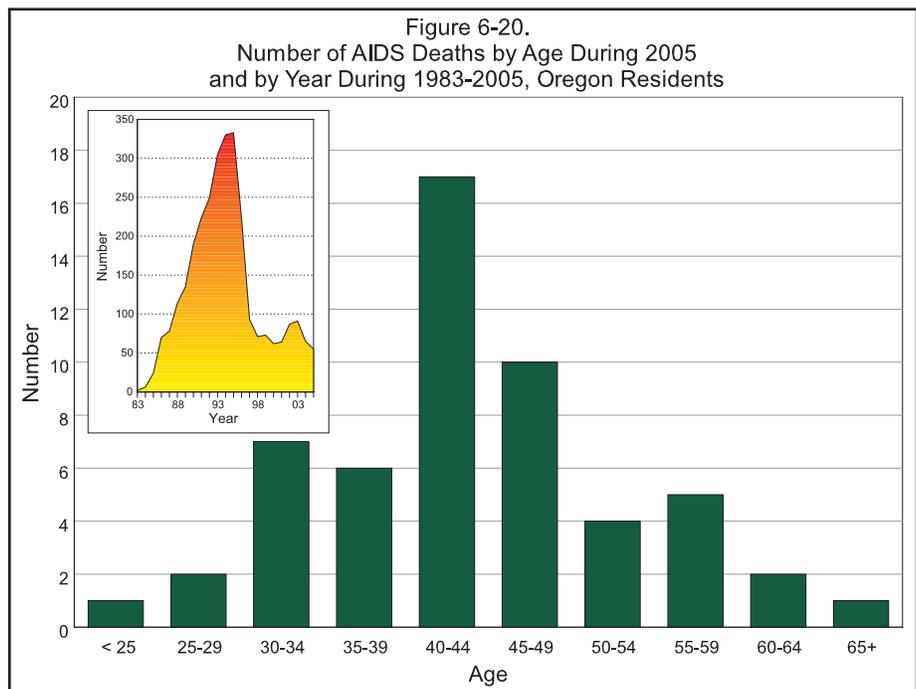
AIDS/HIV

After peaking at 360 deaths in 1995, the number of AIDS/HIV deaths declined to a low of 62 in 2000 with the age-adjusted death rate falling from 11.5 per 100,000 population to 1.8. Subsequently, both the number and rate increased, but in 2005, each fell to a level not seen since the mid-1980s. Fifty-five Oregonians, or 1.5 per 100,000 population, died from AIDS/HIV in 2005.

Among the leading causes of death, there is no greater dichotomy by gender and the risk of death than there is with AIDS/HIV. With age-adjusted death rates of 2.7 and 0.4, respectively, males were almost seven times more likely to die from this cause.

Unlike most causes of death, AIDS/HIV most often claims middle-aged adults. Age-specific death rates rose sharply in early adulthood reaching 4.5 per 100,000 35- to 44-year-olds, before declining to 2.6 among 45- to 54-year-olds, and then diminishing markedly among older age groups. (Figure 6-20). These rates are driven largely by deaths among males. The youngest person to die from this disease was a 22-year-old fe-

The AIDS/HIV death rate fell to a level not seen since the mid-1980s.



male and the oldest a 72-year-old male. The years of potential life lost were 1,186 and the median age at death was 43 years, one year less than that recorded during 2004. Oregon's AIDS/HIV age-adjusted death rate has long been lower than the nation's and in 2004 was 60.0 percent lower than the national rate, ranking 30th among the states and District of Columbia.² On average, a resident died every 6.6 days from this disease.

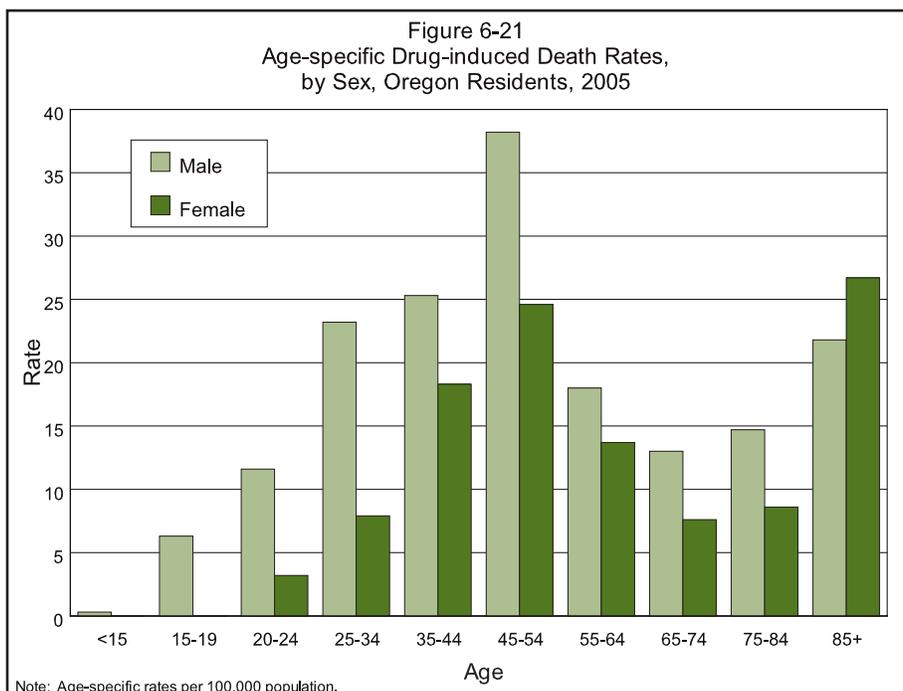
Drug-induced deaths

During 2005, nearly as many deaths were attributed to drug-related causes as were attributed to alcohol, 511 versus 536.¹⁷ (Because of a considerable overlap between the drug-induced death category and other cause of death categories, it is not counted among the leading causes of death. Nevertheless, with a crude death rate of 14.1 per 100,000 population, fatal drug use represents a significant cause of mortality among Oregonians.) The age-adjusted rate for drug-induced deaths has trended up during recent years, with the 2005 rate of 13.6 representing a record high.

Males of all ages, except those 85 or older, were more likely than females to die from drug-induced causes. Their age-adjusted death rate was 17.1 per 100,000 population compared to 10.1 for females.

Age-specific rates for drug-induced deaths increased from childhood and adolescence, peaking among 45- to 54-year-olds before declining by more than two-thirds among 65- to 74-year-olds. (Figure 6-21). Rates increased sharply among Oregonians 85 or older, nearly reaching the level for 45- to 54-year-olds, 25.1 versus 31.3, respectively. More than half of all drug-induced deaths (55.4 percent) occurred among residents aged 35-54.

The drug-induced death rate hit a record high in 2005.



Multnomah County and Clatsop County had drug-induced rates significantly higher than the state's rate.

During the past 10 years, the state's age-adjusted death rate (13.6) was driven by just a handful of counties, two of which had statistically significantly elevated rates: Multnomah (20.6) and Clatsop (19.3). Thirteen counties had significantly lower rates. The five with the lowest rates were: Morrow (3.5), Umatilla (5.1), Hood River (5.2), Malheur (5.3), and Benton (5.8).

In recent years, Oregon's age-adjusted drug-induced death rate has exceeded the U.S. rate, and in 2004 (the most recent available final data) was 22.9 percent higher (12.9 versus 10.5).² The federal Centers for Disease Control and Prevention (CDC) does not make data for state rankings available.

This category includes ICD codes included in many cause-of-death rubrics, but the single largest category, with 174 deaths, was unintentional poisonings by narcotics and psychodysleptics.

Deaths due to military operations

The Oregon vital statistics data files do not include the deaths of 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 and are not forwarded to the decedent's state of residence. However, these deaths (with the decedent's name, date of death, home city, age, and sex) are posted weekly on the Department of Defense's Web site. They are presented here in tabular form for Oregon residents for 2002-2005.

Operation Iraqi Freedom and Operation Enduring Freedom, Oregon Resident Military Deaths, 2002-2005								
County	2002	2003	2004	2005	Characteristics			
Benton	-	1	1	-	Sex	2002-05		
Clatsop	-	-	1	-			Male	41
Coos	1	-	-	-	Female	0		
Douglas	-	-	-	2	Total	41		
Jackson	-	-	-	1	Age			
Klamath	-	-	2	-			<20	2
Lincoln	-	-	1	1			20-24	21
Linn	-	-	2	2			25-29	9
					30+	9		
Multnomah	-	3	6	3	Total	41		
Polk	-	1	1	-	Race			
Umatilla	-	1	1	2			White	36
Union	-	-	-	1			Hawaiian	2
Washington	-	1	4	-			Hispanic	2
Yamhill	-	-	-	2	Multiple	1		
Total	1	7	19	14	Total	41		

Source: <http://siadapp.dmdc.osd.mil/personnel/CASUALTY/castop.htm>

Endnotes

1. State vital records offices within the United States maintain an interstate exchange agreement such that when a resident of a state dies outside of his or her home state, a copy of the death certificate, or electronic equivalent, is provided to the vital records office of the decedent's residence state. California reported the death of only one Oregonian during 2005 prior to June 2007 when the 2005 mortality file was closed and finalized. In November 2007, 229 death certificates were received for Oregonians who died in California. Consequently, the 30,854 deaths reported herein is an undercount. Included in the 229 deaths were 45 unintentional injuries, six suicides, and one homicide (of an infant). In seven cases, the manner of death was still pending with the remaining deaths attributed to natural causes.
2. These data are from the federal Centers for Disease Control and Prevention's (CDC) WONDER online database (<http://wonder.cdc.gov>). The most recent year for which final mortality data are available is 2004. Oregon mortality data from the WONDER database may vary from Oregon data presented elsewhere within this annual report due to different file closure dates, different population estimate methodologies, and incorporation of physician query results.
3. U.S. Central Intelligence Agency. The World Factbook: 2007. Office of Public Affairs. Washington, DC.
4. Periodically, the International Classification of Disease manual is revised. The 10th revision was implemented in 1999 resulting in: considerably greater detail for some causes (and less detail 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 occurred in the comparability for a number of causes of death. Readers wishing to compare death rates (and/or number of deaths) for 1999 and subsequent years to prior years should use the final comparability ratios described in Appendix B. Final comparability ratios have been applied to the data in tables 6-3, 6-50, and 6-54.
5. Through 2005, the Oregon Center for Health Statistics queried physicians for additional information when causes listed on death certificates were incomplete or nonspecific. Physicians were also queried when injury information was missing. Copies of about 10-12 percent of death certificates were returned to physicians for additional information and, of these, about six in 10 resulted in a new or more specific underlying cause of death.

Querying can result in significant data improvement, but researchers comparing temporal or geographic differences in mortality should be aware of query programs and how these programs ultimately influence the data. Death rates for some causes are affected more than others; the Oregon death rate for alcohol-induced deaths is among the highest in the nation, but this is an artifact resulting from improved data quality. Not all states have query programs. More detailed information has been published elsewhere ((1) Hopkins DD, Grant-Worley JA, Bollinger TL. Survey of Cause of Death Query Criteria Used by State Vital Statistics Programs in the U.S. and the Efficacy of the Criteria Used by the Oregon Vital Statistics Program. *Am J Public Health* 1989; 79:570-574. (2) Questioning the Physician: A Survey of Cause of Death Query Criteria Used by Centers for Health Statistics in the United States and the Efficacy of the Criteria Used by the Oregon Center for Health Statistics. Oregon Department of Human Resources. Health Division. Portland, Oregon. 1987. 38pp.). During 1999 and the first six months of 2000, querying was minimal during the implementation of the 10th revision of the International Classification of Disease manual and a new computer system. Beginning in 2006, querying was minimal as a consequence of personnel changes and the implementation of a new Internet-based death registration system.

6. “Unintentional injuries” is preferred to the term “accidents” (ICD-10 V01-X59, Y85-Y86) by the public health community.
7. Age-adjusted death rates for Oregon prior to 1990 are from the CDC’s WONDER database (<http://wonder.cdc.gov>).
8. Statewide records of cause of death were first collected in 1908.
9. Not included in this figure are an additional 45 unintentional injury deaths of Oregonians who died in California; see footnote 1.
10. Note that residents choosing the “Death with Dignity” option are not counted here; they are included in the appropriate disease categories.
11. Not included in this figure are an additional six Oregonians who died by suicide in California; see footnote 1.
12. The Oregon Center for Health Statistics (OCHS) has included a category for alcohol-induced deaths since 1979. With the advent of ICD-10, which supplanted ICD-9 in 1999, Oregon included four causes of death that had not been included by the National Center for Health Statis-

tics (NCHS): G72.1, K86.0, O35.4, and P04.3. In 2006, beginning with final 2003 data, NCHS added the following three ICD-10 codes to the list of alcohol-induced codes: E24.4, G72.1, and K86.0. In the interest of maintaining comparability with national data, OCHS has removed two ICD-10 codes that we previously included: O35.4, maternal care for damage to fetus from alcohol and P04.3, fetus/newborn affected by maternal alcohol use.

The complete list of causes of death attributable to alcohol-induced mortality now includes ICD-10 codes E24.4, Alcohol-induced pseudo-Cushing's syndrome; F10, Mental and behavioral disorders due to alcohol use; G31.2, Degeneration of nervous system due to alcohol; G62.1, Alcoholic polyneuropathy; G72.1, Alcoholic myopathy; I42.6, Alcoholic cardiomyopathy; K29.2, Alcoholic gastritis; K70, Alcoholic liver disease; K86.0, Alcohol-induced chronic pancreatitis; R78.0, Finding of alcohol in blood; X45, Accidental poisoning by and exposure to alcohol; X65, Intentional self-poisoning by and exposure to alcohol; and Y15, Poisoning by and exposure to alcohol, undetermined intent. Excluded are accidents, homicides, and other causes indirectly related to alcohol use (e.g., vehicle crashes, homicides). This category also excludes newborn deaths associated with maternal alcohol use.

Nationally, the number of deaths and death rates based on the newly modified list of causes may differ slightly from those previously published. For example, for 2002, the addition of the three codes increased the total number of deaths from alcohol-induced causes from 19,928 to 20,218 (an increase of 290) and increased the total crude death rate, although not significantly, from 6.9 to 7.0. The total age-adjusted rate remained the same

Because, unlike drug-induced deaths, there is very little overlap between the components of the alcohol-induced category and other leading cause categories, OCHS, unlike NCHS, has included alcohol-induced deaths as a leading cause of death rather than as a supplemental rubric.

13. The very high arteriosclerosis death rate for Crook County is a reporting artifact resulting from the predisposition of one certifier to attribute a death to arteriosclerosis; he reported that 78 percent of his patients died from this condition. Ninety-seven percent of all deaths attributed to arteriosclerosis among Crook County residents resulted from the action of this one physician.
14. Unlike ICD-9, ICD-10 excludes legal intervention (law-enforcement-involved) deaths from this category; see Table

6-29 for the number of deaths attributable to the actions of law-enforcement officers. Deaths in this category may be of intentional (e.g., shooting a person with a weapon) or unintentional (e.g., a suspect drowns while attempting to elude police). Note that state medical examiners may not report all such cases on death certificates, particularly in the cases of “excited delirium” during arrest and/or transport. Therefore, the number of legal intervention deaths shown in Table 6-29, and elsewhere in this report, should be considered a minimum. Oregon’s legal intervention (excluding executions) death rate has long been higher than the nation’s; whether this is a consequence of better reporting in Oregon or different law enforcement policies is unclear. Data reported by the National Center for Health Statistics, and available on WONDER, sometimes do not include all relevant cases; during 2000-2004, the National Center for Health Statistics reported 41 Oregon legal intervention cases when the correct total is 44.

15. Not included in this figure is the homicide of one Oregon infant who died in California; see footnote 1.
16. Based on the 68 homicides where the time of injury was known.
17. In 2006, the National Center for Health Statistics (NCHS) released new definitions for both alcohol-induced deaths and drug-induced deaths. The code changes to the alcohol category were relatively minor, but those to the drug-induced category resulted in the inclusion of many more causes, although not a greatly increased number of deaths. The list of codes included in the drug-induced death category was expanded by NCHS to be more comprehensive. Specifically, the following 37 ICD-10 codes were added to the list of drug-induced codes: D52.1, D59.0, D59.2, D61.1, D64.2, E06.4, E16.0, E23.1, E24.2, E27.3, E66.1, G21.1, G24.0, G25.1, G25.4, G25.6, G44.4, G62.0, G72.0, I95.2, J70.2, J70.3, J70.4, L 10.5, L27.0, L27.1, M10.2, M32.0, M80.4, M81.4, M83.5, M87.1, R78.1, R78.2, R78.3, R78.4, and R78.5. The Oregon Center for Health Statistics (OCHS) has done so, as well.

The complete list of causes of death attributable to drug-induced mortality now includes ICD-10 codes D52.1, Drug-induced folate deficiency anemia; D59.0, Drug-induced hemolytic anemia; D59.2, Drug-induced non-autoimmune hemolytic anemia; D61.1, Drug-induced aplastic anemia; D64.2, Secondary sideroblastic anemia due to drugs and toxins; E06.4, Drug-induced thyroiditis; E16.0, Drug-induced hypoglycemia without coma; E23.1, Drug-induced hypopituitarism; E24.2, Drug-induced

Cushing's syndrome; E27.3, Drug-induced adrenocortical insufficiency; E66.1, Drug-induced obesity; selected codes from the ICD-10 title Mental and behavioral disorders due to psychoactive substance use, specifically, F11.0-F11.5, F11.7-F11.9, F12.0-F12.5, F12.7-F12.9, F13.0-F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0-F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.9, F18.0-F18.5, F18.7-F18.9, F19.0-F19.5, F19.7-F19.9; G21.1, Other drug-induced secondary parkinsonism; G24.0, Drug-induced dystonia; G25.1, Drug-induced tremor; G25.4, Drug-induced chorea; G25.6, Drug-induced tics and other tics of organic origin; G44.4, Drug-induced headache, not elsewhere classified; G62.0, Drug-induced polyneuropathy; G72.0, Drug-induced myopathy; I95.2, Hypotension due to drugs; J70.2, Acute drug-induced interstitial lung disorders; J70.3, Chronic drug-induced interstitial lung disorders; J70.4, Drug-induced interstitial lung disorder, unspecified; L10.5, Drug-induced pemphigus; L27.0, Generalized skin eruption due to drugs and medicaments; L27.1, Localized skin eruption due to drugs and medicaments; M10.2, Drug-induced gout; M32.0, Drug-induced systemic lupus erythematosus; M80.4, Drug-induced osteoporosis with pathological fracture; M81.4, Drug-induced osteoporosis; M83.5, Other drug-induced osteomalacia in adults; M87.1, Osteonecrosis due to drugs; R78.1, Finding of opiate drug in blood; R78.2, Finding of cocaine in blood; R78.3, Finding of hallucinogen in blood; R78.4, Finding of other drugs of addictive potential in blood; R78.5, Finding of psycho-tropic drug in blood; X40-X44, Accidental poisoning by and exposure to drugs, medicaments, and biological substances; X60-X64, Intentional self-poisoning (suicide) by and exposure to drugs, medicaments, and biological substances; X85, Assault (homicide) by drugs, medicaments, and biological substances; and Y10-Y14, Poisoning by and exposure to drugs, medicaments and biological substances, undetermined intent. Drug-induced causes exclude accidents, homicides, and other causes indirectly related to drug use. Also excluded are newborn and maternal deaths associated with a mother's drug use.

18. The number of deaths and death rates based on the newly modified list of causes may differ slightly from those previously published. Nationally, for example, the addition of the 37 codes increased the total number of deaths from drug-induced causes from 26,018 to 26,040 (an increase of 22) for 2002; the total crude and age-adjusted death rates were unaffected.