

# Mortality

## ALL CAUSES

During 1997, Oregon's death rate fell 1.6 percent to 893.7 per 100,000 population, down from 908.5. For the past five years the rate has fluctuated from 888 to 909 per 100,000 population. Prior to 1992 it had been following a consistent downward trend, declining annually since 1987. [Figure 6-1; Table 6-3]. During 1997, 28,750 Oregonians died, 150 fewer than the previous year.

Noteworthy increases occurred in the death rates for two causes: hypertension (up 16%) and diabetes mellitus (up 6.0%). Both were record highs. The diabetes rate has climbed, seemingly inexorably, since the mid-1980s; compared to its value in 1985, the 1997 death rate has more than doubled. Record low death rates were recorded for several causes, most notably SIDS where the mortality rate fell to a record low of 0.8 per 1,000 live births, a 74 percent decrease since 1980's record high of 3.1. (Much of the decrease may be attributable to the "Back to Sleep" campaign introduced during the mid-1990s; see Chapter 7 for further information.) Other record lows occurred for heart disease (down 3.4%) and arteriosclerosis (down 7.5%). And, although not a record low, the rate for homicide declined 15 percent in just one year.

Between 1996 and 1997, the age-specific death rates decreased for all age groups except 0- to 4-year-olds, where the increase was marginal. Males have consistently had higher death rates than females, but the gap is narrowing. In 1987 the rate for males was 15 percent higher; by 1997 it was just 1.4 percent higher. Also during 1997, the median age at death rose to a record high of 78 years, 81 for females and 75 for males. On average, an Oregonian died every 18 minutes during 1997.

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***The median age at death increased to 78, a record high.***

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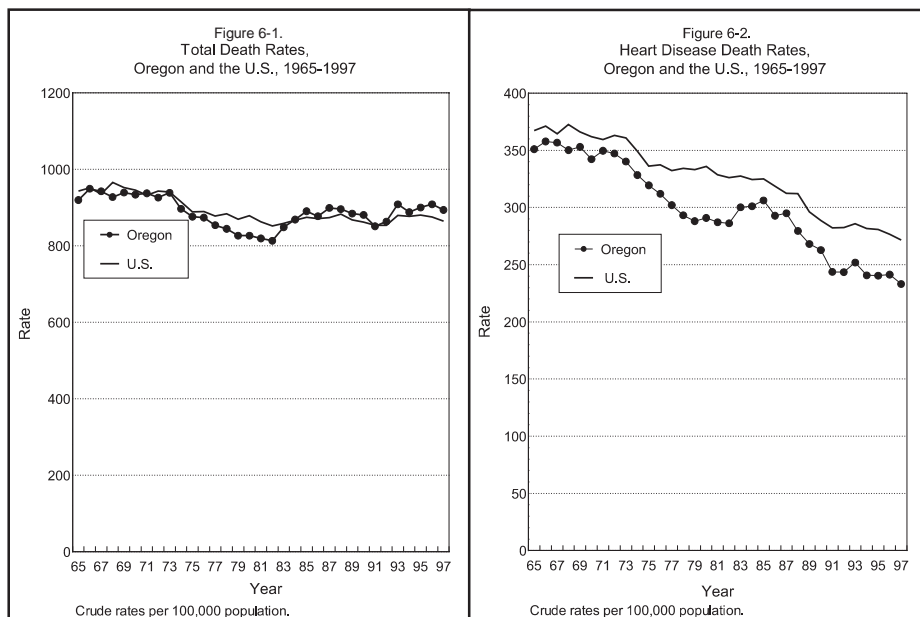
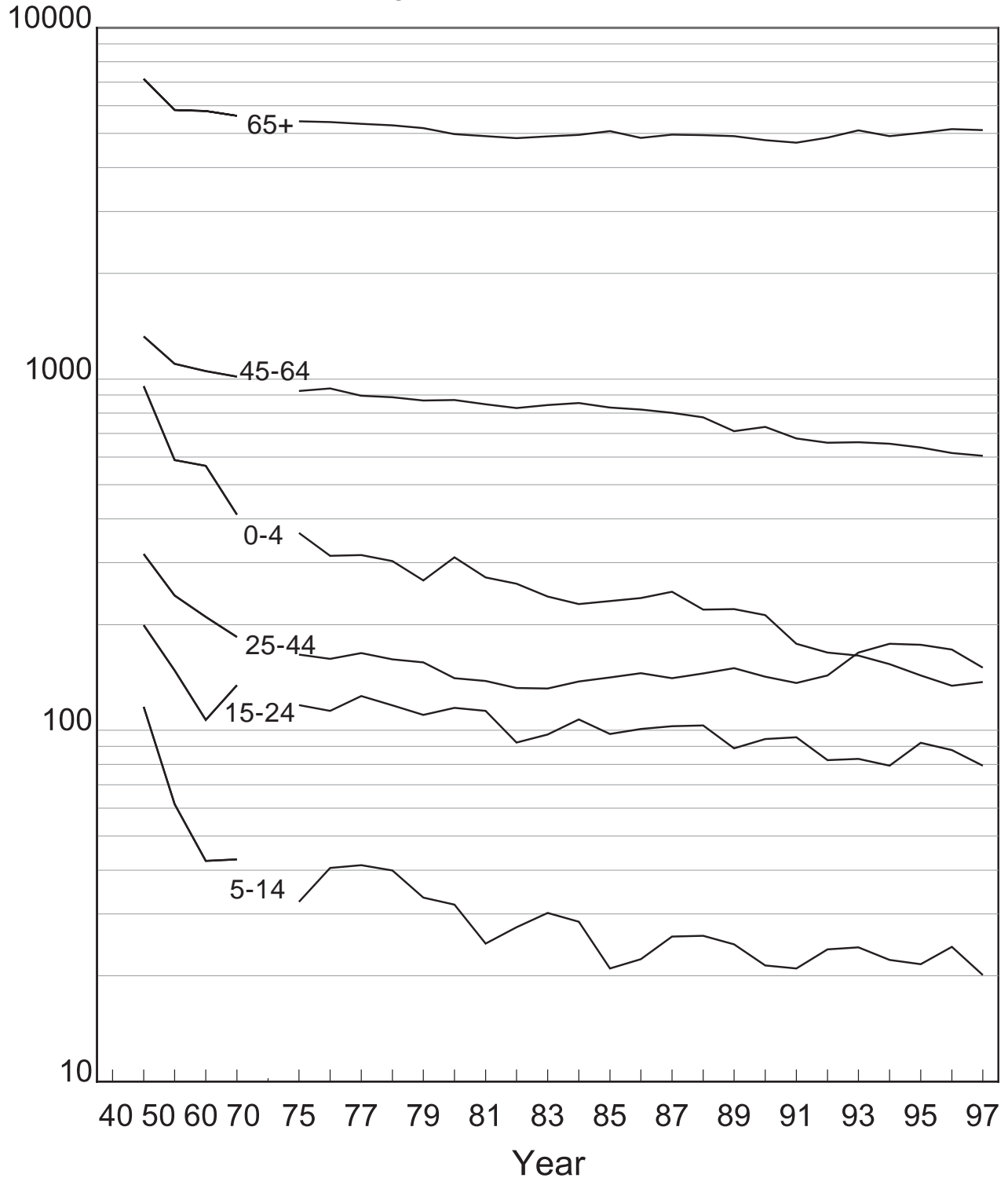
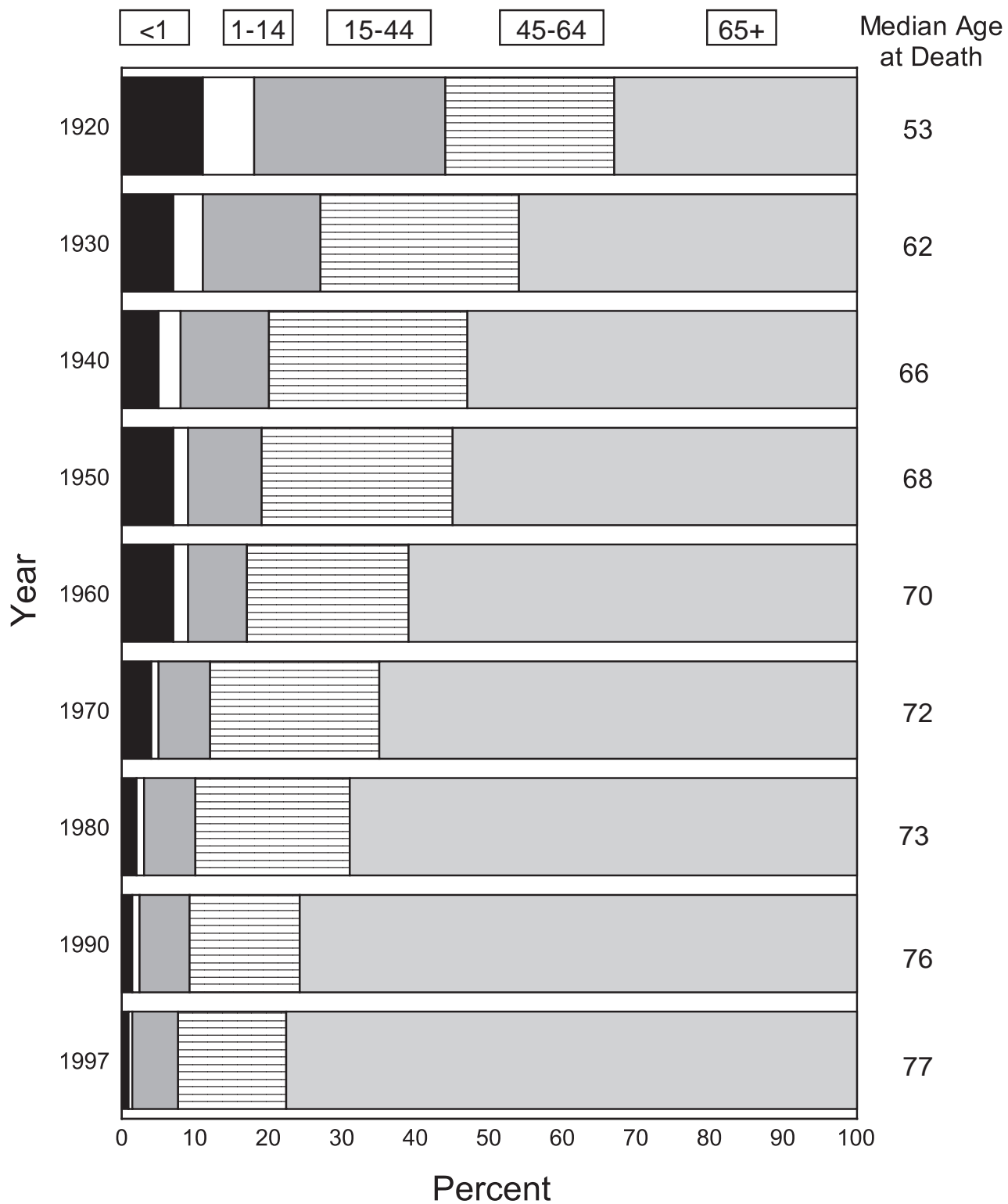


Figure 6-3.  
Age-Specific Death Rates,  
Oregon Residents, 1940-1997



Rates are per 100,000.

Figure 6-4.  
Proportion of Deaths by Selected Age Groups,  
Oregon Residents, 1920-1997



Oregon's 1997 crude death rate for all causes combined was somewhat higher than the nation's (864.4). However, its 1997 age-adjusted death rate was 6.1 percent lower than the nation's. [Table 6-42].<sup>1</sup> (Age-adjusted death rates control for the effect of the age distribution of a population on its death rate. Any remaining differences are due to factors other than age.)

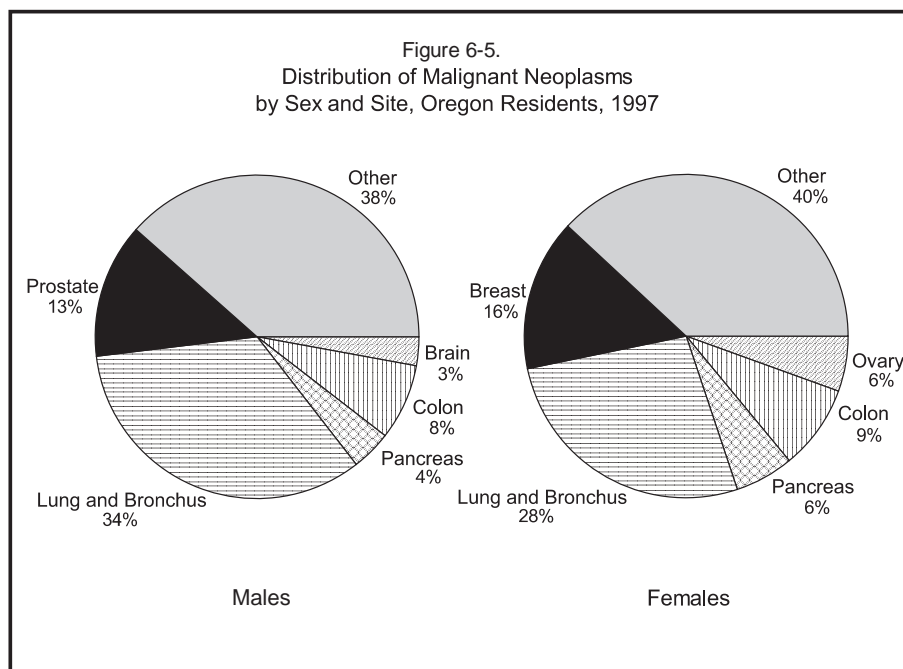
**Over the past two decades the proportion of deaths due to heart disease declined from 33 percent to 26 percent.**

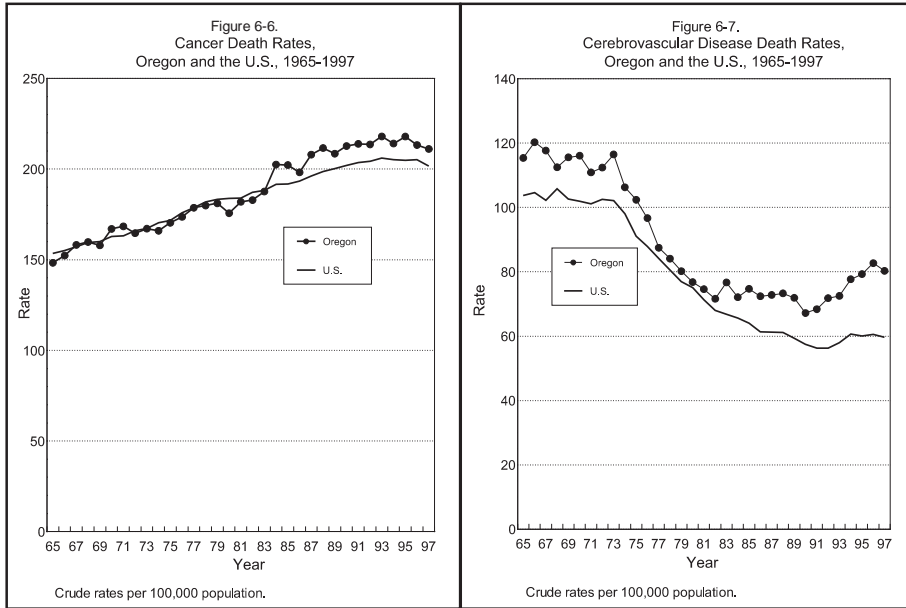
### HEART DISEASE

Heart disease continued to be the leading cause of death in Oregon, accounting for nearly one of every four resident deaths. The near-continual annual declines seen over the past several decades essentially ceased during the 1990s until this year. The death rate fell 3.4 percent compared to the previous year, 233.1 per 100,000 population in 1997 compared to 241.3 in 1996.<sup>2</sup> [Figure 6-2; Table 6-3]. Since 1987, the largest decline has been among chronic ischemic heart disease deaths; the rate fell 33% compared to 11% for other heart diseases.

As with many causes of death, the heart disease mortality rate was higher among males than females. This disparity has narrowed during the past decade, however. [Table 6-2]. During 1987, the rate for males was 14 percent higher than that for females; by 1997, the male rate was just 8.4 percent higher than the female rate. Heart disease is the leading killer of Oregonians 75 or older. The median age for the 7,500 Oregonians who died from this cause was 80 years.

Oregon's rate has consistently been lower than the U.S. rate; in 1997, the state's age-adjusted death rate was 22 percent lower than the nation's. [Table 6-42]. An Oregonian died of heart disease every 70 minutes in 1997.





***Lung cancer is the most common fatal cancer for both men and women.***

The heart disease category includes a number of conditions. Most common, and accounting for the majority of heart disease deaths, are myocardial infarctions, coronary occlusions, coronary thromboses, and coronary heart disease. The infarctions, occlusions, and thromboses are acute, often terminal events, while coronary heart disease is a chronic condition.

**CANCER**

For more than a generation, the Oregon cancer rate rose relentlessly during the 1960s through the 1980s. That trend may be in remission; although a small increase was recorded in the cancer death rate at the beginning of the 1990s, it has declined three out of the past four years and is now only marginally higher than it was in 1990 (212.7 vs. 211.1). [Figure 6-6; Table 6-3].

Although ranking second, after heart disease, cancer is the leading killer of Oregonians ages 45 through 74. [Table 6-4]. During 1997 the median age at death for cancer patients remained at 73, the highest ever recorded. The death rate for males was 11 percent higher than that for females (222.1 versus 200.3), with the disparity greatest among the elderly. In addition to the cancer-caused deaths of 6,790 Oregonians, cancer contributed to another 815 deaths where it was not the underlying cause. [Table 6-35].

The long-term upward trend in cancer mortality over the past several decades has been driven principally by an increasing number of lung cancer deaths, a cause that would be rare in the absence of smoking. The lungs were the most common site of cancer for both sexes, with lung cancer deaths becoming increasingly prevalent among women during recent decades. In 1970, there were 4.5 lung cancer fatalities among men for every female death. By 1997 the ratio declined to 1.4- to-1.0. The total lung cancer death rate has more than quintupled since 1950, increasing from 11.6 to 63.4 per

LUNG CANCER DEATH RATES			
YEAR	TOTAL	MALE	FEMALE
1970	33.5	56.4	11.4
1975	41.2	65.9	17.7
1980	48.3	69.9	27.4
1985	56.2	76.0	37.2
1990	64.3	81.2	48.1
1995	62.5	69.5	55.7
1996	62.9	74.1	52.0
1997	63.4	74.5	52.5
Rates per 100,000 population.			

100,000 Oregonians. (This has been accompanied by a sharp increase in chronic obstructive pulmonary disease deaths, as well.)

During 1997, record high death rates were recorded for myeloid leukemia and multiple myeloma. At the same time, the breast cancer death rate fell to its lowest level since 1982.

Oregon's age-adjusted cancer death rate was 3.5 percent less than the nation's during 1997. Cancer claimed the life of an Oregonian every 77 minutes in 1997.

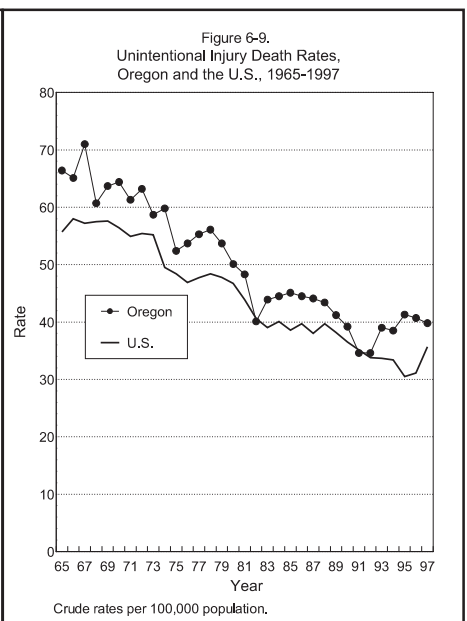
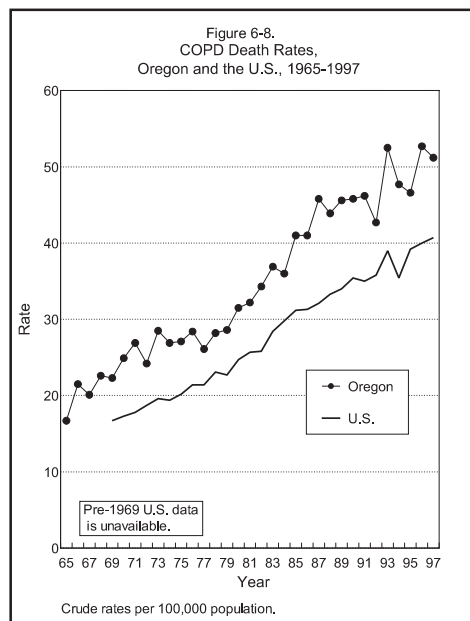
### CEREBROVASCULAR DISEASE

During most of the 1980s, the death rate for cerebrovascular disease fluctuated between a narrow range of values, ultimately declining to a record low 67.2 per 100,000 population in 1990. The early and mid-1990s were marked by increasing mortality with the rate reaching 82.7 during 1996, a 23 percent increase. [Figure 6-7; Table 6-3]. However, a small decline occurred in 1997 with the rate falling to 80.3. Nearly every age group has witnessed an increase in cerebrovascular disease death rates since the beginning of the decade. Besides the 2,582 deaths due to cerebrovascular disease, these conditions contributed to the deaths of another 1,487 Oregonians. [Table 6-35].

Cerebrovascular disease was the third most common cause of death among Oregonians, and struck females far more often than males (97.2 vs. 62.8). However, males 45-79 years old had higher death rates than similarly-aged females. The median age at death was 83 years. [Table 6-13].

Over the past quarter-century, the crude death rate from cerebrovascular disease has consistently been higher in Oregon than in the U.S. as a whole. Part of this difference is because the state's population is older than the nation's but even after controlling for this variable with age-adjusted death rates, Oregon's 1997 rate was

**Since 1990, the cerebrovascular disease death rate has increased 19 percent.**



12 percent higher than the U.S. rate. An Oregonian died from cerebrovascular disease every 3.4 hours.

Sudden circulatory crises such as strokes, cerebral thromboses, and hemorrhages are common acute forms of these diseases; cerebral arteriosclerosis is a chronic form.

### COPD

Chronic obstructive pulmonary disease (COPD) has become an increasingly common killer of Oregonians over the past several decades, and is now the fourth leading cause of death. During 1997, the death rate declined marginally to 51.2 per 100,000 population. [Figure 6-8; Table 6-3]. A record number of years of potential life were lost, however. [Table 6-11]. The median age at death remained at 77, a record high.

There is a distinct, but decreasing, gender difference in the risk of death from COPD. In 1987, males were 48 percent more likely to die from this cause than were females; by 1997, they were only 7.1 percent more likely to do so. The vast majority of COPD deaths are caused by tobacco use; the sharp rise in deaths among women reflects their increasing smoking prevalence during past decades. No other cause, except lung cancer, has a higher proportion of deaths linked to tobacco use than does COPD. [Table 6-19].

The group of allied conditions categorized as COPD includes four principal diseases: chronic and unspecified bronchitis, emphysema, asthma, and chronic airways obstruction. The death rates for the most common of the four, chronic airways obstruction has increased 20 percent since 1987. In addition to the 1,648 Oregonians whose deaths were due to chronic obstructive pulmonary diseases, COPD was a factor in another 1,777 deaths. [Table 6-35].

During 1997, Oregon's age-adjusted COPD death rate was 16 percent higher than the U.S. rate. An Oregonian died from chronic obstructive pulmonary disease every 5.3 hours in 1997. Most of these deaths were preventable.

### UNINTENTIONAL INJURIES

Until the early 1980s, Oregon's unintentional injury<sup>3</sup> death rate had been declining. The downward trend resumed in 1986 and accelerated through 1991 falling to 34.6 per 100,000 population, a record low. [Figure 6-9; Table 6-3]. Since 1992, however, the rate has trended upward reaching 40.7 in 1996 before declining to 39.8 in 1997. Nonetheless, since the record low during 1991-92, rates have risen for both sexes and most age groups, and males remained more than twice as likely as females to die from unintentional injuries.

Although this category ranked fifth overall in the number of deaths (1,281), it was the leading cause of premature death and the leading cause of death for Oregonians ages 1-44; more years of potential life were lost before age 65 from unintentional injuries than from any other cause. [Table 6-25]. Cancer and heart disease ranked second and third, respectively.

COPD Death Rates		
Year	Male	Female
1987	55.0	37.1
1997	53.0	49.5
% Change	-3.6	+19.9
Rates per 100,000 population.		

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***Unintentional injuries were the leading cause of years of potential life lost.***

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**Most unintentional poisoning deaths were overdoses of illicit drugs.**

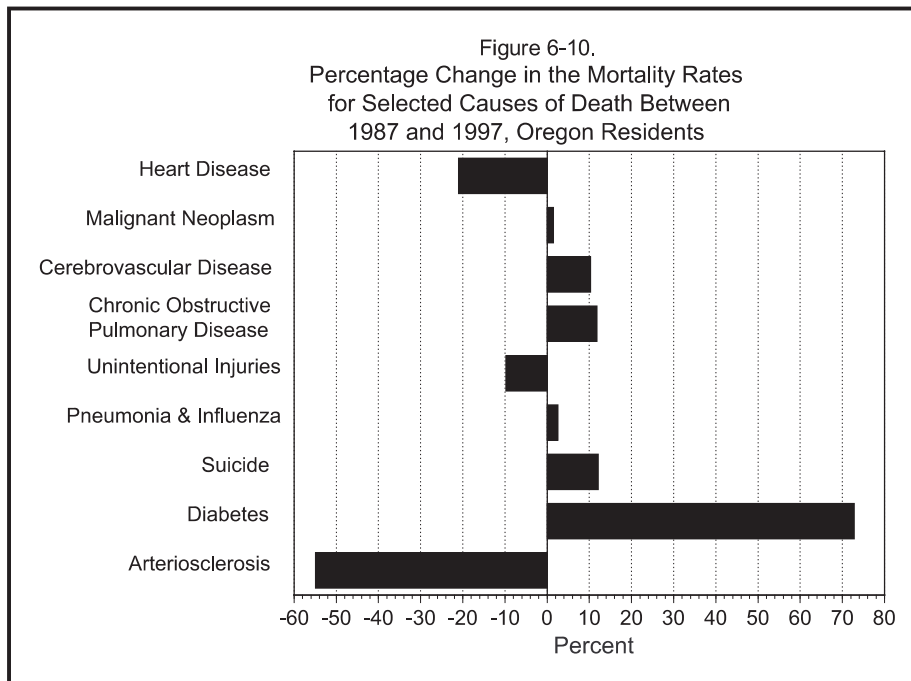
Motor vehicle-related deaths (543) accounted for 42 percent of all unintentional injury deaths; over half (58%) of the decedents were 15-44 years old. (More than one in ten of the deaths involving motor vehicles were of pedestrians. [Table 6-16].) Falls, the second most common type of fatal unintentional injury, claimed 266 Oregonians; The death rate for falls rose to 8.3 in 1997, a record high and likely a reflection of the aging population; 75 percent of fall victims were 75 or older. Most fatal falls occurred in the home. Poisonings and drownings were the third and fourth most common causes of unintentional injury deaths. [Table 6-16]. (For further information on drownings, see *Oregon Health Trends*, No. 50.) During 1997, 61 fatal unintentional injuries were sustained in the workplace.<sup>4</sup> [Table 6-14].

Oregonians continued to be more apt to suffer a fatal unintentional injury than the average American. During 1997, the state's age-adjusted rate exceeded the U.S. rate by 11 percent. An Oregonian died as a consequence of an unintentional injury every 6.8 hours in 1997.

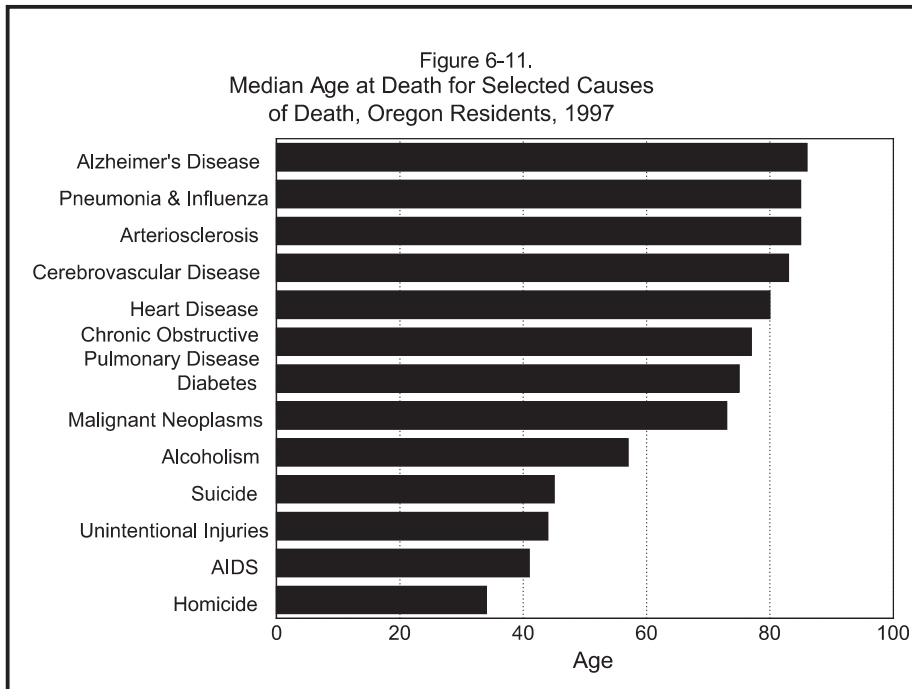
**PNEUMONIA AND INFLUENZA**

The death rate for pneumonia and influenza, the sixth leading cause of death, decreased slightly, down from 29.7 per 100,000 population during 1996 to 28.3 in 1997. All of the decrease occurred among males.

As is typical, the 1997 mortality rate for pneumonia and influenza was higher for females than males (31.9 versus 24.5). This is the fifth leading cause of death among Oregonians 75 or older. Besides the 909 deaths attributed to pneumonia and influenza, these infections played a role in another 1,255 deaths. [Table 6-35].







Oregon's 1997 age-adjusted mortality rate was 24 percent lower than the national rate. A resident died of pneumonia or influenza every 9.6 hours in 1997.

## DIABETES

During the early to mid-1980s, the diabetes mellitus death rate fluctuated over a narrow range of values. Then in 1987 it moved sharply upward, with the disease claiming a record number of Oregonians. The rate has risen every year since then. By 1997, the rate had more than doubled (25.4 versus 12.3 per 100,000 population in 1986). [Table 6-3]. The increase has occurred across all age groups and both sexes. Among all Oregonians in 1997, diabetes caused 816 deaths and contributed to another 1,734. [Tables 6-3 and 6-35]. Other than the increasing obesity of Oregonians, and possibly improved physician awareness and reporting of the disease, local diabetes authorities have no explanation for the rising death rate.

Historically, Oregon's diabetes death rate has been markedly lower than the nation's, but with the increases during recent years the gap has narrowed; the state's 1997 age-adjusted death rate was just 2.9 percent lower than the U.S. rate. An Oregonian died of diabetes every 10.7 hours in 1997.

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***The diabetes death rate hit a new high for the tenth consecutive year.***

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## ALZHEIMER'S DISEASE

Alzheimer's disease (including Alzheimer's dementia) has been reported with increasing frequency during the past decade and ranked eighth among the leading causes of death during 1997. For

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***Oregon's  
Alzheimer's dis-  
ease death rate  
ranked seventh  
highest nationally.***

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the first time, the death rate for this cause declined, from 23.3 per 100,000 population in 1996 to 22.3. Women remained more likely than men to die from Alzheimer's disease; the rates were 31.4 and 13.0, respectively. [Table 6-2]. More than nine in ten (93%) of the victims were 75 or older at death. [Table 6-6]. Besides the 718 deaths due to this cause, Alzheimer's disease contributed to 467 deaths. [Table 6-35].

This state's Alzheimer's disease death rates have historically been higher than the nation's; Oregon's 1997 rate was 45 percent higher and ranked seventh highest among the states and District of Columbia. [Table 6-42]. An Oregonian died from Alzheimer's disease every 12.2 hours in 1997. For further information on Alzheimer's disease in Oregon, see *Oregon Health Trends*, No. 52.

## **SUICIDE**

A record 538 Oregonians committed suicide during 1997. The death rate, however, declined marginally to 16.7 per 100,000 population due to a more rapidly increasing population. Although often exhibiting considerable variation from year to year, the long-term trend of the suicide rate in recent decades has been upward, driven principally by increasing suicidal behavior among the state's youth. (However, the role of youth suicide in the increase in overall suicide rates appears to be abating.)

For the third year in a row, suicide was the sixth leading cause of death among males; they were 3.6 times more likely to kill themselves than were females (26.4 versus 7.3 per 100,000). Male suicide rates have consistently been high in older age groups, with the rate two to five times higher for men 80 or older than for their younger counterparts. [Table 6-7]. Among females, age-specific rates typically increase into middle age, peak among 45- to 54-year-olds, and then decline.

The youngest Oregonians to commit suicide were two 12-year-olds (a boy and a girl, both of whom hanged themselves) and the oldest, two 90 year old men. Suicide was the fourth leading cause of years of potential life lost before age 65, following unintentional injuries, cancer, and heart disease. [Table 6-25]. It was the second leading cause of death for Oregonians ages 15-34. [Table 6-4].

Firearms were the most frequently chosen method (62%) of completed suicide, followed by poisoning (19%) and hanging (10%). The method varied within different age and sex cohorts, however. [Table 6-17].

As in years past, the 1997 age-adjusted rate for Oregon was substantially higher (40 percent) than for the U.S. An Oregonian took his or her own life every 16.3 hours in 1997. For additional information on suicide, see *Suicide and Suicidal Thoughts by Oregonians*, and *Suicidal Behavior: A Study of Oregon High School Students, 1997*, recently published reports by the Center for Health Statistics.

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***Six in ten suicides  
are committed  
with  
firearms.***

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***Suicide is the  
ninth leading  
cause of death  
overall, but sixth  
among males.***

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## ALCOHOLISM

In 1997 the Oregon alcoholism<sup>5</sup> death rate was 11.9 per 100,000 population. Since 1987, the death rate has fluctuated between a low of 10.4 in 1991 and a high of 13.2 in 1996. [Table 6-3].

During 1997, alcoholism was the tenth leading cause of death overall, but ranked fourth among Oregonians 55-64. [Table 6-4]. However, if intentional and unintentional injury deaths (e.g., motor vehicle crashes) that involved alcohol were included in this count, the category would rank substantially higher. (The role, if any, of alcohol in injury deaths is rarely reported on death certificates.) Males have long been more likely to die from alcoholism than females.

A total of 382 deaths were directly due to alcoholism and related disorders, with alcoholic liver disease accounting for the majority (62%). In addition, alcohol-related diseases were reported as contributing to another 288 deaths. [Table 6-35]. Alcoholism often led to early death; one-half of all those who died from it died by age 57.

During 1997, Oregon's age-adjusted death rate was 48 percent higher than the nation's, and ranked fifth among the 50 states and District of Columbia. For no other leading cause of death, did Oregon's rate rank higher.<sup>6</sup> A non-injury alcohol-caused death occurred every 22.9 hours in Oregon during 1997.

## ARTERIOSCLEROSIS

The arteriosclerosis death rate continued its long-term downward trend in 1997, falling to yet another record low. The rate (7.4 per 100,000 population) is now less than half of what was in 1987. (In that year, arteriosclerosis was the seventh leading killer of Oregonians; a decade later, it ranked twelfth. [Table 6-23].) Nonetheless, in 1997, Oregon's age-adjusted death rate was 14 percent higher than the U.S. rate.

Women typically bear the greater risk, and that was so in 1997; their death rate was 8.4, compared to 6.3 for men. [Table 6-2]. An Oregonian died from arteriosclerosis every 1.5 days in 1997. Note, however, that these figures do not include all deaths involving arteriosclerosis, since many have been classified under more specific manifestations of cardiac and cerebral disease. Arteriosclerosis was listed as the underlying cause of death for 237 Oregonians but contributed to the deaths of another 965 residents.

## PARKINSON'S DISEASE

For the first time since 1992, the Parkinson's disease death rate declined, falling to 6.7 per 100,000 population. [Table 6-3]. Even so, the rate was 63 percent higher than it was in 1987. As usual, Oregon men were more likely than women to die from this disease; the rates were 7.5 and 5.8, respectively. [Table 6-2]. A small number of middle-aged residents died from Parkinson's disease, but more than four-fifths of the deaths occurred to residents 75 or older. [Table 6-6]. For additional information, see *Oregon Health Trends*, Number 52.

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***One half of all  
alcoholism deaths  
occurred by age 58.***

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***The arteriosclerosis death rate again fell to a record low.***

The state's 1996 age-adjusted death rate for this cause was the highest in the nation, but with the decline in the number of deaths during 1997, Oregon ranked eleventh highest with the rate 28 percent higher than the nation's. The 214 deaths in 1997 represent the loss of an Oregonian every 1.7 days.

**HOMICIDE**

Continuing a recent trend, the homicide rate declined for the third straight year. By 1997, Oregonians were a third less likely to be a homicide victim than they were during 1994 (4.1 per 100,000 population compared to 6.0). The highest rate ever recorded (6.8) occurred in 1986. [Table 6-3]. Six of the 131 homicide deaths resulted from legal intervention. [Table 6-17].

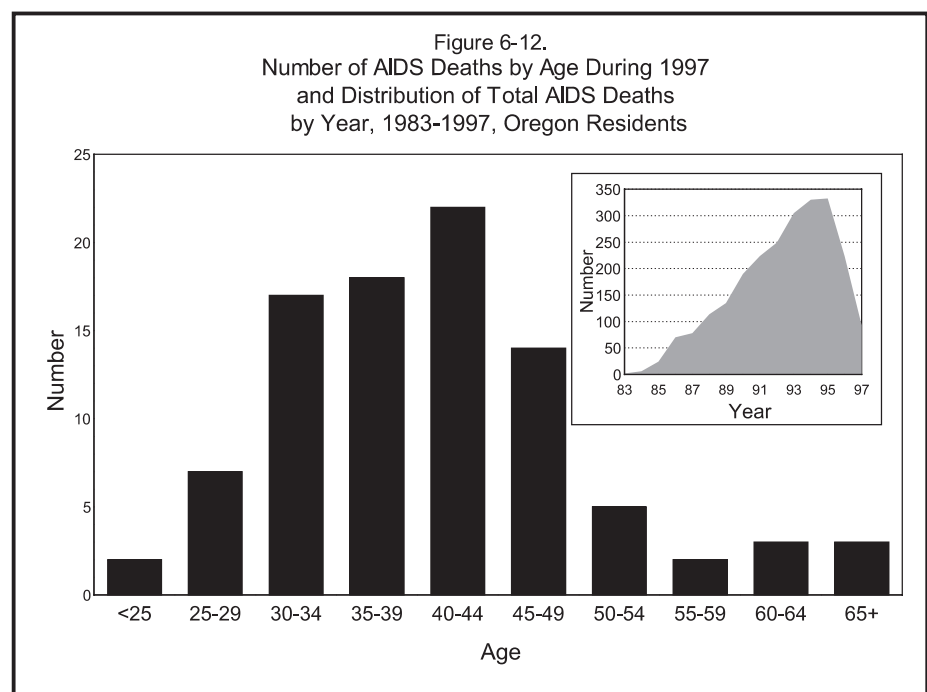
Males were more apt to be murdered than females; their death rate was over three times higher, 6.2 compared to 2.0. [Table 6-2]. Even the youngest Oregonians were at risk: nine children who had not yet reached their fifth birthday were murdered during 1997, and four of these were infants. The median age at death was 34 years. [Figure 6-11; Table 6-13]. Firearms were used in 60 percent of all homicides; most were handguns. [Table 6-17].

Oregonians have long been at less risk of being murdered than the average U.S. resident. In 1997, Oregon's age-adjusted homicide rate was 46 percent lower than the nation's. Even so, an Oregonian was murdered every 2.8 days in 1997.

**AIDS**

For the second year in a row, the AIDS death rate fell dramatically, declining from 7.1 per 100,000 population to 2.9. This is the lowest rate recorded since 1987. Since 1994, when a record high

***During the last three years, the homicide rate has fallen by a third.***



rate of 10.7 was recorded, the death rate has fallen 73 percent. [Table 6-3]. Much of this decline can be attributed to the powerful new AIDS drug “cocktails” that are saving lives. Patients now commonly receive more than one anti-retroviral drug plus a protease inhibitor.

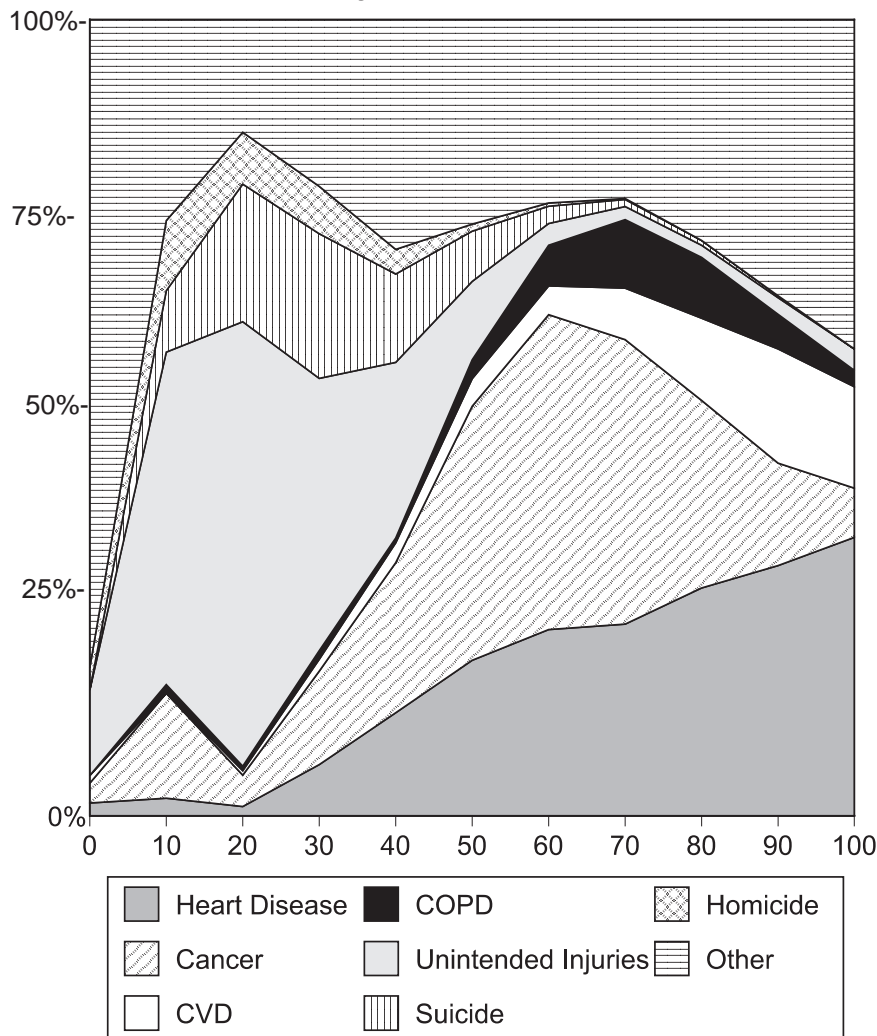
Nearly all (81 or 87%) of the decedents during 1997 were males, but 12 were females. [Table 6-6]. Most deaths (69%) occurred among Oregonians 25 to 44 years old, but the youngest to die was just 21 years old. AIDS was the second leading cause of death among Oregon men 25-44 years old for much of the 1990s but no longer ranks among the top five leading causes of death. [Table 6-4]. Moreover, the median age at death has risen to its highest level ever: 41 years. [Table 6-13]. In addition to the 93 deaths directly due

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***The AIDS death rate has fallen to a level not seen since 1987.***

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Figure 6-13.  
Percentage of Deaths by Cause and Age  
Oregon Residents, 1997

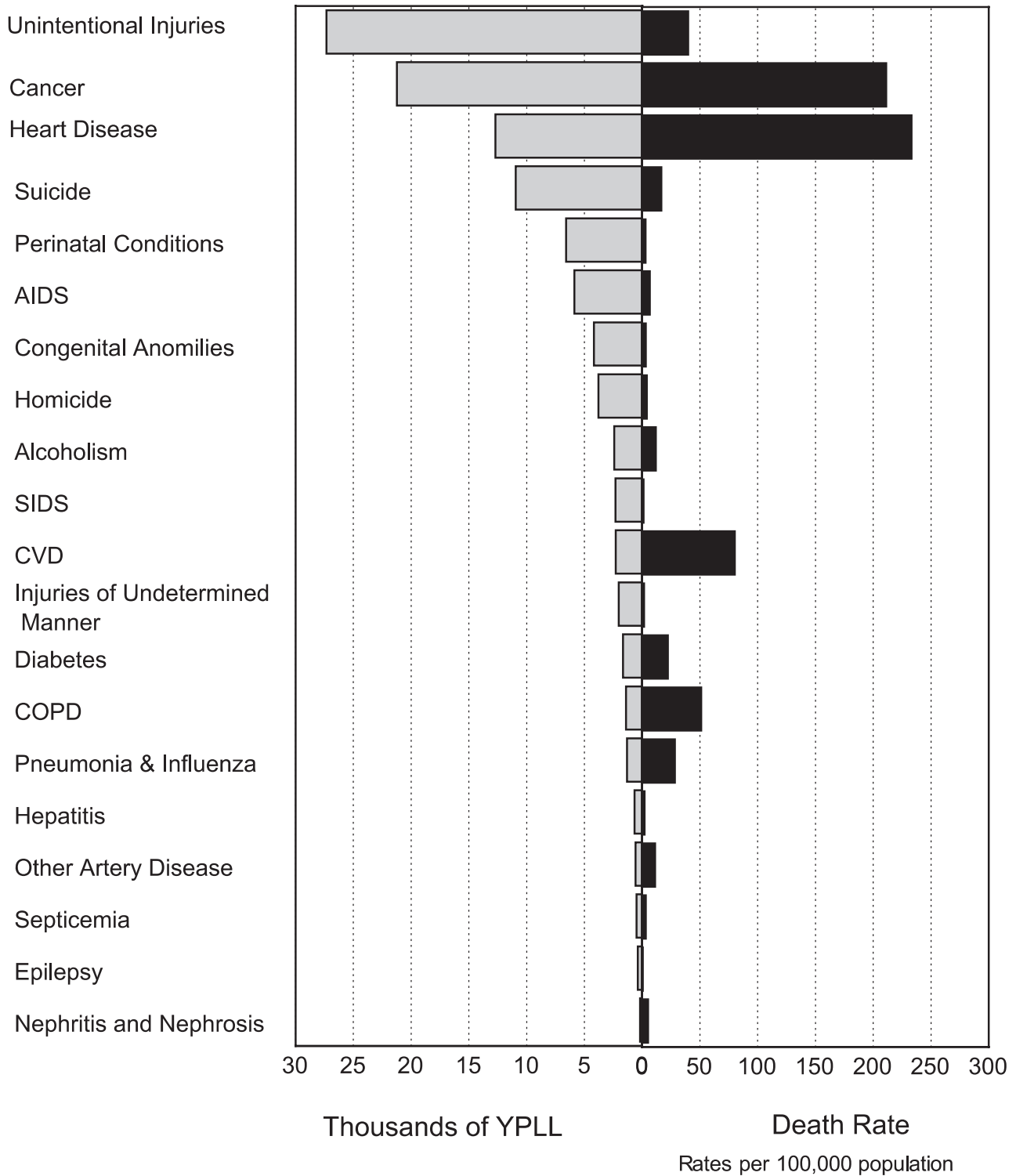



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***The oldest Oregonian to die in 1997 was a 108 year old woman who died from a cerebral thrombosis.***

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Figure 6-14.  
 Leading Causes of Years of Potential Lost Before  
 Age 65 and Corresponding Death Rates,  
 Oregon Residents, 1997



to AIDS, the human immunodeficiency virus was reported to have contributed to another 13 deaths. [Table 6-35].

The age-adjusted death rates in Table 6-42 illustrate that Oregonians were 61 percent less likely to die from AIDS during 1997 than were Americans as a whole. An Oregonian died from AIDS every 3.9 days in 1997.

## 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 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 among all decedents are then totaled. Figure 6-14 shows the disparity between death rates and the years of potential life lost. (In all references to YPLL in this report, that standard is 65 years unless otherwise noted.)

## ENDNOTES

- 1 Comparisons between Oregon and the U.S. are based on 1997 age-adjusted rates; see Table 6-42 and the Technical Notes for comments on age-adjusted rates. Oregon’s population is older vis-a-vis the U.S. population. Rates are adjusted to the U.S. standard million. All other rates are crude rates (i.e., the number of deaths divided by the population, times 100,000.).
- 2 These and subsequent heart disease rates do not include alcoholic cardiomyopathy deaths, which are included in the alcoholism category. The totals for heart disease, including alcoholic cardiomyopathy, are given in Tables 6-6, 6-7, 6-10, and 6-32 through 6-33.
- 3 Unintentional injuries is preferred to the term accidents (ICD E800-E949) among health professionals.

### *More Oregonians Cremated Than Ever Before*

For the first time, more than half of all Oregon decedents were cremated. The method of disposal of remains varied by gender, age, race, education and region of the state. Oregon’s cremation rate was the fifth highest among the states. For further information on this topic, see *Oregon Health Trends*, No.53, available on the Internet at <http://www.ohd.hr.state.or.us/cdpe/chs/newsltr/oh53/als53.pdf>.

For further information on death in Oregon, see our web site at: <http://www.ohd.hr.state.or.us/cdpe/chs/death.htm>

- 4 Note that this figure, unlike those presented in Annual Reports prior to 1993, is based on the number of fatal injuries occurring at work [Table 6-14] rather than the National Safety Council classification system [Tables 6-15 and 6-30].
- 5 This complex of diseases includes alcoholic psychosis, alcoholic dependence syndrome, alcoholic gastritis, alcoholic cardiomyopathy, alcoholic polyneuropathy, and alcoholic liver disease.
- 6 This disparity may be partially explained by the death certificate query program administered by the Oregon Center for Health Statistics: When a cause suggestive of alcoholism is listed on the death certificate, the certifying physician is queried about the role of alcohol in the decedent's death. About ten percent of all death certificates are queried for additional information; the role of alcohol in a death is just one of the reasons prompting a query.