

# Mortality

## ALL CAUSES

During 1996, Oregon's death rate rose 1.0 percent to 908.5 per 100,000 population, up from 900.1. In four of the past five years the rate increased. Prior to 1992 it had been following a consistent downward trend, declining annually since 1987. [Figure 6-1; Table 6-3]. During 1996, a record 28,900 Oregonians died, 2.5 percent more than during the previous year.

Noteworthy increases occurred in the death rates for two causes: chronic obstructive pulmonary disease (up 13%) and Alzheimer's disease (up 6.0%). Both were record highs. The diabetes rate, too, continued its apparently inexorable climb, reaching a record 23.2 deaths per 100,000 population.

Between 1995 and 1996, the age-specific death rates increased for 15- to 24 year-olds and for residents 65 or older; the largest increase (12%) occurred among the former. Males have consistently had higher death rates than females, but the gap is narrowing. In 1986 the rate for males was 19 percent higher; by 1996 it was just 6.6 percent higher. The median age at death was 77 years, 80 for females and 74 for males. On average, an Oregonian died every 19 minutes during 1995.

Oregon's 1995 crude death rate for all causes combined was slightly higher than the nation's (880.0). However, its 1995 age-adjusted death rate was 6.8 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.)

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***On average, an Oregonian died every 19 minutes during 1996 .***

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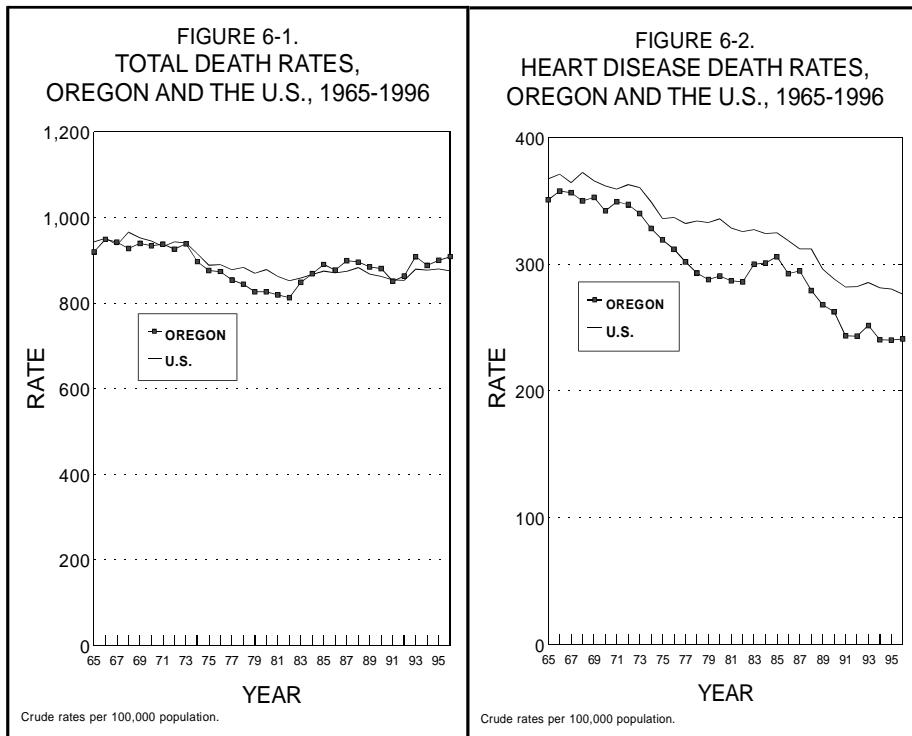
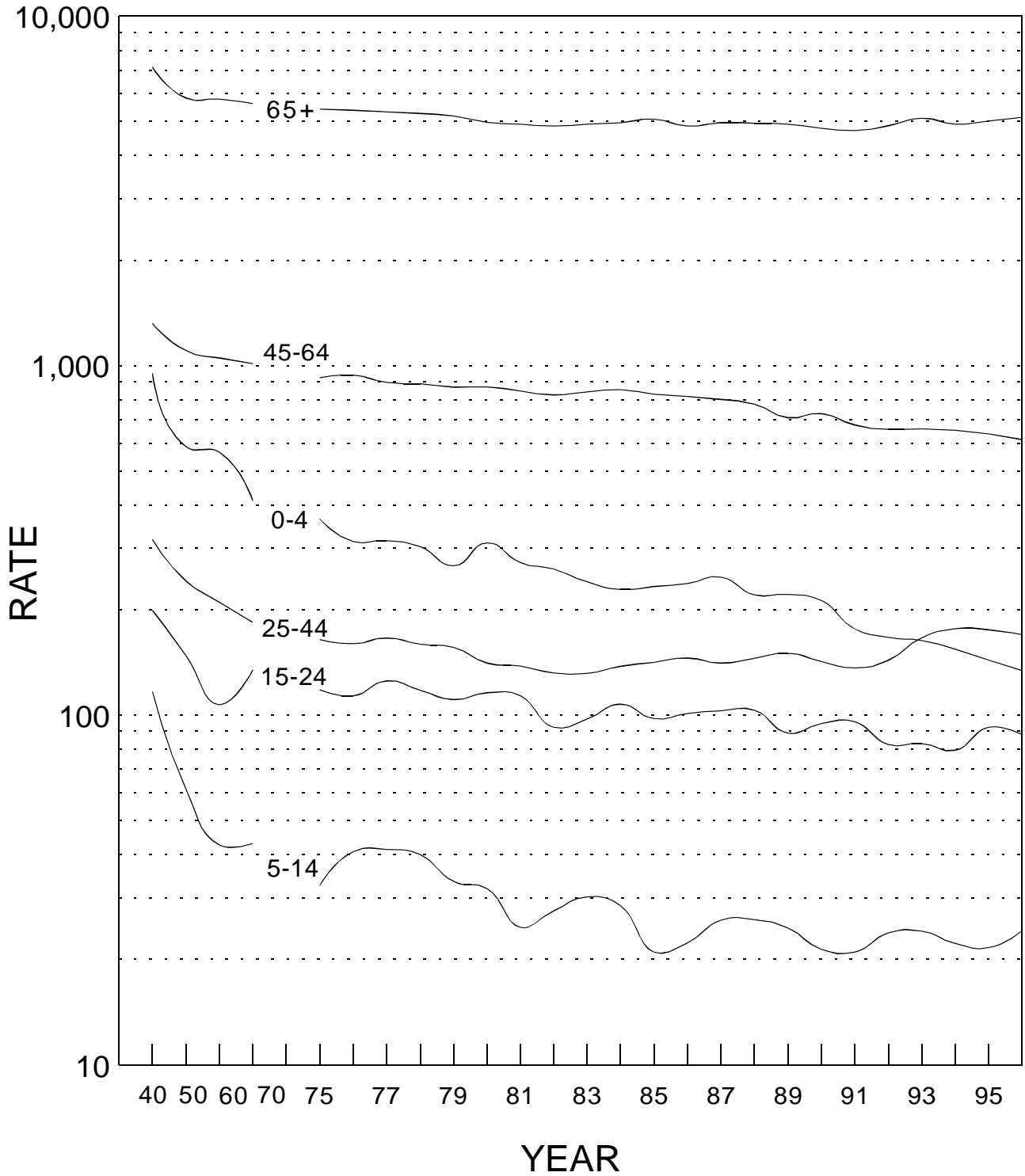
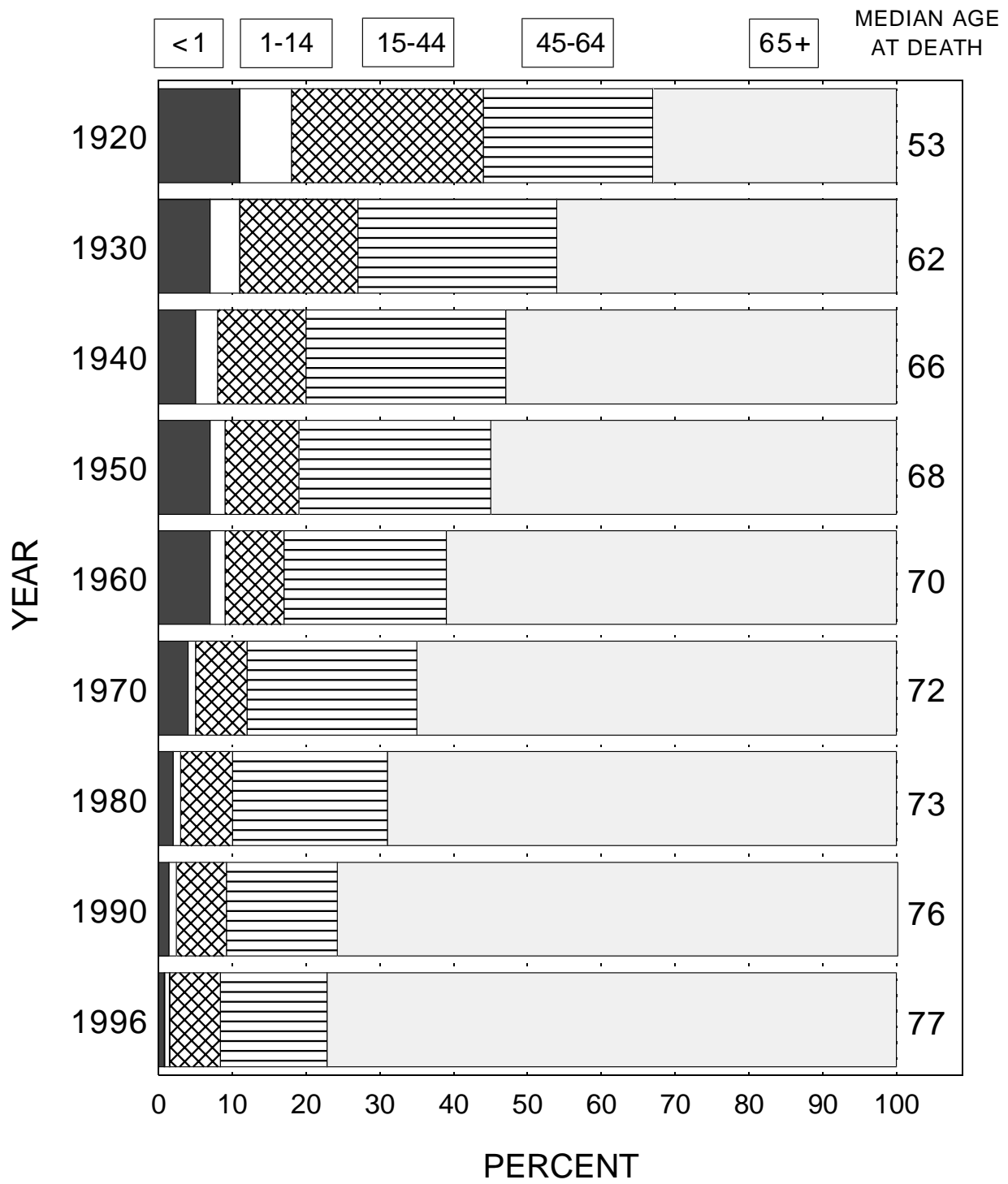


FIGURE 6-3.  
AGE-SPECIFIC DEATH RATES,  
OREGON RESIDENTS, 1940-1996



Rates per 100,000 population.

FIGURE 6-4.  
PROPORTION OF DEATHS BY SELECTED AGE  
GROUPS, OREGON RESIDENTS, 1920-1996



### HEART DISEASE

Heart disease continued to be the leading cause of death in Oregon, accounting for over one of every four resident deaths. The death rate was virtually unchanged compared to the previous year, 241.3 per 100,000 population in 1996 compared to 240.4 in 1995.<sup>2</sup> [Figure 6-2; Table 6-3]. The near-continual annual declines seen over the past several decades have essentially ceased since 1991. Since 1986, the largest decline has been among chronic ischemic heart disease deaths; the rate fell 27% compared to 8.9% for other heart diseases. However for heart disease as a whole, a record number of years of potential life were lost during 1996. [Table 6-11].

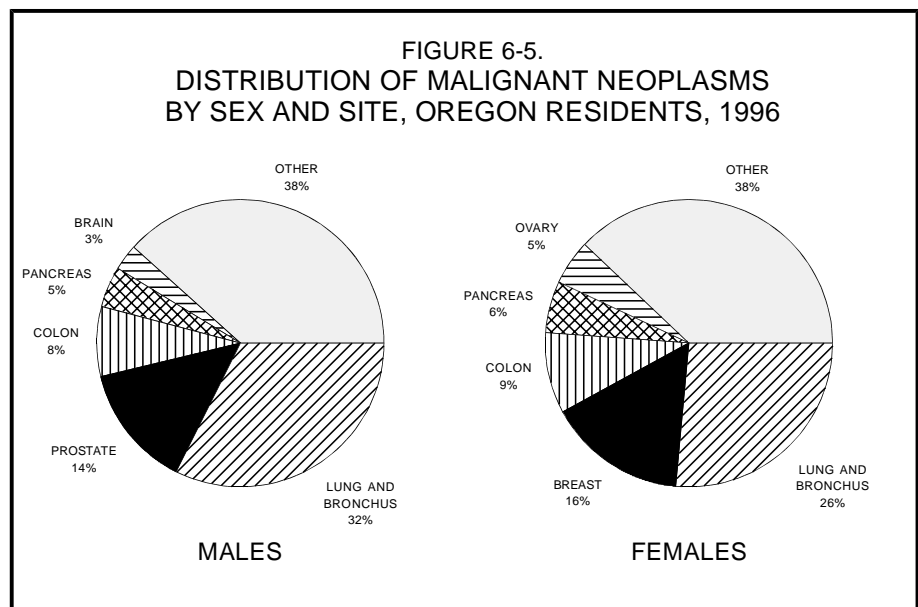
As with many causes of death, the heart disease mortality rate was higher among males than females. This disparity has narrowed during the past decade, however. [Table 6-2]. During 1986, the rate for males was 22 percent higher than that for females; by 1996, the male rate was 11 percent higher than the female rate. Heart disease is the leading killer of Oregonians 75 or older. The median age at death for this cause was 81 years, a record high.

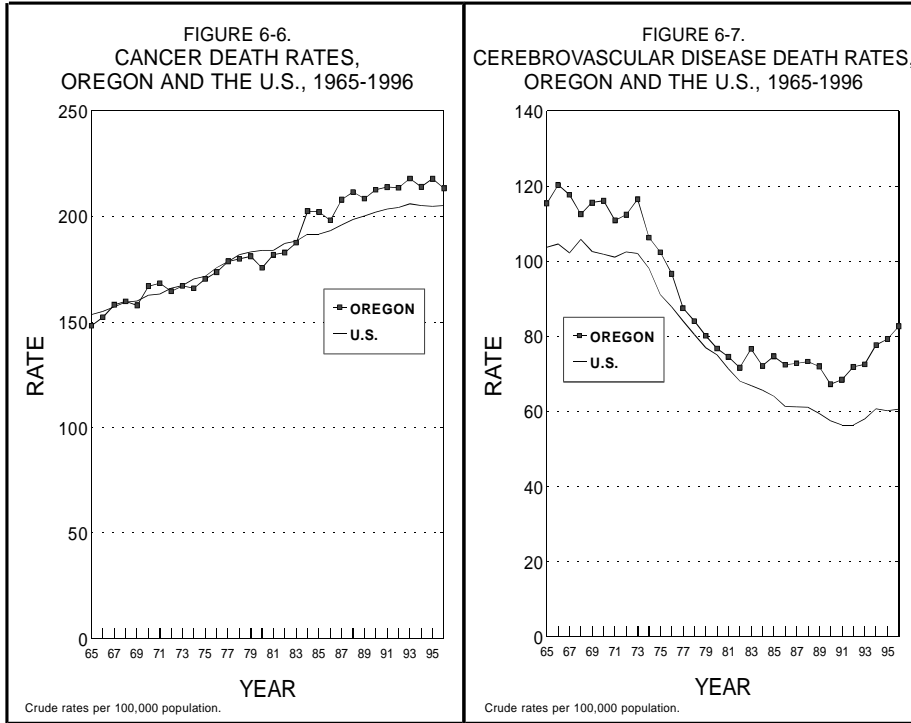
Oregon's rate has consistently been lower than the U.S. rate; in 1995, the state's age-adjusted death rate was 22 percent lower than the nation's. [Table 6-42]. An Oregonian died of heart disease every 68 minutes in 1996.

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.

**Over the past two decades the proportion of deaths due to heart disease declined from 36 percent to 27 percent.**

FIGURE 6-5.  
DISTRIBUTION OF MALIGNANT NEOPLASMS  
BY SEX AND SITE, OREGON RESIDENTS, 1996





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

## CANCER

Like heart disease, after decades of increases, the malignant neoplasm death rate has changed little since 1991, 213.3 per 100,000 population in 1996 versus 213.9 five years earlier. [Figure 6-6; Table 6-3]. A record number of years of potential life were lost to cancer during 1996.

Malignant neoplasms are the leading cause of death in each 10-year age group between 45 and 74 years. [Table 6-4]. During 1996 the median age at death for cancer patients remained at 73, the highest ever recorded. The death rate for males was 15 percent higher than that for females (229.5 versus 197.5), with the disparity greatest among the elderly. In addition to the cancer-caused deaths of 6,784 Oregonians, cancer contributed to another 971 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. A decade ago, there were 1.9 lung cancer fatalities among men for every female death. By 1996 the ratio declined to 1.4-to-1.0. The male lung cancer death rate plateaued during the mid 1980s through the early 1990s, and then began declining. It is unclear as of yet, whether the increase during 1996 was a statistical aberration or the beginning of a new trend.

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

Rates per 100,000 population.

The total lung cancer death rate has more than quintupled since 1950, increasing from 11.6 to 62.9 per 100,000 Oregonians. (This has been accompanied by a sharp increase in chronic obstructive pulmonary disease deaths as well.) During 1996, record high death rates were recorded for myeloid leukemia and multiple myeloma.

During 1995, Oregon's age-adjusted death rate was 3.4 percent less than the nation's. Cancer claimed the life of an Oregonian every 77 minutes in 1996.

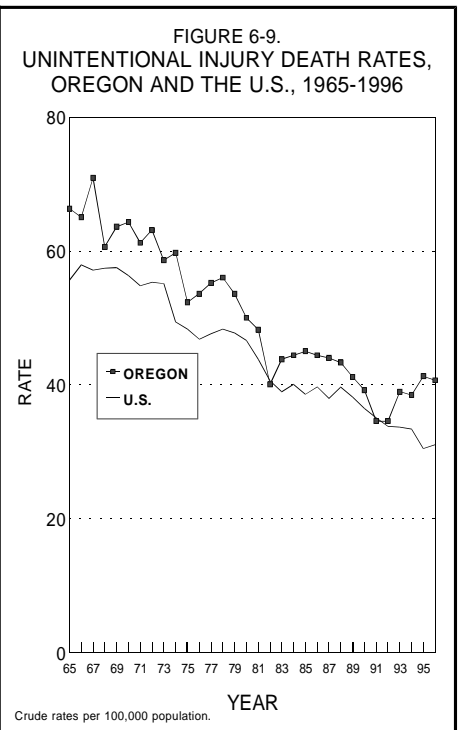
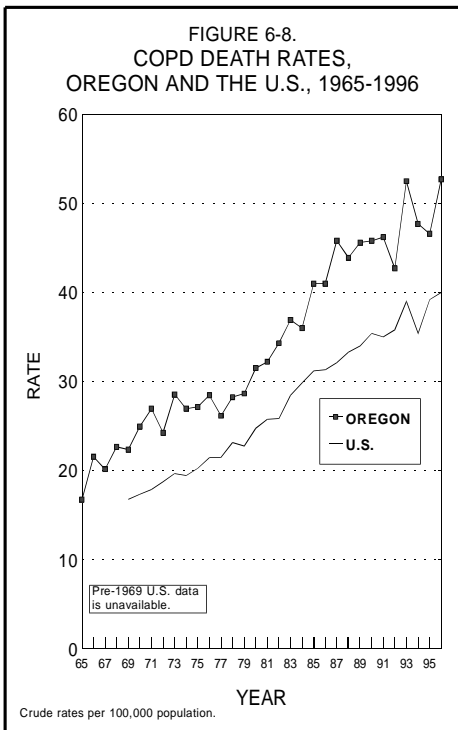
### CEREBROVASCULAR DISEASE

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. Since then, the rate has increased annually reaching 82.7 during 1996, a 23 percent increase. [Figure 6-7; Table 6-3]. Every age group has witnessed an increase in cerebrovascular disease death rates since the beginning of the decade. Besides the 2,632 deaths due to cerebrovascular disease, these conditions contributed to the deaths of another 1,417 Oregonians. [Table 6-35].

Cerebrovascular disease was the third most common cause of death among Oregonians, and struck females far more often than males (100.3 vs. 64.6). However, males 65-79 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

**Since 1990, the cerebrovascular disease death rate has increased 23 percent.**



population is older than the nation's but even after controlling for this variable with age-adjusted death rates, Oregon's 1995 rate was 11 percent higher than the U.S. rate. An Oregonian died from cerebrovascular disease every 3.3 hours.

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

## RESPIRATORY DISEASE

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 1996, the death rate rose 13 percent to 52.7 per 100,000 population, a record high [Figure 6-8; Table 6-3]. A record number of years of potential life were also lost during 1996. [Table 6-11]. Although both the number of years of potential life lost and death rate rose to record highs, Oregonians with COPD lived longer; the median age at death increased to 77, also a record high.

There is a distinct, but decreasing, gender difference in the risk of death from COPD. In 1986, males were 65 percent more likely to die from this cause than were females; by 1996, they were only 6.3 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 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 two most common of the four have increased since 1986: emphysema by 39 percent, chronic airways obstruction by 30 percent. In addition to the 1,676 Oregonians whose deaths were due to chronic obstructive pulmonary diseases, COPD was a factor in another 1,926 deaths. [Table 6-35].

During 1995, Oregon's age-adjusted COPD death rate was 10 percent higher than the U.S. rate. An Oregonian died from chronic obstructive pulmonary disease every 5.2 hours in 1996. Most of these deaths were preventable.

## UNINTENTIONAL INJURIES

Oregon's unintentional injury<sup>3</sup> death rate had been declining until the early 1980s. 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, an 18 percent increase. Rates have risen for both sexes and nearly all age groups but males remained twice as likely as females to die from an unintentional injury.

COPD DEATH RATES		
YEAR	MALE	FEMALE
1985	53.4	29.0
1995	48.2	45.1
% Change	-9.7	+55.5
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.**

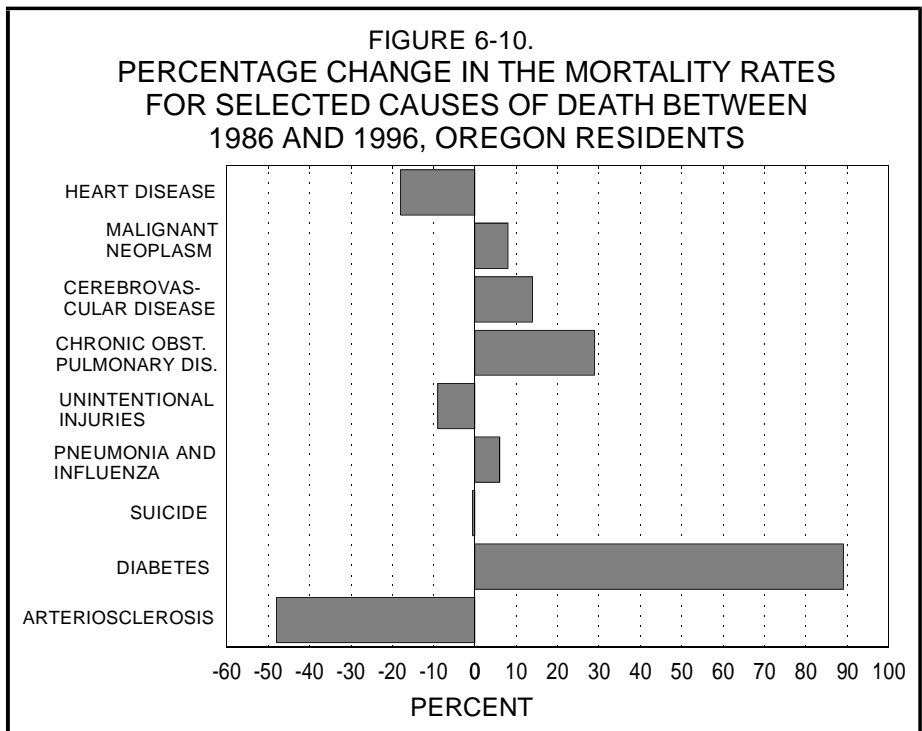
Although this category ranked fifth overall in the number of deaths (1,295), it was the leading cause of premature death and the leading cause of death for Oregonians ages 1-44; more years of potential life were lost before age 65 from unintentional injuries than from any other cause. [Table 6-25]. Cancer and heart disease ranked second and third, respectively.

Motor vehicle-related deaths (576) accounted for 41 percent of all unintentional injury deaths; over half (59%) of the decedents were 15-44 years old. (Almost 10 percent of the deaths involving motor vehicles were of pedestrians. [Table 6-16].) Falls, the second most common type of fatal unintentional injury, claimed 260 Oregonians; eighty percent of the 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]. During 1996, 88 fatal unintentional injuries were sustained in the workplace.<sup>4</sup> [Table 6-14].

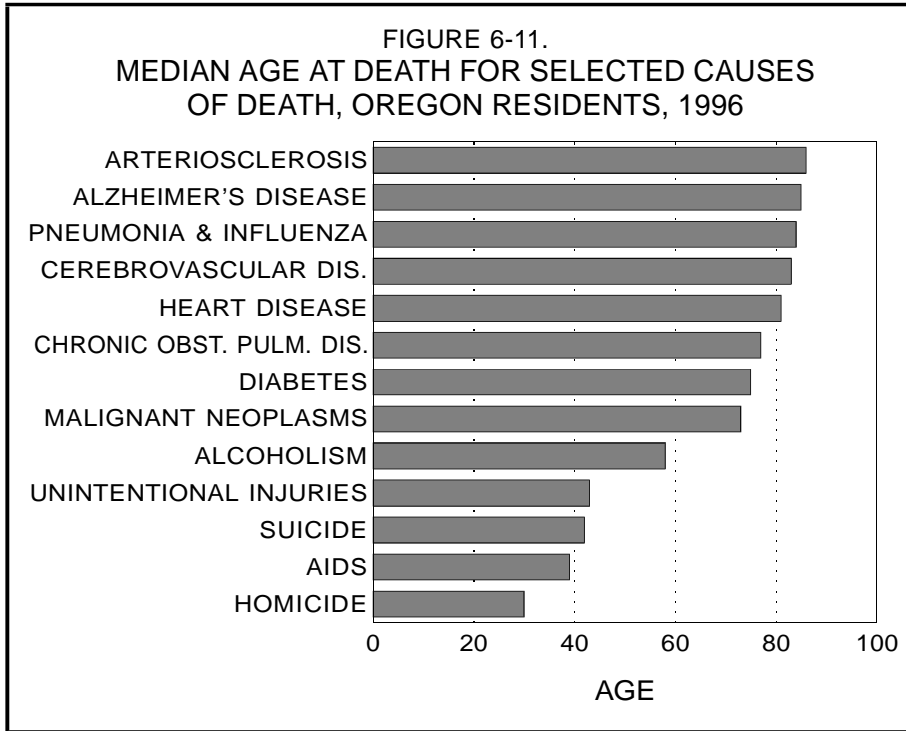
Oregonians continued to be more apt to suffer a fatal unintentional injury than the average American. During 1995 the state's age-adjusted rate exceeded the U.S. rate by 19 percent. An Oregonian died as a consequence of an unintentional injury every 6.8 hours in 1996.

**PNEUMONIA AND INFLUENZA**

The death rate for pneumonia and influenza, the sixth leading cause of death, increased slightly, up from 28.7 per 100,000 population during 1995 to 29.7 in 1996.







As is typical, the 1996 mortality rate for pneumonia and influenza was higher for females than males (31.9 versus 27.5). This is the fifth leading cause of death among Oregonians 75 or older. Besides the 946 deaths attributed to pneumonia and influenza, these infections played a role in another 1,350 deaths. [Table 6-35]. Oregon's 1995 age-adjusted mortality rate was 22 percent lower than the national rate. A resident died of pneumonia or influenza every 9.3 hours in 1996.

### ALZHEIMER'S DISEASE

Alzheimer's disease (including Alzheimer's dementia) has been reported with increasing frequency during the past decade and is now the seventh leading cause of death, displacing diabetes. In 1996 the death rate was 23.3 per 100,000 population, 5.9 percent higher than the 1995 rate. Women were about twice as likely as men to die from Alzheimer's disease; the rates were 30.8 and 15.5, respectively. [Table 6-2]. Ninety percent of the victims were 75 or older at death. [Table 6-6]. Besides the 740 deaths due to this cause, Alzheimer's disease contributed to 536 deaths. [Table 6-35].

Of the 20 leading causes of death, the greatest disparity in age-adjusted death rates between Oregon and the U.S. was recorded for Alzheimer's disease; Oregon's 1995 rate was 56 percent higher and ranked third highest among the states and District of Columbia. [Table 6-42]. An Oregonian died from Alzheimer's disease every 11.8 hours in 1996.

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***Alzheimer's disease  
 displaced diabetes  
 as the seventh  
 leading cause of  
 death in 1996.***

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

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## 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 1996, it was 89 percent higher than the 1986 rate (23.2 versus 12.3 per 100,000 population). [Table 6-3]. The increase has occurred across all age groups and both sexes. Among all Oregonians in 1996, diabetes caused 739 deaths and contributed to another 1,783. [Tables 6-3 and 6-35]. Local diabetes authorities have no explanation for the rising death rate other than improved physician awareness and reporting of the disease.

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 1995 age-adjusted death rate was 11 percent lower than the U.S. rate. An Oregonian died of diabetes every 11.9 hours in 1996.

## SUICIDE

A record 533 Oregonians committed suicide during 1996. The death rate, however, remained unchanged (16.8 per 100,000 population). Although often exhibiting considerable variation from year to year, the long-term trend in the suicide rate has been upward, driven principally by increasing suicidal behavior among the state's youth.

For the third year in a row suicide was the sixth leading cause of death among males; they were 4.6 times more likely to kill themselves than were females (27.8 versus 6.1 per 100,000). Male suicide rates have consistently been high in older age groups, with the rate two to four times higher for men 80 or older than for their younger counterparts. [Table 6-7]. Among females, age-specific rates typically increase slightly among 45-to 64-year-olds, and then decline. During 1996, however, the rates were highest for 35- to 54-year-olds. The youngest Oregonians to commit suicide were two 10 year old boys and the oldest, a 96 year old man. 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 5-34. [Table 6-4].

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

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Firearms were the most frequently chosen method (62%) of completed suicide, followed by poisoning (17%) and hanging (13%). The method varied within different age and sex cohorts, however. [Table 6-17].

As in years past, the 1995 age-adjusted rate for Oregon was substantially higher (30 percent) than for the U.S. An Oregonian took his or her own life every 16.4 hours in 1996. For additional information on suicide, see *Suicide and Suicidal Thoughts by Oregonians*, a recently published report by the Center for Health Statistics.

## ALCOHOLISM

In 1996 the Oregon alcoholism<sup>5</sup> death rate was 13.2 per 100,000 population. Since 1986, the death rate has fluctuated between a low of 10.4 in 1991 and a high of 13.2 in 1996. Not since 1981 has the alcoholism death rate been as high. [Table 6-3].

During 1996, alcoholism was the tenth leading cause of death overall, but ranked fourth among Oregonians 45-64. [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.)

A total of 419 deaths were directly due to alcoholism and related disorders, with alcoholic liver disease accounting for the majority (66%). In addition, alcohol-related diseases were reported as contributing to another 316 deaths. [Table 6-35]. Alcoholism often led to early death; one-half of all those who died from it died by age 58. More years of potential life were lost from alcoholism during 1996 than ever before.<sup>6</sup>

During 1995, Oregon's age-adjusted death rate was 26 percent higher than the nation's.<sup>7</sup> A non-injury alcohol-caused death occurred every 20.9 hours in Oregon during 1996.

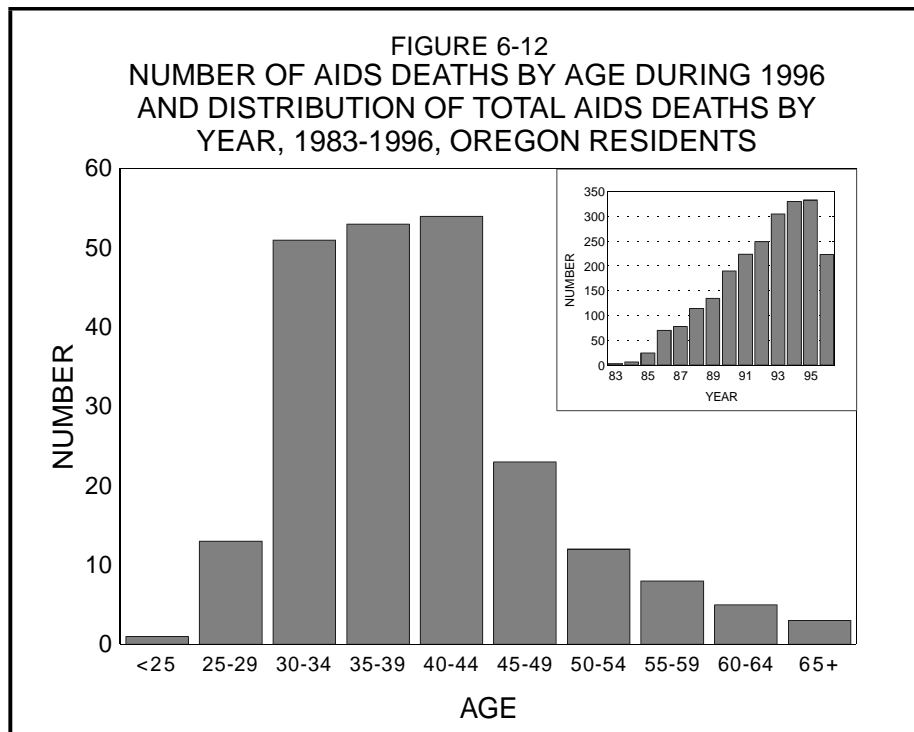
## ACQUIRED IMMUNE DEFICIENCY SYNDROME

During 1996, the AIDS death rate fell dramatically, declining from 10.6 per 100,000 population to 7.1. 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

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

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***During 1996, the AIDS death rate fell 33%, the first large decline seen since the epidemic began.***

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inhibitor. Despite the considerable improvement, three times as many Oregonians were claimed by this disease in 1996 than were a decade earlier. [Table 6-3].

Nearly all (212 or 94%) of the decedents during 1996 were males, but 11 were females. [Table 6-6]. Most deaths (77%) occurred among Oregonians 25 to 44 years old, but the ages ranged from 24-71 years. AIDS was the third leading cause of death among Oregon men 25-44 years old, down from second for many prior years. The median age at death was 39 years. [Table 6-13].

AIDS claims predominantly young to middle-aged adults and was the sixth leading cause of years of potential life lost. [Figure 6-14]. More years were lost (before age 65) due to AIDS than from cerebrovascular disease, diabetes, arteriosclerosis, pneumonia, and influenza combined. [Table 6-25]. In addition to the 223 deaths directly due to AIDS, the human immunodeficiency virus was reported to have contributed to another 37 deaths. [Table 6-35].

The age-adjusted death rates in Table 6-42 illustrate that Oregonians were 45 percent less likely to die from AIDS during 1995 than were Americans as a whole. An Oregonian died from AIDS every 1.6 days in 1996.

## ARTERIOSCLEROSIS

The arteriosclerosis death rate continued its long-term downward trend in 1996, falling to a record low. The rate (8.0 per 100,000 population) was 49 percent lower than it was ten years earlier. In 1985, arteriosclerosis was the seventh leading killer of Oregonians; a decade later, it ranked twelfth. [Table 6-23]. Nonetheless, in 1995, Oregon's age-adjusted death rate was 39 percent higher than the U.S. rate.

Women typically bear the greater risk, and that was so in 1996; their death rate was 8.5, compared to 7.5 for men. [Table 6-2]. An Oregonian died from arteriosclerosis every 1.4 days in 1996. 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 256 Oregonians but contributed to the deaths of another 1,105 residents.

## PARKINSON'S DISEASE

The apparently inexorable long-term upward trend of the Parkinson's disease death rate paused in 1996, remaining at 1995's 7.4 per 100,000 population. [Table 6-3]. As is usually the case, Oregon men were more likely than women to die from this disease; the rates were 9.4 and 5.5, 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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***The Arteriosclerosis death rate fell to a record low.***

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Oregon's 1995 age-adjusted death rate for this cause was the highest in the nation and 63% higher the U.S. rate. The 236 deaths in 1995 represent the loss of an Oregonian every 1.5 days.

### HOMICIDE

Oregonians were less frequently homicide victims during 1996 than during 1995; the death rate declined slightly from 5.0 per 100,000 population to 4.9. The highest rate ever recorded (6.8) occurred ten years earlier. [Table 6-3]. Nine of the 152 homicide deaths resulted from legal intervention. [Table 6-17].

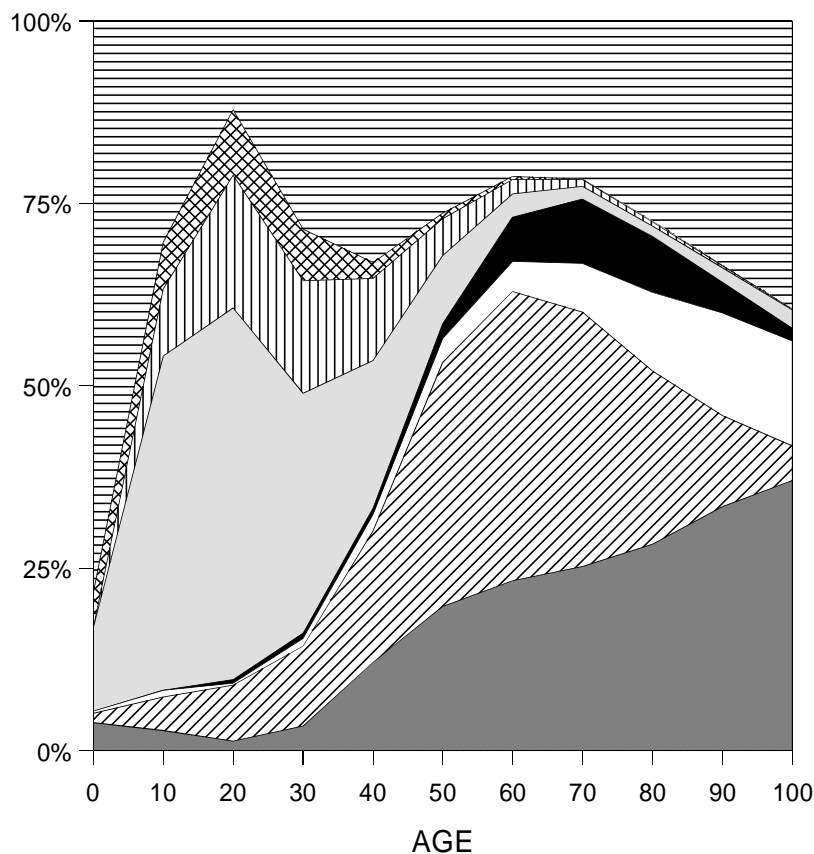
Males were more apt to be murdered than females; their death rate was over two times higher, 6.4 compared to 3.2. [Table 6-2]. Even the youngest Oregonians were at risk: 15 children who had not even reached their fifth birthday were murdered during 1996, and six

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**An Oregonian was only about half as likely to be murdered than was the average American.**

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FIGURE 6-13.  
PERCENTAGE OF DEATHS BY CAUSE AND AGE,  
OREGON RESIDENTS, 1996

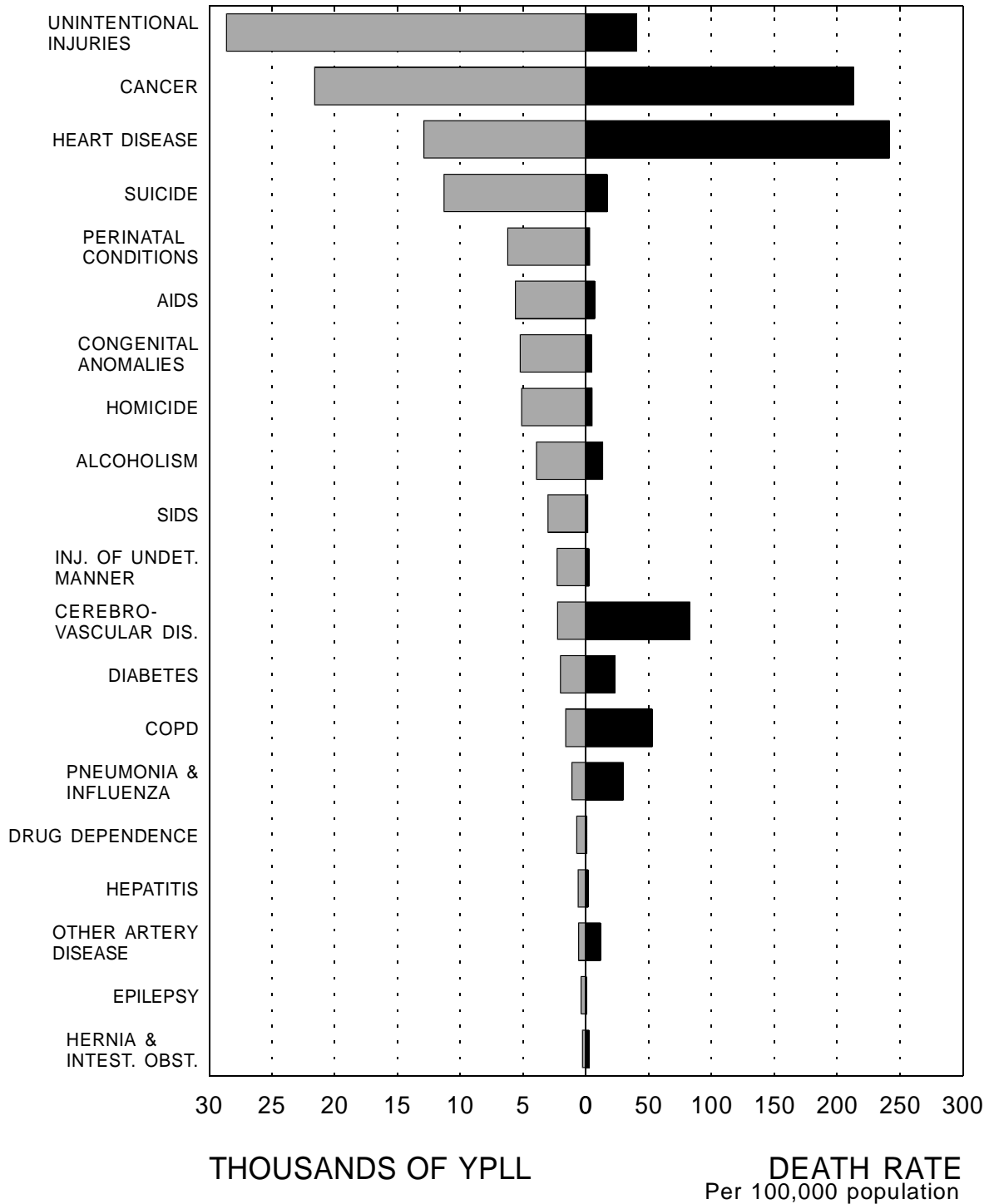



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**The oldest Oregonians to die in 1996 were two 107 year old women who died from cardiac disease.**

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FIGURE 6-14.  
 LEADING CAUSES OF YEARS OF POTENTIAL LIFE LOST  
 BEFORE AGE 65 AND CORRESPONDING DEATH RATES,  
 OREGON RESIDENTS, 1996



of these were infants. The median age at death was 30 years. [Figure 6-11; Table 6-13]. Firearms were used in half 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 1995, Oregon's age-adjusted homicide rate was 45 percent lower than the nation's. An Oregonian was murdered every 2.4 days in 1996.

## 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 1995 age-adjusted rates (the most recent available); 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.
- 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 Since at least 1979, when the ninth revision of the International Classification of Disease was first used.
- 7 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.