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# Mortality

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During 1999, Oregon's death rate changed little from the preceding year, decreasing 1.0 percent to 889.4 per 100,000 population, down from 898.1. For the past seven years the rate has fluctuated between 888 and 909 per 100,000 population. [Table 6-3]. During 1999, 29,356 Oregonians died, 10 more than the previous year.

Between 1998 and 1999, the sex-specific death rates increased for females but decreased for males. Their death rates were 893.3 and 885.3, respectively. [Table 6-2]. This was the first such occurrence of the female rate exceeding the male rate during at least the past 70 years and is consistent with a long-term trend of increasing death rates for females. A generation earlier, the rate for males was 26.5 percent higher; by 1999, the female rate exceeded the male rate by 0.9 percent. However, the increase is largely due to the changing population distribution by age rather than health status. Females still have lower age-specific death rates.

Age-sex-specific death rates fell to record lows for several age groups, particularly among residents ages 15-64 years old. [Figure 6-1]. Increases were recorded for younger and older groups. [Table 6-1]. Since 1940, the median age at death has usually increased by two years per decade. [Figure 6-2]. During 1999, the median age of Oregonians at death was 78 years, 81 for females and 75 for males. On average, an Oregonian died every 18 minutes during 1999.

Unlike previous years' reports, there is no comparison to national data for 1999 since age-adjusted death rates were not available at press time.

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***For the first time in 70 years the female death rate exceeded that for males.***

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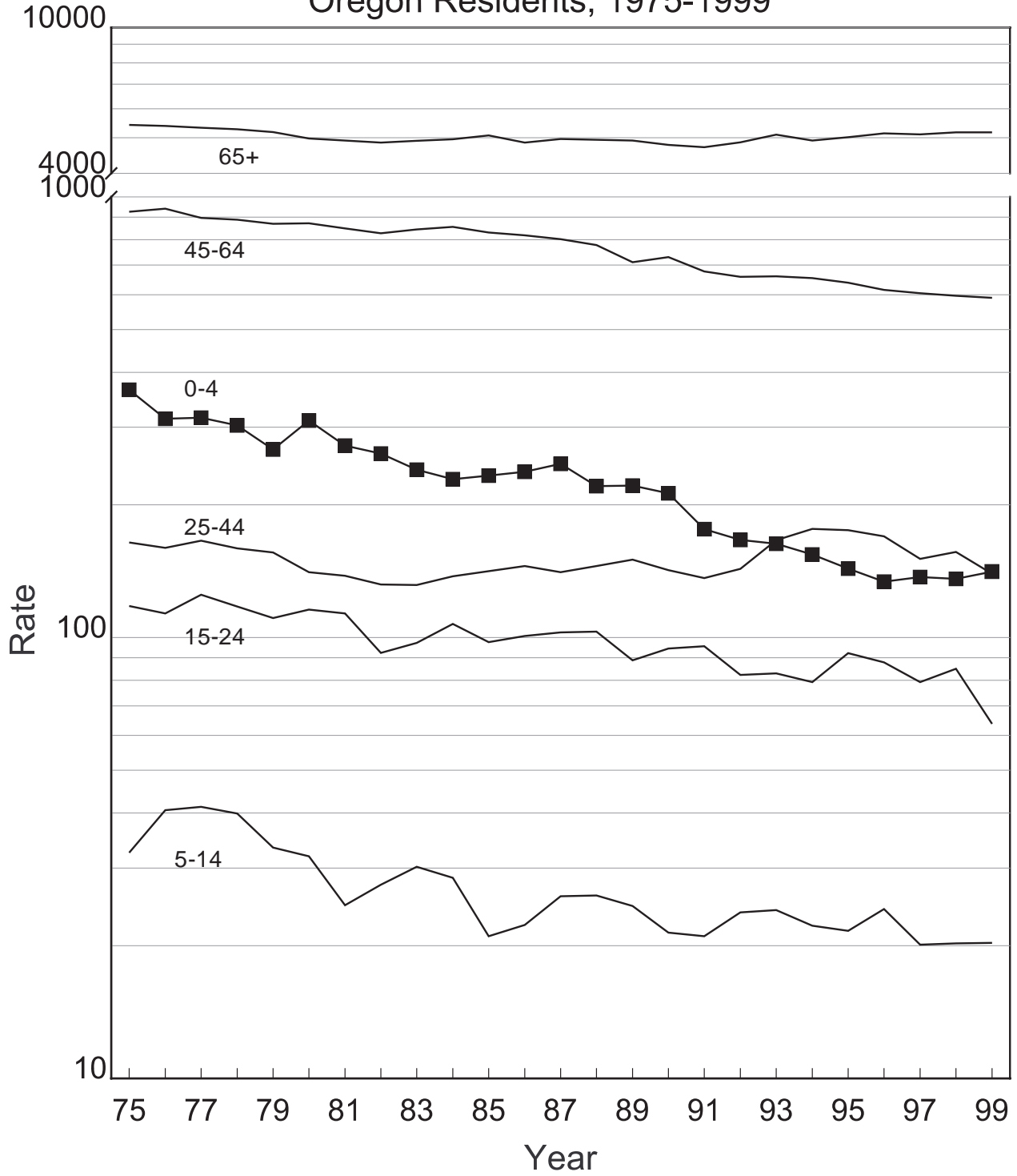
***The oldest Oregonian to die in 1999 was a 117 year old man who was born in Siberia.***

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## **Introducing ICD-10**

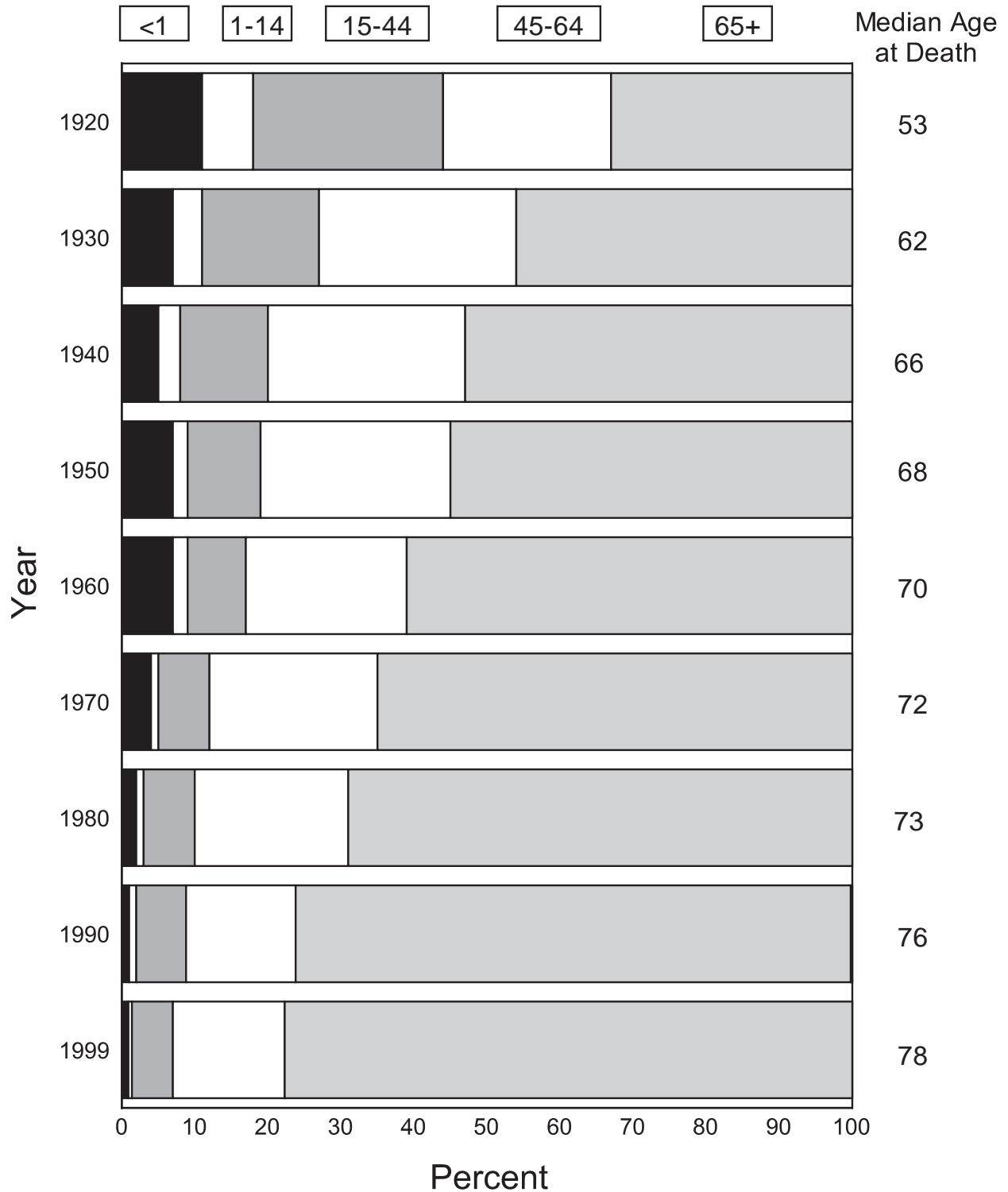
Beginning in 1999, and for the first time in twenty years, a new revision of the International Classification of Disease (ICD) became the standard nosological manual. This tenth revision (ICD-10) incorporates new rules for selecting the underlying cause of death as well as new, and often more detailed, cause of death codes. Changes have also been made in the structure of the leading causes of death, most notably the addition of new categories (e.g., Aortic Aneurysm). As a consequence of these changes, the data for 1999 are not directly comparable to previously published data. Most of the leading causes of death discussed here are not greatly affected by the use of the new manual with the exception of "Influenza and Pneumonia" where the number of deaths attributed to this cause declined substantially (30%). For further information, please see Appendix B (Technical Notes -- Methodology).

Figure 6-1.  
Age-Specific Death Rates,  
Oregon Residents, 1975-1999



Rates per 100,000 population.

Figure 6-2.  
 Proportion of Deaths by Selected Age Groups,  
 Oregon Residents, 1920-1999



**Heart disease is the leading killer of Oregonians.**

**HEART DISEASE**

Heart disease<sup>1</sup> continued to be the leading cause of death in Oregon, accounting for one of every four resident deaths (7,252 out of 29,356). [Table 6-6]. As with many causes of death, the heart disease mortality rate was higher among males than females. In 1999, the male rate was 6.7 percent higher than the female rate, a much smaller difference than was seen a generation or two ago. Although the leading cause of death for Oregonians as a whole, by age group it ranks first only among persons 75 or older. The median age for heart disease was 81 years, the highest ever recorded. [Table 6-13 and Figure 6-4].

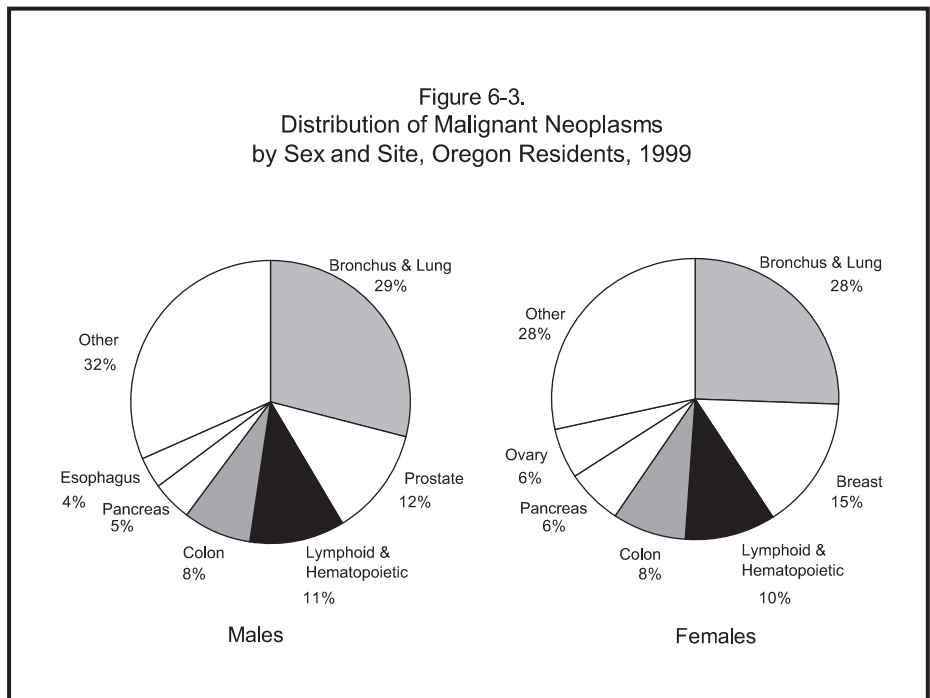
The heart disease category includes a number of conditions. [Table 6-6]. Most common, and accounting for the majority of heart disease deaths, are myocardial infarctions, coronary occlusions, coronary thromboses, and coronary heart disease. The infarctions, occlusions, and thromboses are acute, often terminal events, while coronary heart disease is a chronic condition.

Although the leading cause of death, heart disease ranked third in years of potential life lost (13,390) after unintentional injuries and cancer. [Table 6-11]. On average, an Oregonian died of heart disease every 72 minutes.

**CANCER**

Nearly seven thousand Oregonians succumbed to cancer during 1999. During the last half of the 20th Century, the discrepancy in death rates between males and females has narrowed considerably. By 1999 the male death rate was just 9.9 percent higher than the female rate; nonetheless, cancer death rates among elderly males

Figure 6-3.  
Distribution of Malignant Neoplasms  
by Sex and Site, Oregon Residents, 1999



were far higher than among elderly females. [Table 6-7f and 6-7m]. Although ranking second after heart disease, cancer is the leading killer of Oregonians ages 35 through 74. [Table 6-4]. During 1999 the median age at death for the 6,904 cancer patients increased to 74, a new high.

The decades-long upward trend<sup>2</sup> in cancer mortality was driven principally by an increasing number of lung cancer deaths, a cause that would be rare in the absence of smoking. [Figure 6-3]. 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 1999 the ratio declined to 1.1 to 1.0.

Malignant neoplasms accounted for more years of potential life lost (21,254) than any other cause, except unintentional injuries. [Table 6-11]. Every 76 minutes, on average, cancer claimed the life of an Oregonian.

### CEREBROVASCULAR DISEASE

With 2,817 deaths, cerebrovascular disease was the third leading cause of death among Oregonians and claimed females far more often than males (105.1 per 100,000 population vs. 65.1). Among residents 85 or older it is the second leading cause of death. Although females have the highest overall death rate, males 55-84 years old had higher death rates than similarly-aged females. The median age at death was 83 years. [Table 6-13].

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

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

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
1999	53.4	53.6	53.1
Rates per 100,000 population.			

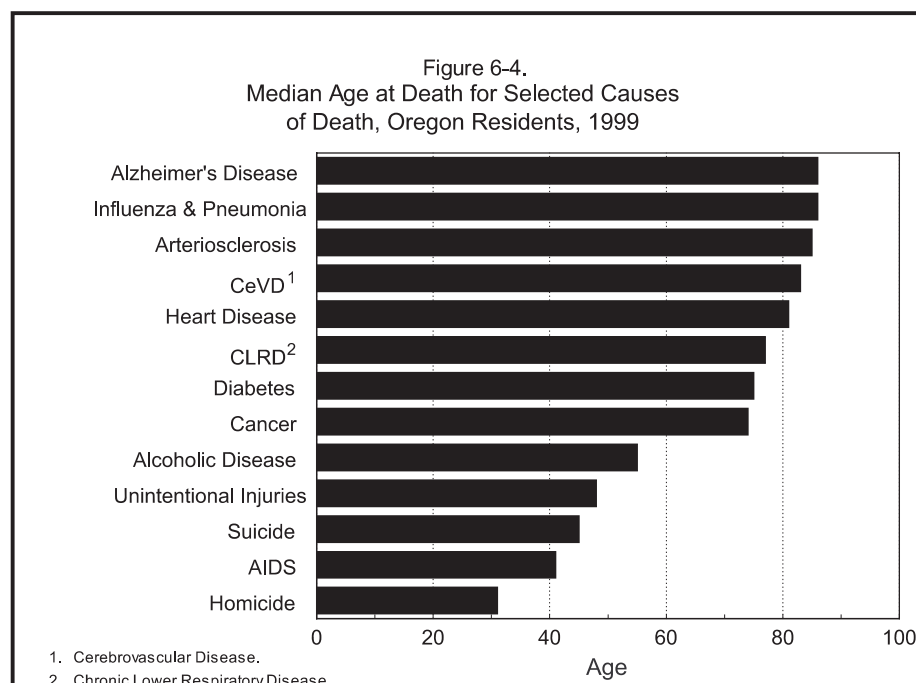
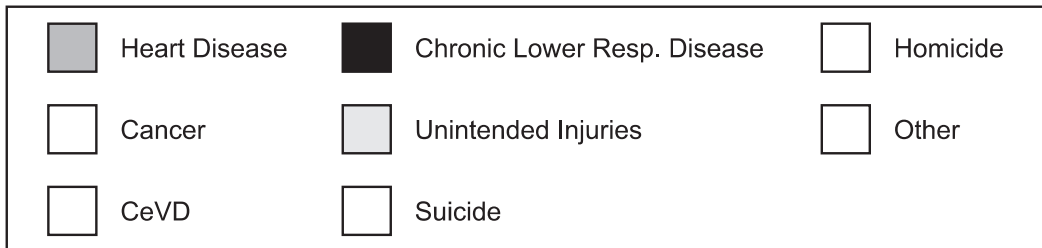
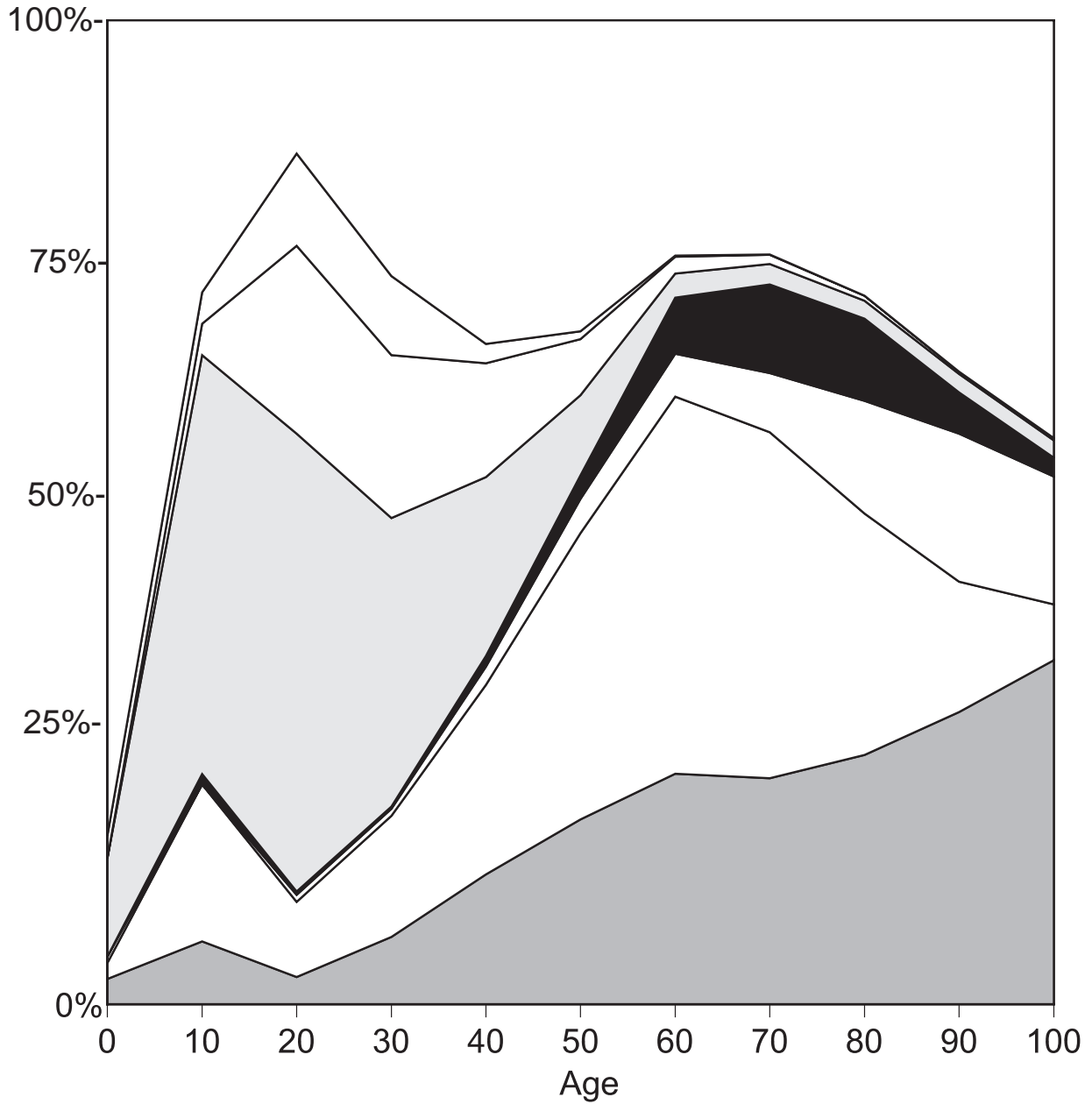


Figure 6-5.  
 Percentage of Deaths by Cause and Age,  
 Oregon Residents, 1999



Although the third leading cause of death, cerebrovascular disease ranked tenth in the number of years of potential life lost (2,226), a consequence of the older ages of the decedents (compared to relatively younger ages at death for many other causes). An Oregonian died from cerebrovascular disease every 3.1 hours.

## CLRD

Chronic lower respiratory disease (CLRD) has become an increasingly common killer of Oregonians over the past several decades, and during 1999 claimed 1,762 residents; it was the fourth leading cause of death. (CLRD was formerly classified as chronic obstructive pulmonary disease.)<sup>3</sup> Until recently, males were far more likely to succumb to this cause than females. A generation ago, males were twice as likely to die from CLRD, but by 1999 there was essentially no difference in death rates between the genders (53.6 for males vs. 53.1 for females). CLRD ranked as the third leading cause of death among residents 55-74 years-old. [Table 6-4]. The median age at death was 77.

The vast majority of CLRD deaths are caused by tobacco use with the sharp rise in deaths among women reflecting their increased smoking prevalence during recent decades. No other cause, except lung cancer, has a higher proportion of deaths linked to tobacco use than does CLRD; at least eight in 10 CLRD deaths were associated with tobacco use. [Table 6-18].

The group of allied conditions categorized as CLRD includes four principal diseases: chronic and unspecified bronchitis, emphysema, asthma, and chronic airways obstruction.

Although the fourth most common cause of death, chronic lower respiratory disease ranked 11th in the number of years of potential life lost (YPLL). An Oregonian died from CLRD every 5.0 hours, on average. Most of these deaths were preventable.

## UNINTENTIONAL INJURIES

During 1999, 1,144 Oregonians died from unintentional injuries<sup>4</sup>, making them the fifth leading cause of death. With a rate of 45.0 per 100,000 population, males were nearly twice as likely to die in this manner than were females (24.5). [Table 6-2]. Although this category ranked fifth overall in the number of deaths, it was the leading cause of death for Oregonians ages 1-34. The median age at death increased by four years (over the previous year) to 48, a record high.

Transportation-related injuries accounted for the bulk of unintentional injury deaths with about half of the decedents 15-44 years old. Falls, the second most common type of fatal unintentional injury, claimed 183 Oregonians. (ICD-10 no longer includes unspecified fractures in the fall category; they are now placed in a residual category.<sup>2</sup> Hence the number of deaths attributed to falls is substantially lower using ICD-10.) Sixty-two percent of fall victims were 75 or older. Poisonings and inanimate mechanical forces were

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***In the past, males were much more likely to die from CLRD than were females, but in 1999, both were about equally likely to succumb to this cause.***

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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.***

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the third and fourth most common causes of unintentional injury deaths. [Table 6-23]. Summer is the season of greatest risk, with more residents dying from unintentional injuries during July than any other month. [Table 6-8]. During 1999, 66 fatal unintentional injuries were sustained in the workplace.

More years of potential life were lost (21,710) from unintentional injuries than from any other cause. [Table 6-11]. Cancer ranked a close second and heart disease a distant third. An Oregonian died as a consequence of an unintentional injury every 7.7 hours.

## **ALZHEIMER'S DISEASE**

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***Alzheimer's disease is the fifth leading cause of death among women.***

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Mirroring the aging of Oregonians has been the seemingly inexorable rise in Alzheimer's disease deaths. During 1999, the tangles and plaques characteristic of this disease led to the deaths of 868 Oregonians, making it the sixth leading cause of death. As in past years, women were about twice as likely as men to die from Alzheimer's disease (35.5 per 100,000 vs. 16.9). Alzheimer's was the fifth leading cause of death among women but ninth among men. [Table 6-2]. This devastating disorder takes years to claim its victims' lives; 19 in 20 of the deaths occurred after the decedent's 75th birthday. [Table 6-6]. No leading cause had a higher median age at death (86) than did Alzheimer's disease. [Table 6-13].

Concomitant with the high median age at death was a minimal number (39) of years of potential life lost. Every 10.1 hours, this disease claimed an Oregonian.

For further information on Alzheimer's disease in Oregon, see *Oregon Health Trends, Number 52*. Because of differences between the state and the nation in leading cause of death categorization, the comparability ratios published by the National Center for Health Statistics should *not* be applied to Oregon data (unless only ICD-9 code 331.0 is used). Please see Appendix B for further information.

## **DIABETES MELLITUS**

With 855 deaths during 1999, diabetes was the seventh leading cause of mortality among Oregonians. Both males and females were about equally likely to die from diabetes. Among the various chronic diseases that lead to death, diabetes had one of the lowest median ages at death (75). [Table 6-13].

Residents lost 2,441 years of potential life as a consequence of diabetes, making it the ninth leading cause of YPLL. An Oregonian died of diabetes every 10.2 hours in 1999.

## **INFLUENZA AND PNEUMONIA**

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***Women were 24 percent more likely than males to die from influenza and pneumonia.***

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The eighth leading cause of death, influenza and pneumonia, more often claims females than males; during 1999, their death rates were 22.9 and 18.5, respectively. This is the fifth leading cause of death among Oregonians 85 or older.



At 86, the median age at death set a record high during 1999. Influenza and pneumonia accounted for 768 years of potential life lost, ranking 15th among the causes of death. A resident died from these causes every 12.8 hours, on average.

Because of a substantial change in the manner of coding influenza and pneumonia deaths in ICD-10, the 1999 death rate should not be compared to previous years' without applying the ICD-10/ICD-9 comparability ratio. (See Appendix B.)

## SUICIDE

During 1999, 499 Oregonians died by suicide. (Note that residents choosing the "Death with Dignity" option [Measure 16] are not counted here; they are included in the appropriate disease categories.) Overall, suicide ranked ninth among the leading causes of death but seventh for males compared to fifteenth for females; their death rates were 25.3 per 100,000 and 5.2, respectively. Even more striking, is the difference in rates between the elderly; males 85 or older were ten times more likely to die by suicide than were their female counterparts. [Tables 6-7f and 6-7m]. Females most often die from suicide during middle age. Suicide is the second leading cause of death of Oregonians ages 15-34. [Table 6-4].

The youngest Oregonian to commit suicide was a 13-year-old boy (who shot himself with a long gun) and oldest a 98-year-old man (who shot himself with a handgun). Firearms were the most frequently chosen method (63.1%) of completed suicide, followed by hanging/suffocation (15.2%) and poisoning (15.0%). The method varied within different age and sex cohorts, however. [Table 6-30].

The median age at death was 45. Suicide was the fourth leading cause of YPLL (9,807 years) following unintentional injuries, cancer, and heart disease. [Table 6-11]. Every 17.6 hours an Oregonian died from suicide.

## ALCOHOL-INDUCED

Alcoholism (including related disorders) and alcohol poisonings<sup>5</sup> claimed 304 Oregonians during 1999, making it the tenth leading cause of death. The death rate was 9.2 per 100,000 population. Fatal alcohol abuse occurred more than three times as often among males as among females; their death rates were 14.4 and 4.2, respectively. [Table 6-2]. Alcoholism ranked as the fifth leading cause of death for 35-54 year-olds. [Table 6-4]. For more than a decade, Oregonians have been dying at younger ages from this cause; in 1999, the median age at death was 55, the lowest ever recorded.

This category is comprised of alcohol-related disorders from multiple organ systems with alcoholic liver disease accounting for the majority (60.2%). If intentional and unintentional injury deaths where alcohol was a factor (e.g., motor vehicle crashes) were

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***Males were five times more likely to die by suicide than were females.***

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***One half of all alcoholism deaths occurred by age 55, the youngest age ever recorded.***

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included in this category, the count would be substantially higher. (The role, if any, of alcohol in injury deaths is rarely reported on death certificates.)

Alcoholism was the eighth leading cause of years of potential life lost (3,142). Every 1.2 days an Oregonian succumbed to this cause.

## **PARKINSON'S DISEASE**

Ranking twelfth during 1999, Parkinson's disease claimed 256 Oregon residents; the death rate was 7.8 per 100,000 population. Men more often die from this disease than do women and in 1999 they were about half-again as likely to do so. Their death rate was 9.3 compared to 6.2 for women. [Table 6-2]. A small number of middle-aged residents died from Parkinson's disease, but eight in ten of the deaths occurred to residents 75 or older. [Table 6-6]. The median age of death was 83.

Because most deaths were among the elderly, very few (41) years of potential life were lost by Oregonians due to this disease. [Table 6-12]. The 256 deaths represent the loss of an Oregonian every 1.4 days. For additional information, see *Oregon Health Trends*, Number 52.

## **ARTERIOSCLEROSIS**

During the past several decades, a declining number of deaths have been attributed to arteriosclerosis. It was the 16th leading cause of death in 1999, claiming 198 Oregonians. Women have long been more likely to die from this cause; their 1999 death rate was 6.9, compared to 5.0 for men. [Table 6-2]. Nearly nine in ten of the deaths (87.4%) occurred among those 75 or older. The median age at death was 85, one of the oldest among the leading causes. Note, the number of deaths attributed to arteriosclerosis do not include all deaths relating to this cause, since many have been classified under more specific manifestations of cardiac and cerebral disease.

Because most deaths attributed to arteriosclerosis do not occur until age 85 or older, the number of years of potential life lost are typically very small; in fact in 1999, there were none at all. Oregon residents died from arteriosclerosis every 1.8 days, on average.

## **HOMICIDE**

Homicide was the 21st leading cause of death during 1999; 109 Oregonians were murdered, or 3.3 per 100,000 population. (Unlike ICD-9, deaths resulting from legal intervention are no longer included in this category; see Table 6-30 for the number of deaths attributable to the actions of law enforcement officers.) Males were twice as likely to be murdered as were females (4.4 vs. 2.2). Even the youngest Oregonians were at risk. Ten children who had not yet reached their fifteenth birthday were murdered during 1999; in fact, the death rate for infants was the highest by age group (based on a relatively small number of events). [Table 6-7t]. The median age at death was 31 years.

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***The arteriosclerosis death rate fell to another record low.***

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***The homicide rate for males was twice that for females.***

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Firearms were used in most (53.2%) homicides; handguns predominated. [Tables 6-29 and 6-30]. Sharp objects (e.g., knives) and strangulation/hanging were the second and third most commonly used methods, respectively.

Homicide was the seventh leading cause of years of potential life lost by Oregonians, accounting for 3,724 years. On average, a state resident was murdered every 3.3 days.

## HIV DISEASE

HIV disease (AIDS) led to the deaths of 73 Oregonians, or 2.2 per 100,000 population. Most (66 or 90.4%) of the decedents during 1999 were males, but seven were females. [Table 6-6]. Age-specific death rates were highest among 35- to 45-year-olds. Moreover, the median age at death increased to 41 years, a likely consequence of the powerful AIDS drug cocktails, including protease inhibitors and anti-retroviral medications, that are now available.

A declining number of deaths from this cause as well as increased survival times has resulted in a diminishing number (1,700) of years potential life lost. HIV disease claimed an Oregonian every five days.

This category is more inclusive than it was prior to 1999; please see Appendix B.

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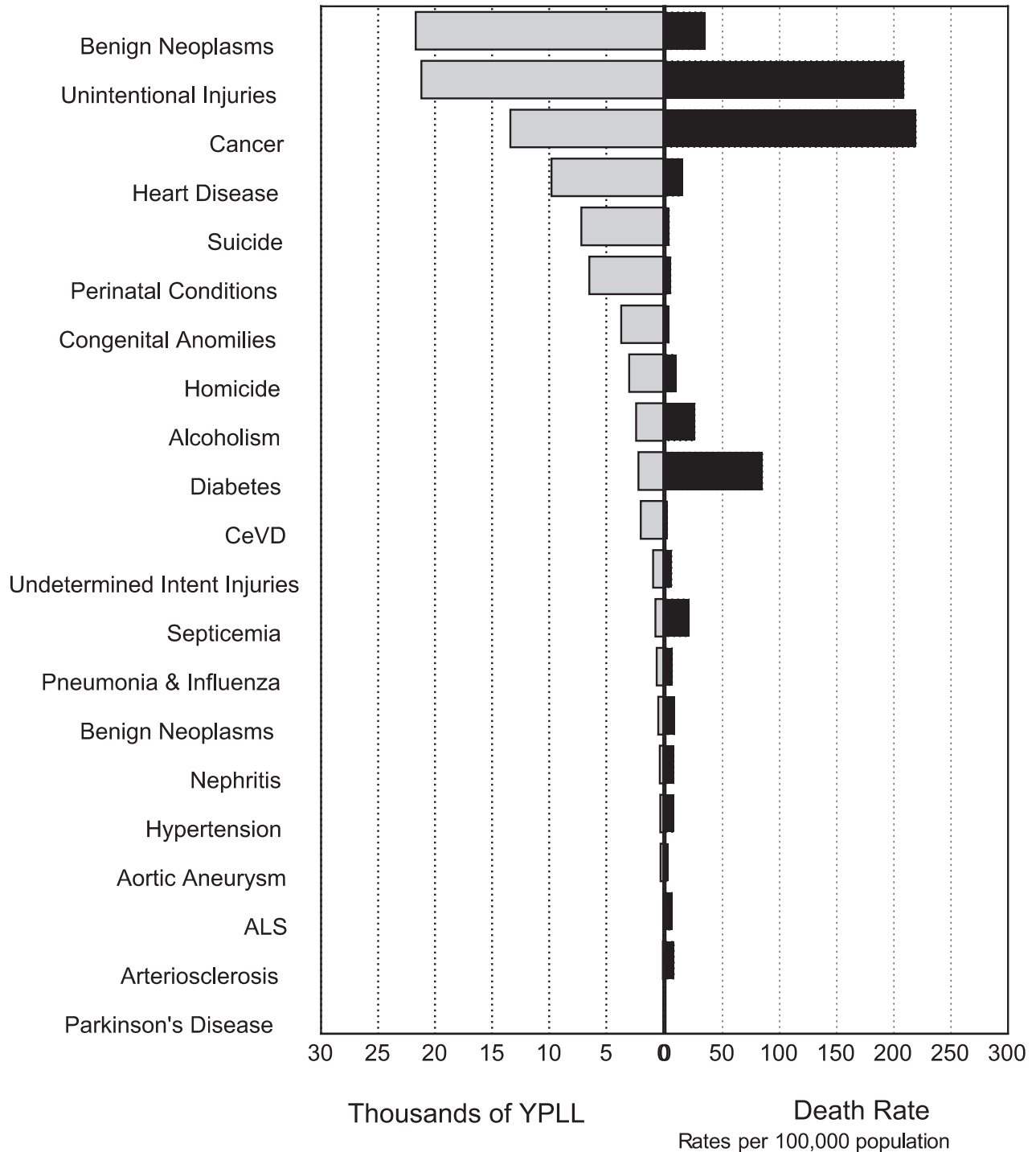
***The AIDS death rate was highest among persons ages 35-44.***

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### **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 for all decedents are then totaled. Figure 6-6 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.)

Figure 6-6.  
 Leading Causes of Years of Potential Life Lost  
 Before Age 65 and Corresponding Death Rates,  
 Oregon Residents, 1999



**ENDNOTES**

1. Unlike deaths occurring prior to 1999, those resulting from alcoholic cardiomyopathy are counted in both the heart disease and alcoholic disease categories.
2. Readers wishing to compare 1999 death rates (and/or number of deaths) to prior years' should use the comparability ratios described in Appendix B.
3. Please see Appendix B, for a discussion of the effects of the implementation of the tenth revision of the International Classification of Disease on this cause.
4. Unintentional injuries is preferred to the term accidents (ICD-10 V00-X59, Y85-Y86) among health professionals.
5. This cause includes both a complex of natural and acute poisoning deaths unlike previous years' data which excluded the latter. Beginning with 1999 data the following causes are included: alcoholic mental/behavioral disorders, degeneration of the nervous system, polyneuropathy, cardiomyopathy, gastritis, liver disease, maternal care for damage to fetus from alcohol, fetus or newborn affected by maternal alcohol use, alcohol in the blood, acute unintentional alcohol poisoning, acute suicidal alcohol poisoning, and acute alcohol poisoning of undetermined manner. The ICD-10 codes are F10, G31.2, G62.1, I42.6, K29.2, K70, O35.4, P04.3, R78.0, X45, X65, and Y15, respectively.