

# Chapter 3

## DEATH FROM ALL CAUSES

### Rates of Death From All Causes

Measuring death rates from all causes is a valuable tool for monitoring progress in fighting disease and improving health. In the early 1900s, the predominant health threats in the United States were diseases associated with poor hygiene and sanitation, poor nutrition, poor maternal and infant health, and diseases or injuries associated with unsafe workplaces or hazardous occupation. With the success of biomedical innovations such as vaccinations and antibiotics, and the development of interventions such as health education programs, the impact of these diseases has decreased significantly over the last 50 years.<sup>1-5</sup> Along with a decline in mortality, life expectancy at birth has increased from 47.3 in 1900, to 68.2 in 1950, 75.4 in 1990, and 77.6 in 2003.<sup>6-8</sup>

In 2003, a total of 2,443,908 deaths occurred in the United States and the age-adjusted death rate from all causes was 831.2 per 100,000 population.<sup>6</sup> In California it was 729.0 for the period 2001-2003.<sup>9</sup> Currently, five chronic diseases account for two-thirds of all deaths in the United States—heart disease, cancer, stroke, chronic lower respiratory disease, and diabetes. Heart disease and cancer combined account for more than half of all deaths.<sup>10</sup>

Among the behaviors most clearly associated with chronic diseases are tobacco and alcohol use, poor diet, and lack of exercise. In turn, health behaviors are strongly influenced by social factors, such as income, education level, stress, workplace conditions, violence and exposure to environmental toxins.<sup>11-13</sup> Routine screening, health education and appropriate follow-up care can save lives, reduce illness and disability, and reduce health care costs.

In general, recent declines in death rates for many leading causes of death reflect the influence of healthier life styles, greater use of preventive care, public health efforts, and advances in medicine. However, the rising prevalence of overweight in children, adolescents and adults, and the high percent of physically inactive adolescents and adults raise additional burden for future health outcomes.<sup>8,11</sup>

The elderly population in the United States is growing rapidly. By 2050, one in every five Americans will be 65 years of age and over.<sup>8,11</sup> As the elderly population increases, more services will be required for the prevention, treatment and management of chronic and acute health conditions.

Despite overall declines in mortality, race/ethnic and gender inequities in mortality persist. Low-income groups continue to have poorer health outcomes. Future progress in improving health status will require comprehensive interventions that address individual behaviors, neighborhood environments and public policy. A profile of mortality for the residents of Alameda County by sex, age, and race/ethnicity provides us with a picture of the burden of disease and injury, which can serve as a guide for prevention efforts.

## What is Alameda County's status?

### All Cause Mortality

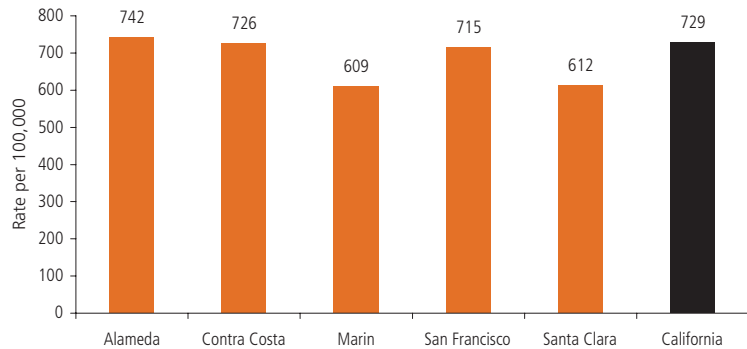
From 2001 to 2003, an average of 9,595 people per year died in Alameda County. The death rate was 742 per 100,000 people.

Alameda County's death rate from all causes was higher than its four Bay Area neighbors for the period 2001 to 2003. However, the rate was statistically significantly higher than only two of these, Marin and Santa Clara counties. Alameda County's death rate was slightly higher than that for California.

The African American mortality rate from all causes was significantly higher than any other race/ethnic group. In general, African American rates were two times higher than those of American Indians, Asians, and Latinos. Males of each race/ethnic group had 30-50% higher rates than females with the exception of Pacific Islanders and American Indians.

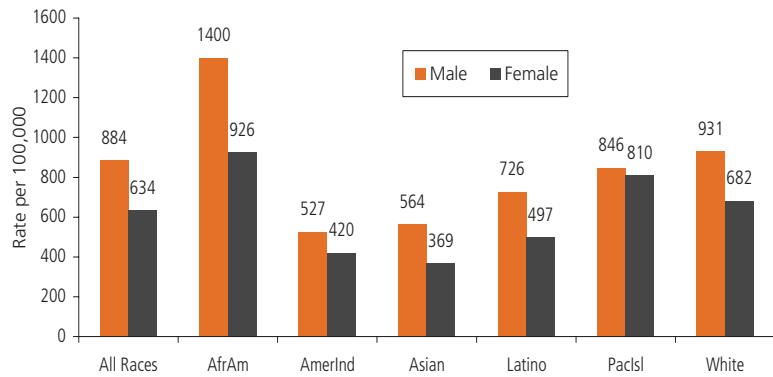
Mortality from all causes was higher among males than females in every age group. After the age of 15, all-cause mortality rose steeply with age. It was two to three times higher for the 85 and older age group than for the age group 75-84.

Figure 3.1: Death From All Causes, Selected Counties and California, 2001-2003



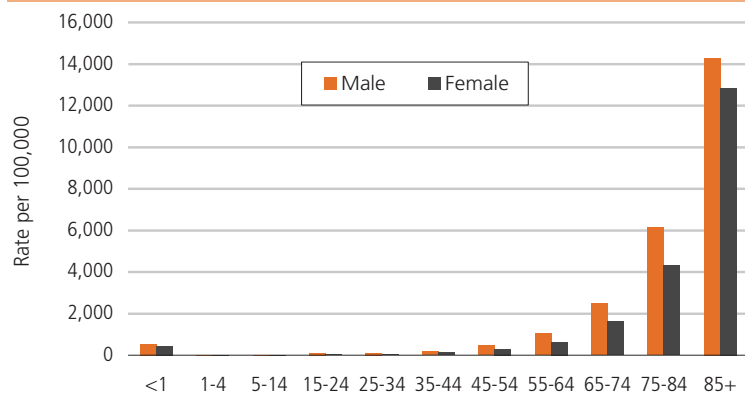
Source: CAPE; ACPHD Vital Statistics files; CADHS County Health Profiles; Census 2000; DOF.

Figure 3.2: Death From All Causes by Race/Ethnicity and Gender, Alameda County 2001-2003



Source: CAPE; Alameda County vital statistics files, Census 2000, DOF.

Figure 3.3: Death From All Causes by Age and Gender, Alameda County, 2001-2003

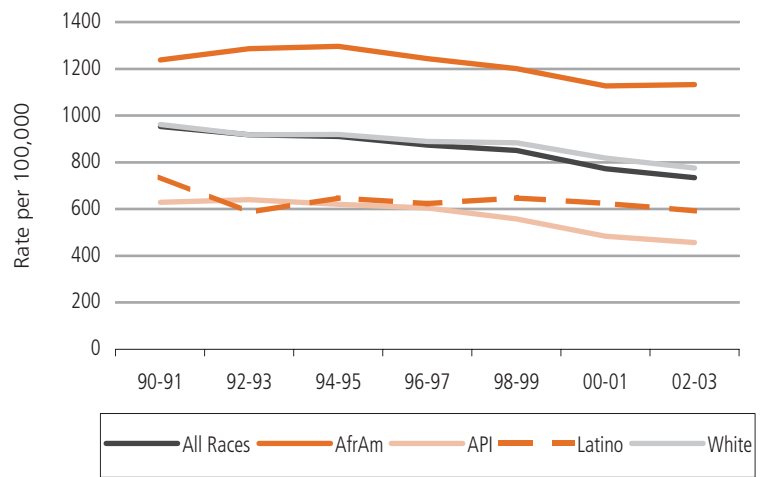


Source: CAPE; Alameda County vital statistics files, Census 2000, DOF.

The rate of death due to all causes in Alameda County declined significantly during the last decade. Between 1998 and 2003 the overall mortality rate declined more steeply than earlier in the decade, by almost 4% per year. However, this declining trend was not seen for every race/ethnic group. The Latino rate has been relatively flat. White and Asian rates declined overall while the African American rate increased until the mid 1990s and then declined significantly until 2002.

The African American rate has been consistently higher than that of any other race/ethnic group over the past decade. The disparity in rates between African Americans and the county as a whole widened during this time; the African American rate was 30% higher than the county rate in 1990-91 and 54% higher in 2002-03.

Figure 3.4: Death From All Causes by Race/Ethnicity, Alameda County 1990-2003



Source: CAPE; Alameda County vital statistics files, Census 1990 and 2000, DOF.

NOTE: Birth and death figures that show a three-year average rate for the period 2001-2003 present Asians and Native Hawaiians/other Pacific Islanders (abbreviated as NHOPI or PacIsl in this report) separately. For many health indicators, NHOPI figures are not shown due to small numbers. Figures showing trends, 1990-2003, in this report group Asians with NHOPI. This combined group is shown as API, for Asian/Pacific Islander. The combined group is shown in order to be consistent with racial classifications used prior to Census 2000 when NHOPI was first offered as a separate racial group. Other data sources, such as hospitalization, cancer incidence, and communicable diseases present the combined API group in all figures.

# Leading Causes of Death

## What are they?

Leading causes of death are the most common causes of death and are generally ranked based on their frequency of occurrence. The most frequent cause of death is ranked as number one, the second most frequent as number two, and so on. In this section we consider the ten most common causes of death. However, when we examine cause of death by race/ethnicity or age group and the numbers become small, we consider only the five most common causes of death.

## Why are they important?

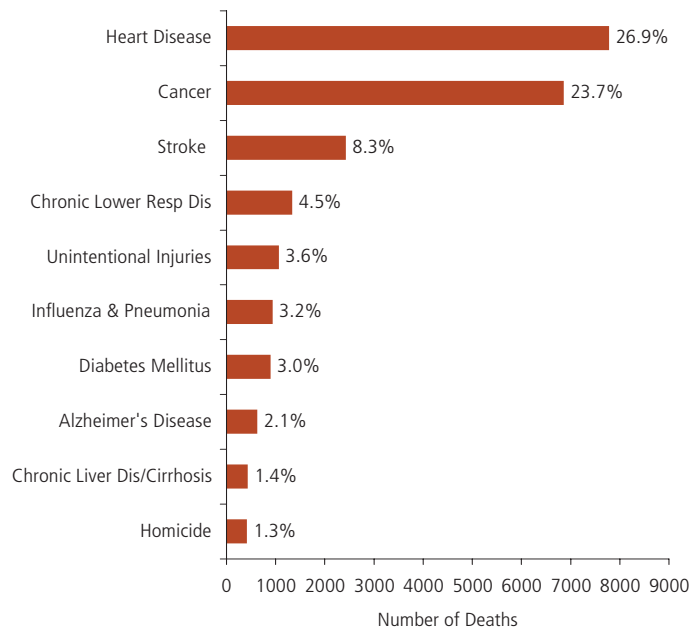
Cause of death ranked according to the number of deaths is a useful way to examine the relative burden of mortality from specific causes. From the standpoint of prevention, it is helpful to understand the most common causes of death and how they vary in different age, race, and sex subgroups. This type of data informs resource allocation, program planning, and provision of services.

In 2002, the ten leading causes of death accounted for 79% of all deaths occurring in the United States.<sup>10</sup> Five chronic diseases accounted for almost two-thirds of all deaths in the United States—heart disease, cancer, stroke, chronic lower respiratory disease, and diabetes. The first and third leading causes of death, heart disease and stroke, have been declining since 1950 and the second leading cause of death, cancer, has been declining since 1990.<sup>11</sup>

## What is Alameda County's status?

During the period 2001-2003, there were 28,790 deaths among Alameda County residents, an average of 9,597 per year. The ten leading causes of death accounted for 78% of this total. Heart disease, cancer, and stroke, the three leading causes of death, accounted for 59% of all deaths. Chronic lower respiratory disease and unintentional injuries ranked fourth and fifth, respectively, followed by influenza and pneumonia, diabetes, Alzheimer's disease, and chronic liver disease/cirrhosis. Homicide, which was not among the leading causes of death in 1999-2000, ranked tenth, accounting for about 1% of all deaths.

Figure 3.5: Leading Causes of Death, Alameda County, 2001-2003 (N=28,790)

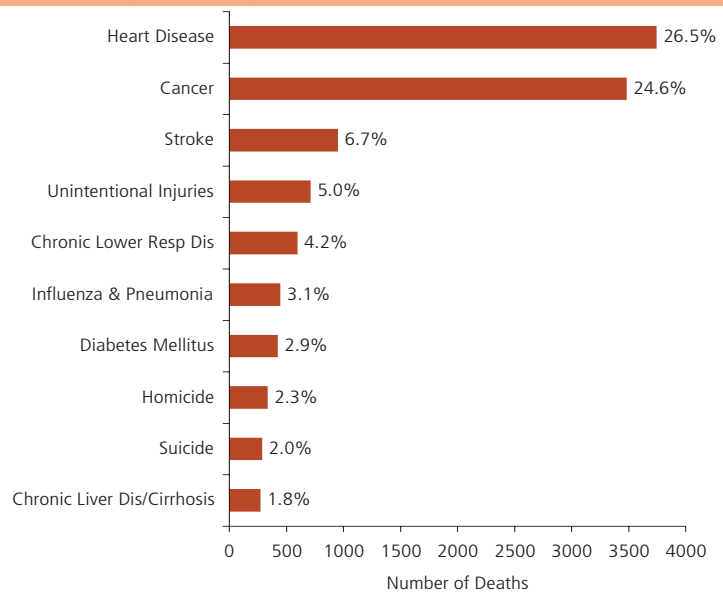


Source: CAPE; Alameda County vital statistics files.

## Gender

Both males and females had the same three leading causes of death—heart disease, cancer, and stroke. Among males, they accounted for 58% of deaths. The fourth leading cause of death among males was unintentional injury, followed by chronic lower respiratory disease, influenza and pneumonia, diabetes, homicide, suicide, and chronic liver disease/cirrhosis. Suicide ranked in the top ten for males while it did not for the total population or females alone.

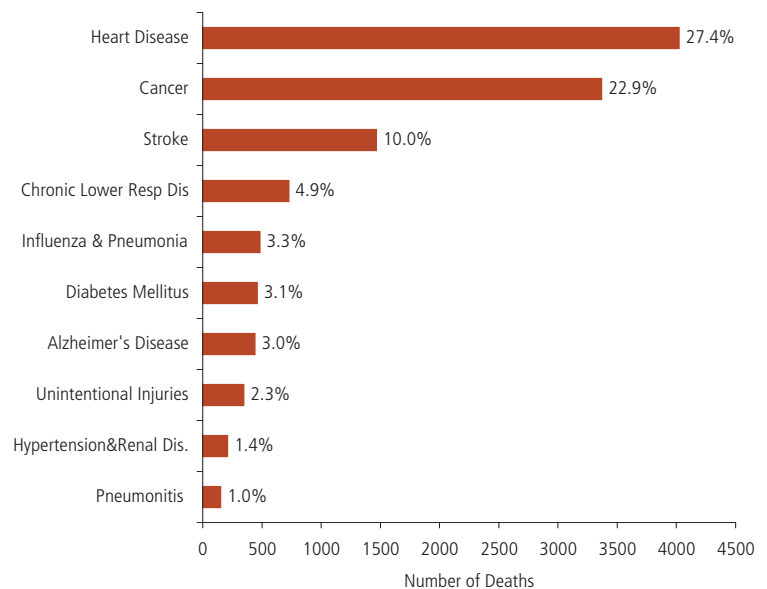
Figure 3.6: Leading Causes of Death Among Males, Alameda County, 2001-2003 (N=14,109)



Source: CAPE; Alameda County vital statistics files.

The three leading causes of death among females—heart disease, cancer, and stroke—accounted for 60% of all deaths. The fourth leading cause was chronic lower respiratory disease, followed by influenza and pneumonia, diabetes, Alzheimer’s disease, unintentional injuries, hypertension/hypertensive renal disease, and pneumonitis.

Figure 3.7: Leading Causes of Death Among Females, Alameda County, 2001-2003 (N=14,681)



Source: CAPE; Alameda County vital statistics files.

## Race/Ethnicity

Heart disease was the leading cause of death, followed by cancer and stroke, for every race/ethnic group except American Indians and Asians. Among American Indians and Asians, cancer was the leading cause, followed by heart disease. The third cause for American Indians was chronic liver disease/cirrhosis, while for Asians it was stroke.

Diabetes ranked among the five leading causes of death for every race/ethnic group except Whites. Chronic lower respiratory disease, homicide, unintentional injury, and influenza/pneumonia are other diseases that ranked among the five leading causes, depending upon race/ethnicity.

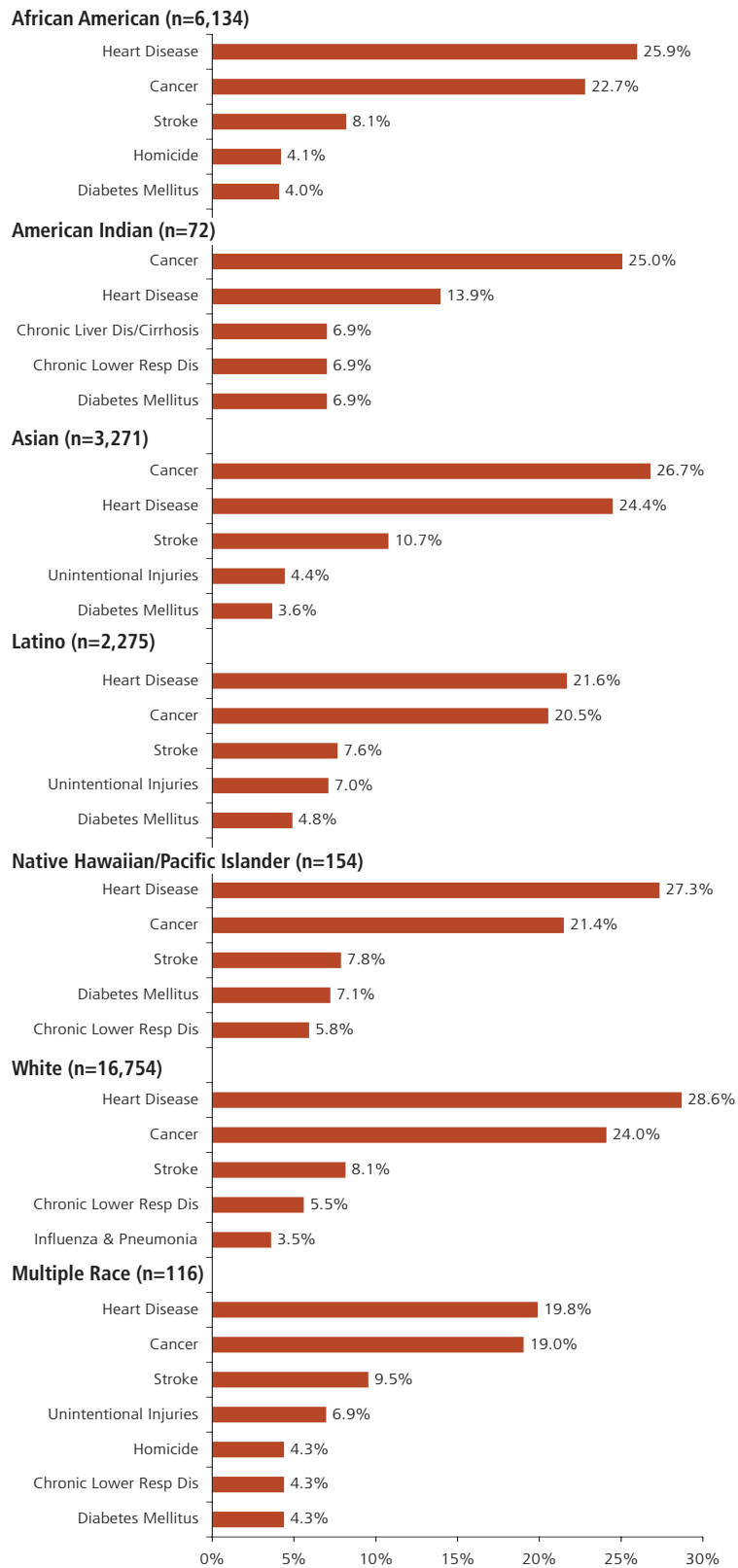
The total number of deaths among American Indians, Native Hawaiians/Pacific Islanders and Multiple Races was small (72, 154, and 116, respectively). Thus rankings of cause may shift based on just a few deaths.

## Age

Birth defects were the leading cause of death among babies under one year of age, accounting for 23.5% of infant deaths. Sudden Infant Death Syndrome (SIDS) ranked second, followed by disorders related to short gestation and low birth weight, neonatal hemorrhage, and complications of pregnancy (placenta, cord, or membranes). Birth defects were the leading cause of infant death for every race/ethnic group except African American infants, for whom SIDS was the leading cause of death.

Unintentional injury was the leading cause of death among children one to

Figure 3.8: Leading Causes of Death by Race/Ethnicity, Alameda County, 2001-2003 (N=28,790)



Source: CAPE; Alameda County vital statistics files.

14 years of age, accounting for 27.7% of all deaths. Of unintentional injury deaths, over one-third were from motor vehicle crashes. Cancer was the second leading cause of death, followed by birth defects and homicide.

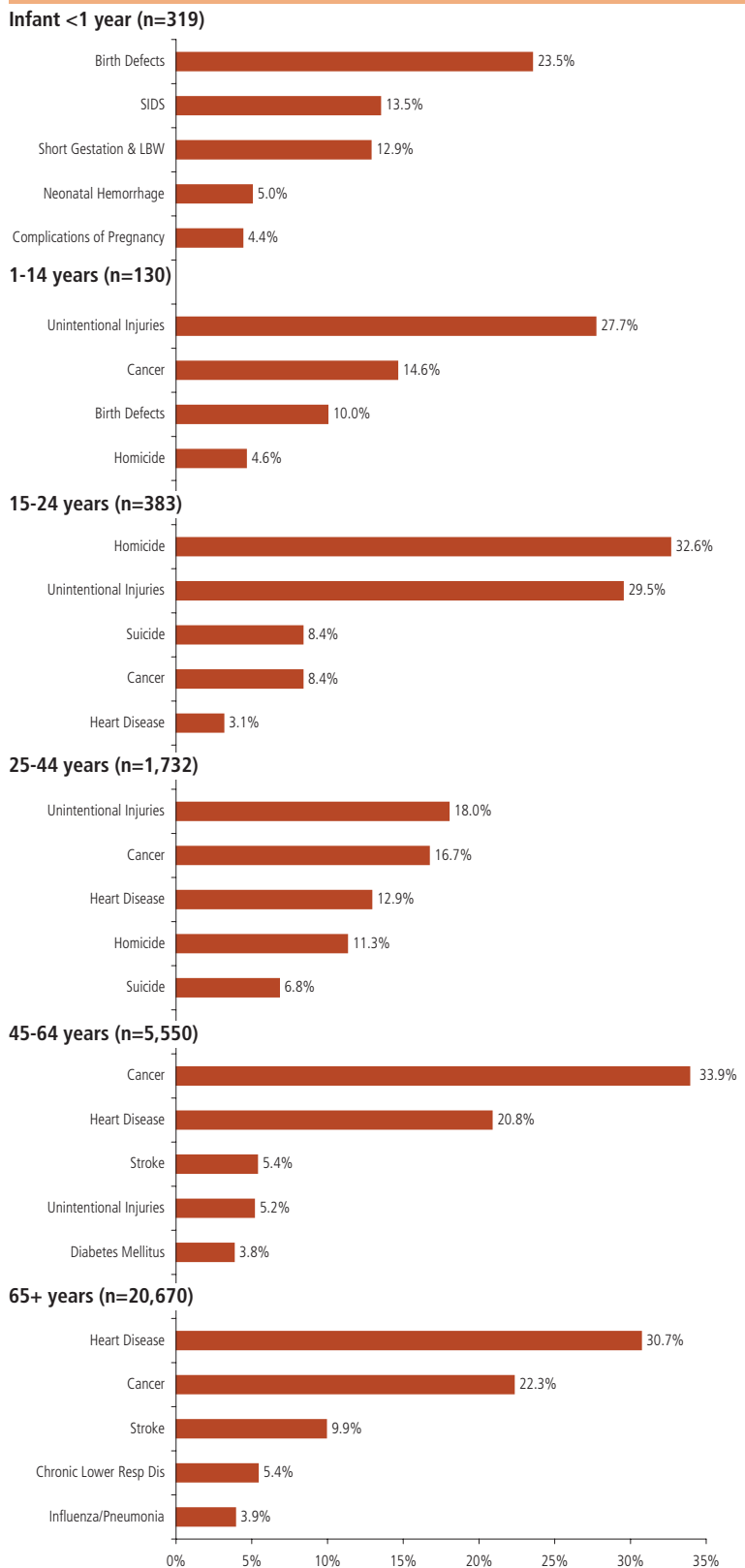
Homicide was the leading cause of death among youth 15 to 24 years of age, accounting for one third of all deaths in this age group. Unintentional injury ranked a close second, accounting for 29.5% of deaths. Suicide and cancer tied for the third leading cause, followed by heart disease. It is noteworthy that over 70% of all deaths in this age group are due to either intentional or unintentional injury.

Unintentional injury was the leading cause of death among adults 25 to 44 years of age, accounting for 18% of all deaths. Cancer was the second leading cause of death, followed by heart disease, homicide and suicide. Injury, either intentional or unintentional, accounted for 36% of all deaths in this age group.

Cancer was the leading cause of death among adults 45 to 64 years of age, accounting for 33.9%, or one-third, of all deaths. Heart disease was the second leading cause of death, followed by stroke, unintentional injury, and diabetes. In this age group, chronic disease surpasses injury among the leading causes, accounting for 64% of deaths shown here.

By far, the greatest number of deaths occur in the oldest age group, reflecting, for the most part, the pattern observed for leading causes overall. Among the elderly, chronic diseases are the predominant cause of death.

Figure 3.9: Leading Causes of Death by Age Group, Alameda County, 2001-2003 (N=28,790)



Source: CAPE; Alameda County vital statistics files.

## Leading Causes of Premature Death

### What is it?

Premature or early death is measured in years of potential life lost (YPLL). Since most deaths occur among elderly people, death rates are dominated by the causes of death most common to the elderly. The measure of years of potential life lost has been used as an alternative to reflect the mortality patterns of younger age groups.<sup>11, 14, 15</sup> This summary measure provides a more accurate picture of premature mortality by weighing deaths occurring at younger ages more heavily than those occurring in older populations. The measure of YPLL used in this report represents the number of years of life lost due to death before age 75, summed over all age groups.

### Why is it important?

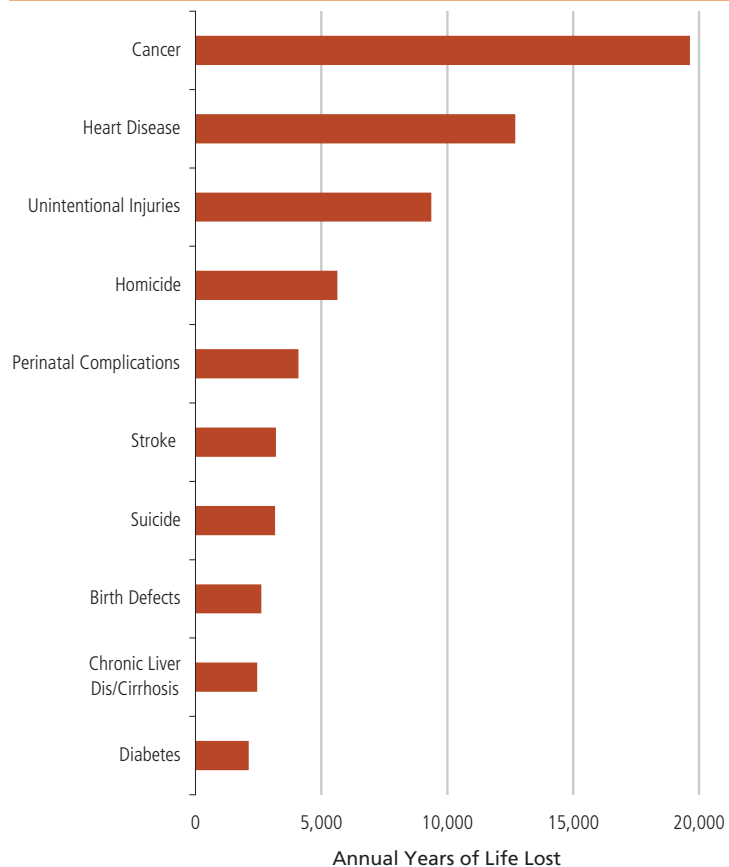
Since many premature deaths could be prevented by public health interventions, this measure indicates the potential for prevention in a population. It can be used to monitor progress toward the critical public health goal of preventing premature death.<sup>14</sup> Premature death can be viewed as a loss to society in terms of lost years of productivity.<sup>11, 14</sup>

### What is Alameda County's status?

The largest contributor to years of potential life lost is cancer, followed by heart disease and unintentional injury. The most notable difference between leading causes of death and leading causes of premature death is that intentional injury (homicide and suicide) ranked among the top ten causes of premature death and unintentional injury moved from the fifth leading cause to third.

While a relatively small number of deaths are due to unintentional injury, homicide, and perinatal complications, they contribute a large number of YPLL due to the early age at which many of these deaths occur. Among Latinos, unintentional injury was the leading contributor to years of life lost. Homicide was the second leading contributor to years of life lost among American Indians and the third among African Americans.

Figure 3.10: Leading Causes of Premature Death (YPLL-75), Alameda County, 2001-2003



Source: CAPE; Alameda County vital statistics files.

Of cancer deaths, lung cancer was the most important contributor to years of life lost, followed by breast cancer and colorectal cancer. Coronary heart disease was the major contributor to years of life lost due to heart disease. Motor vehicle crash was the major contributor to years of life lost due to unintentional injuries. Deaths classified as 'perinatal complications' are deaths to newborns. These were predominantly due to low birth weight and other conditions relating to short gestation, respiratory distress, and other complications of pregnancy. Chronic liver disease and cirrhosis were largely the result of alcohol dependence.

# Life Expectancy

## *What is it?*

Life expectancy represents the number of years a group is expected to live, either from birth or from a given point in the lifespan. Life expectancy at birth is the average number of years that a group of infants would be expected to live if they were to experience throughout their lifespan the same mortality experienced by the different age groups alive at that time.<sup>7,16,17</sup> The measure is strongly influenced by infant and childhood mortality. One of the advantages of using life expectancy is that it does not require the use of a standard population as does age-adjustment. Therefore, it is easily comparable across different subgroups, periods and areas.

## *Why is it important?*

In the United States, life expectancy at birth increased from 47.3 in 1900 to 77.6 in 2003.<sup>8,11</sup> Female life expectancy is currently 80.1 years and male life expectancy is 74.8 years. The race/ethnic inequities in life expectancy are pronounced. Nationally, the life expectancy for African American males is 69.2 years compared to 75.4 years for White males. For African American females the life expectancy is 76.1 years compared to 80.5 years for White females.<sup>6</sup> During the past decade, male-female differences have grown smaller as have African American-White differences. Nationally, the gap between African Americans and Whites narrowed from 7.0 years in 1990 to 5.2 years in 2003.<sup>8</sup>

## *What is Alameda County's status?*

Life expectancy at birth in Alameda County was 79.2 years during 2001 to 2003. In keeping with national trends, life expectancy in Alameda County has increased, by about four years during the past decade alone. The improvement in life expectancy at birth was seen in every race/ethnic group: 4.2 years for Asian/Pacific Islanders, 3.3 years for Whites, 3.1 years for African Americans, and 3.0 years for Latinos.

Asians have the highest life expectancy at birth, 85.9 years, while African Americans have the lowest, 71.6 years at birth, a difference of 14.3 years. On average, Whites live 7.1 years longer than African Americans. While this gap has been narrowing over the past decade at the national level, it has not been narrowing in Alameda County.

Females of every race/ethnic group have a higher life expectancy than males. The differences range from 4.5 years for Whites to 7.6 years for African Americans.

Table 3.1: Life Expectancy at Birth, Alameda County, 2001-2003

	Total	Male	Female
African American	71.6	67.7	75.3
Asian	85.9	83.0	88.5
Latino	82.2	79.5	84.7
White	78.7	76.4	80.9
Total	79.2	76.7	81.5

Source: CAPE; Alameda County vital statistics files, Census 2000, DOF.

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