

**A-C. MORTALITY**

<b>Importance</b>	Examination of the frequencies of the various causes of death in a population can help to identify opportunities for intervention to reduce illness, injury, and death. Unintentional injuries, suicide, and homicide are the 5 <sup>th</sup> , 11 <sup>th</sup> , and 15 <sup>th</sup> leading causes of death in the United States. Moreover, fatal injuries may be considered as particularly important causes of death since they tend to affect a young population and thus cause a disproportionate share of Years of Potential Life Lost. Completed suicides are also an indicator for suicide attempts, which constitute a major nonfatal injury category, and for emotional distress, which is a strong indicator of the well-being of the population. Infant mortality is an important measure of a nation's health and a worldwide indicator of health status and social well-being.
<b>Highlights</b>	<ul style="list-style-type: none"> <li>▪ The 2006-2008 overall age-adjusted death rate was significantly lower in Santa Cruz County and in the state of California than in the rest of the nation.</li> <li>▪ The County's rate of death from coronary heart disease was significantly lower than the state and national rates.</li> <li>▪ The county's homicide rate was significantly lower than the state and national rates.</li> <li>▪ In the United States, homicide death rates are highest among Blacks (8 times the rate among Whites) and Hispanics (2.7 times the rate among Whites).</li> <li>▪ Homicide death rates are almost 4 times higher among males than females.</li> <li>▪ Suicide rates among Whites are more than double those among Blacks, Asians, and Hispanics.</li> <li>▪ California and Santa Cruz County infant mortality rates have been declining for years; in most years, Santa Cruz rates are lower than California's and meet the HP2010 objective.</li> </ul>
<b>Definitions</b>	<p><u>Years of Potential Life Lost</u>: the number of years between a person's age at death and an age to which they might have been expected to live had they not died of their actual cause of death (often set at 75) – a measure of mortality that emphasizes the importance of death at early age.</p> <p><u>Unintentional injury</u>: an injury that is not inflicted by deliberate means and not intended to harm anyone, regardless of whether the injury was inflicted by oneself or by another person: e.g., motor vehicle crashes, drownings, fires, falls, poisonings, and accidental firearm fatalities. Does not include intentional injuries such as homicides and suicides. Cases of unknown or undetermined intent are usually classified as unintentional injuries.</p>
<b>Healthy People 2010 Objective</b>	<ul style="list-style-type: none"> <li>▪ Reduce deaths from unintentional injuries to <b>17.1</b> per 100,000 persons (age-adjusted).</li> <li>▪ Reduce homicides to no more than <b>2.8</b> per 100,000 population (age-adjusted).</li> <li>▪ Reduce suicides to no more than <b>4.8</b> per 100,000 population (age-adjusted).</li> </ul>

In Santa Cruz County, the age-adjusted death rate from all causes was 669.8 deaths per 100,000 population, on average, from 2006 through 2008.<sup>1</sup> The rate was similar to the state rate of 666.4 deaths per 100,000, and significantly better than the 2007 national rate of 760.3 per 100,000.<sup>2</sup>

**A. YEARS OF POTENTIAL LIFE LOST**

“Years of Potential Life Lost” (YPLL) is a widely used measure of a community's health. YPLL is the number of years of potential life lost due to premature mortality. It is measured by calculating the difference between the actual age of death (only for deaths occurring before a selected age) and the selected age; the age selected is usually 65 or 75. For example, if the selected age is 75, then a death occurring at age 60 would contribute 15 YPLL; a death occurring at age 20 would contribute 55 YPLL. YPLL is usually presented as an age-adjusted rate of YPLL per 100,000 persons.

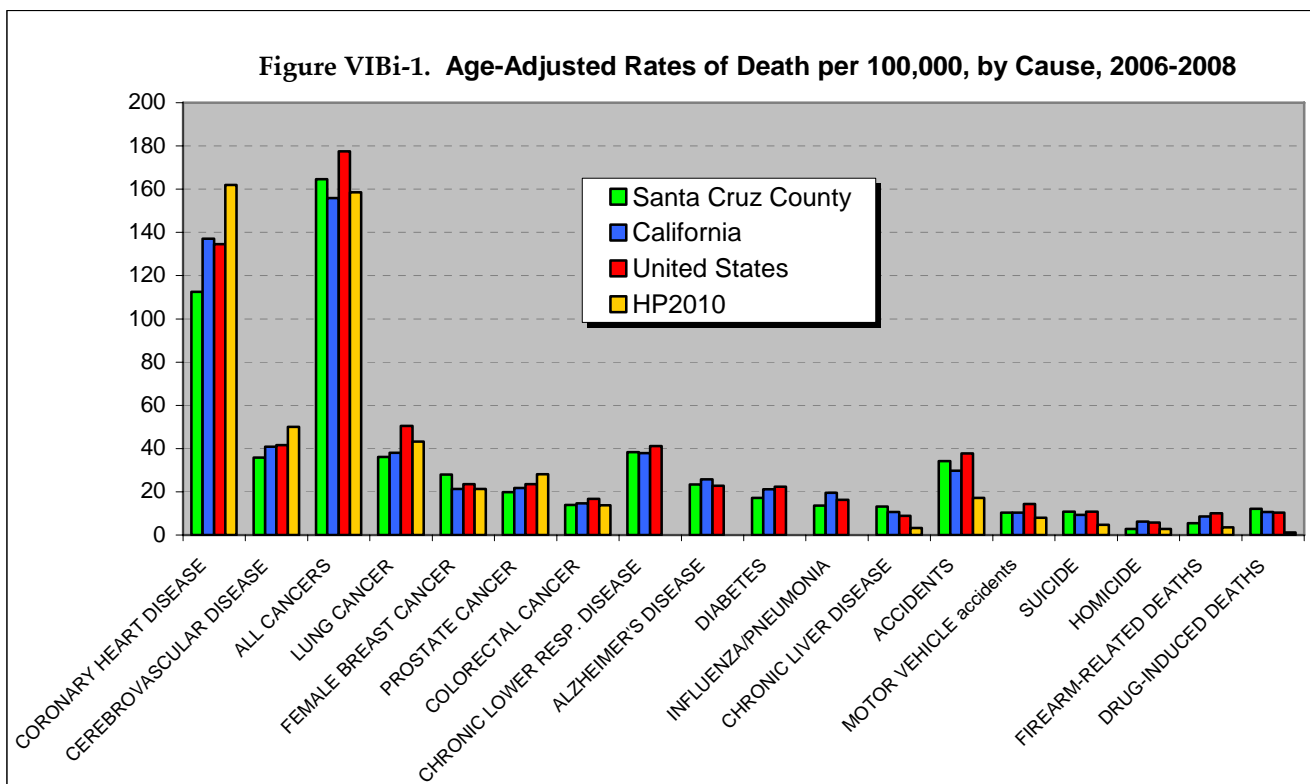
## A. YEARS OF POTENTIAL LIFE LOST (CONT.)

The National Vital Statistics System calculated the YPLL (with a selected age of 75) for each individual county in the United States for the years 2004-2006.<sup>3</sup> California's statewide average YPLL was 6196. Santa Cruz County ranked sixth best among all California counties, with a YPLL of just 5199.

## B. CAUSES OF DEATH

The leading cause of death in the United States is heart disease,<sup>4</sup> primarily coronary heart disease. In Santa Cruz County in 2006-2008, the age-adjusted death rate from coronary heart disease (112.5 per 100,000 population) was significantly lower than the statewide rate (137.1) and the national rate (134.5).<sup>2</sup> Santa Cruz County death rates were also significantly lower than statewide rates for homicide (2.8 versus 6.3 per 100,000) and for pneumonia and influenza. The county did not have rates significantly higher than statewide rates for any leading cause of death.

The second leading cause of death in the U.S. is cancer.<sup>4</sup> The county's rate of death from all types of cancer combined was higher than the statewide rate, but lower than the national rate, and not significantly different from either.<sup>2</sup> County rates of death from cerebrovascular disease (stroke), diabetes, and Alzheimer's disease were lower than state rates, but not significantly lower. Rates of death from accidents, suicide, drug-induced injury, and liver disease were higher than state rates, but not significantly higher.



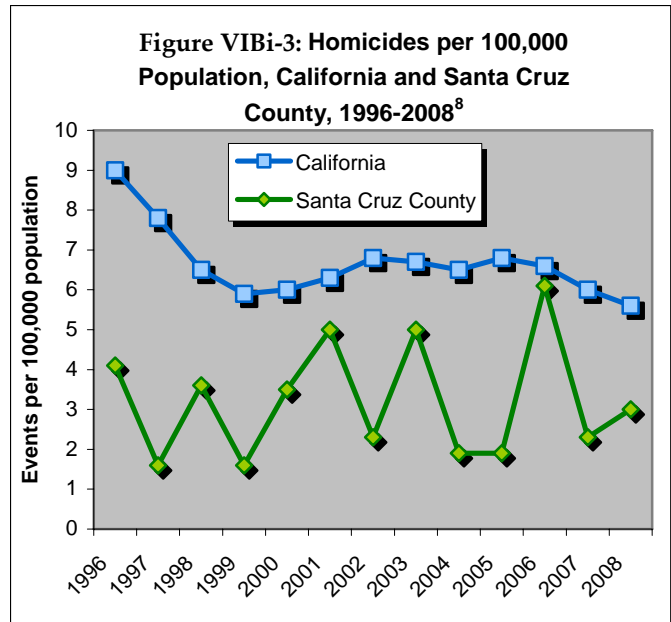
In the last 100 years, public health advances such as improved sanitation, refrigeration, vaccinations, and antibiotics have greatly reduced the death toll from infectious disease. Nowadays, changes in lifestyle can substantially reduce most of the major causes of death due to chronic diseases, such as heart disease, cancer, stroke, chronic lower respiratory disease, diabetes, and cirrhosis of the liver.

## B. CAUSES OF DEATH (CONT.)

The single greatest actual cause of death in developed countries is tobacco.<sup>5</sup> The second greatest is the combination of poor diet and physical inactivity; in the U.S., that combination threatens to overtake tobacco as the leading cause of death. The third greatest is alcohol, which contributes heavily to liver disease, to deaths by accident, homicide and suicide, and to certain cancers. Each of these major causes of death involves personal lifestyle choices that are ripe for public health intervention. Reductions in tobacco and alcohol usage and improvements in diet and physical activity are keys to improving health and extending lifespans in the 21<sup>st</sup> century.

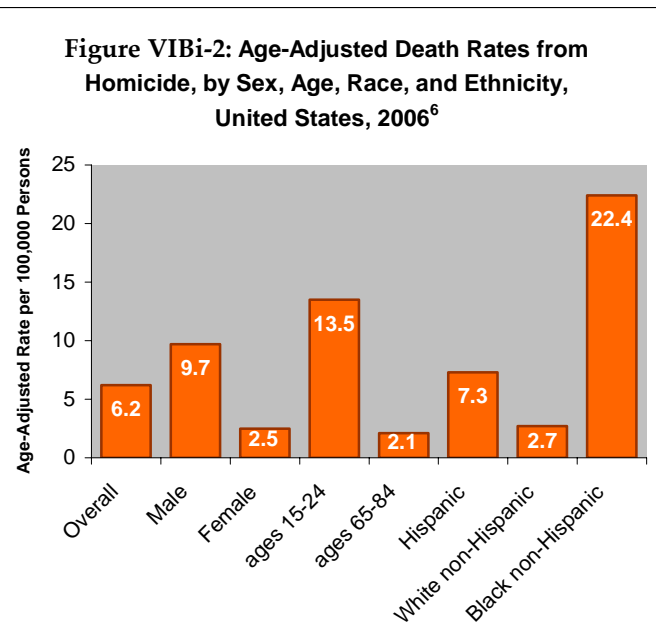
### i. HOMICIDE

The United States had an age-adjusted homicide rate of 6.2 per 100,000 in 2006,<sup>6</sup> more than double the rate of most industrialized countries. Homicide death rates in 2006 were highest among Blacks (over eight times the rate among non-Hispanic Whites) and Hispanics (2.7 times the rate among Whites), adolescents and young adults (over six times the rate



among the elderly), and males (almost four times the rate among females) (Figure VIBi-2).

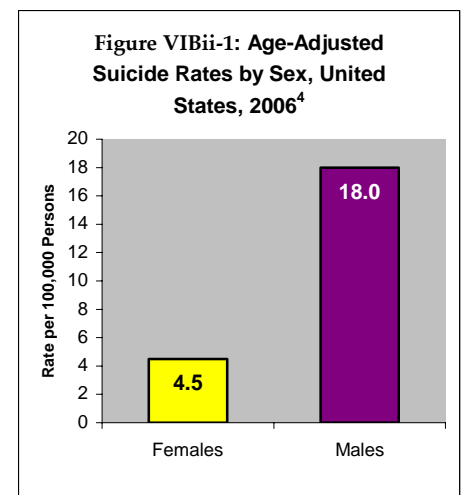
Most homicides are committed by someone who knows the victim. Two-thirds of homicides are committed with firearms. Homicide rates vary between urban and rural settings, but that relationship has not been studied well enough to describe with confidence.<sup>7</sup>



Over the past 15 years, Santa Cruz County has consistently had homicide rates lower than statewide and national rates. County rates were significantly lower in most years, averaging less than half of state rates over the period shown in Figure VIBi-3.<sup>8</sup> Homicide rates, along with other violent crime rates, track with economic conditions. California homicide rates dropped sharply during the economic boom of the 1990s and rebounded somewhat during the economic slump of the early 2000s.<sup>8</sup> The period shown does not include much of the recent far more severe economic downturn; there may have been a further upswing in homicide rates as economic conditions continued to worsen.

### ii. SUICIDE

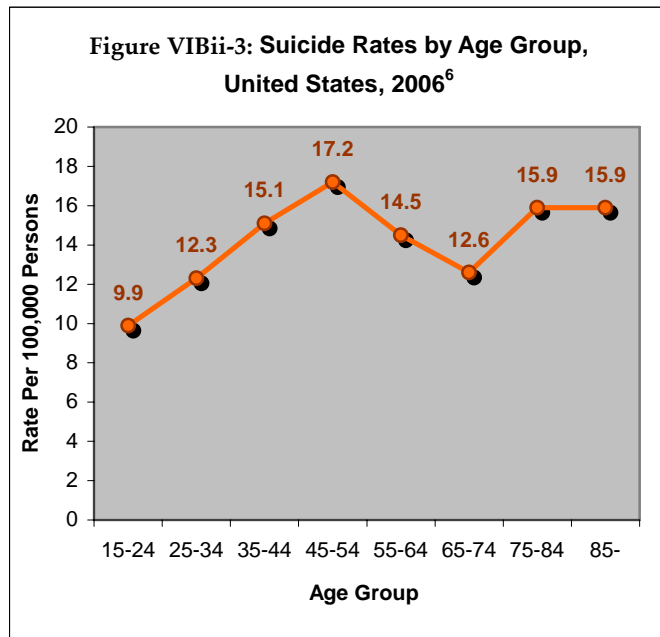
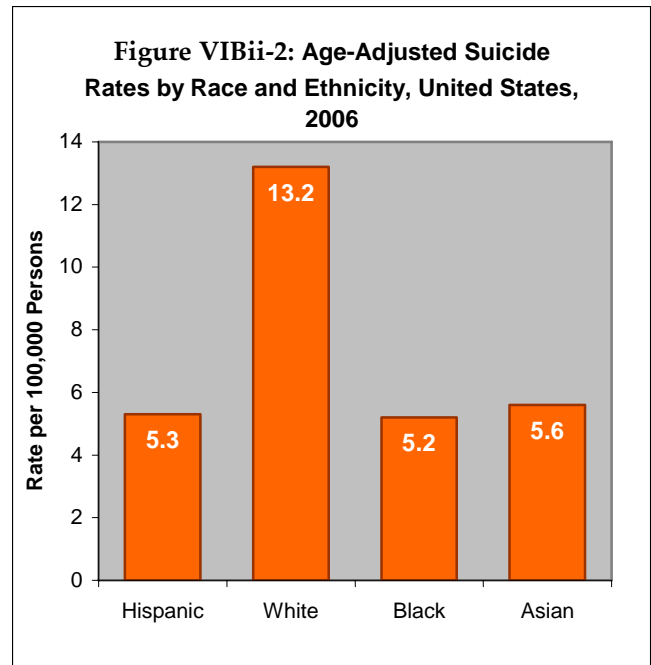
Suicide is the 11<sup>th</sup> leading cause of death nationally, taking the lives of about 33,000 people per year, almost 1.4% of all deaths in the United States.<sup>4</sup> Suicide causes almost twice as many American deaths as homicide does.



## ii. SUICIDE (CONT.)

Suicide rates are strongly linked to sex, age, race, and ethnicity. Suicide rates are four times as high among men as among women<sup>6</sup> (although women are more likely to *attempt* suicide). Suicide rates among Whites are more than double those among Blacks, Asians, and Hispanics (see Figure VIBii-2).

Suicide rates increase with age; the rate per 100,000 rises from about 10 in the 15-24 age group to a peak of about 17 in the 45-54 age group, drops to about 13 in the 55-64 and 65-74 age groups, and then climbs to about 16 in the oldest age groups (Figure VIBii-3). Other risk factors for suicide include depression, substance abuse, availability of firearms in the home, family violence, family history of suicide or mental illness, social isolation, rural residence, stress, and lack of mental health care.



The age-adjusted rate of death by suicide for the years 2006-2008 in Santa Cruz County was 10.8 per 100,000 persons, the same as the national age-adjusted rate in 2007, somewhat higher than the statewide rate of 9.4.<sup>2</sup> Santa Cruz ranked exactly in the middle among California counties, 29<sup>th</sup> out of 58.<sup>1</sup> Santa Cruz County's suicide rates since 1980 have been fairly typical for a partly urban and partly rural county with a mid-sized population.

Suicide *attempts* are far more frequent than actual suicides.<sup>9</sup> Although suicide rates generally increase with age, the rate of suicide *attempts* decreases with age. The number of suicide attempts compared to completed suicides may be as high as 200 to 1 among 15 to 24 year olds, and drop to as low as 4 to 1 among adults over age 65.<sup>10</sup>

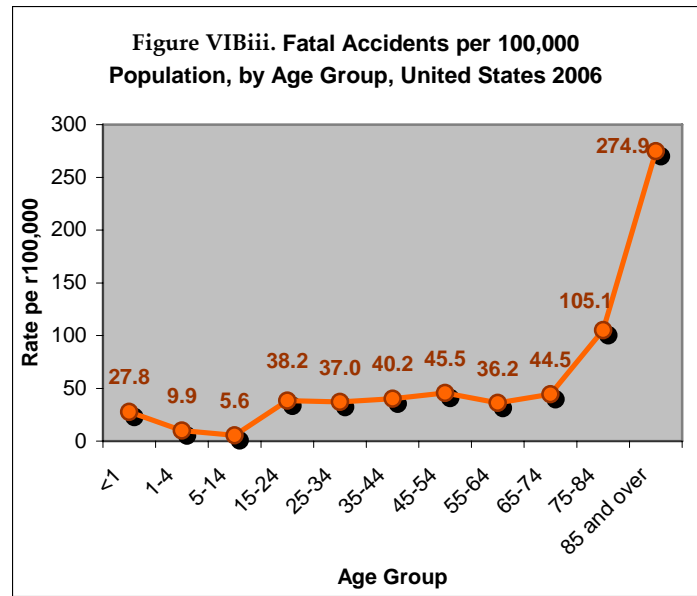
A failed suicide attempt is one of the strongest predictors of subsequent attempts and completed suicide. Development of an effective tracking system for suicide attempts could facilitate targeted intervention that might significantly reduce the incidence of suicide.

About half of all suicides in this country involve firearms. In Santa Cruz County since 1991 the proportion has been lower, just over 40%. Nevertheless, reduced access to firearms would probably reduce the incidence of suicide.

Suicide is associated with depression, an illness treatable both by psychotherapy and by medication. Training physicians to identify and treat depression, and increasing the availability of mental health resources, could reduce the incidence of suicide. Other interventions could include steps to reduce substance abuse, prevent social isolation, and reduce the incidence of chronic diseases.

### iii. UNINTENDED FATAL INJURIES

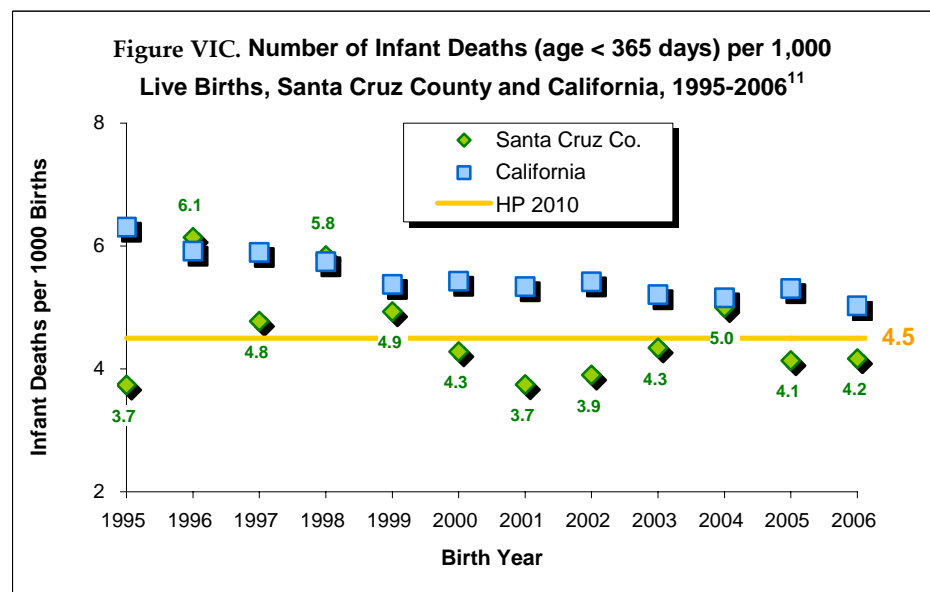
Unintended injuries are the fifth leading cause of death in the United States, with an age-adjusted death rate of 39.1 per 100,000 persons, accounting for 117,000 deaths in 2007, or 4.8% of all deaths.<sup>4</sup> Rates have been gradually increasing since a low of 33.2 per 100,000 in 1992. Males were 2.2 times as likely as females to die in accidents in 2006.<sup>6</sup> Whites and Blacks had fairly similar age-adjusted death rates due to unintended injuries, 33% and 25% higher than the rate among Hispanics; the rate among Asians and Pacific Islanders was barely 40% that among Whites. Rates among children 14 and under are lower than for older age groups (Figure VICiii). Rates varied from about 36-45 per 100,000 among the age groups between 15 and 74, then doubled to 105 among 75-84 year-olds, and more than doubled again to 275 among those over 85. Unintended injuries are the leading cause of death in all groups below age 45.



During the period 2006-2008, Santa Cruz County ranked 22<sup>nd</sup> among California counties, with an average annual age-adjusted mortality rate from unintentional injuries of 34.2 per 100,000 persons. That was better than the national rate of 37.8, but worse than California's rate of 29.7. The Healthy People 2010 objective is 17.1 per 100,000; no county in California has attained the objective.<sup>1</sup>

### C. INFANT MORTALITY

Infant mortality is an important measure of a nation's health and a worldwide indicator of health status and social well-being. Since 1995, California has seen an improving trend in infant mortality (see Figure VIC). Santa Cruz County rates are unstable, due to our smaller population, but also appear to show an improving trend.<sup>11</sup> In most years, the county's rates are lower than statewide rates and meet the HP2010 objective.



The three leading causes of infant mortality (congenital malformations, disorders related to short gestation and low birth weight, and sudden infant death syndrome) accounted for approximately 43% of all infant deaths in the United States in 2005.<sup>12</sup>

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