

MORTALITY

<p>Importance</p>	<p>The mortality rate is one of the fundamental measures of the health of a population. Examining the frequencies of the various causes of death in a population can help us identify opportunities for intervention to reduce illness, injury, and death. Years of Potential Life Lost is an especially useful indicator of early mortality. Infant mortality is an important measure of a nation's health and a worldwide indicator of health status and social well-being.</p>
<p>Definitions</p>	<p><u>Years of Potential Life Lost</u>: the number of years between a person's age at death and an age (often set at 75) to which they might have been expected to live had they not died of their actual cause of death – a measure of mortality that emphasizes the impact of death at early age.</p> <p><u>Unintentional injury</u>: an accidental injury – one 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>
<p>Healthy People 2020 Objectives</p>	<ul style="list-style-type: none"> ▪ Reduce motor vehicle accident fatalities to 12.4 per 100,000 population (age-adjusted). ▪ Reduce drug-induced deaths to 11.3 per 100,000 population (age-adjusted). ▪ Reduce homicides to no more than 5.5 per 100,000 population (age-adjusted). ▪ Reduce suicides to no more than 10.2 per 100,000 population.

In Santa Cruz County, the age-adjusted rate of death from all causes was 676.7 deaths per 100,000 population, for the period 2008 through 2010.¹ The rate was significantly higher than the state rate of 632.7 deaths per 100,000, but significantly better than the 2009 national rate of 741.1 per 100,000.² The county's mortality rates were not significantly different from statewide rates for any major cause of death, even though the rate for all causes combined was elevated. Mortality rates continue to drop nationwide, statewide, and in the county, but over the past decade, state and national rates have dropped much faster than Santa Cruz County rates.

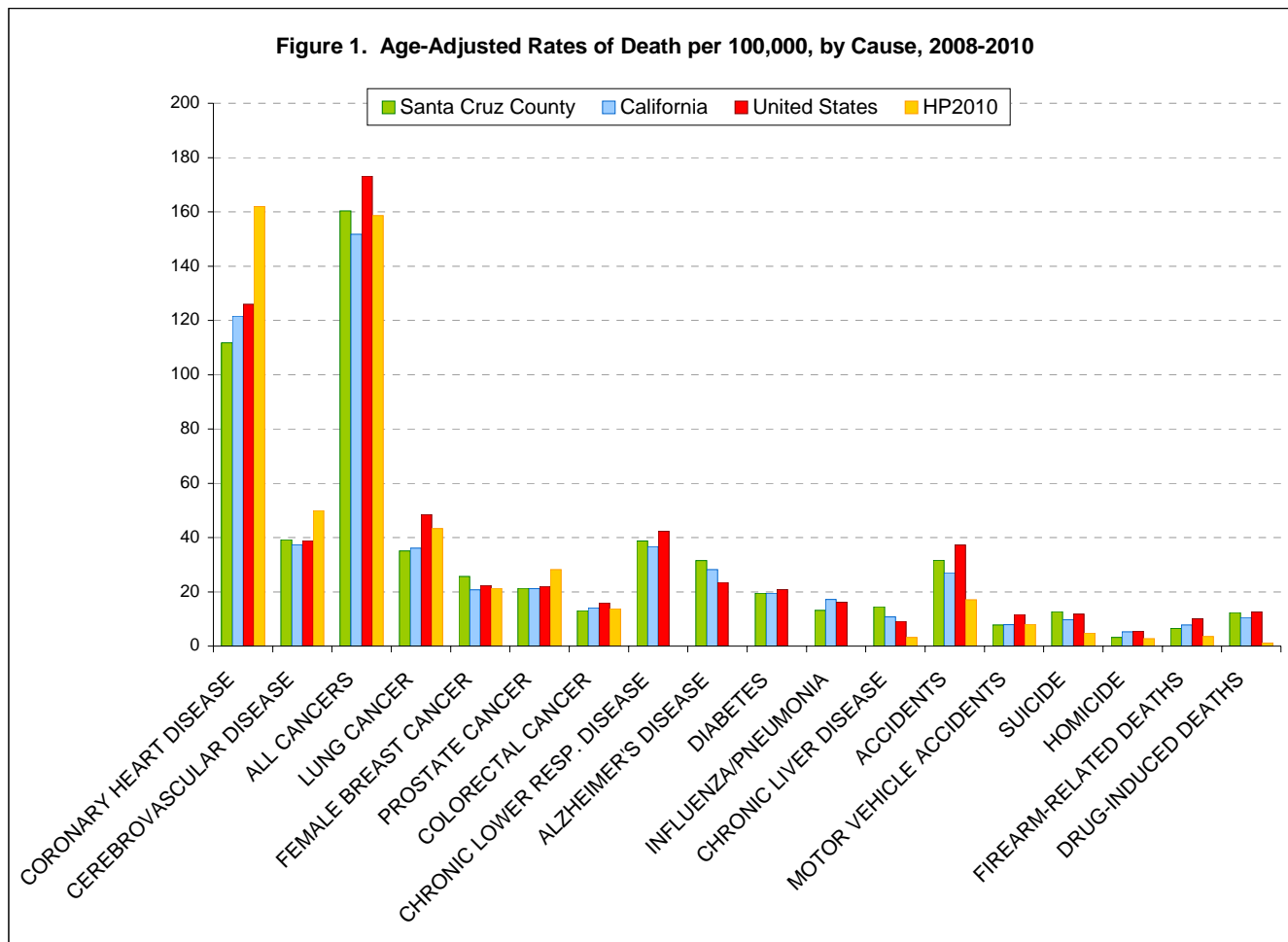
The leading cause of death in the United States is heart disease,³ primarily coronary heart disease. In Santa Cruz County in 2008-2010, the age-adjusted rate of death from coronary heart disease (111.8 per 100,000 population) was better than the statewide rate (121.6) and significantly better than the national rate (126.0).²

The second leading cause of death in the U.S. is cancer.³ 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.²

Over the years, county rates of death from suicide and drug-induced injury have generally been higher than state rates, while deaths from homicide and motor vehicle accidents have tended to be quite low; these differences have generally not been statistically significant in any given three-year period, but they have been consistent over a much longer period of time.

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.

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The single greatest actual cause of death in developed countries is tobacco.⁴ 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 actual 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 21st century.

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 either 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.

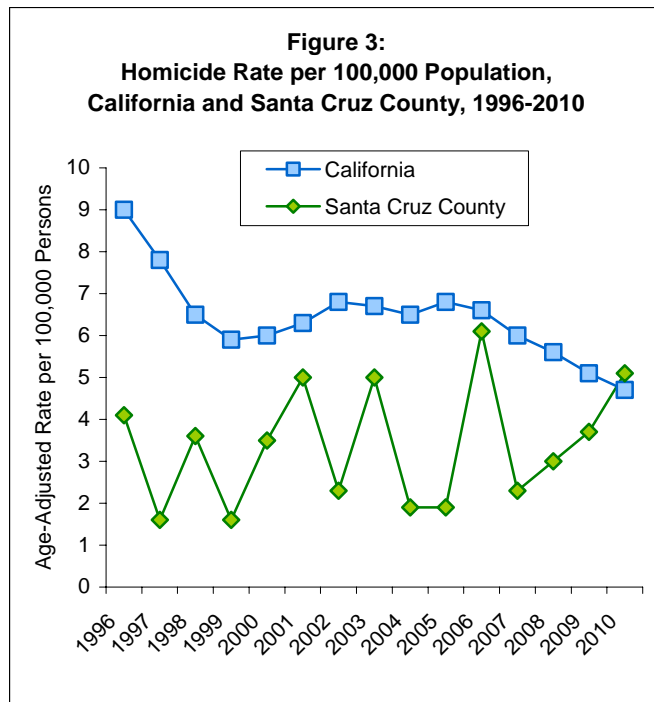
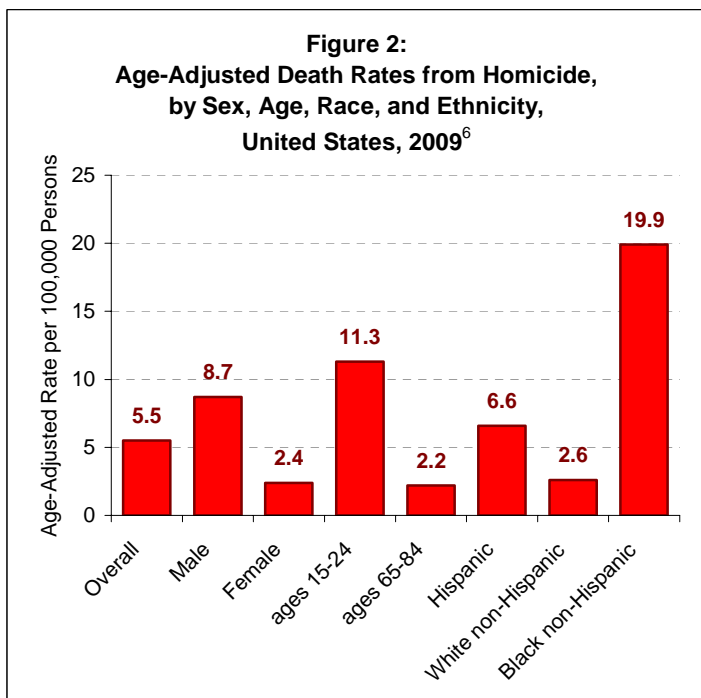
The National Vital Statistics System calculated the YPLL rate (with a selected age of 75) for each individual county in the United States for the years 2006-2008.^{5,6} The national YPLL rate for those years was 7083. California’s statewide rate was 5922, 8th best in the nation. Santa Cruz County ranked tenth best among all 58 California counties, with a YPLL of just 5293. However, in recent years the county’s rate has not been improving nearly as fast as the statewide rate.

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HOMICIDE

The United States had an age-adjusted homicide rate of 5.5 per 100,000 in 2009,⁷ more than double the rate of most industrialized countries. U.S. homicide rates in 2009 were highest among Blacks (over 7.5 times the rate among non-Hispanic Whites) and Hispanics (2.5 times the rate among Whites), adolescents and young adults (over five times the rate among the elderly), and males (over 3.5 times the rate among females) (Figure 2).

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 3.⁸ California rates have dropped considerably during that time, while the county's have not, and California's rate dipped below the county rate in 2010.

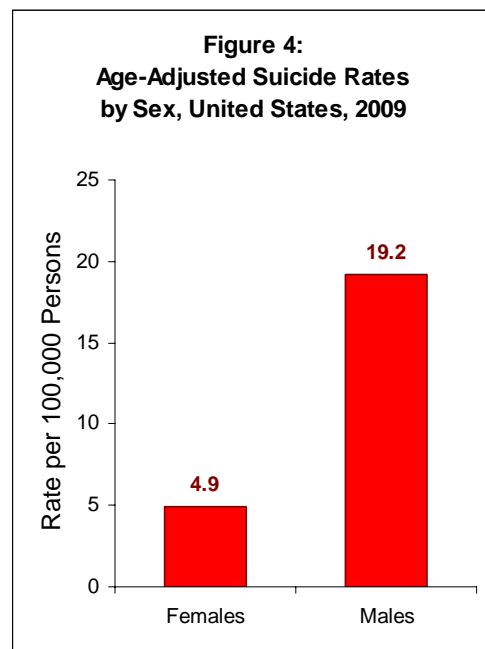


Close to two thirds of homicides are committed by someone who knows the victim. Over two thirds of homicides are committed with firearms. Homicide rates have historically been thought to be higher in urban areas than in rural areas,^{9,10} but some sources suggest that rural homicide rates are actually higher.

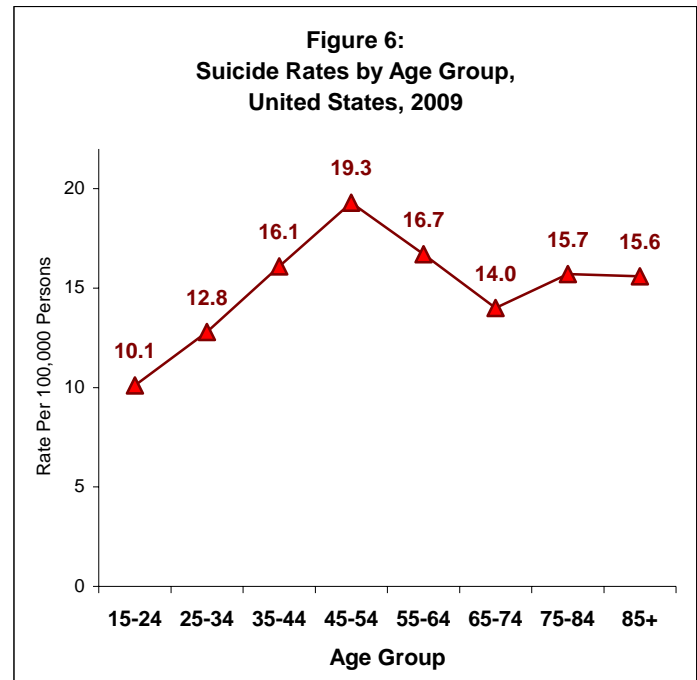
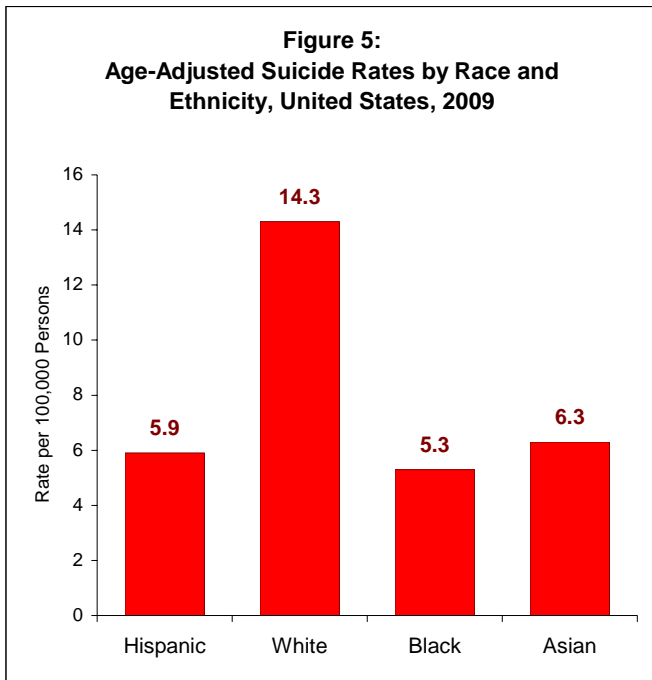
SUICIDE

Suicide is the 10th leading cause of death nationally, taking the lives of over 33,000 people per year, almost 1.5% of all deaths in the United States – twice as many American deaths as homicide in 2009⁷.

Suicide rates are strongly linked to sex, age, race, and ethnicity. Suicide rates are four times as high among men as among women⁷ (Figure 4) (although women are more likely to *attempt* suicide). Suicide rates among Whites are more than double those among Blacks, Asians, and Hispanics (see Figure 5).



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Suicide rates increase with age; the rate per 100,000 rises from about 10 in the 15-24 age group to a peak of almost 20 in the 45-54 age group, drops off in the 55-64 and 65-74 age groups, and then climbs back up to about 16 in the oldest age groups (Figure 6). 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.

For the years 2008-10, the age-adjusted rate of death by suicide in Santa Cruz County was 12.7 per 100,000 persons, compared to the statewide rate of 9.7 and the 2009 national age-adjusted rate of 11.8.² Santa Cruz ranked 34th out of 58 California counties.¹ Santa Cruz County's suicide rates since 1980 have consistently been somewhat higher than state rates.

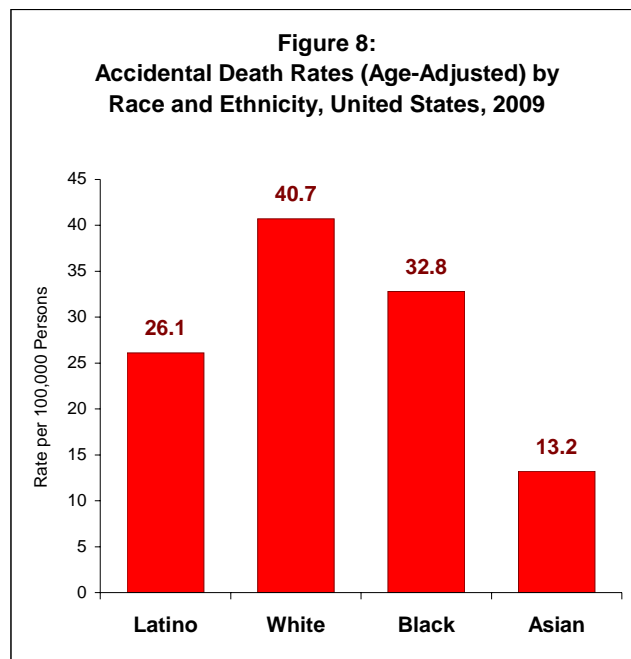
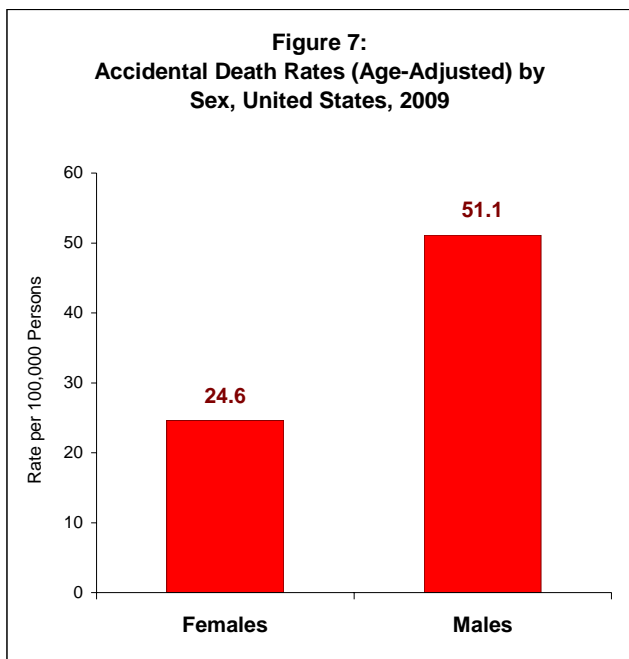
Suicide *attempts* are far more frequent than actual suicides.¹¹ Although suicide rates generally increase with age, the rate of suicide *attempts* decreases with age. The number of suicide attempts compared to completed suicides may be as high as 200 to 1 among 15 to 24 year olds, and drop to as low as 4 to 1 among adults over age 65.¹²

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.

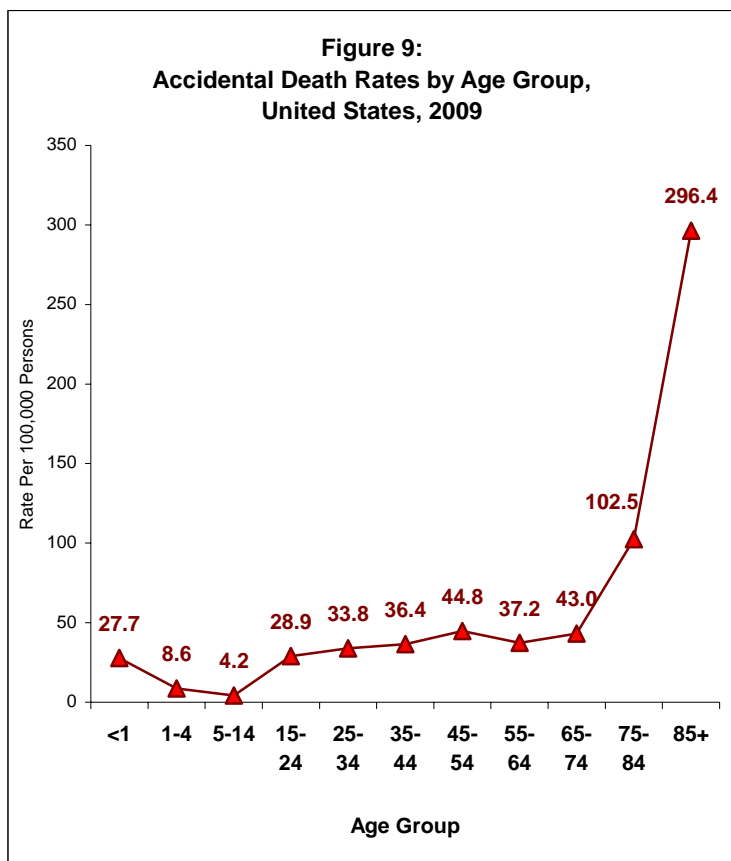
Suicide is associated with depression, an illness treatable both by psychotherapy and by medication. Training physicians to identify and treat depression, and increasing the availability of mental health resources, could reduce the incidence of suicide. Other interventions could include steps to reduce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

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UNINTENDED FATAL INJURIES (ACCIDENTAL DEATHS)

Unintended injuries are the fifth leading cause of death in the United States, with an age-adjusted death rate of 37.1 per 100,000 persons, accounting for 118,000 deaths in 2010, or 4.8% of all deaths.³ In 2009, males were more than twice as likely as females to die in accidents (Figure 7).⁷ Age-adjusted death rates varied strikingly by race and ethnicity, with non-Hispanic Whites having a rate three times as high as that among Asians (Figure 8). Accidental death rates are very low in middle childhood and very high among the elderly (Figure 9). Unintended injuries are the leading cause of death in all groups below age 45.



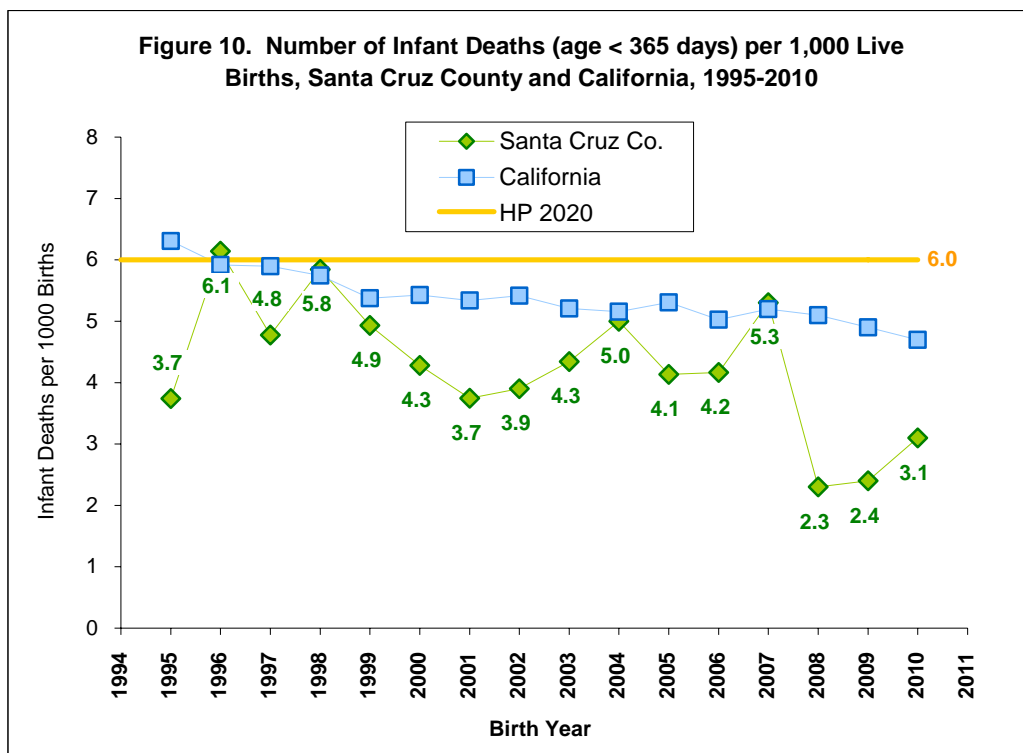
During the period 2008-2010, Santa Cruz County ranked 22nd among California counties, with an average annual age-adjusted mortality rate from unintentional injuries of 31.6 per 100,000 persons. That was better than the national rate of 37.3, but worse than California's rate of 27.1, and not significantly different from either. The state and the county both met the Healthy People 2020 objective of 36 per 100,000.¹

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INFANT MORTALITY

Infant mortality is an important measure of a nation's health and a worldwide indicator of health status, social well-being, and availability of adequate prenatal care. Local, state, and national infant mortality rates have improved fairly steadily for many decades. Santa Cruz County rates are more variable (see Figure 10), due to our smaller population, but show a similar improving trend.¹³ The county's rates usually are well below statewide rates, even farther below national rates, and meet the HP2020 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 2005.¹⁴



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Sources

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