The Burden of Chronic Disease and Injury

California, 2013

California Department of Public Health

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California, 2013

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Message from the Director

California Department of Public Health

California's health landscape has evolved dramatically over the past 100 years. In 1910, pneumonia, tuberculosis, and diarrhea were the leading causes of death, and the average life expectancy was 47 years. In 2010, the leading causes of death were heart disease, cancer, and stroke, and the average Californian lived to 81 years. Overall, Californians are living longer, healthier lives. Improvements in housing, sanitation, drinking water, nutrition, working conditions, and advances in education and preventive clinical services such as immunization have created conditions that prevent many infectious diseases and injury. To realize such remarkable accomplishments, public health joined with urban planners, educators, engineers, health professionals, policy makers, and thousands of concerned Californians from all walks of life.

Despite these extraordinary successes, more remains to be done. Millions of our friends and loved ones are living with and dying from chronic diseases that are preventable and treatable. Additionally, too many Californians do not have the same opportunities to be as healthy as others.

This report brings together data and reports compiled by the California Department of Public Health (CDPH), county health departments, nongovernmental organizations, and research centers. Its purpose is to provide a snapshot of the burden of chronic disease and injury in California, as we develop the California Chronic Disease Prevention Plan with our partners in 2013.

Section I: Introduction to Chronic Disease and Injury, describes the impact of chronic disease and injury in California and the influence on our lives. The road to good health is not just about individual behavior and access to health care. It is about living in a safe, healthy, and supportive community, with clean air to breathe, safe water to drink, easy access to healthy food, safe places to be physically active, and access to good education, housing, and employment opportunities.

Section II: Portraits of Chronic Disease and Injury, explains the facts and figures of some of the most devastating chronic diseases and injuries and illustrates how diseases impact some communities more than others.

Section III: The Road Ahead, explores new ways that the public health workforce and communities can work to prevent chronic disease and injury.

Woven throughout the report are "Community in Focus" segments that highlight California cities and counties that face particular health challenges.

We have attempted to make the data presented in this report accessible to a broad audience. We rely on graphs and maps rather than technical explanations to highlight the major findings. The data we present have been compiled from previously published technical reports of many programs at CDPH. These documents are referenced at the end of the report and are available for those seeking more detail.

Community-focused prevention remains a guiding principle at CDPH. Our efforts are most effective when we join with all of our partners—from other government agencies to nongovernmental, community, and faith-based organizations. We hope that this report will enlighten you about our collective accomplishments, as well as demonstrate the work that still needs to be done. Together, we can make California healthier for all.

Best of health,

Ron Chapman, MD, MPH
Director and State Health Officer
California Department of Public Health

I. An Introduction to Chronic Disease and Injury in California

Highlights

- Chronic disease and injury account for 80 percent of deaths in California.
- Many Californians have multiple chronic diseases, lowering their quality of life and increasing medical costs.
- Education, housing, transportation, and the workplace all play an essential role in promoting health.
- Not all Californians have the same opportunities for a healthy life; some communities are more at risk for developing chronic diseases.

What are Chronic Diseases and Injuries?

Chronic diseases are long-lasting or recurrent medical conditions that shorten lives and limit the ability of people to engage in normal activities. Most chronic diseases cannot be cured by medication or prevented by vaccines. These diseases are manageable through early detection, improved diet and exercise, smoking cessation, and medical treatment.

Injuries occur when a person's body is damaged unintentionally (in an "accident") or by intent (violence). Injuries can cause disability and premature death.

What Is in this Section?

The introduction contains two chapters that will provide the foundation for the discussion of individual chronic diseases in Section II.

Chapter One discusses how chronic disease affects our health, our economy, and our quality of life.

In Chapter Two, the influence of our surroundings on our health—sometimes for better, and sometimes for worse—is explained.

The leading causes of death:

- Heart Disease
- Cancer
- Stroke
- Respiratory disease
- Unintentional injuries

Chronic disease accounts for eight of every ten deaths and affects the quality of life of 14 million Californians.

Almost one in four Californians experience limitations in their daily activities due to chronic conditions.

Chapter One

Burden of chronic disease and injury

From Infectious Disease to Chronic Disease: A Century of Change in Causes of Death

In 2010, over 187,000 deaths (80%) in California were caused by chronic disease and injury. A century ago, when infectious diseases were common, chronic disease was responsible for approximately half of all deaths.

Chronic diseases are largely preventable. Up to 80 percent of heart disease, stroke, and type 2 diabetes and over 30 percent of cancers could be prevented by eliminating tobacco use, unhealthful diet, physical inactivity, and the harmful use of alcohol.

Many of these health risks are largely shaped by community environments and neighborhood design, which influence whether healthful, accessible, and affordable food; safe housing; and opportunities for exercise and transportation are a part of everyday life.

Figure 1a. Leading causes of death, California, 1910

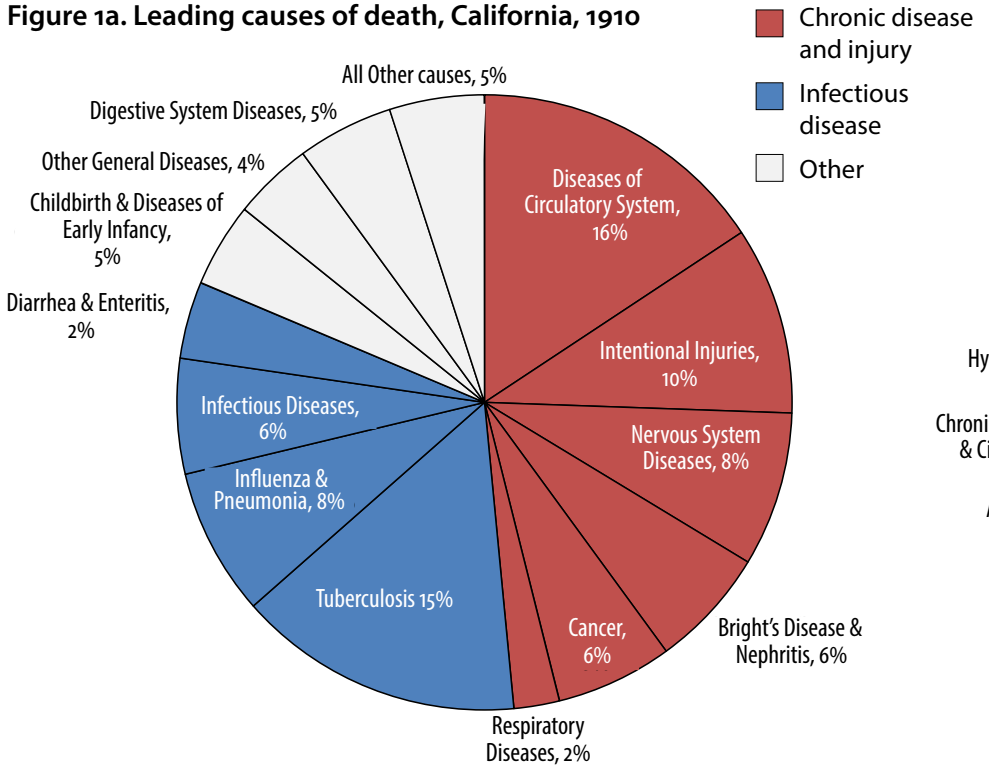
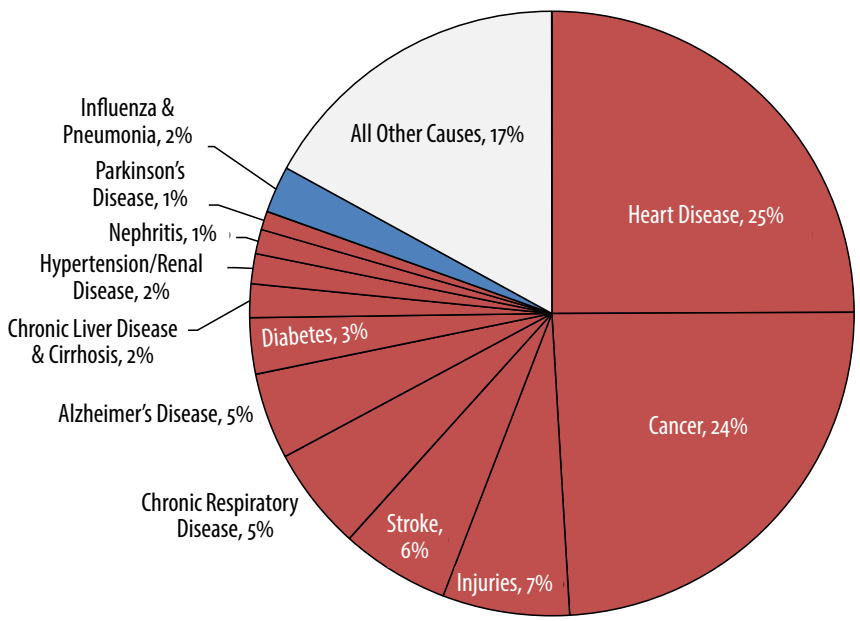


Figure 1b. Leading causes of death, California, 2010



Sources: A: California State Board of Health, Twenty-second Biennial Report, 1913; B: California Department of Public Health, Vital Records, 2012

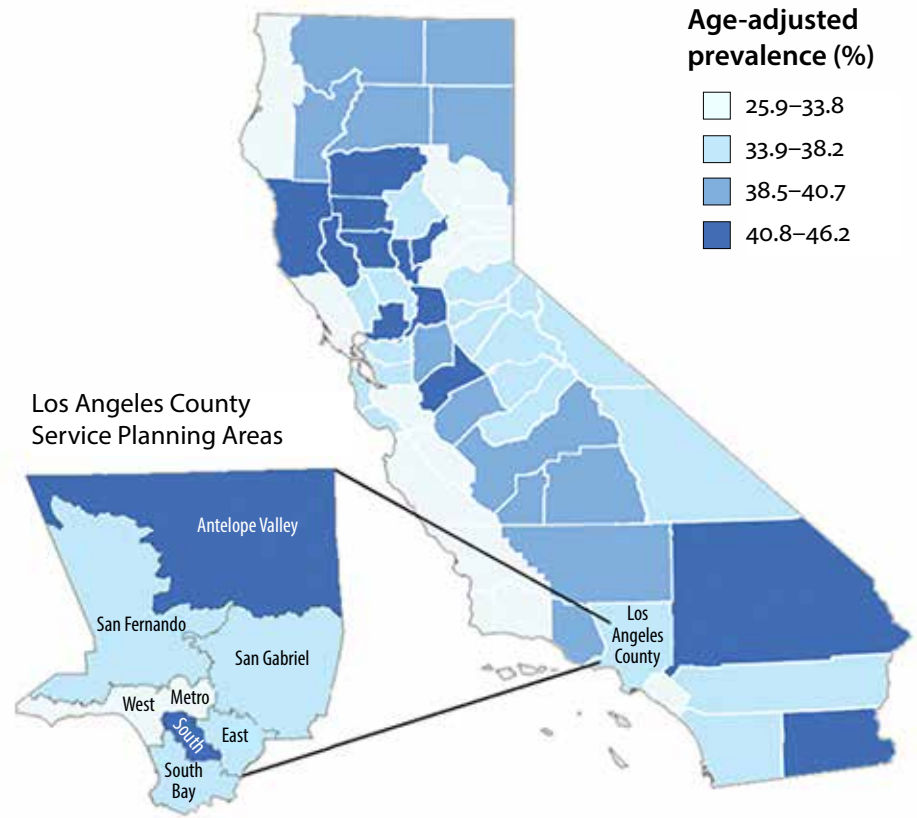
Fourteen Million Californians Are Living with Chronic Disease

Thirty-eight percent of California's residents live with at least one chronic condition.

- Many Californians have multiple chronic conditions; this puts them at greater risk for other chronic conditions, limits their ability to exercise or be a member of the workforce, and can portend an early death.

Figure 2 illustrates the distribution of California adults with chronic disease. Some California counties have chronic disease rates nearing 50 percent, while other counties have rates as low as 26 percent. Dramatic variations can also exist within counties, as exemplified in Los Angeles County.

Figure 2. Share of adults with one or more chronic conditions, by county, 2007



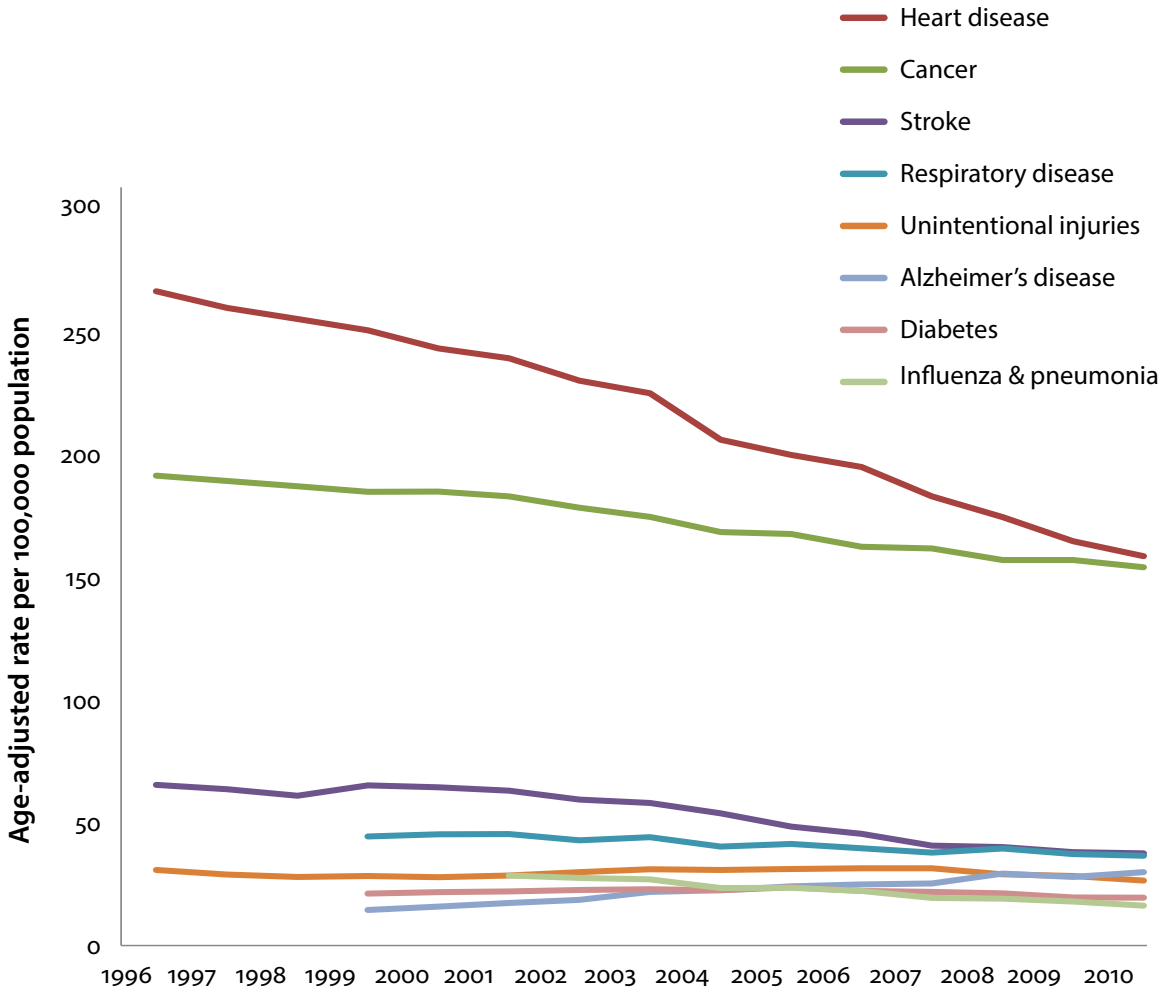
Source: Lui and Wallace, 2010

Most Californians Die from Chronic Disease

Despite advances in treatment, death rates resulting from preventable chronic disease and injury have remained high.

- Heart disease and stroke are the first and third leading causes of death.
- Cancer is the second leading cause of death.

Figure 3. Leading causes of death, California, 1996–2010



Source: California Department of Public Health, Vital Records, 2012

Chronic Disease Lowers Workforce Productivity

Californians with chronic disease report more days of poor health. Poor health can affect a person's mental well-being and productivity in school or at work.

Both mental and physical poor health can lead to job loss, increased school dropout rates, and ultimately, economic hardship.

- Twenty-one percent of adults with both diabetes and arthritis experience major depression.
- Asthma, diabetes, heart disease, and arthritis are responsible for the most absenteeism and disruption in daily activities.
- Twenty-three percent of children ages 0–17 with asthma reported missing at least 1 day of school in the previous 12 months due to an asthma flare.
- Ten percent of children ages 0–17 with asthma reported missing 5 or more days.

Figure 4a. Chronic disease and quality of life, 2005

Days when work or other activities were limited in the past month due to physical or mental health, by chronic disease, California

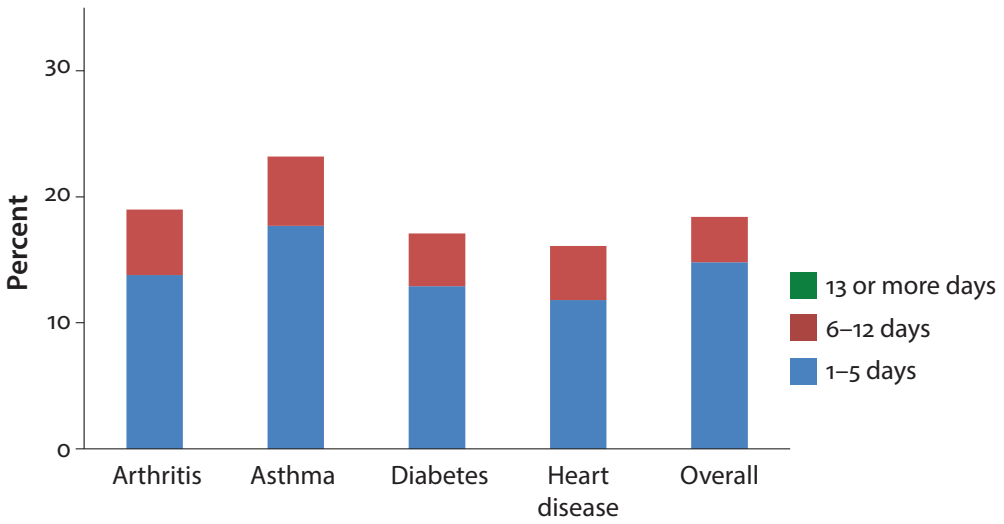
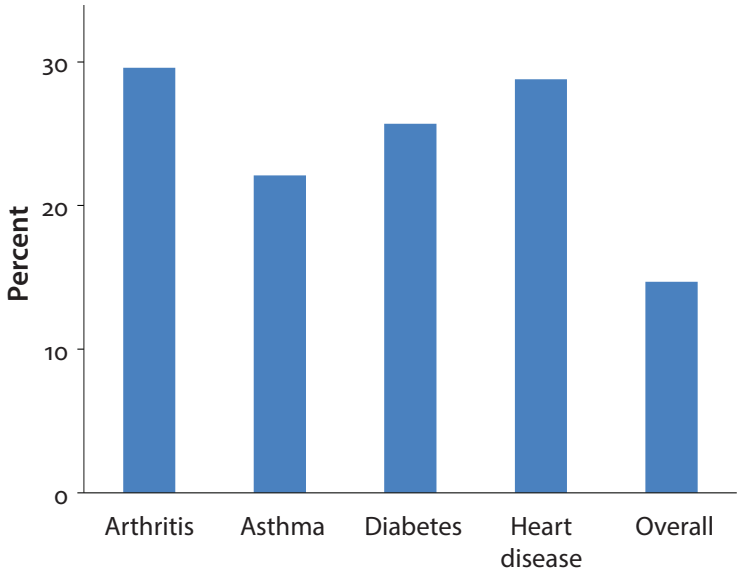


Figure 4b. Chronic disease and quality of life, 2005

Prevalence of 21 or more days in poor health in the past month, by chronic disease, California



Source: California Health Interview Survey, 2005

Not Enough Californians Have Access to Quality Health Care

Quality care is essential for prevention.

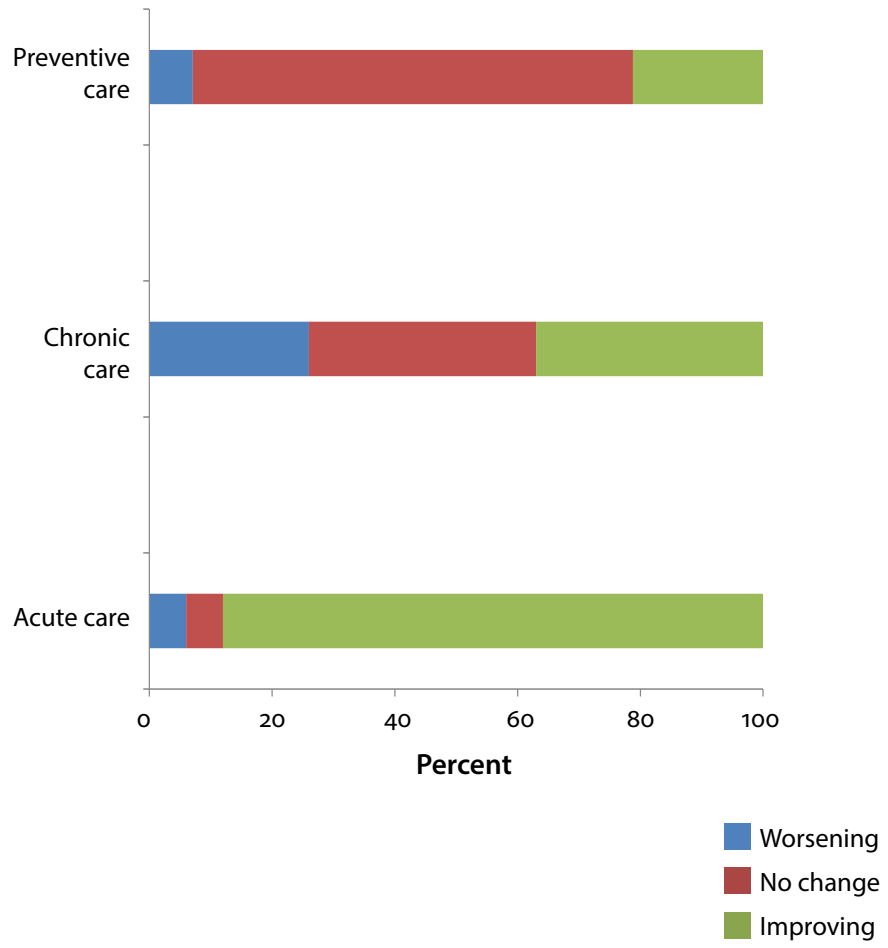
- Heart disease and stroke are two of the most common causes of death, but many of the people who are at high risk are not aware that these conditions can be prevented and treated.
- High blood pressure is one of the leading causes of heart disease and stroke. One in three U.S. adults has high blood pressure, but only half of these individuals undergoing treatment have achieved a normal blood pressure level.
- Half of adults with high cholesterol, another risk factor for heart disease and stroke, are not treated appropriately.
- People who are not optimally treated have an increased risk of severe disease and subsequent poor quality of life.

Disparities exist in access to quality care.

- People of color make up 74 percent of California's uninsured population. More than half of these uninsured are Latino.
- Over 50 percent of Californians who do not speak English well or at all were uninsured for all or part of 2005, compared to 24 percent of those who speak English very well.
- Almost 64 percent of noncitizen adults without Green Cards are uninsured for all or part of the year, and 37 percent of noncitizen adults with Green Cards are uninsured for all or part of the year.

Even for those Californians with access to care, the quality of chronic care has worsened approximately 25 percent of the time, as shown in Figure 5.

Figure 5. Change in quality, by type of care, California, 2010 baseline year to most recent data year, average annual change



Source: California Healthcare Foundation, October 2012

Community in Focus: Imperial County

Unique health issues on the U.S.–Mexico border:

- Imperial County, a large, rural county on the border with Mexico, faces unique challenges in its attempts to meet residents' basic health needs. Some residents have limited access to primary health care. This can lead to poorly controlled chronic disease, acute events, and the need for emergency care.
- The county has a youth asthma hospitalization rate of 34 per 10,000, three times higher than the state rate and nearly 50 percent higher than the next-highest county. These high hospitalization rates may be due in part to poor air quality and a lack of access to quality medical care.
- Figure 6 displays the dearth of medical, dental, and mental health providers. This is unfortunate, as the Imperial County rates of some chronic diseases, such as youth asthma hospitalization rates, are higher than California rates as a whole.

Figure 6. Some Imperial County residents have limited access to health care.

Youth asthma hospitalization rate, per 10,000 population (2010)	Ratio of population to primary care physicians (2009)	Ratio of population to dentists (2007)	Ratio of population to mental health providers (2007)
• California 11	• California 847:1	• California 1,583:1	• California 1,853:1
• Imperial County 34	• Imperial County 2,398:1	• Imperial County 4,988:1	• Imperial County 12,546:1

Sources: California Breathing, County Asthma Profiles, 2012; County Health Rankings and Roadmaps, 2010

Not Enough Californians Are Getting Clinical Preventive Services

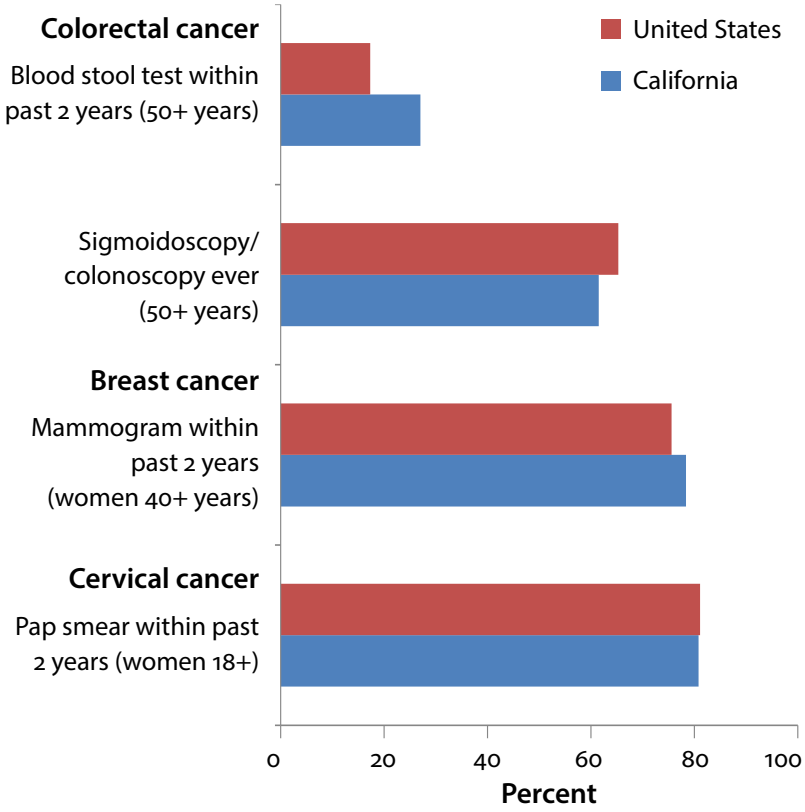
Many cancers, such as cervical, breast, and colorectal, are preventable, treatable, and beatable.

However, not enough Californians are getting the screening tests to detect these cancers early. Often, lack of access to medical care, lack of awareness about the recommended tests, and fear of the result or fear of the testing procedure are major barriers to the utilization of clinical preventive services.

Screening rates in California and the United States are below the Centers for Disease Control and Prevention's (CDC's) *Healthy People 2020* targets below, which are compared in figure 7:

- 70.5 percent for colorectal cancer,
- 81 percent for breast cancer,
- 93 percent for cervical cancer.

Figure 7. Percent of adults who have undergone cancer screening tests, California vs. United States, 2010



Source: California Healthcare Foundation, June 2012

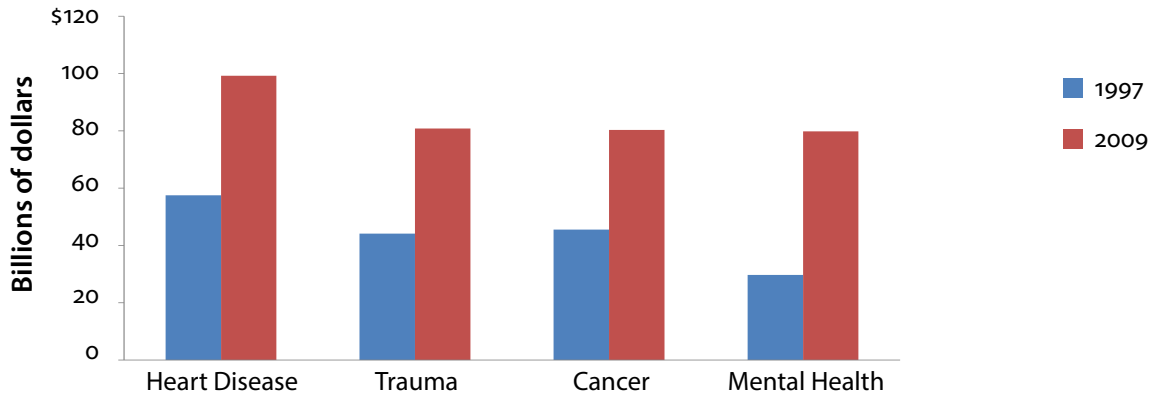
Poor Health Is Costly

Poor health increases direct medical costs (such as emergency room visits and hospitalizations) and indirect costs (lost productivity due to absenteeism). Costs have rapidly increased over the past decade.

- The economic costs of obesity, overweight, and physical inactivity are estimated to exceed $28 billion annually.
- People with chronic conditions account for approximately 80 percent of health care costs, 80 percent of hospital admissions, 90 percent of all prescriptions filled, and 75 percent of all doctor's visits.
- Almost 60 percent, or $51 billion, of California's health care expenditures were for people with multiple chronic conditions.

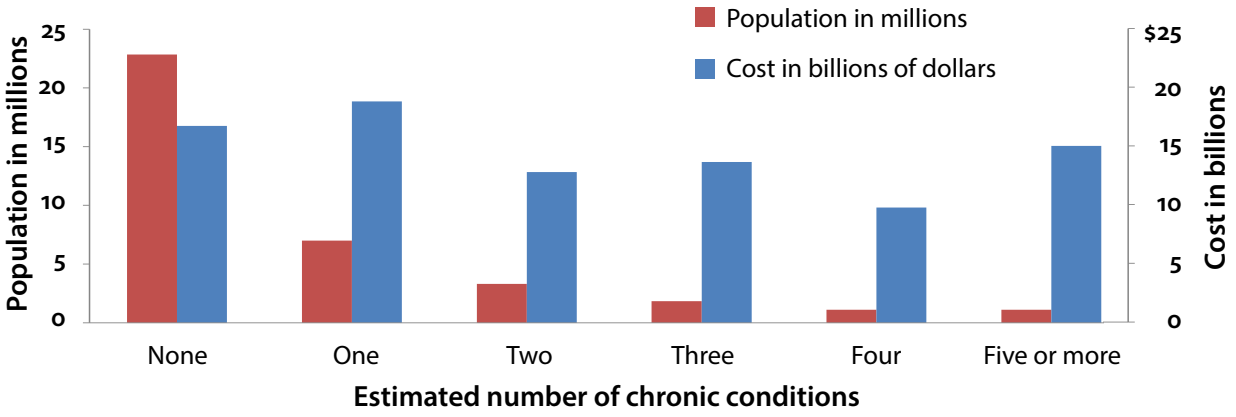
Ten dollars per person per year invested in prevention would yield $1.7 billion annually in health care savings in California within 5 years, a return of $4.80 for every $1 spent (healthyamericans.org).

Figure 8a. Expenditures on four most costly conditions, United States, 1997 and 2009 (in billions)



Source: California Healthcare Foundation, June 2012

Figure 8b. California population and estimated health care costs by number of chronic conditions a person has, California, 2002



Source: Anderson and Wilson, 2006

Many Chronic Diseases Have Common, Preventable Risk Behaviors

Almost half of all deaths that occurred in the United States in 2000 can be attributed to a limited number of largely preventable behaviors and exposures.

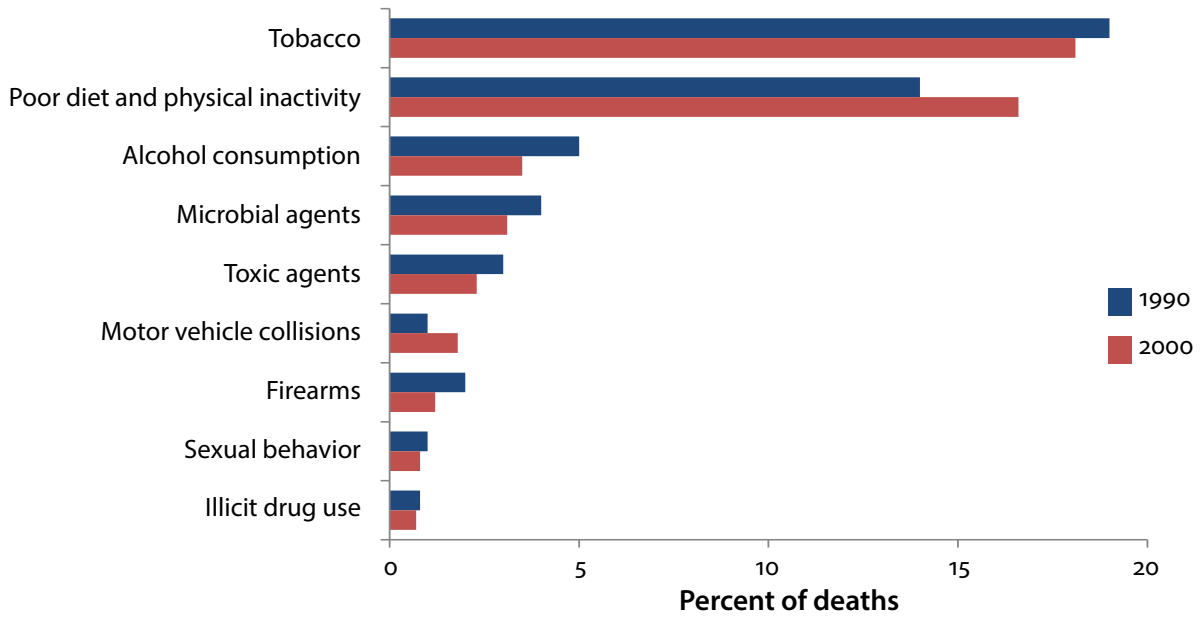
The leading attributable causes of death in 2000 were tobacco (435,000 deaths), poor diet/physical inactivity (400,000 deaths), and harmful alcohol use (85,000 deaths).

Many chronic diseases have these causes in common, so creating healthy environments and adopting healthy behaviors will impact both death and disability, especially for the one in five Californians who have more than one chronic disease.

The percentage of deaths attributed to poor diet and physical inactivity increased 17 percent from 1990 to 2000 and is expected to surpass tobacco as the leading attributable cause of death in the near future.

Figure 9 depicts the leading attributable causes of death in the United States in 1990 and 2000.

Figure 9. Leading attributable causes of death, United States: 1990, 2000



Source: Based on Mokdad, Marks, Stroup, and Gerberding, 2004

Public Health Efforts: A History of Success

Lung cancer is the leading cause of cancer deaths.

The California death rate from lung cancer started diverging from the rest of the United States in the 1990s and has become even more marked over the last two decades.

The decline in both lung cancer incidence and deaths may be attributed, in part, to changes in smoking rates and increasing social acceptability of smoke-free policies.

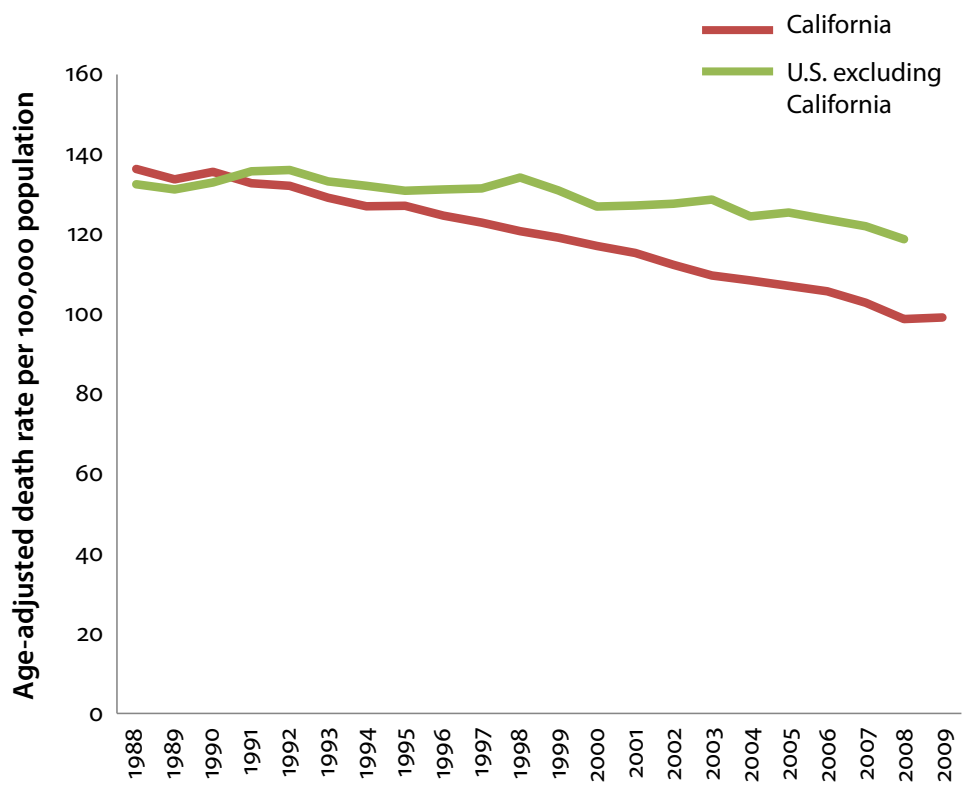
- Smoking rates in California have been declining more rapidly than in the rest of the nation since the late 1980s.
- Per capita cigarette consumption has declined 72 percent, and smoking prevalence has declined almost 50 percent.

California serves as an example of what works in tobacco control.

The California Tobacco Control Program's smoke-free policies, media campaign, and smoking-cessation services have been credited with:

- Contributing to the second lowest state adult and youth smoking prevalence in the nation,
- Saving 1 million lives,
- Saving $86 billion in health care costs, and
- Decreasing lung cancer death rates.

Figure 10. Lung cancer death rates for California versus the rest of the United States, age 35 years and older, 1988–2009



Source: California Cancer Registry, 2010

Public Health Challenge: Poor Diet and Physical Inactivity

People who do not engage in adequate amounts of physical activity or have a calorie-dense diet are at increased risk for type 2 diabetes, heart disease, stroke, some types of cancer, and other chronic diseases.

Too few Californians are physically active.

- One-third of California teens do not engage in the recommended level of physical activity (vigorous activity three or more times per week).
- Approximately 20 percent of children ages 2–11 report watching more than 2 hours of television or video games on a typical weekday.
- Nearly one in four California adults report that they do not engage in any physical activity.

Many Californians are eating too much calorie-dense, nutrient-poor food.

- Less than half of California children ages 2–11 eat the recommended number of fruits and vegetables daily (five servings).
- 28 percent of California children ages 2–11 and 43 percent of teens and adults eat at least one fast food meal daily.
- 14 percent of children ages 2–11 and 30 percent of teens and adults drink two or more cans or glasses of sugar-sweetened beverages daily.
- On average, Americans now consume approximately 300 more calories daily than they did in 1985.

Chapter Two

Health begins where we live, learn, work, and play.

The Diversity of California

California's population of nearly 38 million* is the most diverse in the United States and the world, consisting of immigrants from more than 60 countries. There are over 200 languages spoken and read in California.

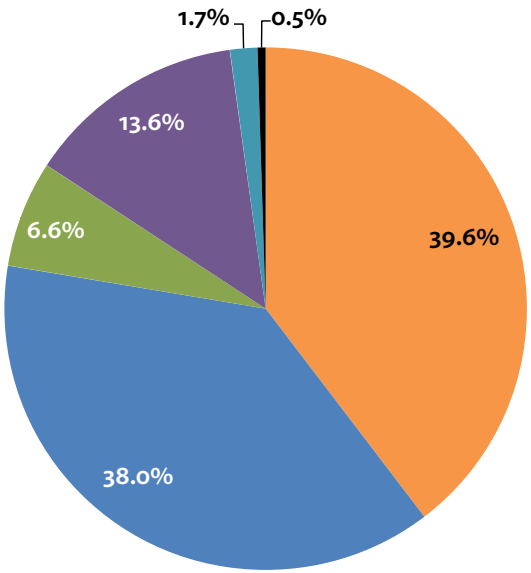
- California is a majority–minority state, meaning that no ethnic group within the state is a majority.
- Latinos and Whites are the two largest racial/ethnic groups in California. It is projected that Latinos will constitute the majority, 52 percent, of the estimated 60 million residents in 2050.

Although we embrace our diversity, millions of Californians face social inequities that contribute to health inequity.

- The median income of White households ($69,224) is roughly 50 percent greater than the median income of African American ($46,320), American Indian/ Alaska Native ($44,620), and Latino ($43,856) households.
- African Americans, Latinos, and Native Americans/ Alaska Natives are more than twice as likely as Whites to have an income below the poverty level.
- African American (29%), Latino (26%), and Native American (27%) children are more than three times as likely to live in poverty as White children (8%).

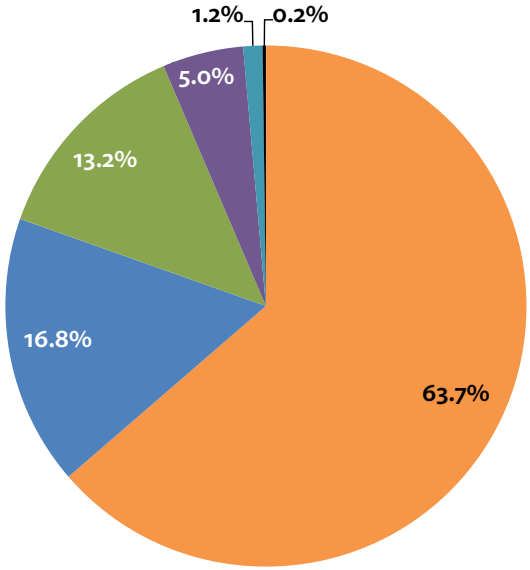
**Source: California Department of Finance, July 2012*

Figure 11a. California population by race/ethnicity, 2011



White, non-Latino
Latino
African American
Asian
Native American/Native Alaskan
Native Hawaiian/Pacific Islander

Figure 11b. United States population by race/ethnicity, 2011



Source: U.S. Department of Commerce, U.S. Census Bureau, 2012

Life Expectancy Has Increased but a Racial/Ethnic Gap Persists

California ranks third in the United States in terms of life expectancy. Californians born today can expect to live almost 6 years longer than a baby born in 1980. At birth, the average Californian is expected to live 81 years.

Life expectancy is not the same for all racial/ethnic groups.

Asian Americans are expected to live the longest (86 years), and African Americans the shortest (73 years) number of years.

Native Americans have a life expectancy of 78 years.

Women live longer than men (83 years versus 78 years).

The Latino Health Paradox: Latinos have the lowest levels of educational attainment, high rates of poverty, language barriers, and low rates of health insurance, yet they live 3 years longer than the average Californian.

Latino foreign-born residents tend to have better health outcomes than those born in the United States or who have lived in the United States 15 years or more.

The Latino paradox does not guarantee good health. Young Latino men have homicide rates that are three times the California average.

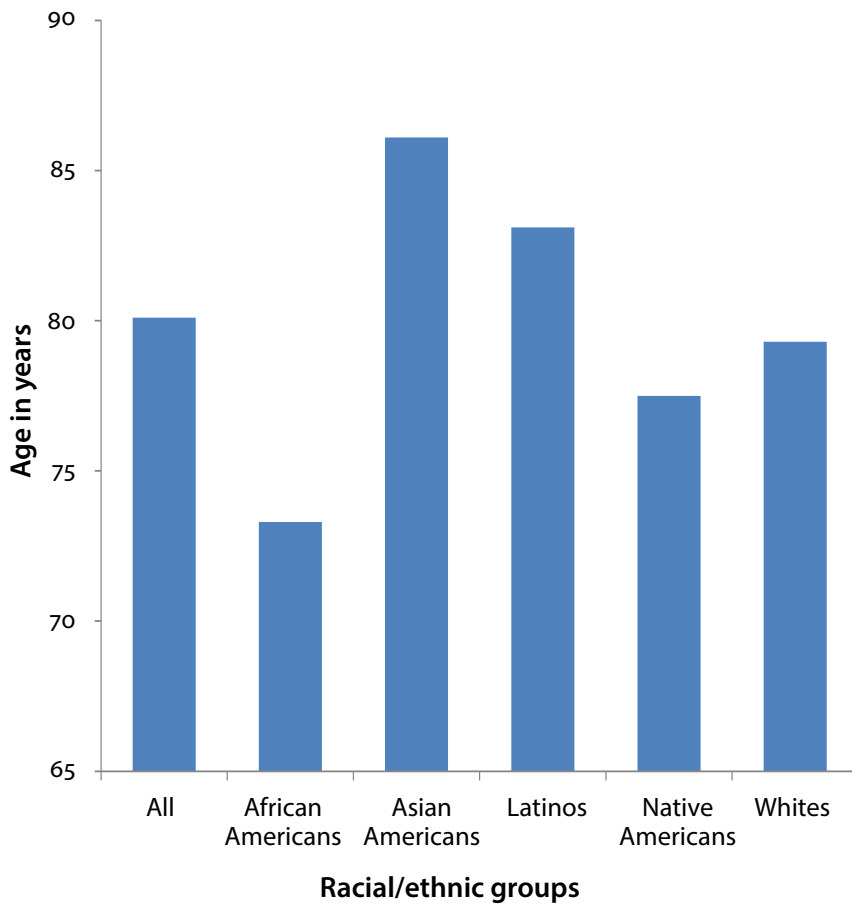
Life expectancy depends on where you live.

San Francisco has the greatest life expectancy of the five most populous metropolitan areas in California at 81 years, and the Riverside–San Bernardino metropolitan area has the shortest at 78 years.

Overall, educational attainment is the most important predictor of life expectancy.

Adults with a bachelor's degree are expected to live an additional full year of life longer than those without a bachelor's degree, after race/ethnicity and income are taken into account.

Figure 12. Life expectancy in California by race/ethnicity, 2006–2008



Source: Burd-Sharps and Lewis, A Portrait of California, 2011

Community in focus: The Women of Los Angeles County

Los Angeles County women reflect the diversity and the health challenges faced by the community.

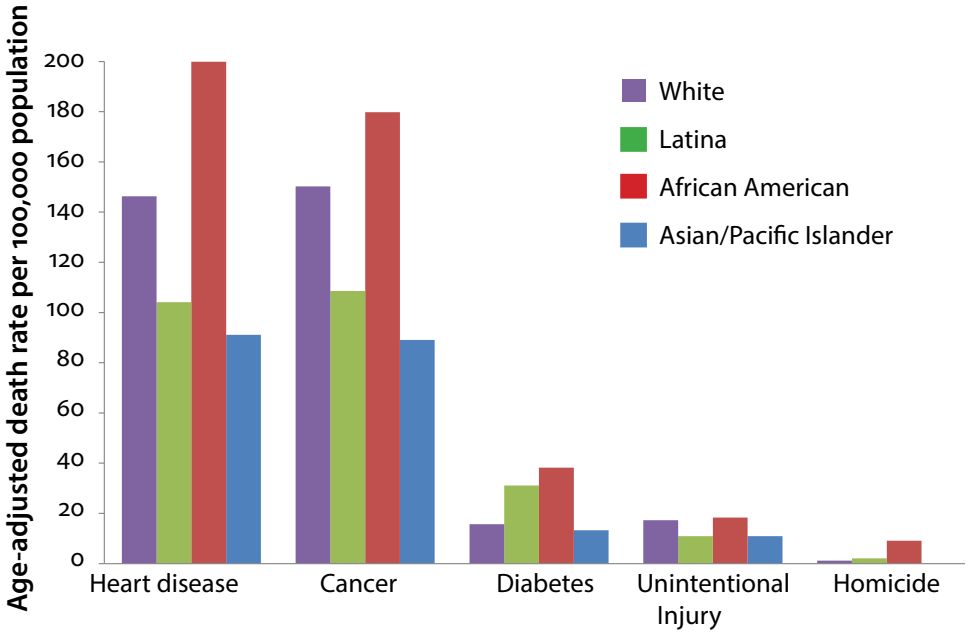
A woman's health not only affects her, but also impacts her family. Women often are the decision-makers for what a family eats and where they play.

Figure 13 highlights the chronic disease and injury health disparities that millions of Los Angeles women face. It is important to keep in mind that certain subgroups have better or worse outcomes than the group as a whole.

Significant social and health disparities exist among the women of Los Angeles County.

- Half of the women in the county report living in poverty, and almost 25 percent report less than a high-school education.
- Over 25 percent report difficulty accessing health care services.
- African-American women have far higher death rates for many chronic diseases, and face unique barriers to health, such as high rates of smoking and exposure to violence.
- Latina women report more difficulty than women of other ethnicities in finding safe places to be physically active and locations to purchase high-quality food.
- Vietnamese women have much higher rates of poverty compared to other Asian groups; over two-thirds live in households earning incomes less than 200 percent of the federal poverty level.

Figure 13. Death rates of Los Angeles women, by race, 2010



Source: Los Angeles County Department of Public Health, 2010

Chronic Disease Impacts Quality of Life

Disability Adjusted Life Years (DALYs)

- A measure of overall disease burden, expressed as the cumulative number of years lost due to ill health, disability, and early death. See Figure 14.

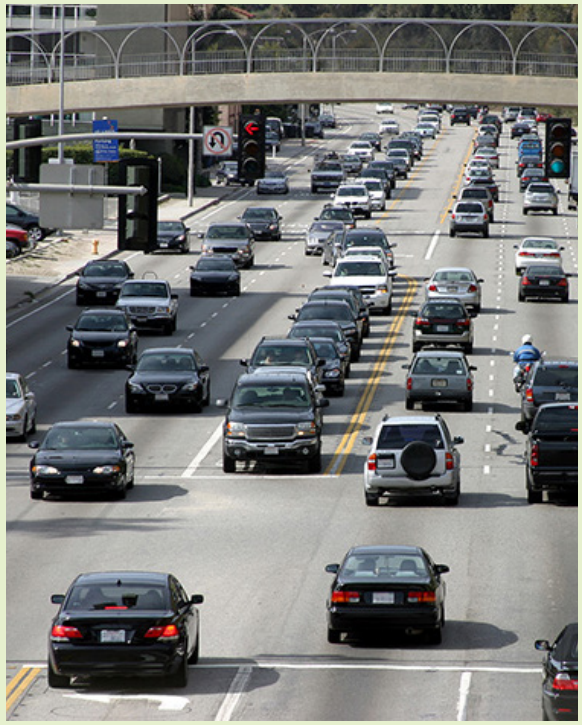
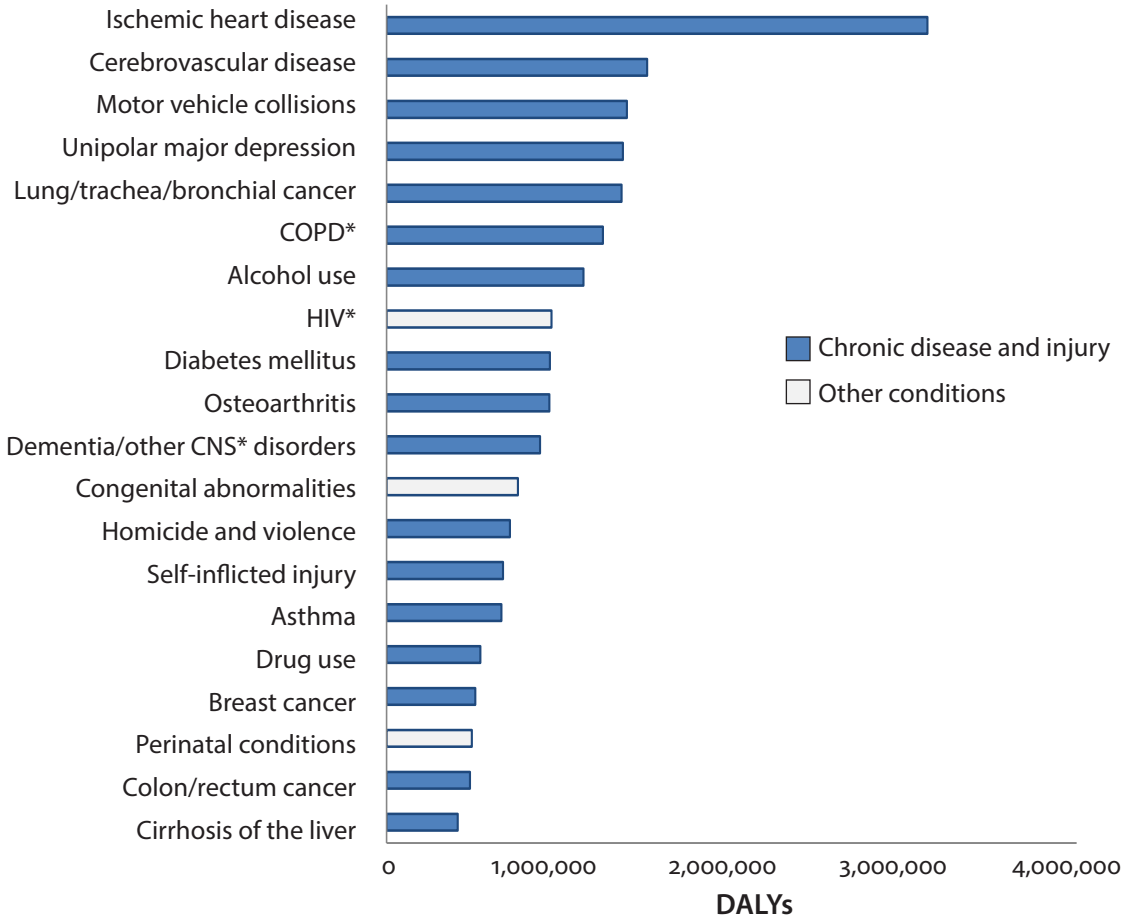


Figure 14. Leading causes of disability adjusted life years (DALYs), United States, 1996



* COPD = Chronic Obstructive Pulmonary Disease; HIV = Human Immunodeficiency Virus; CNS = central nervous system

Source: Michaud et al., 1996

The Social Determinants Of Health

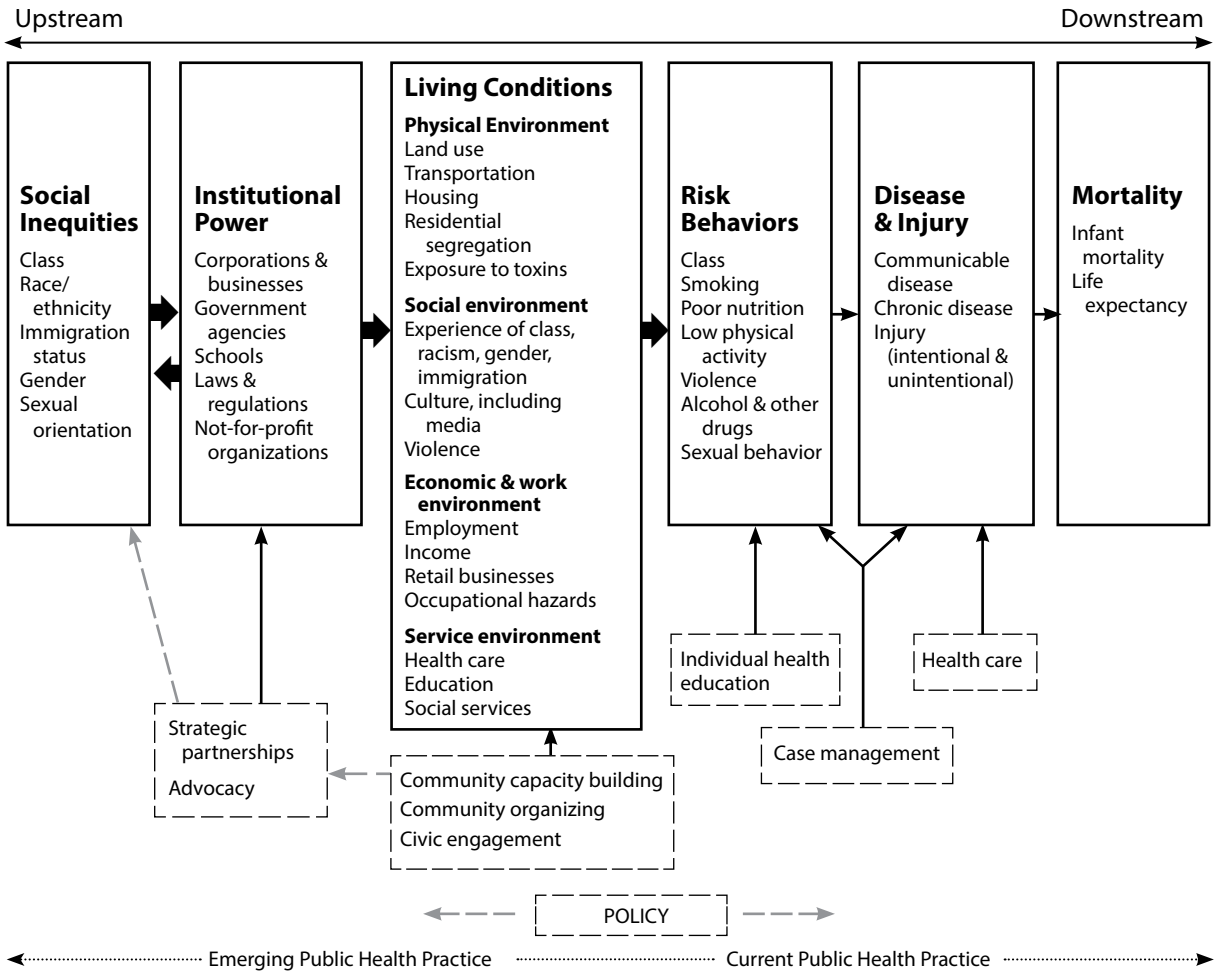
Good health begins long before you see a doctor.

The health of Californians is significantly influenced by the social, physical, and economic environments in which they live, work, learn, and play. These influences, in contrast to genetic factors, are called "social determinants of health."

Social determinants of health shape the choices that people make every day, as well as the opportunities and resources for health available to them. People in disadvantaged communities often have fewer opportunities and resources for health, which is reflected in significantly worse health outcomes.

Figure 15 explains the social determinants of health in graphic form. Each health-related influence is intricately linked and cannot be considered in isolation. For example, if a child with asthma lives in a neighborhood near a freeway and breathes this unhealthy air, she may miss school and be less likely to participate in physical activities, resulting in an increased risk for obesity and poor grades.

Figure 15. A public health framework for reducing health inequities



Source: Bay Area Regional Health Inequities Initiative, 2008

Social Inequity Causes Health Inequity

People with low educational attainment and low income and people of color are at greater risk for poor health, and ultimately, premature death.

Californians die at a younger age in neighborhoods where:

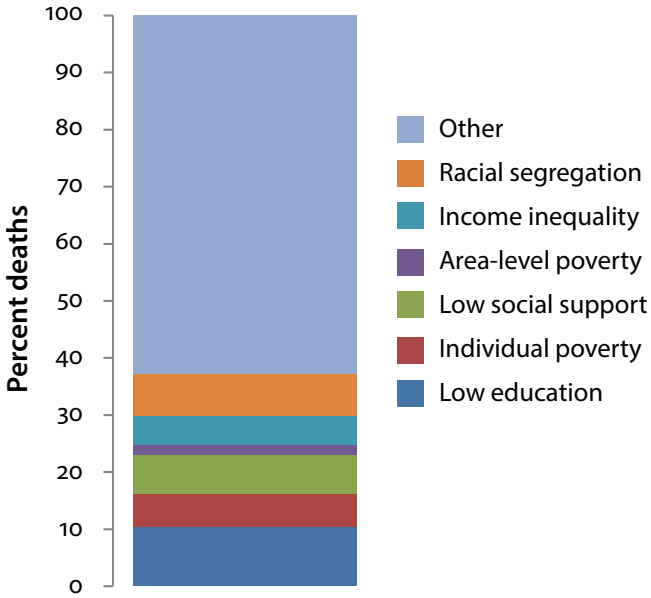
- Educational attainment is lower;
- Unemployment is higher; and
- Poverty is more widespread.

For millions of families, these patterns of social and health inequity at the community level can be perpetuated from generation to generation, leaving family members with few opportunities to make healthful decisions.

Social factors, including racism, low education, and poverty, have a profound impact on people's health, including premature death. Figure 16 demonstrates how many deaths are attributable to these social factors.

There is a growing consensus that childhood abuse, neglect, and exposure to other traumatic stressors, termed adverse childhood experiences, increase the risk for unhealthy behaviors, the most deadly chronic diseases, and both unintentional and intentional injuries.

Figure 16. Estimated deaths attributable to social and environmental factors in the United States, 2000



Source: Galea, Tracy, et al., 2011

Place and Neighborhood Matter for Health

The communities in which people are born, go to school, live, work, worship, and age largely determine health status.

It is almost impossible to maintain good health in a neighborhood without:

- Safe streets and transportation, including safe intersections, traffic lights, crosswalks, sidewalks, and bike lanes;
- Opportunities for physical activity, including safe playgrounds, parks, and other walkable areas;
- Access to conveniently located nutritious, affordable food;
- Quality schools;
- Safe and affordable housing; and
- Equitable employment opportunities.

Low-income and minority neighborhoods are less likely to have access to recreational facilities and full-service grocery stores and more likely to have higher concentrations of stores selling tobacco, alcohol, and fast food.

Adolescents who grow up in neighborhoods characterized by concentrated poverty are more likely to be victims of violence; use tobacco, alcohol, and other substances; and become obese.

As important as good health care is, most experts agree that health care contributes only about 10–15 percent to health outcomes and life span. Where you live is a larger determinant of your health than health care.

Community in Focus: Alameda County

A White child from the Oakland Hills can expect to live to 85 years old, whereas an African-American child living in West Oakland—just a few miles away—can only expect to live to 70.

The child from West Oakland is:

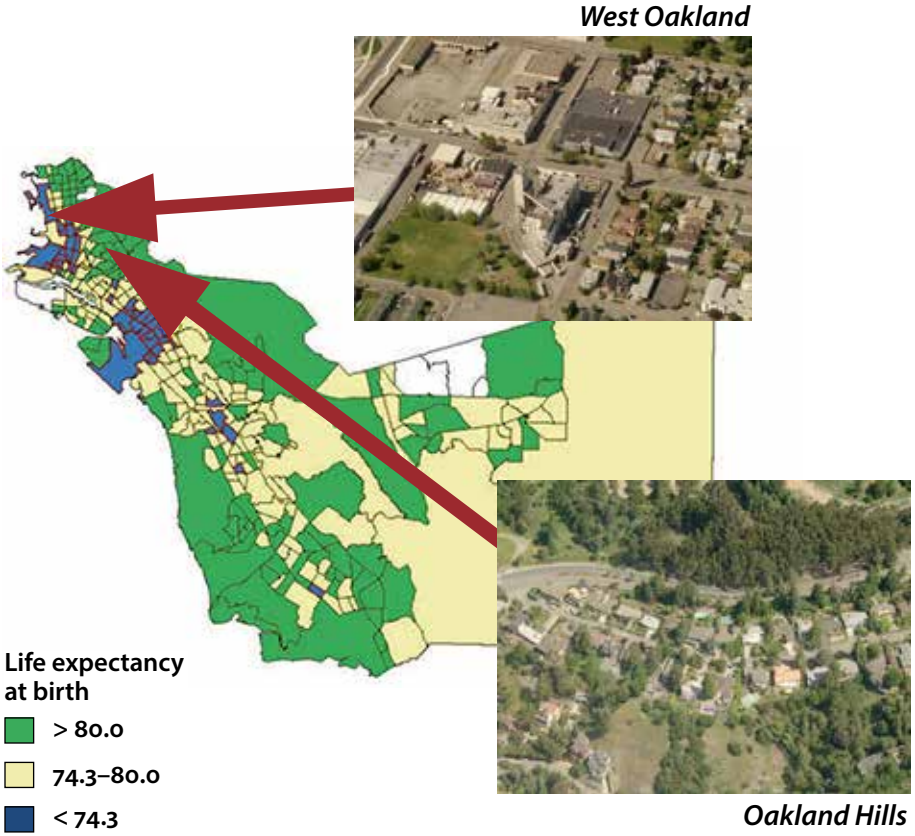
- 1.5 times more likely to be born prematurely;
- 7 times more likely to be born into poverty;
- 2 times as likely to live in a home that is rented.
- 4 times more likely to have parents with only a high-school education.
- 2.5 times more likely to be behind in childhood vaccinations.
- 4 times less likely to read at grade level by 4th grade.
- 4 times as likely to live in a neighborhood with double the density of liquor stores and fast-food outlets, and
- 5.6 times more likely to drop out of school.

As an adult, he or she is:

- 5 times more likely to be hospitalized for diabetes.
- 2 times more likely to be hospitalized for heart disease.
- 2 times more likely to die of heart disease.
- 3 times more likely to die of stroke, and
- 2 times as likely to die of cancer.

Figure 17 shows the dramatic social and environmental differences between living in West Oakland and Oakland Hills, California, and their link with life expectancy.

Figure 17. Life expectancy by census tract, Alameda County, 2000



Percent	West Oakland	Oakland Hills
High school grads	65%	90%
Unemployment	12	4
Poverty	25	7
Home ownership	38	64
Non-White	89	49

Sources: Alameda County Public Health Department, 2008, 2012

Racial and Ethnic Minorities Often Live in Unhealthy Environments

Some Californians live in communities that can contribute to health disparities.

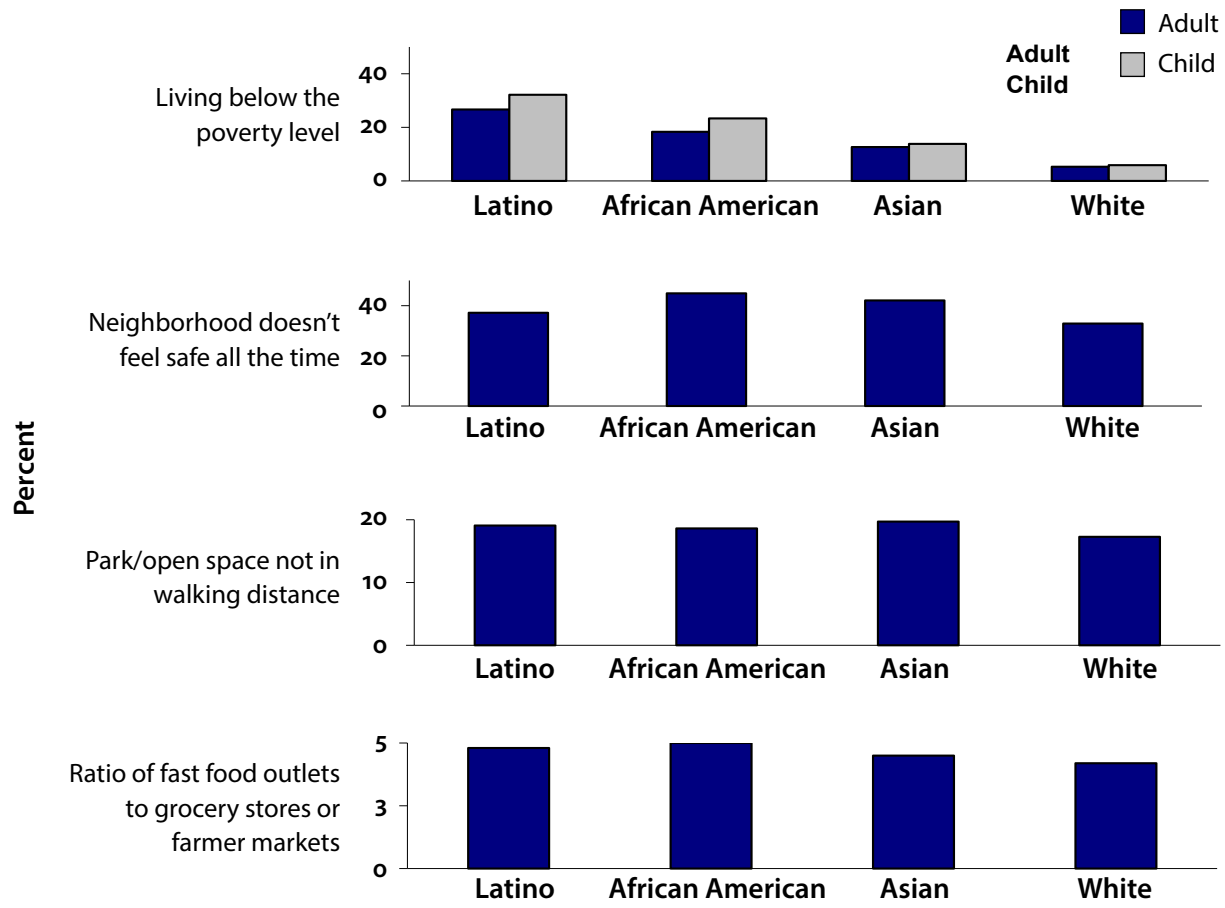
- Latinos have the highest adult and child poverty rates.
- The proportion of African Americans who do not feel safe in their neighborhoods is larger than that of other racial/ethnic groups.

Individuals act in the context of their

- families,
- neighborhoods,
- workplaces,
- social networks, and
- communities.

These environments are in turn influenced by regional, national, and global policies and provide a spectrum of opportunities in which policies and other actions can be applied to improve the health of all Californians.

Figure 18. Certain racial/ethnic groups live in social and economic environments that adversely affect health, 2007.



Source: UCLA, California Health Interview Survey, 2007

Community in Focus: Kern County

In Kern County, an agricultural community in California's Central Valley, chronic disease has reached epidemic proportions.

- Sixty percent of the population is overweight or obese.
- Kern County has the highest rates of death from heart disease, the second-highest rate of death from diabetes and chronic obstructive pulmonary disease, and the third highest rate from homicide and all causes.
- Kern County residents have a higher percentage of fast-food restaurants and have more limited access to healthy foods than do most Californians.

Air pollution such as ozone and particulate matter have been linked with heart disease.

- In 2007, Kern County experienced 110 unhealthy air-quality days due to ozone, while the state's average was 51 days.

Figures 19a and 19b highlight social, behavioral, and environmental characteristics that put Kern County residents at greater risk for chronic diseases such as obesity and heart disease.

Figure 19a. Social and behavioral characteristics of Kern County vs. California, 2009

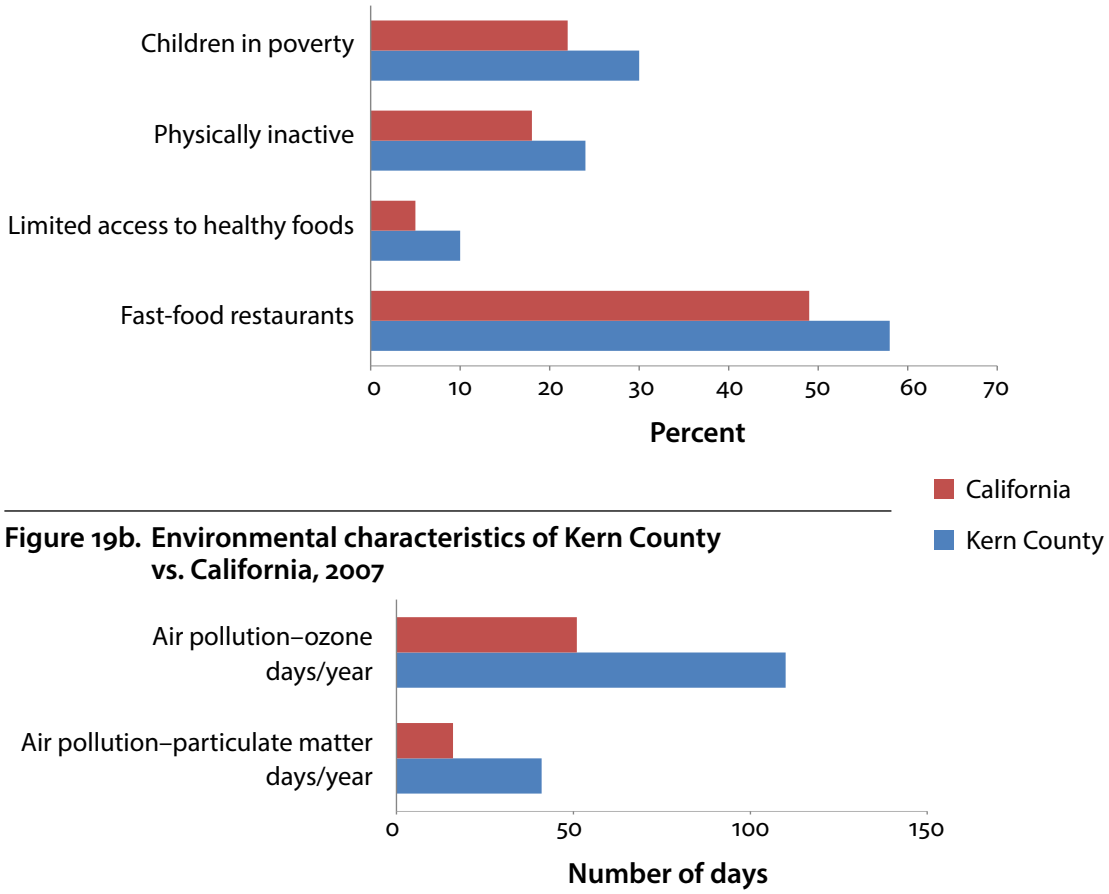


Figure 19b. Environmental characteristics of Kern County vs. California, 2007

Source (a & b): County Health Rankings and Roadmaps, 2012

II. Portraits of Chronic Disease and Injury

Highlights

- Despite improvements, heart disease and cancer top the leading causes of death in California.
- The leading cause of non-fatal injuries resulting in emergency visits and hospitalization is falls, which are most common among the elderly.
- Arthritis is the number-one cause of disability, and millions of Californians with arthritis also have another chronic disease.
- More than 6 million Californians are obese, and those with the lowest levels of education and income have disproportionately higher rates of obesity and other chronic disease.
- Californians with less education and lower incomes are more likely to have heart disease, cancer, stroke, chronic obstructive pulmonary disease, asthma, and diabetes.

What Is in this Section?

"Portraits" provides the facts and figures behind the most common and devastating chronic diseases in California, including heart disease, stroke, cancer, asthma, injuries, diabetes, arthritis, and obesity. We also take a closer look at which Californians are most affected by each chronic disease. Each disease discussed will be followed by a page entitled "Unequal Impacts."

Heart Disease and Stroke

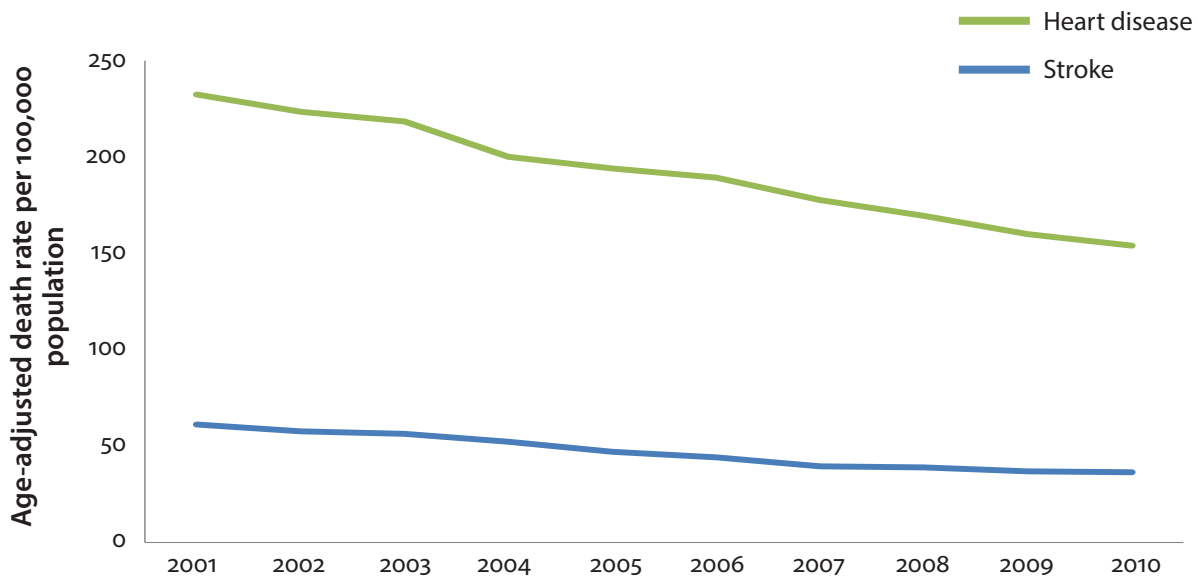
What are heart disease and stroke?

Heart disease refers to all diseases that involve the heart, including congestive heart failure and heart attack. A stroke, or "brain attack," occurs when a blood clot blocks an artery or a blood vessel breaks, interrupting blood flow to an area of the brain.

Heart disease is the leading cause of death in California.

- In 2010, more than 58,000 Californians died of heart disease.
- From 2001 through 2010, the overall heart disease death rate declined 34 percent—from 232 to 154 per 100,000 population.
- From 2001 through 2010, the overall stroke death rate declined 41 percent—from 61 to 36 per 100,000 population.
- These reductions in cardiovascular deaths are due to tobacco-control efforts and to improvements in medical treatment. These gains are threatened by the rise in obesity, which increases the risk of dying from heart disease and stroke.

Figure 20. Heart disease and stroke death rates, California, 2001–2010



Source: California Department of Public Health, Death Records, 2012

Heart Disease: Unequal Impacts

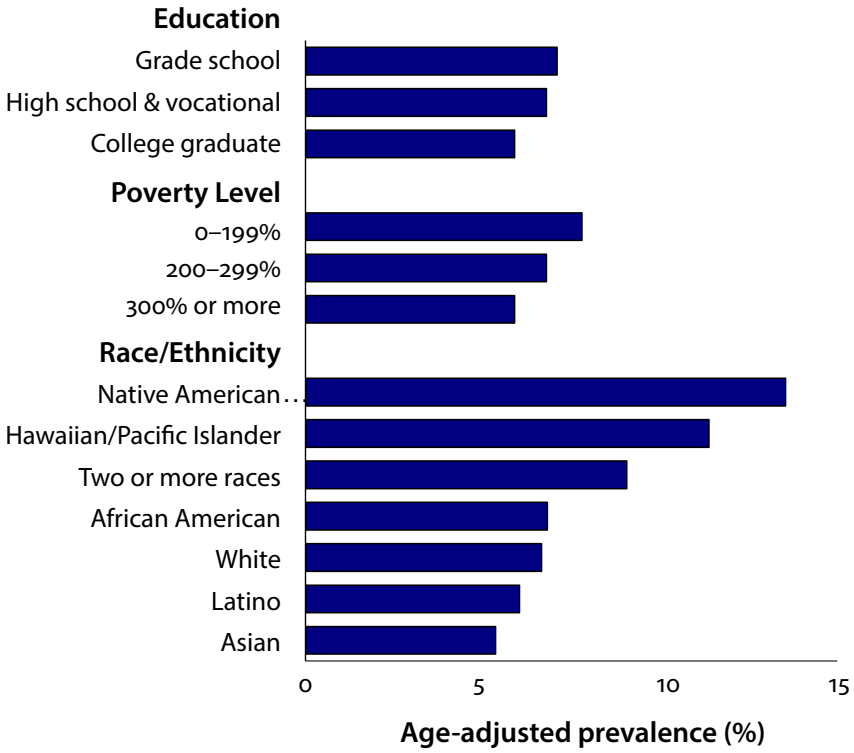
Socioeconomic status is an important predictor of heart disease in California.

As education increases, the risk of heart disease falls. A similar relationship exists between income and heart disease.

Lower education and income impact heart disease by reducing access to health care, chronic stress from poverty, and living in environments that are not conducive to a healthy diet and physical activity.

- Native Americans and Pacific Islanders have rates of heart disease that are two times higher than those of other ethnicities.

Figure 21. Social determinants influence the share of California adults who were ever told by a doctor that they have heart disease, 2007



Source: UCLA, California Health Interview Survey, 2007

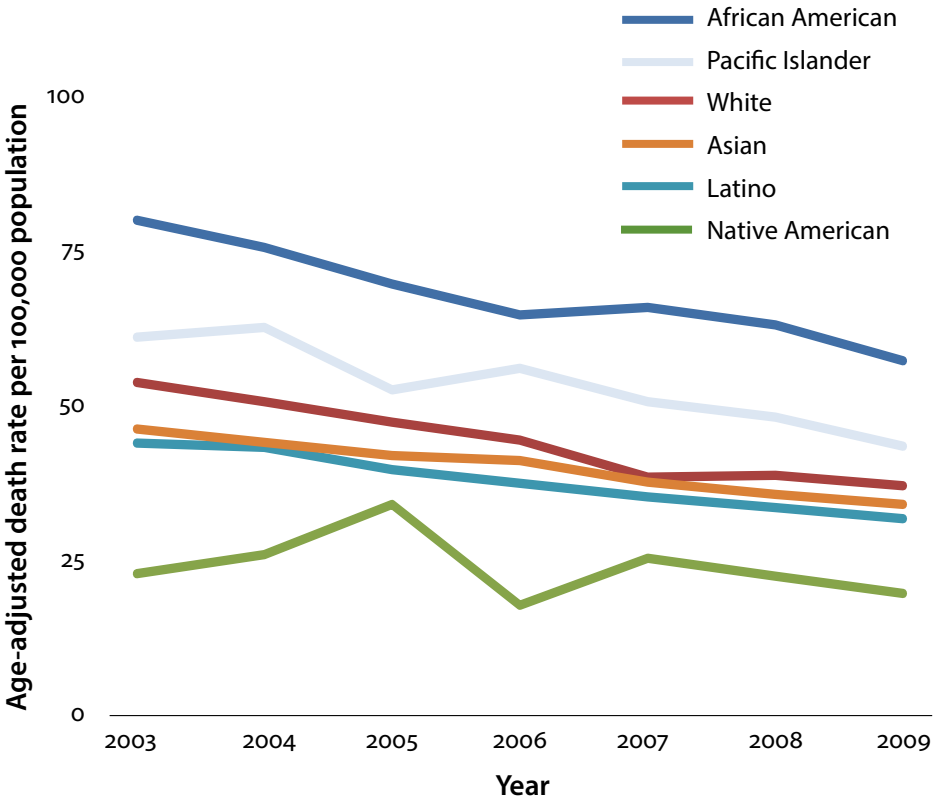
Stroke: Unequal Impacts

Death rates from stroke are declining in almost all racial/ethnic groups in California.

However, the rate in African Americans is still 50 percent higher than that of other ethnicities, and gaps between racial/ethnic groups are not narrowing.

Racial/ethnic disparities in stroke death mirror racial/ethnic differences in risks due to high blood pressure, diabetes, high cholesterol, tobacco use, and obesity, except in Native Americans.

Figure 22. Stroke death rates by race/ethnicity, California, 2003–2009



Source: California Department of Public Health, California Heart Disease and Stroke Prevention Program, 2012

Cancer: An Introduction

What is cancer?

Cancer is a large group of diseases characterized by uncontrolled growth and spread of abnormal cells. Figures 23a–b display the ten most common cancers and cancer deaths.

The good news: cancer rates are declining; more Californians are surviving cancer.

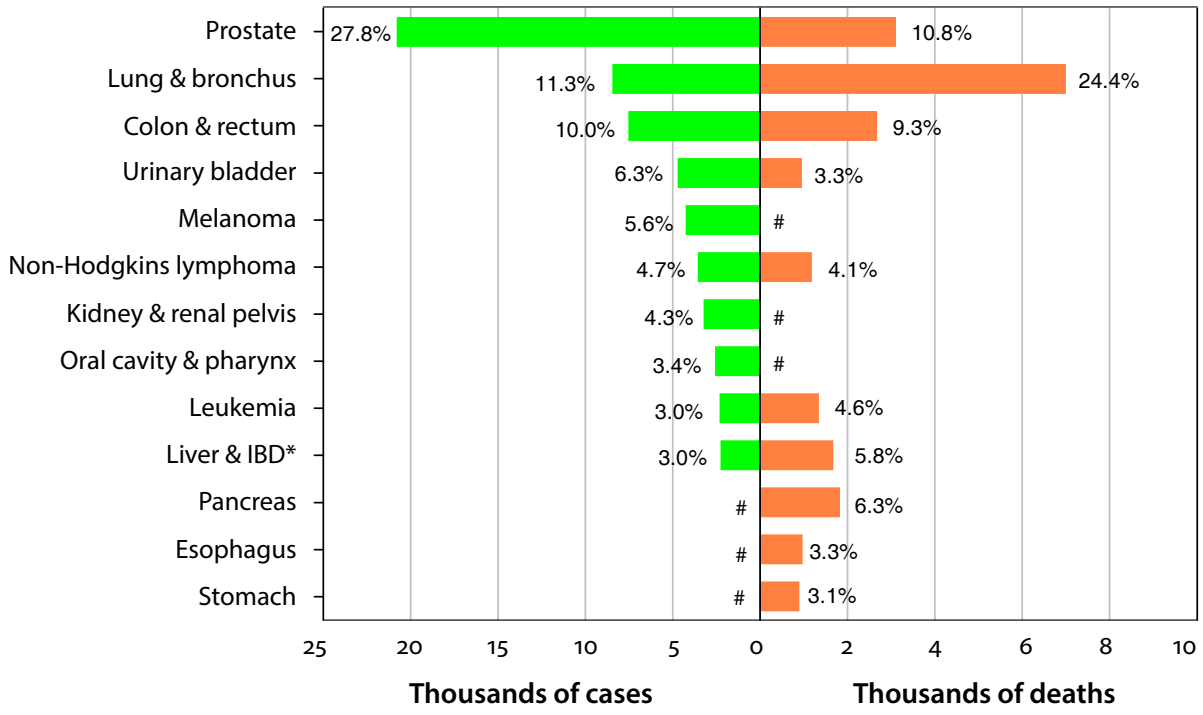
- From 1988 through 2008, overall cancer incidence rates decreased by 11 percent and death rates by 23 percent.
- Presently, more than three of five cancer patients are alive 5 years after diagnosis, as compared to one of five in the 1930s.
- More than 1,277,200 Californians who are alive today have a history of cancer.

Prevention and early detection are essential.

- Nearly two-thirds of cancer deaths could be prevented through tobacco cessation, regular exercise, healthy eating, and maintaining a healthy weight.
- Survival rates are as high as 100 percent for common cancers when detected early.

Prostate cancer, the most common cancer among men, accounts for 28 percent of cases. Lung cancer is the most deadly, accounting for 24 percent of deaths.

Figure 23a. Ten most common types of cancers and their incidence and death rates among males, California, 2009



Excludes *in situ* cancers except bladder
* IBD = Intrahepatic bile duct
\# Not among the ten most common types

Source: Hofer et al., 2012

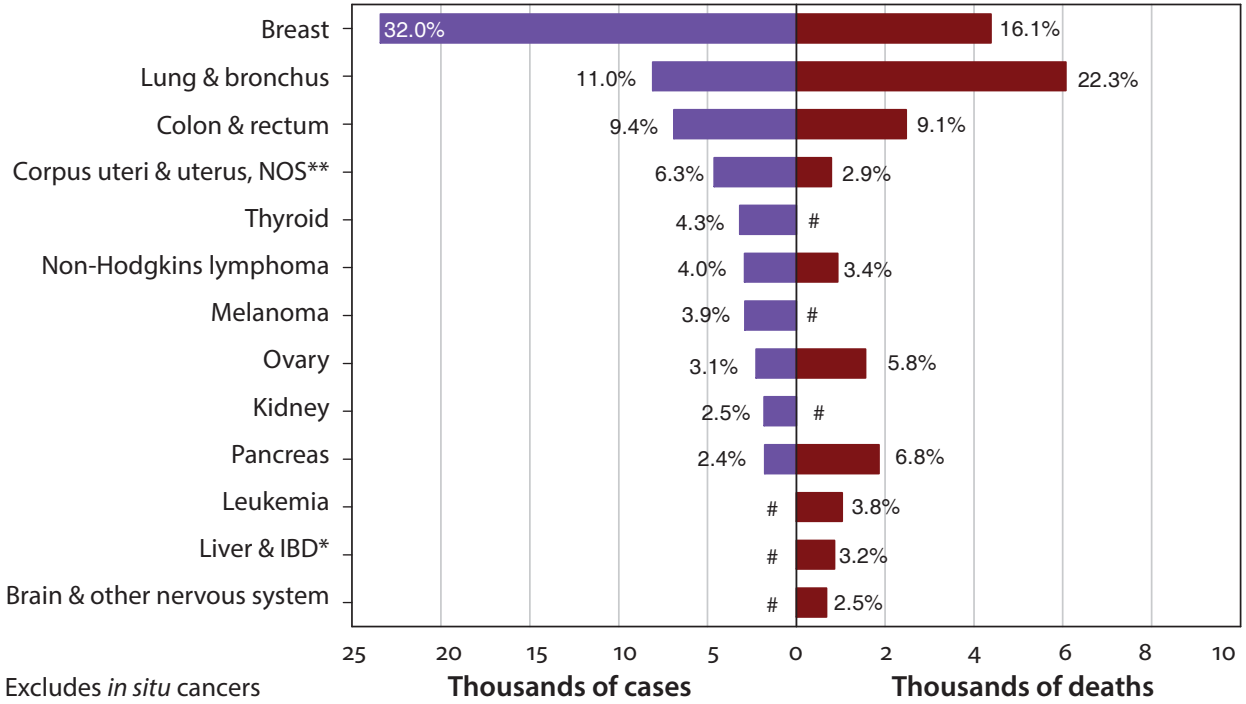
Cancer: An Introduction, continued

The bad news: cancer is still a major killer in California.

- In 2012, nearly 144,800 Californians will be diagnosed with cancer, which is equivalent to more than 16 new cases every half-hour of every day.
- In 2012, about 150 Californians will die every day from cancer.
- Nearly one of every two Californians born today will develop cancer; it is likely that one in five will die of the disease.

Breast cancer is the most common cancer among California women, accounting for 32 percent of cases. Lung cancer is the most deadly, accounting for 22 percent of deaths.

Figure 23b. Ten most common types of cancer and their incidence and death rates among females, California, 2009



Excludes *in situ* cancers
* IBD = Intrahepatic bile duct
** NOS = Not otherwise specified
\# Not among the ten most common types

Source: Hofer et al., 2012

The following pages highlight several types of cancer, along with maps that indicate the rates of each cancer in every county. Veterans Health Administration hospitals did not report cancer cases to the California Cancer Registry in 2005–2009. Therefore, case counts and incidence rates for adults in 2005–2009 are underestimated and should be interpreted with caution (see http//www.ccrcal.org/VAtechnotes.shtml).

Lung Cancer and Other Tobacco-Related Cancers

What are lung cancer and other tobacco-related cancers?

Lung cancer is a type of cancer, caused primarily from smoking, that starts in the lungs or the bronchi. Tobacco use increases the risk of other cancers, including cancers of the mouth, nasal cavities, larynx, pharynx, esophagus, stomach, liver, pancreas, kidney, bladder, cervix, and certain blood cells.

Lung cancer kills more than 13,000 Californians each year—more than prostate, breast, and colorectal cancers combined.

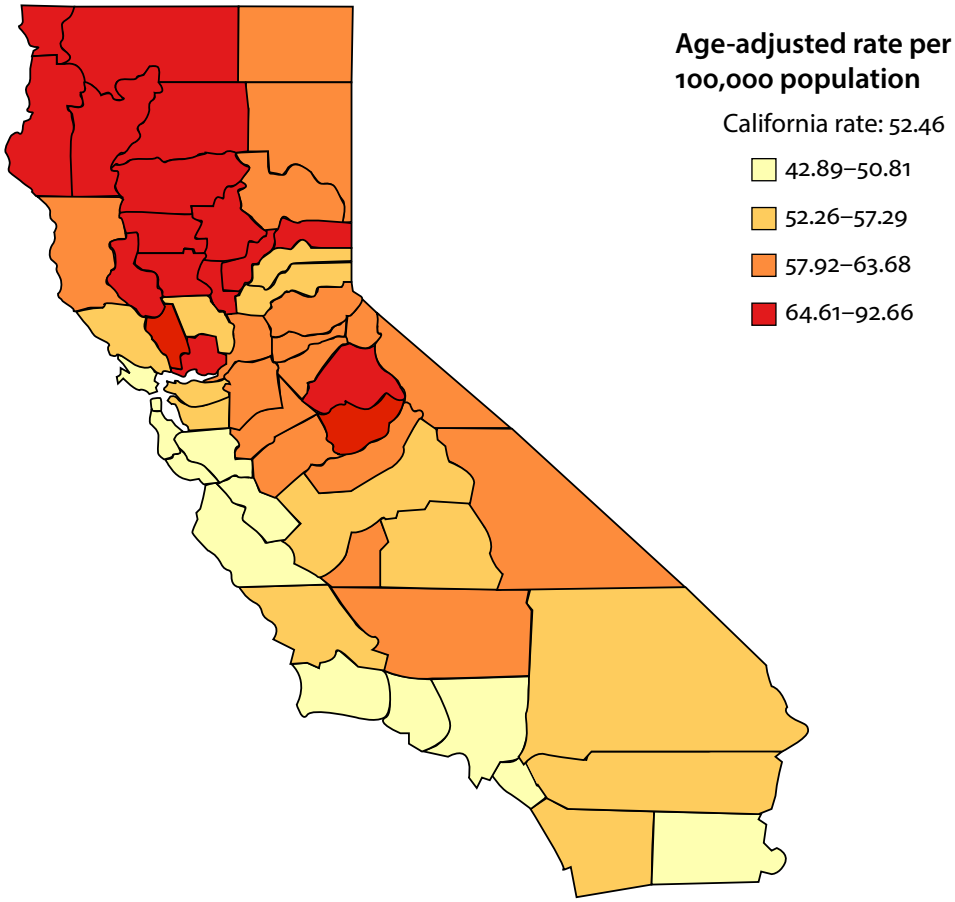
- In 2012, there were expected to be 16,540 adults diagnosed with lung cancer.
- Incidence rates of lung cancer in California decreased by 29 percent from 1988 to 2009, reflecting the continued decline in smoking among Californians.
- Rates from other smoking-related cancers are dropping as well.

Fewer Californians are smoking.

- Smoking rates have declined steadily from 1989 to 2012.
- Approximately 12 percent of California adults currently smoke.
- The rate of smoking is highest among 25–34 year olds (15%), down from 21 percent in 2003.

The counties with the highest rates of lung cancer from 2005 to 2009 were Sierra and Yuba (92.66); the county with the lowest rate was San Benito (42.89).

Figure 24. Lung and bronchus cancer incidence, California, 2005–2009



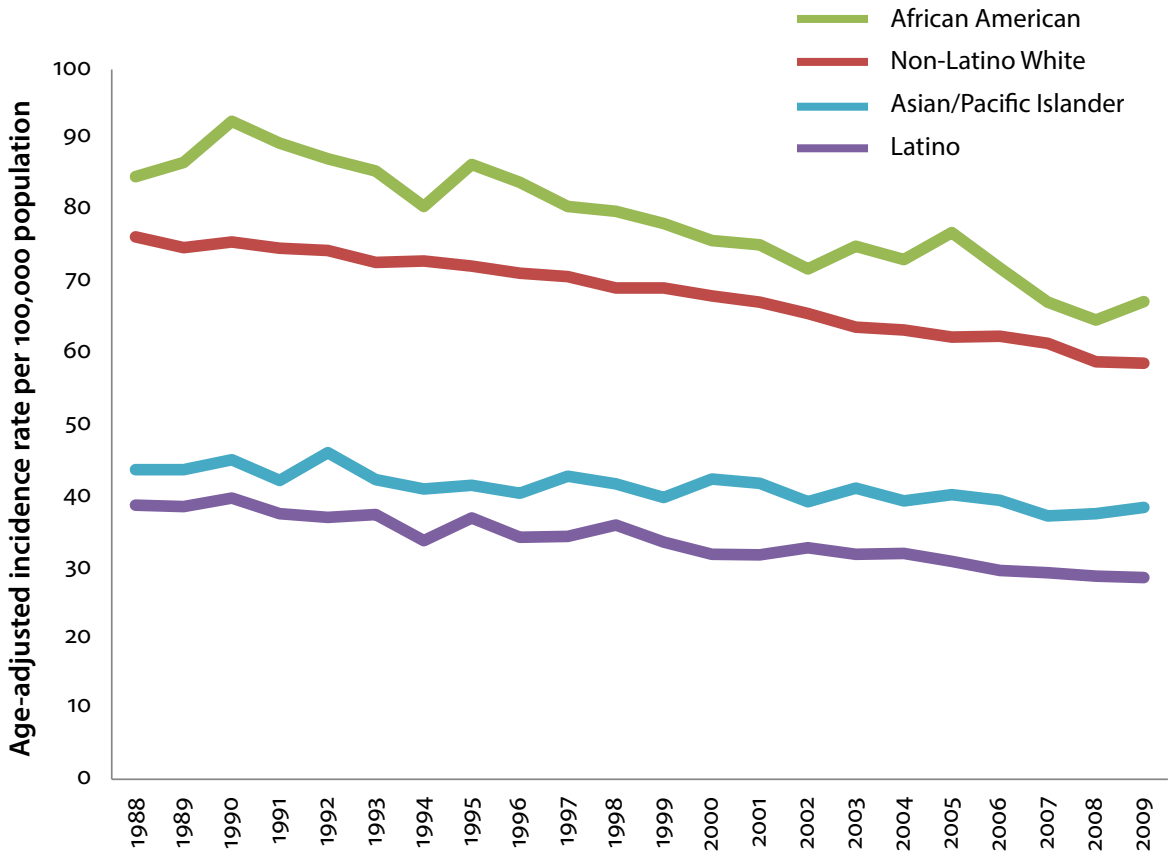
Source: California Cancer Registry, 2012

Lung Cancer: Unequal Impacts

Statewide, African Americans have the highest lung cancer incidence and mortality.

- African Americans (19%) and certain Asian subgroups, such as Vietnamese, Chinese, and Filipinos, have higher rates of smoking overall.
- Californians of lower socioeconomic status are more likely to be current smokers.

Figure 25. Trends in lung and bronchus cancer incidence by race/ethnicity, California, 1988–2009



Source: California Cancer Registry, 2012

Colorectal Cancer

Colorectal cancer is common and deadly.

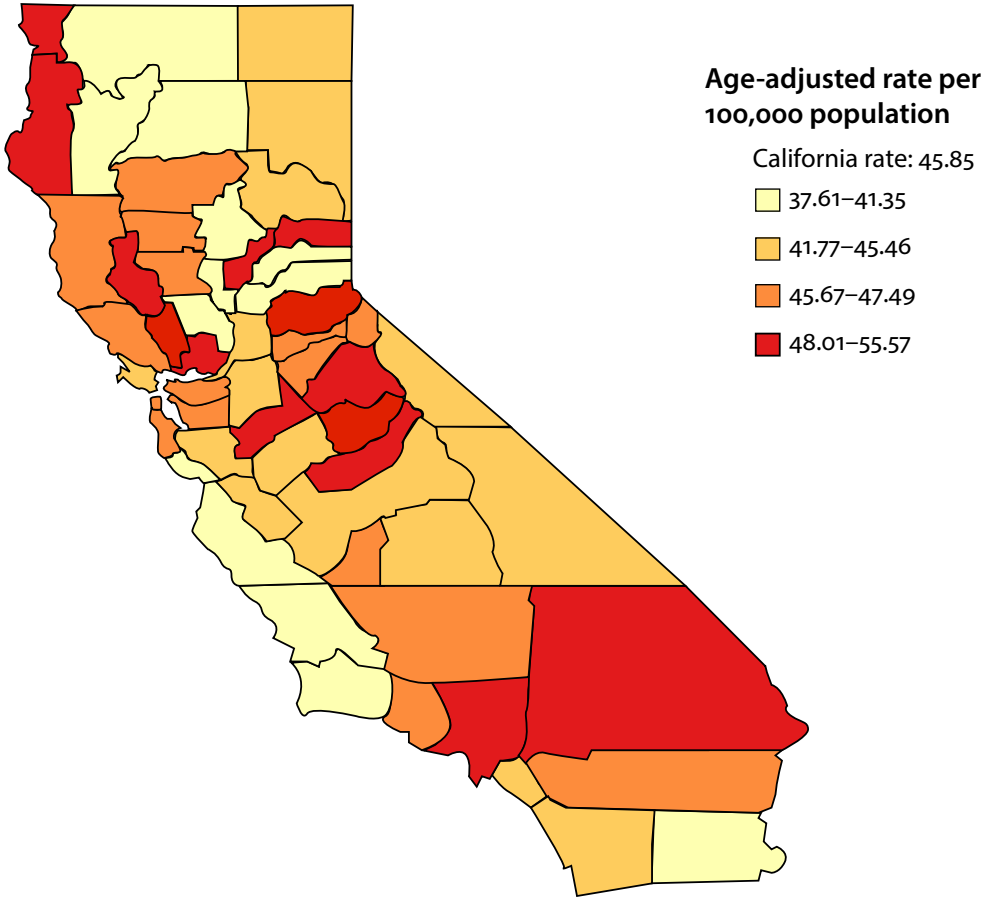
- In California, 14,530 adults are expected to be diagnosed in 2012.
- Colorectal cancer kills more Californians than any other cancer except lung cancer; 5,120 deaths are expected in 2012.

The good news: colorectal cancer is preventable and fewer Californians are dying of the disease, in part due to early detection.

- Colorectal cancer is preventable through screening tests.
- Colorectal cancer rates have declined dramatically in California since 1988. Incidence rates have decreased by 29 percent for all races combined.
- Fewer people are dying of colorectal cancer in California; since 1988, death rates have decreased by 36 percent for all races combined.

The county with the highest rate of colorectal cancer from 2005 to 2009 was Lake (55.57); the lowest colorectal cancer rates were from Monterey (37.61) and Yolo (37.67).

Figure 26. Colon and rectum cancer incidence, California, 2005–2009



Source: California Cancer Registry, 2012

Colorectal Cancer: Unequal Impacts

Some California communities have more colorectal cancer cases diagnosed at an advanced stage (meaning the cancer has extended beyond the colon wall) than other communities.

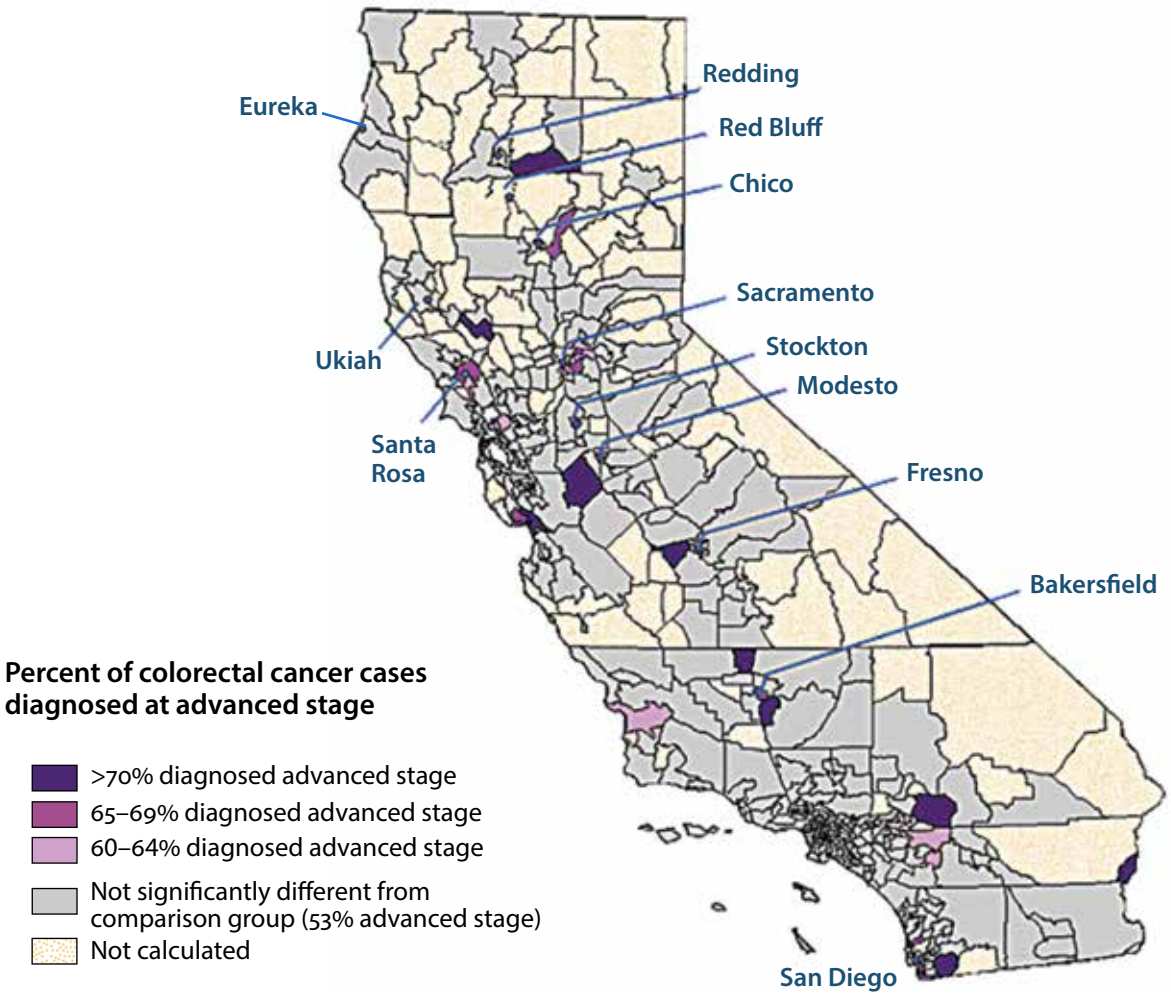
Figure 27 identifies communities in California where the percentage of advanced-stage colorectal cancer cases is higher than the state average.

Although the map tells us where the cases are, the underlying reasons are not as clear.

Possible reasons include:

- Social determinants, such as poverty or lack of health insurance;
- Inadequate access to medical providers and screening tests, especially in rural and medically underserved areas;
- High-risk factors such as a family history of colorectal cancer, or inflammatory bowel disease;
- Lack of regular physical activity, low-fiber/high-fat diet, and obesity.

Figure 27. Advanced-stage colorectal cancer in California adults 50 years and older, by Medical Service Study Area, 2004–2009



Source: California Cancer Registry, 2012

Colorectal Cancer: Unequal Impacts

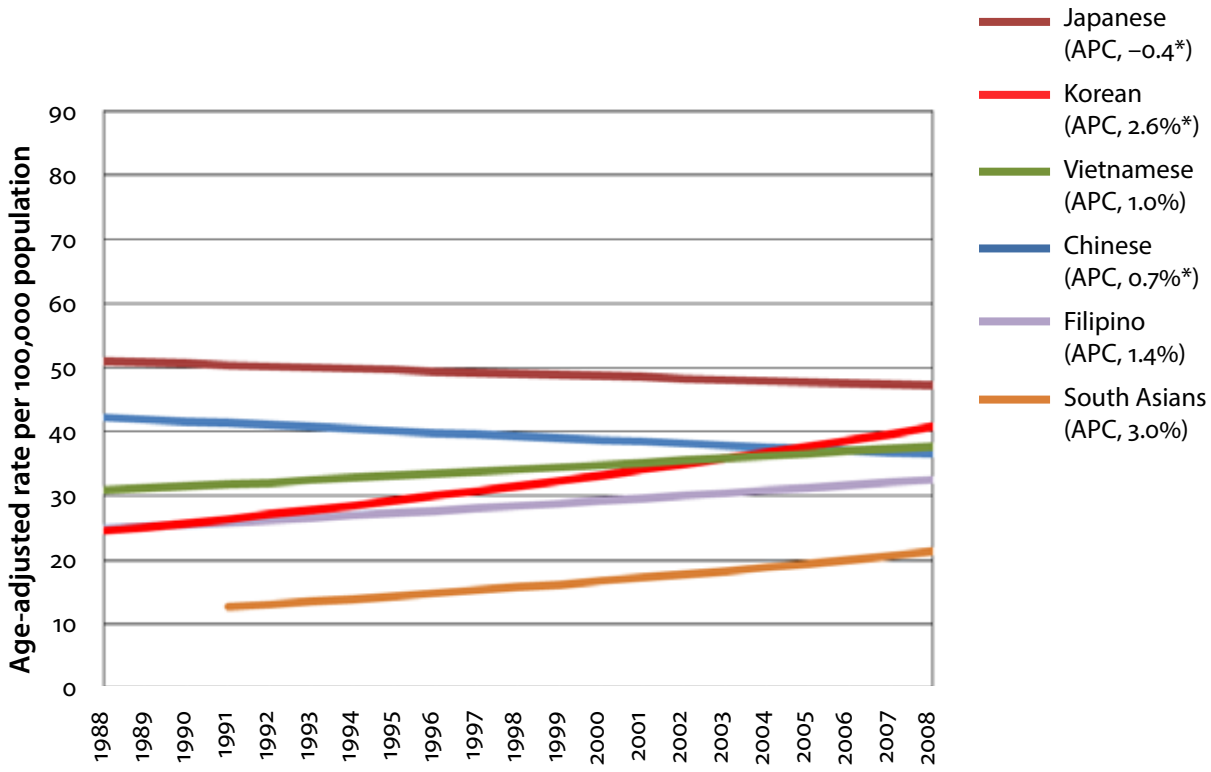
Although colorectal cancer incidence and death rates have declined from 1988 to 2008 in California among all major racial/ethnic groups, the rate of decline is not equal.

- Whites have experienced the fastest rate of decline in new diagnoses (1.5% annually), while Latinos have experienced the slowest (0.3% annually).

In some racial/ethnic subgroups, such as Korean men and women, and south Asian and Filipina women, incidence rates are rising.

- Figure 28 illustrates the colorectal cancer disparities of female Asian subgroups. There are similar disparities among male Asian subgroups.
- The trends for some Asian subgroups differ with respect to stage of diagnosis and socioeconomic status.
- Vietnamese males and Filipino males and females had 20 percent or more cases diagnosed at advanced stages.
- Vietnamese and Korean cases were more frequently from neighborhoods where many people live in poverty.

Figure 28. Trends in colorectal cancer incidence rates among Asian ethnic subgroups, females, California, 1988–2008



* The annual percent change (APC) is significantly different from zero ($p < 0.05$).

Source: California Cancer Registry, 2012

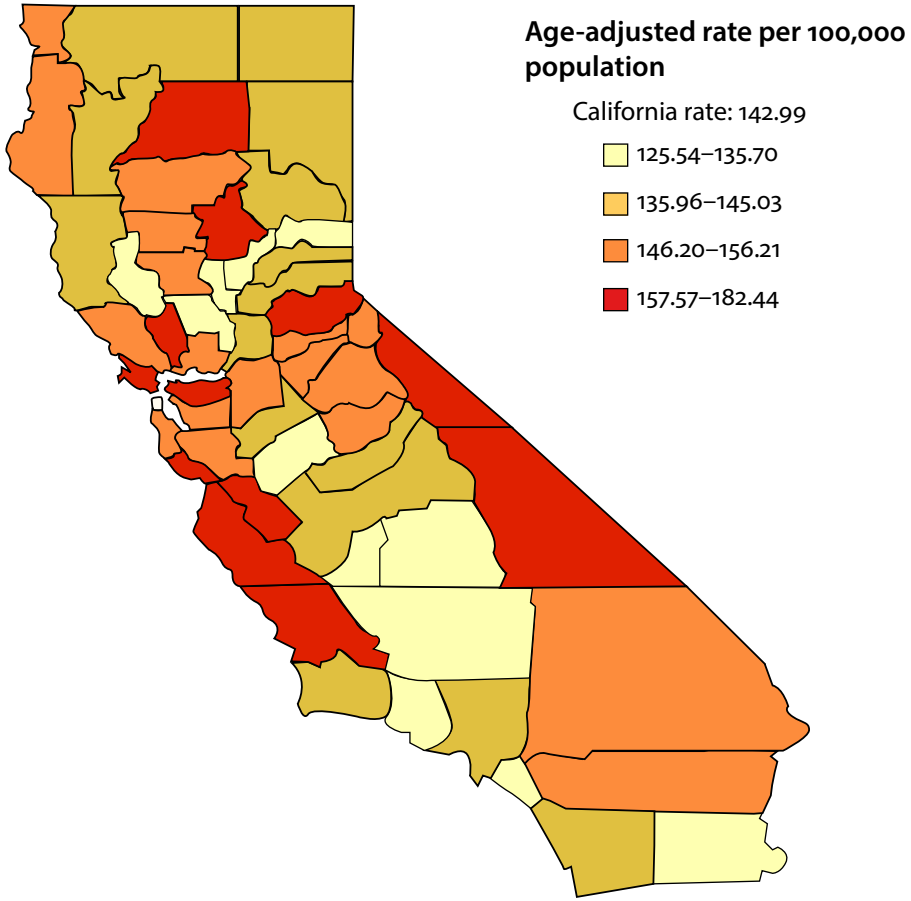
Prostate Cancer

Prostate cancer is the most common cancer among men in California.

- In 2012, 20,195 California men were expected to be diagnosed with prostate cancer, and 3,085 of them were expected to die that year.
- Incidence rates have marginally declined since 1988. However, death rates have declined by 36 percent.
- Nearly 70 percent of prostate cancers are diagnosed among men ages 65 and older.

The counties with the highest rate of prostate cancer from 2005 to 2009 were Marin (182.44) and Santa Cruz (176.37); the counties with the lowest rate of prostate cancer were San Francisco (121.54), Tulare (121.84), and Merced (121.87).

Figure 29. Prostate cancer incidence, California, 2005–2009



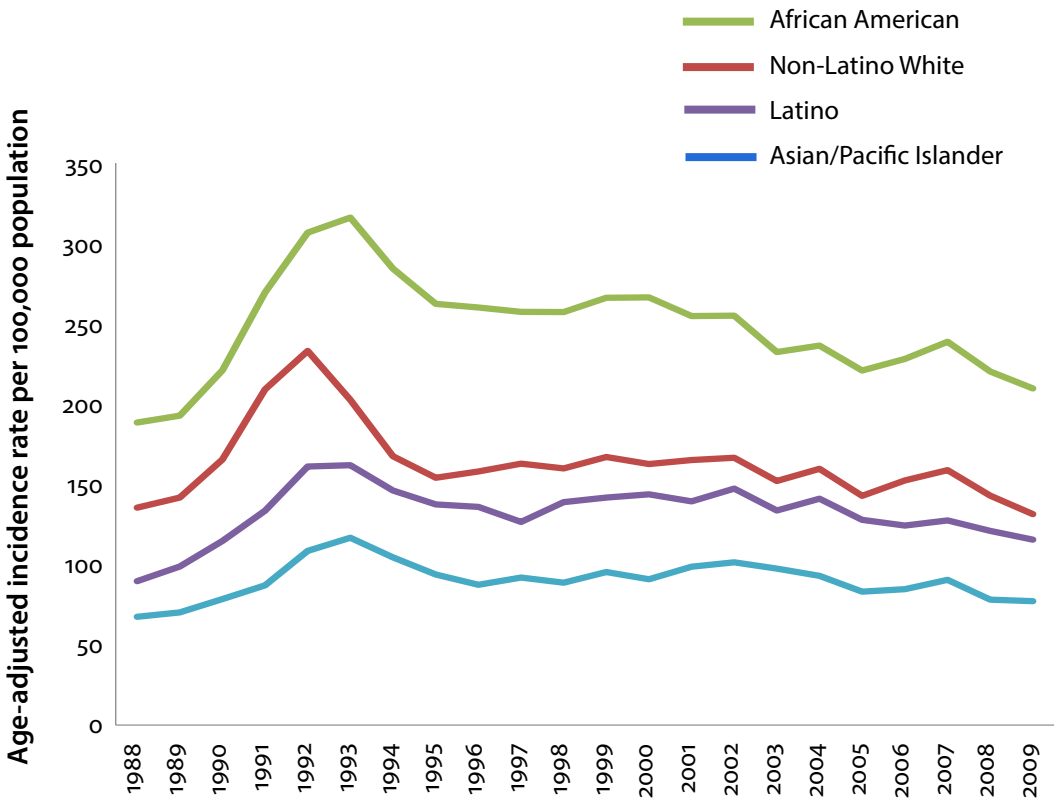
Source: California Cancer Registry, 2012

Prostate Cancer: Unequal Impacts

African-American and Latino men have the poorest prostate cancer survival rates.

- African-American men are 56 percent more likely than White men, and 78 percent more likely than Latino men, to develop prostate cancer.
- African American men are more than twice as likely to die from prostate cancer.
- African-American and Latino men are less likely to have health insurance and access to health care.
- Asian/Pacific Islander men have the lowest incidence and highest survival rates.

Figure 30. Trends in prostate cancer incidence by race/ethnicity, California, 1988–2009



Source: California Cancer Registry, 2012

Breast Cancer

Breast cancer is the most common cancer among women in California.

- 23,280 California women are expected to be diagnosed with breast cancer in 2012, and 4,335 California women are expected to die from the disease.

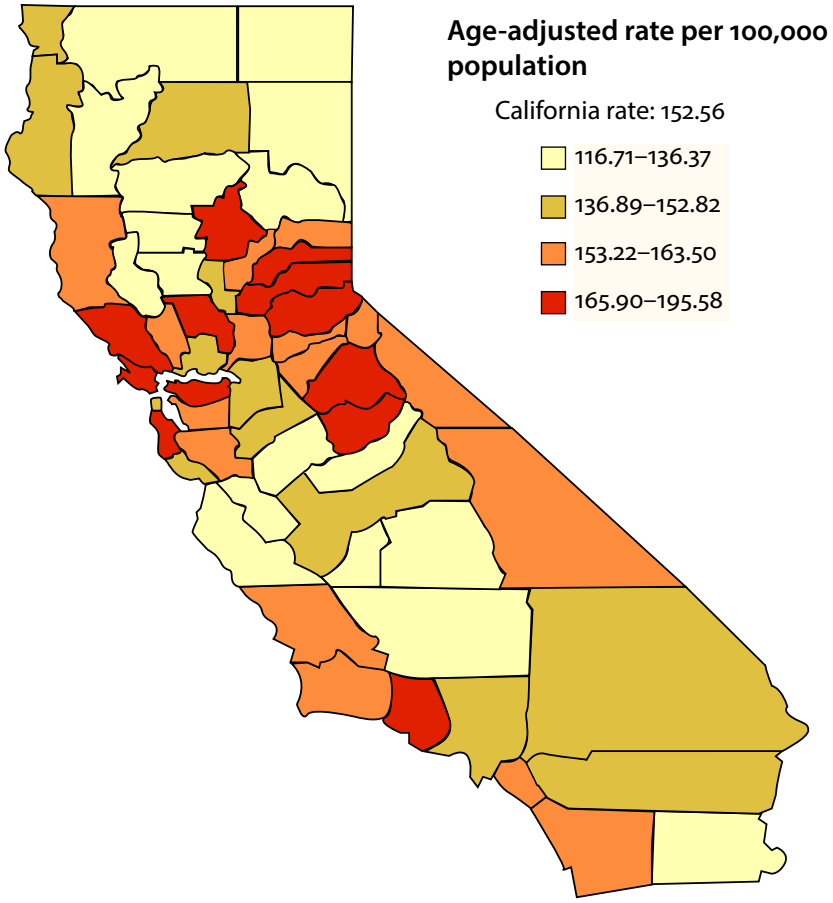
Early detection is the best defense against breast cancer.

- More cancers are being diagnosed at an early stage, due to screening mammograms.
- In 2010, 61 percent of women for whom screening is recommended reported that they had a mammogram in the past year, compared to only 39 percent in 1987.
- Approximately 71 percent of female breast cancers diagnosed in California in 2009 were found at an early stage.
- Breast cancer diagnosed at an early stage has 5-year survival of 91 percent.

The counties with the highest rates of breast cancer from 2005 to 2009 were Marin (195.58) and Placer (186.45); the counties with the lowest rates of breast cancer were Siskiyou–Trinity (116.71) and Merced (120.27).

Rates are reported per 100,000 females in the population.

Figure 31. Female breast cancer incidence, California, 2005–2009



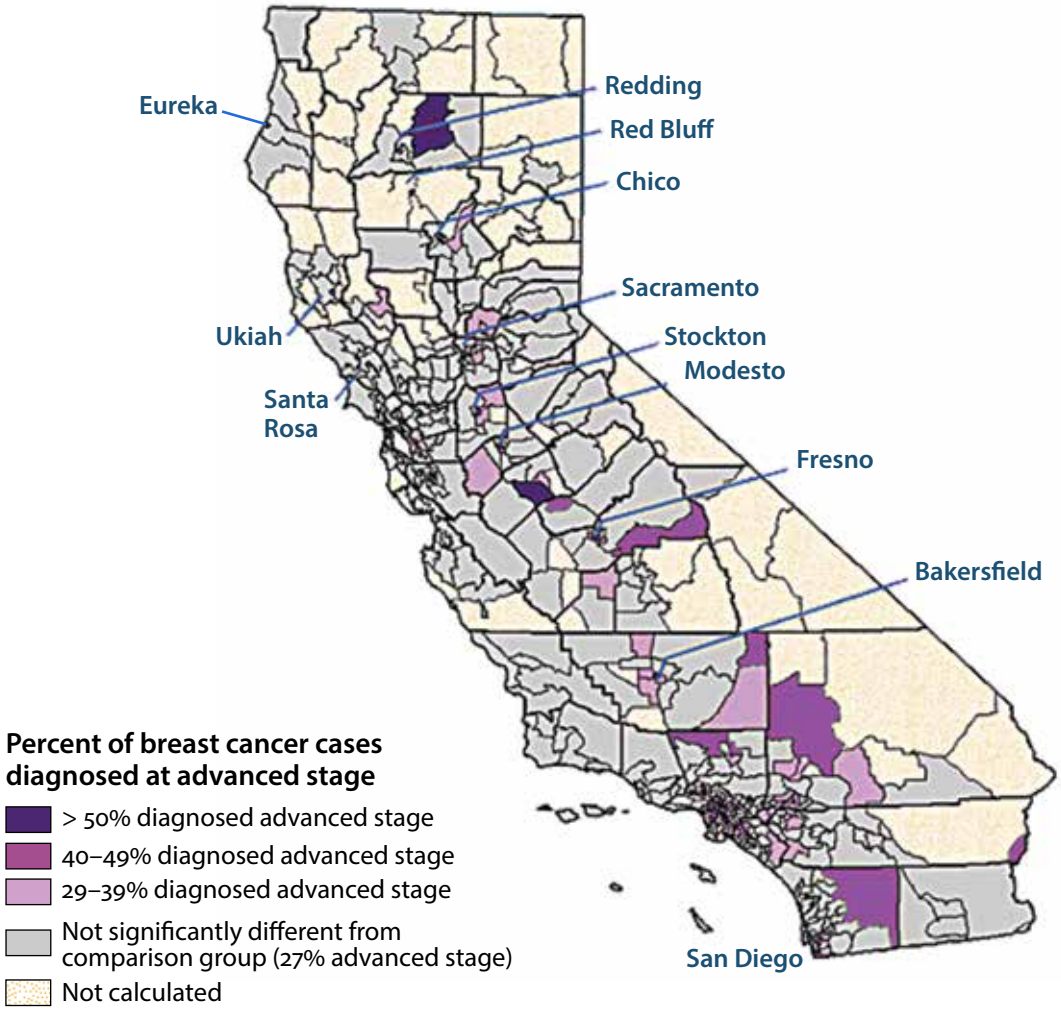
Source: California Cancer Registry, 2012

Breast Cancer: Unequal Impacts

- Low-income women are less likely to get mammograms.
- Latina and Asian/Pacific Islander women are less likely to have had a mammogram in the past year.
- Asian women are experiencing increasing rates of breast cancer upon migrating and assimilating into the United States.
- Women who are more educated and have a higher socioeconomic status have a higher risk of developing breast cancer.

The map to the right identifies communities in California where the percentage of advanced-stage breast cancer cases is higher than the state average, allowing efforts to be focused in the areas of greatest need.

Figure 32. Advanced-stage breast cancer in California women 40 years and older, by Medical Service Study Area, 2004–2008



Source: California Cancer Registry, 2008

Asthma

What is asthma?

Asthma is a chronic disease that inflames and narrows the airways of lungs. Asthma causes a variety of symptoms that can worsen at any time, making breathing difficult. This leads to decreased physical activity, thereby contributing to obesity and other chronic diseases.

Asthma is on the rise in children and adults.

- About 13.7 percent of adults and 12 percent of children have been diagnosed with (lifetime) asthma in California.
- Adult lifetime asthma has been increasing in California since 1995 and has been consistently higher than the national average.
- A majority of adults and children with current asthma (66% and 54%, respectively) had asthma symptoms in the past month.
- Asthma emergency room visits and hospitalizations generally indicate that the disease is not well controlled. Rates of emergency room visits and hospitalizations tend to be highest in the Central Valley.

Figure 33a. Asthma hospitalizations, 2009

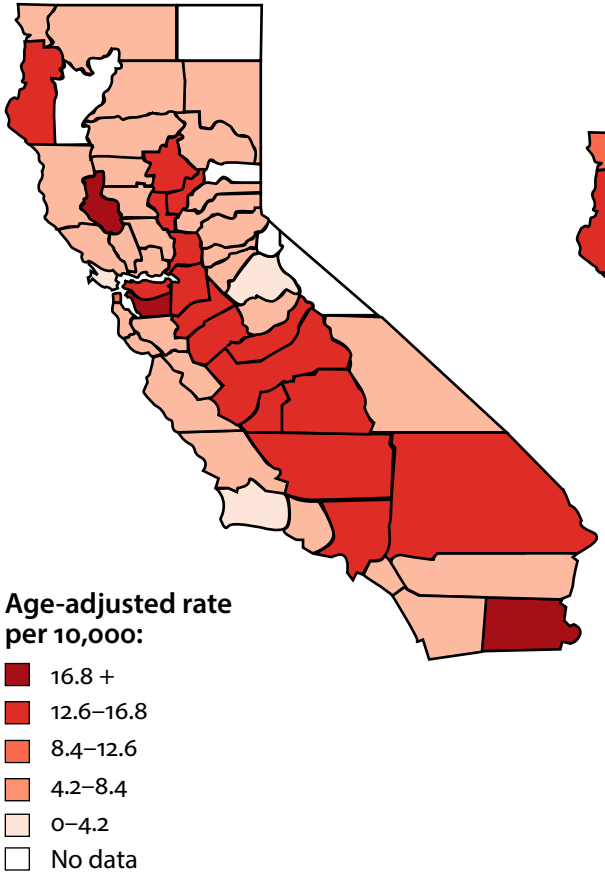
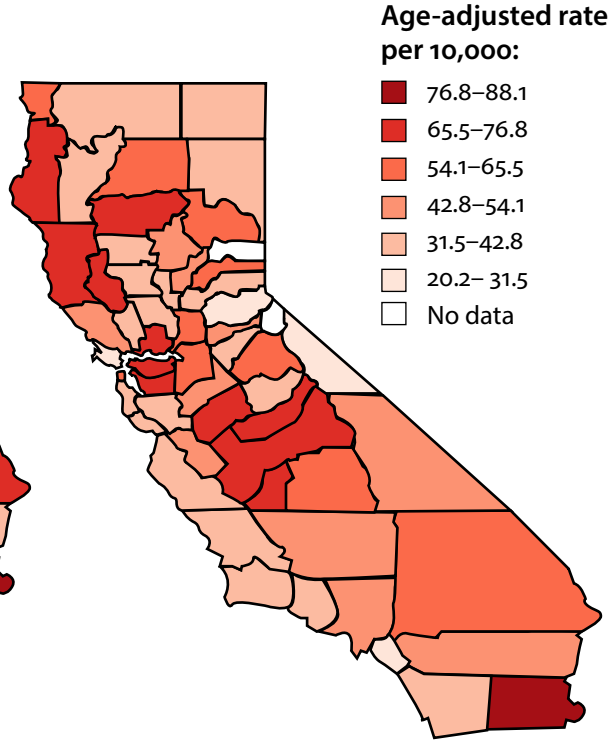


Figure 33b. Asthma emergency department visits, 2009



Source: CDPH California Environmental Health Tracking Program, 2009

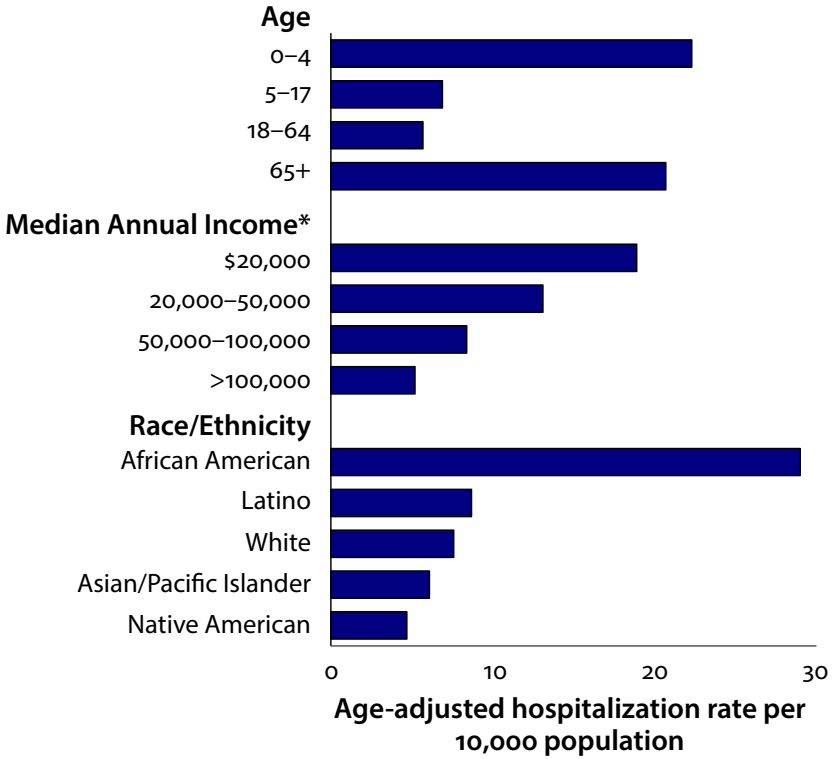
Asthma: Unequal Impacts

Poor indoor and outdoor air quality can trigger asthma attacks. Asthma emergency room visits and hospitalization rates are higher among Californians living in low-income areas, in part because these areas are more likely to have deteriorated housing and/or schools, and are closer to freeways and busy roads.

Figure 34 illustrates the association between asthma hospitalizations and age, poverty, and race.

Young children, seniors, people living in lower-income neighborhoods, and African Americans have increased asthma morbidity.

Figure 34. Social determinants influence the share of Californians hospitalized for asthma, 2010



**Note: Data from 2009. Information on each person's income is not available in hospitalization data, so the median household income in each person's zip code is used as a proxy.*

Source: California Breathing, County Asthma Profiles, 2012

Work-Related Asthma

What is work-related asthma?

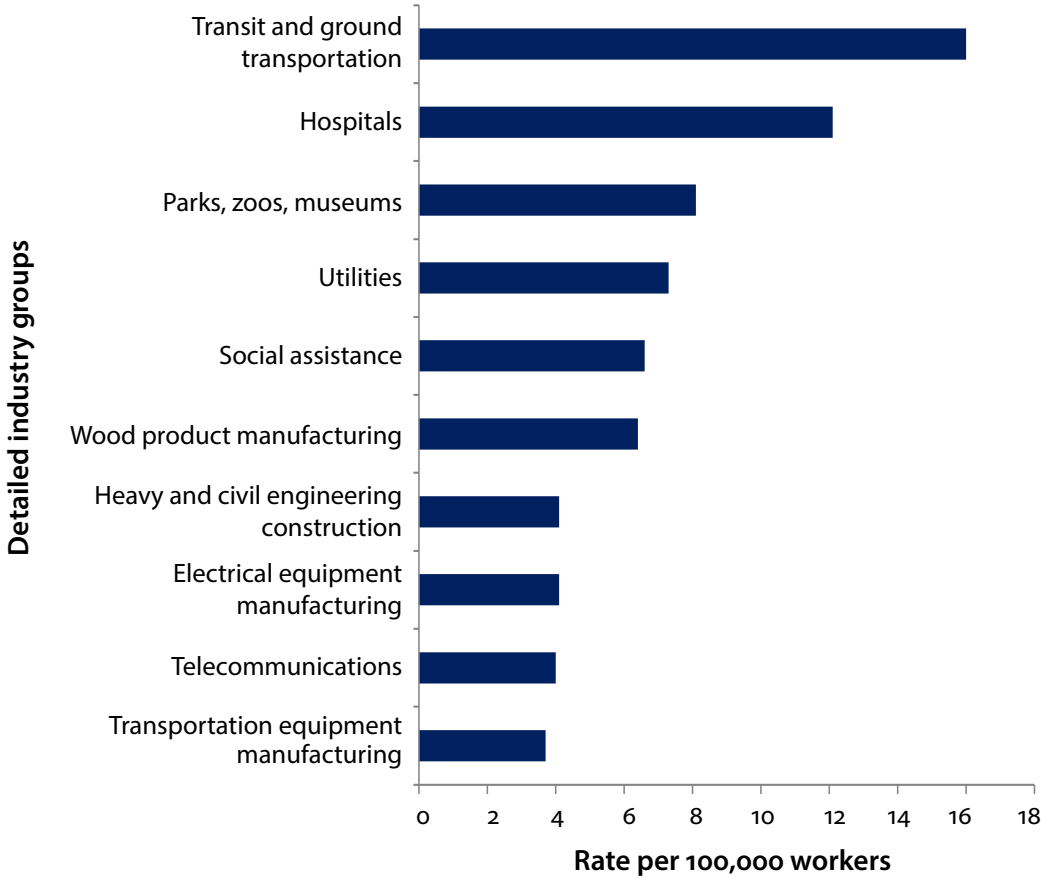
Work-related asthma (WRA) is asthma that is caused or worsened by conditions or substances in the workplace.

WRA is often unrecognized and unreported.

- Over 974,000 Californians have asthma that was caused or aggravated by their work (40% of adults with asthma). The number is likely higher as work-related asthma is often not recognized, reported, or diagnosed.
- Nearly two-thirds (63%) of all reported WRA cases are White, and about one in five cases are Latino.
- The majority of people with WRA are unable to perform their usual work (56%), and over 60 percent had to visit the emergency department since their breathing problems began at work.

The rate of WRA varies widely by industries and occupations. Figure 35 displays the WRA rates for different industries. Workers in transit and ground transportation and hospitals are impacted the most.

Figure 35. Work-related asthma by industry group, 1993–2008



Source: California Department of Public Health, California Work-Related Asthma Prevention Program, 2012

Chronic Obstructive Pulmonary Disease

What is chronic obstructive pulmonary disease?

Chronic obstructive pulmonary disease (COPD) refers to two diseases (chronic bronchitis and emphysema) that make breathing difficult. COPD can cause coughing up large amounts of mucus, wheezing, shortness of breath, and chest tightness.

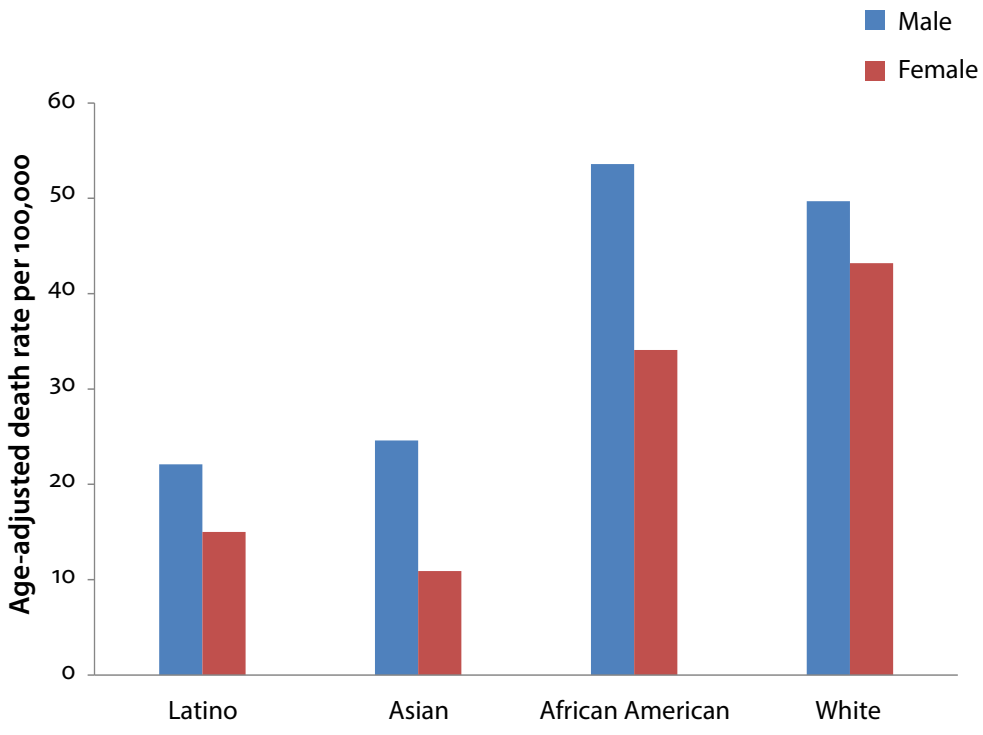
Cigarette smoking is the leading cause of COPD. Up to 90 percent of people who have COPD smoke or smoked in the past. Long-term exposure to lung irritants—such as air pollution, secondhand smoke, chemical fumes, or dust—also may contribute to COPD. For some people, exposures at work may worsen COPD. COPD almost always gets worse over time, and there is no cure. However, people can manage COPD by stopping smoking, eliminating harmful exposures, and taking medications properly.

- An estimated 3 percent of Californians have been diagnosed with chronic bronchitis, and 1.3 percent have been diagnosed with emphysema.
- COPD is underreported in California and in the United States, as up to 50 percent of people with COPD do not know they have it.

COPD is the fourth leading cause of death in California.

- The age-adjusted death rate for COPD has fallen from 44.1 in 2001 to 35.5 in 2010 (20%). However, disparities exist—see Figure 36.

Figure 36. COPD death rates by race/ethnicity and sex, California, 2009



Source: California Department of Public Health, Vital Records, 2012

Chronic Obstructive Pulmonary Disease: Unequal Impacts

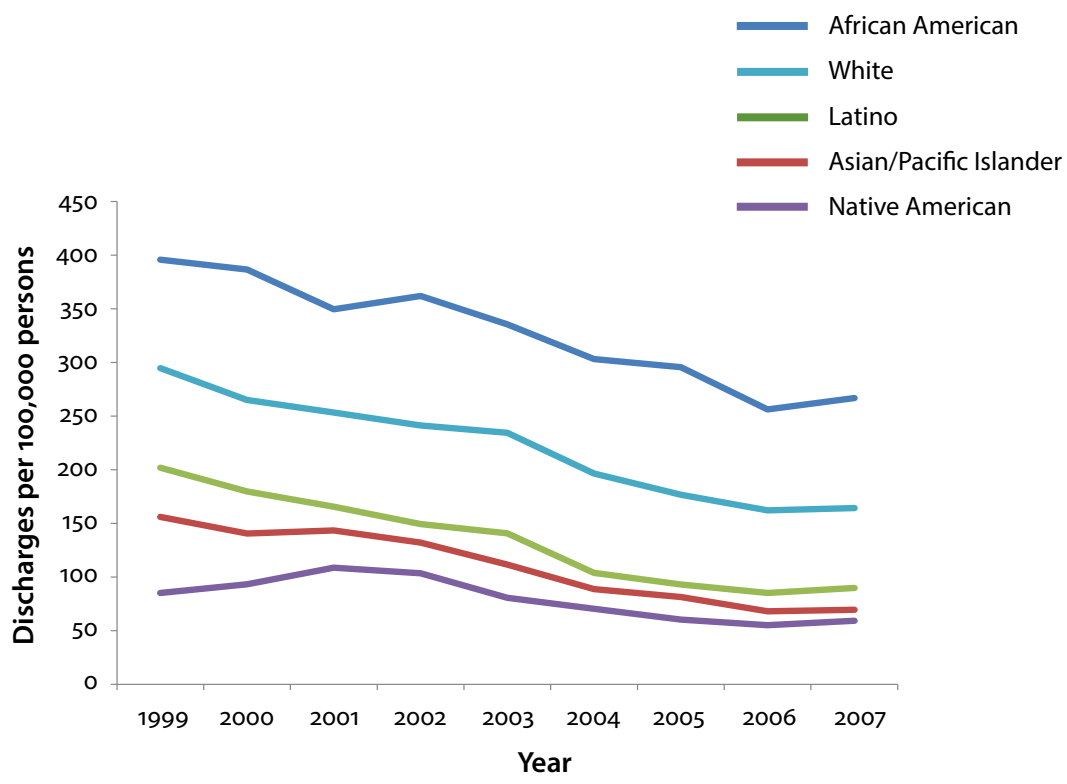
The symptoms of COPD can be well controlled with quality health care and a healthy environment. However, smoking, living in areas with poor air quality, and lack of regular medical care contribute to an increase in COPD symptoms and hospitalization rates.

COPD hospitalizations are highest for African Americans.

- There was a strong downward trend in COPD hospitalizations for all racial/ethnic groups from 1999 through 2007.
- From 1999 through 2007, the average hospitalization rate for COPD was three times higher for African Americans and almost two times higher for other racial/ethnic groups.

In 2006, California's Office of Statewide Health Planning and Development reported 46,407 hospital discharges associated with COPD, amounting to an estimated $1.34 billion in medical costs.

Figure 37. COPD admission rates by race/ethnicity, 1999–2007



Source: California Office of Statewide Health Planning and Development, Racial Ethnic FactBook, 2010

Injuries

Every year in California, injuries cause:

- over 16,000 deaths
- permanent disability for over 75,000 Californians,
- more than 240,000 hospitalizations, and
- 2.3 million emergency department visits.

Injuries can be either intentional or unintentional.

- Among intentionally inflicted injuries in 2010, suicide was the leading cause of fatal injuries (3,823).
- In 2010, adults 75 years and older had the highest suicide rate in California.

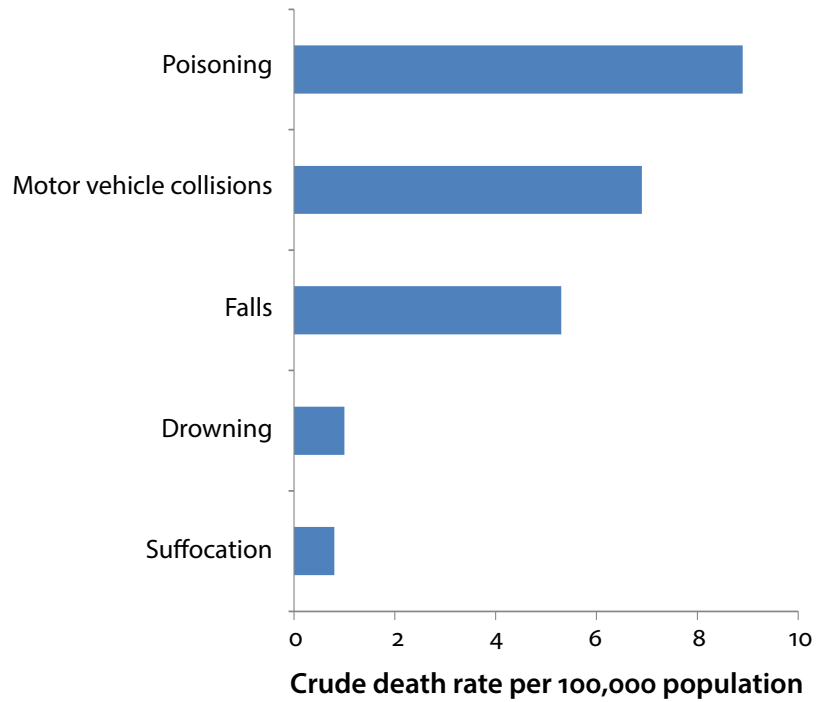
Most injuries are unintentional (by "accident") and often lead to premature death and disability.

- Unintentional injuries are the leading cause of death in California children and adults between 1 and 44 years of age.
- Poisoning was the leading cause of unintentional injury death in 2010, with 45–49 year olds accounting for 45 percent of unintentional poisoning deaths.
- Poisoning deaths involving pharmaceuticals now exceed deaths involving illicit drugs. In Los Angeles County each year, 60 percent of the drug-related deaths involve commonly abused pharmaceuticals.
- More than one-quarter of nonfatal injuries from motor vehicle collisions were suffered by people between 18 and 26 years old.

Neighborhood design plays a role in safety.

Neighborhoods with high traffic speeds and volumes endanger residents and discourage physical activity. In addition, neighborhoods without easy access to stores, recreation, and jobs require long motor vehicle trips, which increases the risk of injury and limits the options for making the healthy choice the easy choice.

Figure 38. Leading causes of death from unintentional injuries, California, 2010



Source: California Department of Public Health, EPICenter, 2012

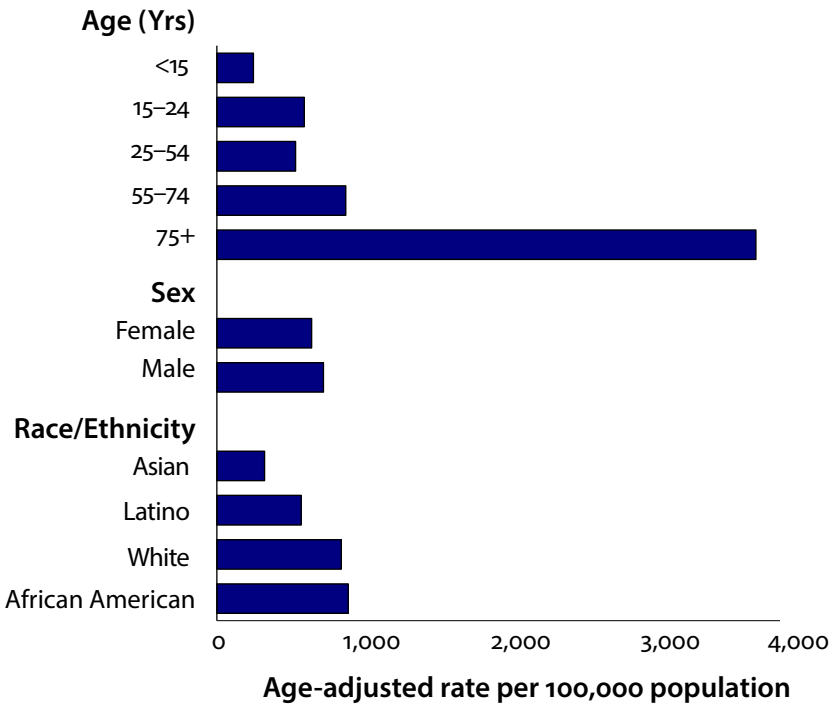
Injuries: Unequal Impacts

Injury hospitalization rates differ depending on age and race/ethnicity.

The elderly have the highest rate of unintentional and intentional injuries that require hospitalization.

- The leading cause of injury for people 65 and older is falls.
- The elderly are fragile, and even falls from a standing position to flat ground may cause serious injuries.
- In 2010, there were 1,653 deaths, more than 74,000 hospitalizations, and 162,500 emergency department visits due to falls in those 65 and older, more than for all other age groups combined.

Figure 39. Injury hospitalizations by age, sex, and race/ethnicity, California, 2002–2006



Source: CDPH EPICenter, 2012

Injuries: Unequal Impacts

Violence Impacts African Americans and Their Communities Disproportionately

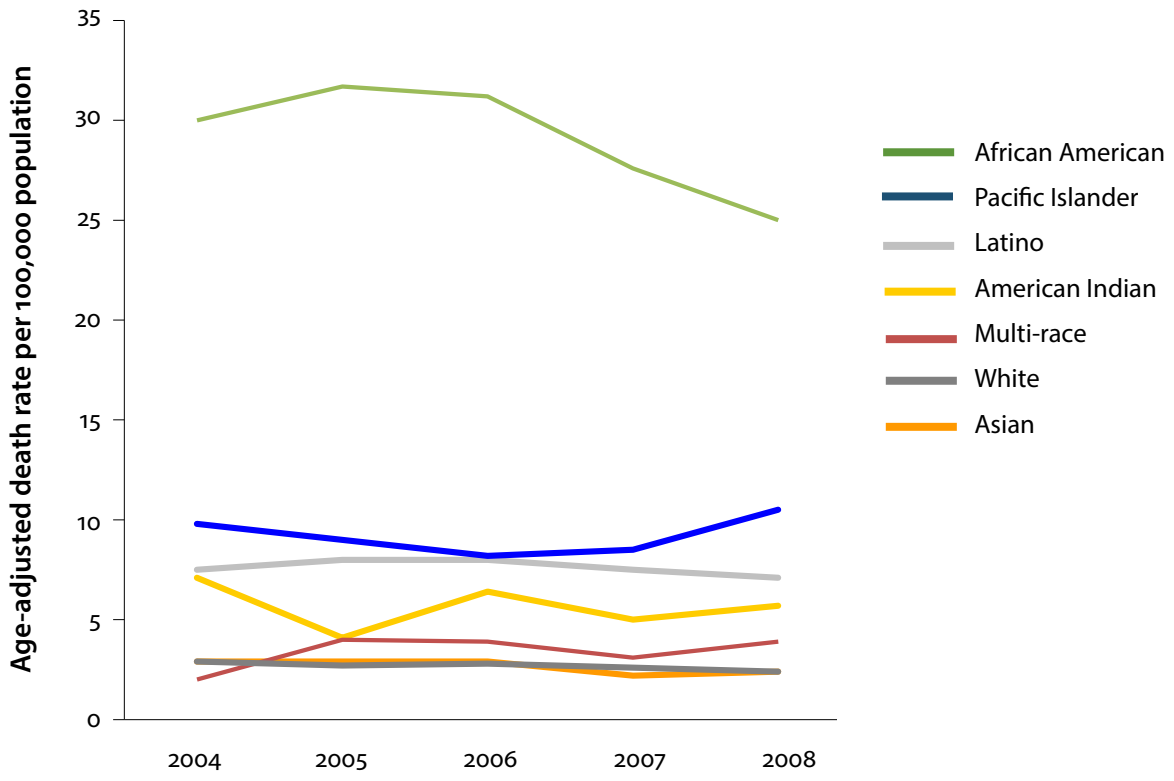
Violence affects entire communities, including chronic stress from living in unsafe neighborhoods.

- Over 1,800 Californians were victims of homicide in 2010.
- The homicide rate of African Americans is ten times greater than that for Whites.
- African Americans have higher rates of emergency department visits, hospitalizations, and child protective services referrals for intimate partner violence and child maltreatment (family violence).
- In 2007, only 48 percent of African-American adult women felt safe all the time, compared to 64 percent of White women.

Violence and fear of violence can lead to risky behaviors (e.g., smoking, substance use, retaliatory violence).

- Safety concerns create barriers to using parks and playgrounds, walking in the neighborhood, and using public transit, which decrease opportunities for healthful behaviors, such as daily physical activity.

Figure 40. Homicide death rates by race/ethnicity, California, 2004–2008



Source: CDPH EPICenter, 2012

Injuries: Unequal Impacts:
The riskiest occupations include farming, transportation, security, and construction

Hundreds of Californians die of work-related injuries each year.

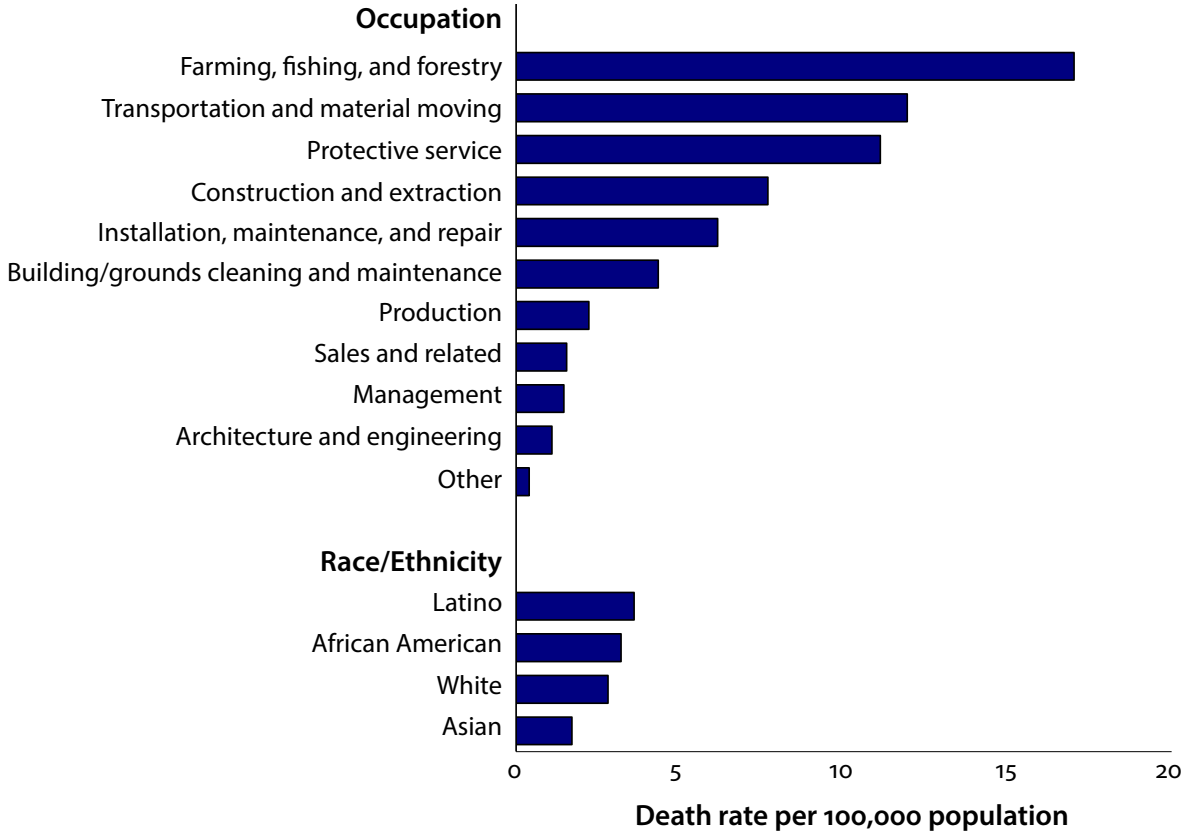
- Farming, trucking, police, and construction jobs have the highest fatality rates.
- 553 workers died in transportation jobs, and 399 died in construction jobs.

Many Latino workers are employed in farming and construction jobs, where injuries from machinery, cars and trucks, and falls are common.

Occupational fatality rates are over two times higher in Latinos than in Asians.

Most occupational injuries are preventable through workplace design engineered for safety; education; and enforcement.

Figure 41. Annual average work-related fatal injury rates by industry and race/ethnicity, California, 2005–2009



Source: Division of Occupational Injury and Health, 2010

Alzheimer's Disease

What is Alzheimer's disease?

Alzheimer's disease is the most common form of dementia, a clinical syndrome of loss or decline in memory and other cognitive abilities. Dementia is caused by various diseases and conditions that result in damaged brain cells.

The second most common cause of dementia is stroke, followed by other diseases and conditions, such as Parkinson's disease, head injuries, drugs, and nutritional deficiencies.

Alzheimer's disease is not normal aging; it is a progressive and fatal brain disease for which cause and cure are unknown.

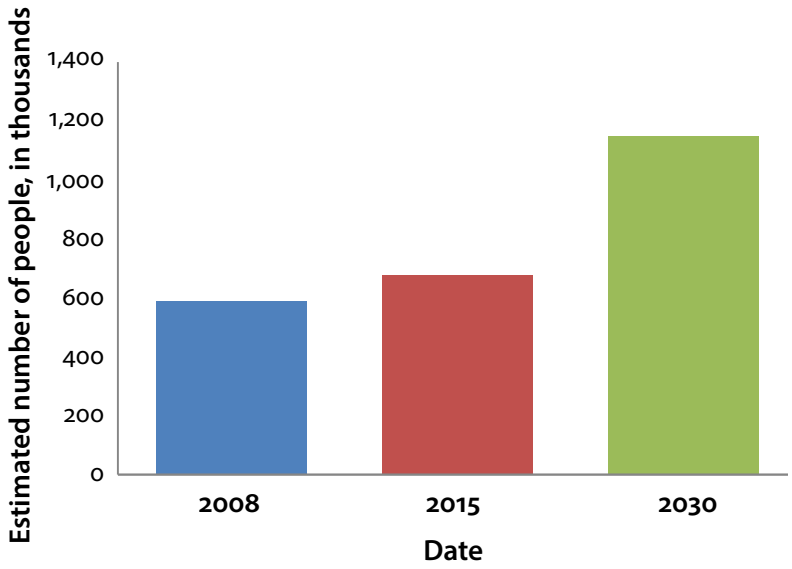
Although the greatest risk factors are advancing age and family history, choosing a healthy lifestyle and effectively managing other health conditions may decrease risk.

- Alzheimer's disease is the only cause of death in the top ten that has increased in prevalence in the past 10 years, increasing 73 percent since 2001.
- One in eight California baby boomers who reach age 55 will develop Alzheimer's disease.

The cost for caring for people with Alzheimer's disease is a major concern.

- Nationally, the cost to Medicare of patients with dementia is estimated to be three times the cost of enrollees without dementia.
- In California, the cost to Medi-Cal is 2.5 times higher for Alzheimer's patients than for age-matched enrollees without dementia.
- Much of these costs are driven by nursing home expenditures.
- Businesses face as much as $1.4 billion in lost productivity each year as family caregivers miss work, reduce their hours, or change jobs.
- Within the next 20 years, the number of Californians living with Alzheimer's disease will nearly double, growing to over 1.1 million.

Figure 42. Projected prevalence of Alzheimer's disease among Californians 55+, by date



Source: Alzheimer's Association, 2009

Alzheimer's Disease: Unequal Impacts

Women live with and die from Alzheimer's disease at a higher rate than men.

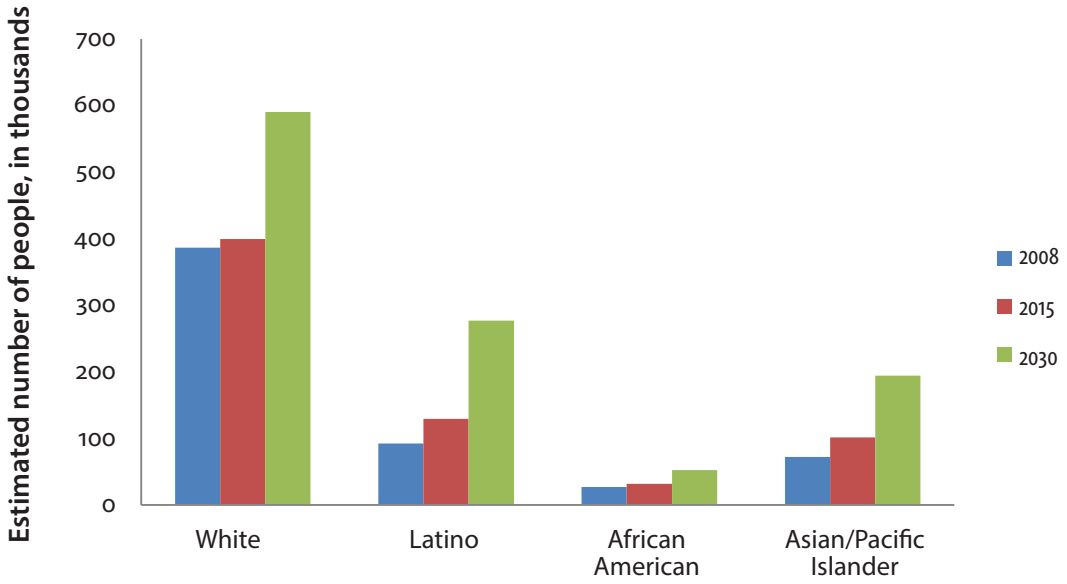
This is mainly because women live longer than men do. This gap between female and male death rates due to Alzheimer's disease has been growing since 1995, despite a decrease in the difference in life expectancy between women and men.

The identification of Alzheimer's disease in ethnically diverse populations can be challenging due to the limited availability of culturally and linguistically appropriate diagnostic tools.

Obtaining a diagnosis at a later stage of Alzheimer's disease often occurs among people of color. This not only limits our understanding of the impact of Alzheimer's disease within the racially and culturally diverse communities of the state but can directly affect the individual living with Alzheimer's disease, since the effectiveness of medications and psychological or social interventions depends on early intervention.

Due to a rapidly aging population and the growing immigrant population, the increase in the number of Californians living with Alzheimer's disease will be even more dramatic among Asians and Latinos, who will see a tripling in those affected by 2030.

Figure 43. Projected prevalence of Alzheimer's disease among Californians 55+, by race/ethnicity



Source: Alzheimer's Association, February 2009

Diabetes

What is diabetes?

Diabetes is a chronic condition marked by high levels of blood glucose (sugar) resulting from defects in insulin production, insulin action, or both. It is the leading cause of blindness, amputation, and kidney failure, and is a major contributor to heart attacks and strokes.

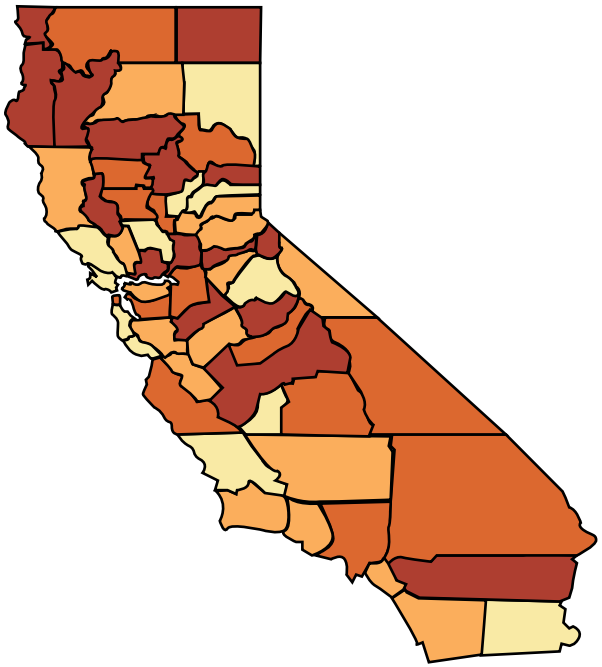
Diabetes is rising quickly in California.

- The number of persons with diabetes has increased 32 percent over the past decade.
- 3.9 million people, or one in seven adults in California, have diabetes.
- Almost 11.4 million California adults have pre-diabetes.
- 7 percent of people with diabetes are unaware of their condition.
- Without intervention, about one in four people with pre-diabetes will develop type 2 diabetes within 3–5 years.

Figures 44a and 44b illustrate how quickly diabetes rates are increasing in California.

Figure 44a. Diabetes prevalence in California counties, 2004

Figure 44b. Diabetes prevalence in California counties, 2008



Percent of residents with diabetes

- 5.0–6.9%
- 7.0–7.5%
- 7.6–8.0%
- 8.1–10%

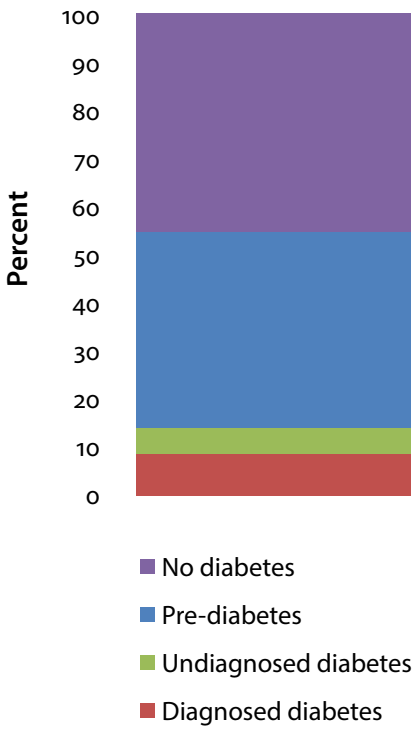
Source: Centers for Disease Control and Prevention: National Diabetes Surveillance System, 2012

Diabetes, continued

- Among U.S. states, California has the greatest number of new persons with diabetes every year.
- Diabetes costs in California exceed $24 billion each year. This is due to direct medical costs, such as hospitalizations and medical care, and indirect medical costs, such as disability, time lost from work, and premature death.
- Treatment costs can be reduced by managing diabetes and preventing complications.

Diabetes reduces life expectancy by 18 years if diagnosed at age 20, 14 years if diagnosed at age 40, and 10 years if diagnosed at age 60.

Figure 45. Adult diabetes prevalence, California, 2010



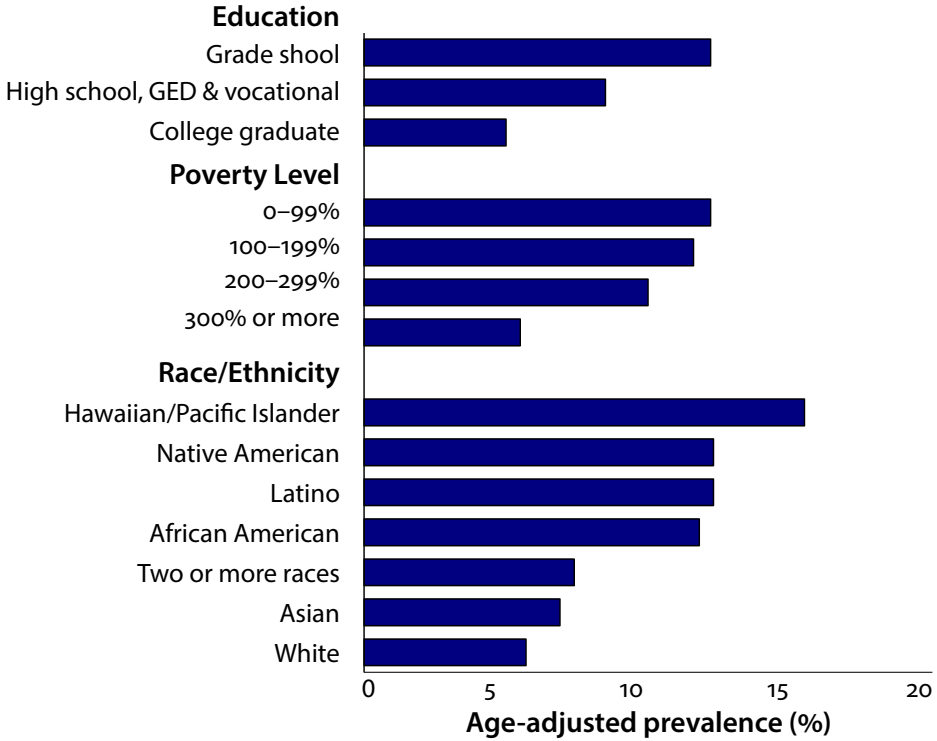
Source: Centers for Disease Control and Prevention: National Diabetes Surveillance System, 2012

Diabetes: Unequal Impacts

Ethnic minorities and those who are poor or less advantaged have especially high rates of diabetes.

- One in 18 White adults have diabetes, yet one in seven Hawaiians/Pacific Islanders, one in eight Native Americans and Latinos, and one in nine African Americans have diabetes.
- The rate of diabetes among Californians without a high-school diploma is more than two times higher than the rate for Californians with a college degree.
- The percentage of adults with diabetes is more than two times higher in those with a family income below 200 percent of the federal poverty level as compared to those whose income is 300 percent above the poverty level.

Figure 46. Social determinants influence the share of California adults who were ever told by a doctor that they have diabetes, 2007



Source: UCLA, Center for Health Policy Research, 2007

Arthritis

What is arthritis?

Arthritis literally means "joint inflammation," but the term is often used to refer to any of the more than 100 diseases that affect the joints.

The most common types of arthritis are:

- **Osteoarthritis:** a condition in which the joint cartilage breaks down, causing pain and stiffness.
- **Rheumatoid arthritis:** a condition in which the body's immune system attacks the thin membrane that lines the joints, causing pain, swelling, inflammation, and, if not treated, joint destruction.

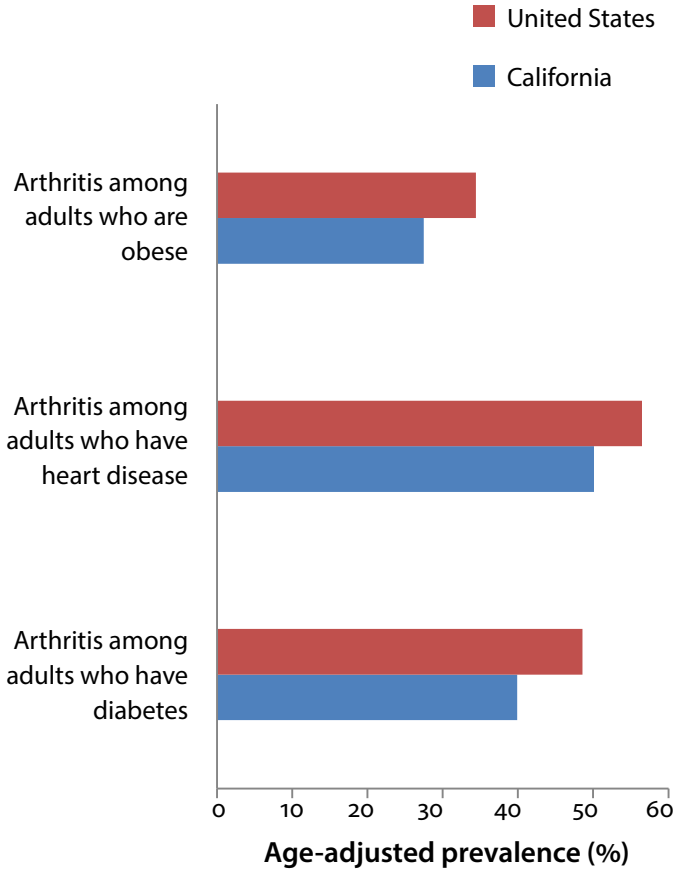
Arthritis is debilitating and common, especially in those who already have chronic diseases.

- In 2010, 5,041,000, or 20 percent, of California adults had arthritis.
- Of adults with arthritis, one in two, or 2,413,000, have activity limitation resulting from arthritis.
- Of adults with arthritis, one in three, or 1,615,000, rate their general health status as fair or poor.

Arthritis often occurs simultaneously with other chronic diseases, such as cardiovascular disease, diabetes, and obesity.

Forty percent of adults in California with diabetes have arthritis, and 50 percent of adults with heart disease have arthritis.

Figure 47. Adults with arthritis and other chronic conditions, California and the United States, 2009

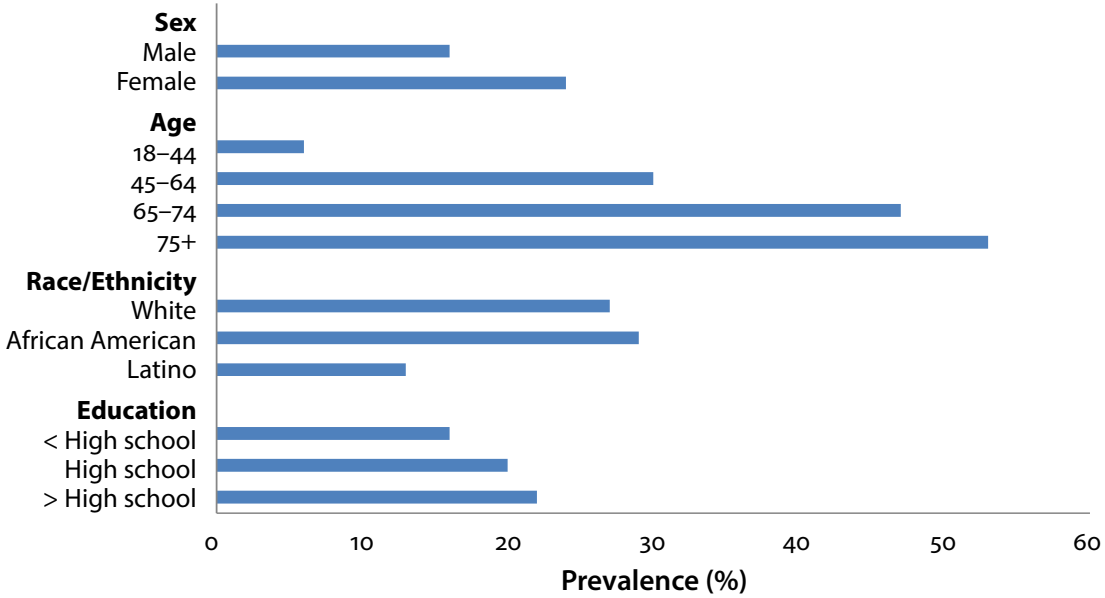


Source: Centers for Disease Control and Prevention, California Behavioral Risk Factor Survey, 2009

Arthritis: Unequal Impacts

- In California, 54 percent of African Americans with arthritis and 42 percent of Latinos with arthritis reported fair/poor health or limited activity in the previous 30 days, versus 21 percent of Whites.
- Arthritis affects more women (24%) than men (16%).
- Arthritis affects older adults: 53 percent of adults 75 years or older have arthritis, whereas only 30 percent of adults between 45 and 64 have arthritis.

Figure 48. Social determinants influence the share of California adults who have arthritis, 2009



Source: Centers for Disease Control and Prevention, California Behavioral Risk Factor Survey, 2009

Obesity

What is obesity?

For adults, overweight and obesity are determined by using weight and height to calculate a number called the "body mass index" (BMI). BMI is used because, in most people, it correlates with their amount of body fat.

- An adult who has a BMI between 25 and 29.9 is considered overweight.
- An adult who has a BMI of 30 or higher is considered obese.

Obesity is a chronic disease and increases risk for and aggravates cardiovascular disease, cancer, diabetes, and arthritis, among others.

Although there are a number of risk factors associated with obesity, ranging from genetics to individual behavior, the composition and structure of neighborhoods, levels of poverty, and other social factors impact a person's ability to maintain a healthy lifestyle and weight.

Figures 49a and 49b illustrate how quickly obesity rates are increasing in California.

Figure 49a. Obesity prevalence by body mass index, adults, 2004

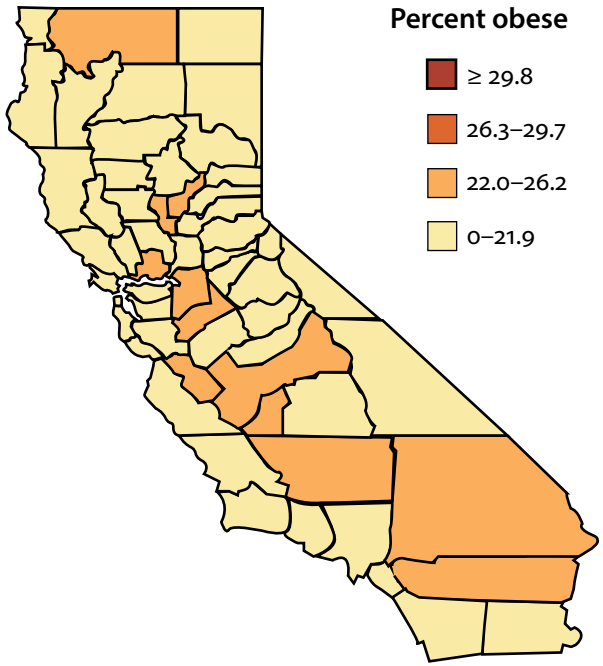
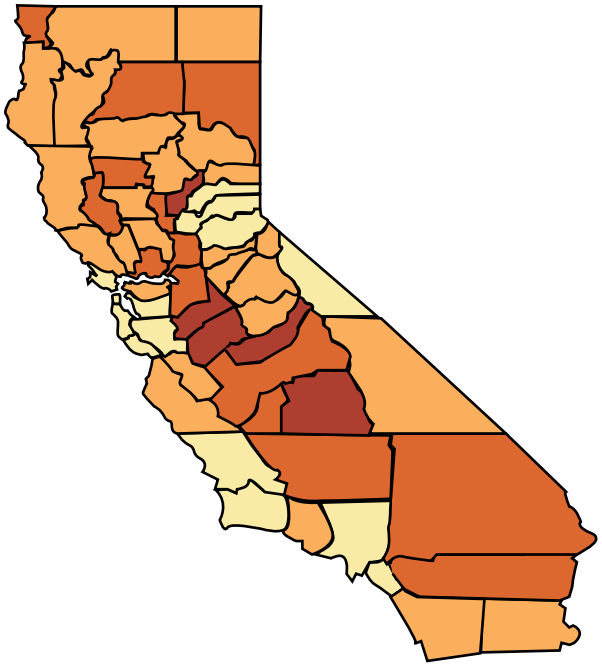


Figure 49b. Obesity prevalence by body mass index, adults, 2009



Source: Centers for Disease Control and Prevention: National Diabetes Surveillance System, 2012

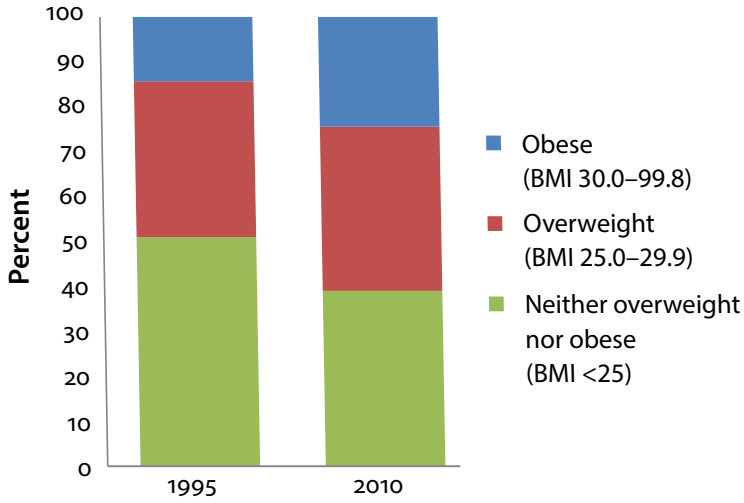
Obesity, continued

Obesity is rising in California and nationwide.

- In 1984, 40 percent of California adults were overweight or obese; in 1995, 50 percent were overweight or obese, and in 2010, almost 60 percent were overweight or obese.
- One in every nine California children, and one in three teens, are already overweight or obese.

According to the California Center for Public Health Advocacy, costs to California resulting from physical inactivity, obesity, and overweight were estimated at $41.2 billion in 2006. A five-percent decrease in each of these risk factors could result in annual savings of nearly $2.4 billion.

Figure 50. Prevalence of obesity/overweight in California adults, 1995, 2010



Source: Centers for Disease Control and Prevention, California Behavioral Risk Factor Survey, 2012

Obesity: Unequal Impacts

Obesity rates are highest among racial and ethnic minorities.

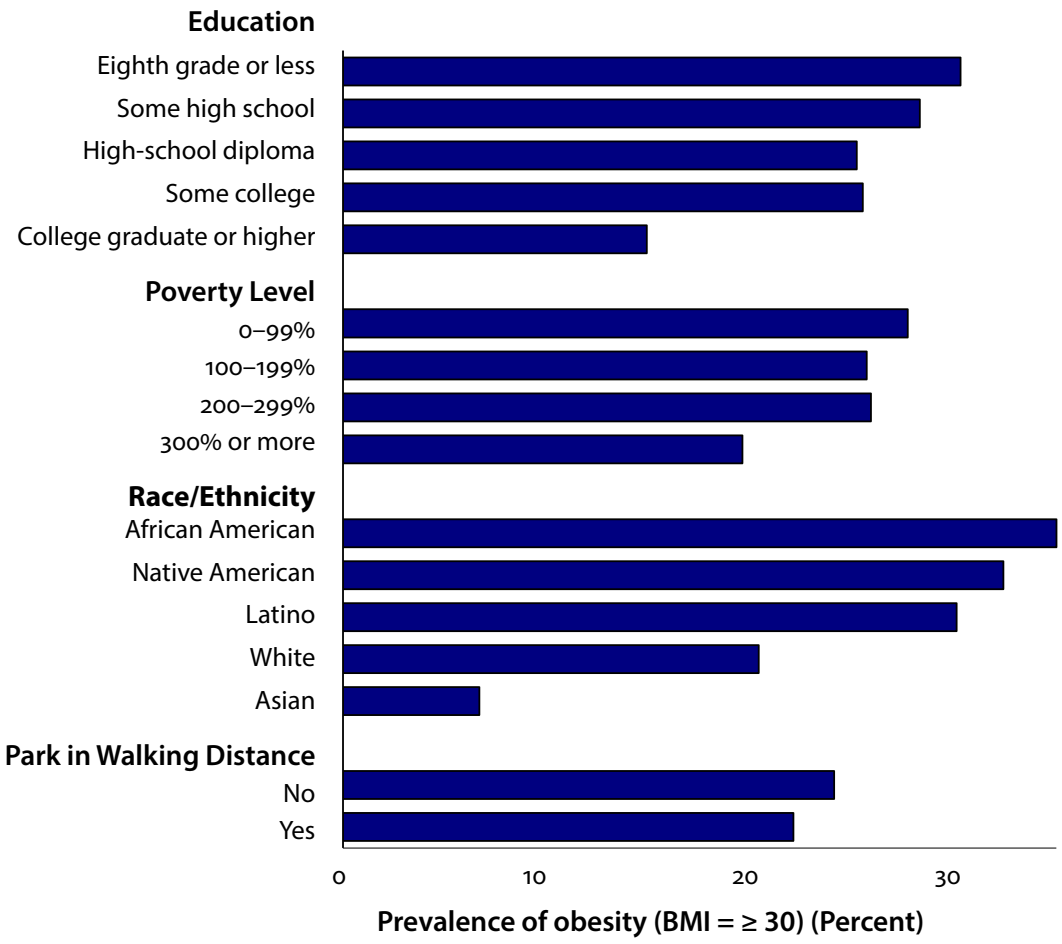
- African Americans have a rate that is over five times greater than that of Asians, the population with the lowest prevalence of obesity.
- 76 percent of Native Americans in California are overweight or obese.

Where people live, work, and play impacts obesity.

- In Imperial County, 73 percent of adults are overweight or obese (highest in the State), versus only 43 percent of San Francisco County adults.
- Within counties, residents of low-income neighborhoods have higher obesity rates.
- In West Los Angeles, approximately three in every ten adults are overweight or obese, versus more than seven in every ten adults in South Los Angeles.

Californians with less than a high-school diploma are twice as likely to be obese as college graduates.

Figure 51. Social and environmental determinants influence the share of California adults who are obese, 2007



Source: University of California, Los Angeles, California Health Interview Survey, 2007

Childhood Obesity

Overweight and obesity rates in California's youth tripled over the past 30 years but have been stable from 2005 to 2010.

- In 2010, 38 percent of public school children in grades 5, 7, and 9 had a body mass index (BMI) in the overweight or obese range.

The high overweight and obesity rates in children vary greatly by county, neighborhood, and race/ethnicity.

- Marin County has the lowest rate (25%).
- Imperial County has the highest rate (47%).
- The two cities with the highest and lowest rates are both in Los Angeles County: (Huntington Park [53%] and Manhattan Beach [11%]).

Breastfeeding provides reduced risk for obesity and obesity-related chronic diseases such as diabetes and asthma, but most California newborns are not exclusively breastfed after delivery.

- There is a 15–30 percent reduction in adolescent and adult obesity rates if any breastfeeding occurred in infancy, compared with no breastfeeding.
- In 2010, only 46 percent of California mothers were exclusively breastfeeding 1 month after delivery, and 32 percent were exclusively breastfeeding 3 months after delivery.
- Breastfeeding rates are lowest among Latina and African-American women.

As a direct result of the obesity epidemic, health care providers are seeing a significant rise in chronic diseases in children.

- Obese children are more than twice as likely to have type 2 diabetes as children of normal weight.
- If current obesity trends continue, experts warn that one of three American children born in 2000—and half of all children from ethnic/racially diverse populations—will develop type 2 diabetes during his/her lifetime.

Figure 52a. Prevalence of obesity among low-income children, ages 2–4, by race/ethnicity, California, 2009

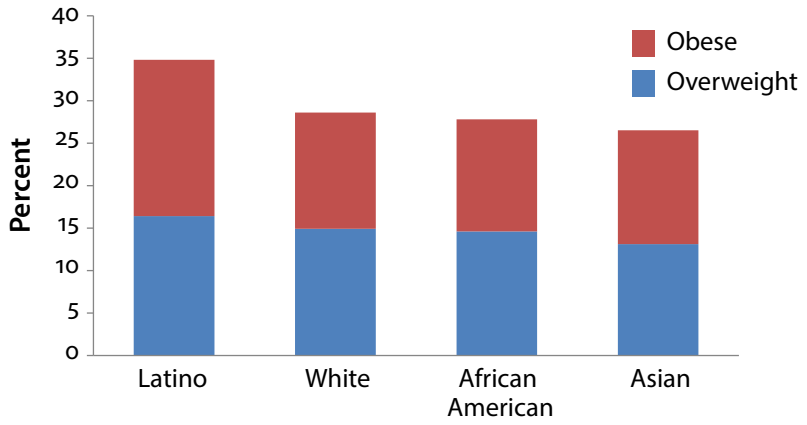
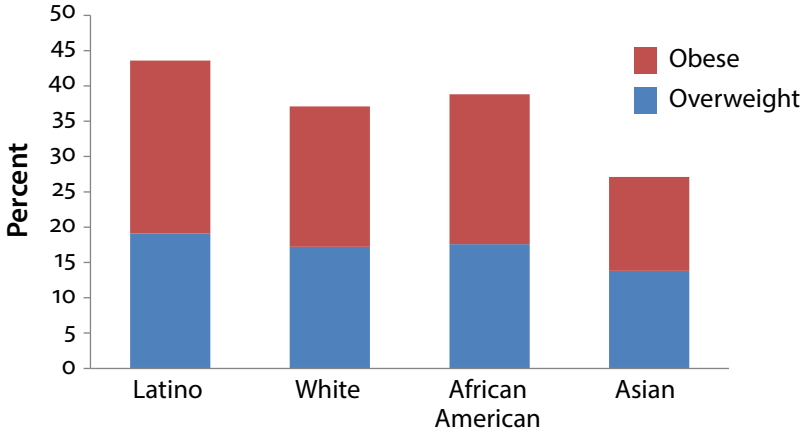


Figure 52b. Prevalence of obesity among low-income children, ages 5–19, by race/ethnicity, California, 2009



Source: California Department of Public Health, 2009 Pediatric Nutrition Surveillance System Data Tables

Oral Health

"You're not healthy without good oral health." *–C. Everett Koop, former U.S. Surgeon General*

What is oral health?

Oral health, also known as dental health, refers to all aspects of the health and functioning of the mouth, especially the teeth and gums. Oral health is essential to the overall health of an individual. Poor oral health increases risk for heart disease and hinders control of blood sugar in diabetics.

Poor oral health can have adverse mental health impacts, and may inhibit an individual's ability to smile, taste, chew, and communicate. Ultimately, this may lead to low self-confidence and discrimination in the job market. Dental disease imposes financial and social burdens as treatment is costly, and both children and adults may miss time from school or work because of dental pain.

Tooth decay is the single most common chronic disease of childhood in the United States.

- According to the National Oral Health Surveillance System, 71 percent of California third-grade students have experienced tooth decay—the third highest in the nation.
- 11.6 percent of California's children under age 12 have never been to the dentist.

Tooth decay in children can be largely prevented by:

- Decreasing the consumption of sugar-sweetened beverages;
- Improving access to a community fluoridated water supply;
- Ensuring regular preventive medical and dental care for all California children.

Providing simple and affordable preventive dental care is cost beneficial.

- The American Dental Hygenist's Association has determined that $1 in preventive care saves as much as $50 in restorative and emergency dental care.
- California students miss an estimated 874,000 school days annually due to oral health problems, and these absences cost local school districts $29.7 million/year, according to the UCLA Center for Health Policy Research.

Oral Health: Unequal Impacts

Poorer children are more likely to have severe tooth decay and painful teeth.

- About one in three low-income children have untreated tooth decay compared to about one in five higher income children.
- Nearly 40 percent of children with no insurance had untreated decay compared with 21 percent of children with private insurance.
- Children who participated in free and/or reduced-price lunch programs had a higher prevalence of decay (72% vs. 52%).

Latino children have the highest risk for oral health problems.

- Seventy-two percent of Latino children screened in 2005 had experienced tooth decay, and 26 percent had cavities in more than seven teeth. This is nearly twice the rate of non-Latino Whites.
- Latino children are less likely to have private dental insurance than non-Latino Whites.

Figure 53a. Oral health of California's kindergarten and third grade children by race/ethnicity, 2005

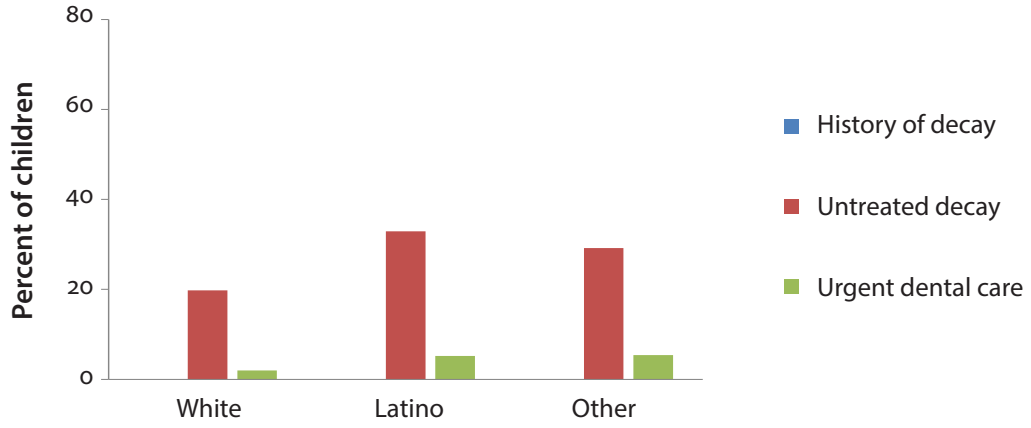
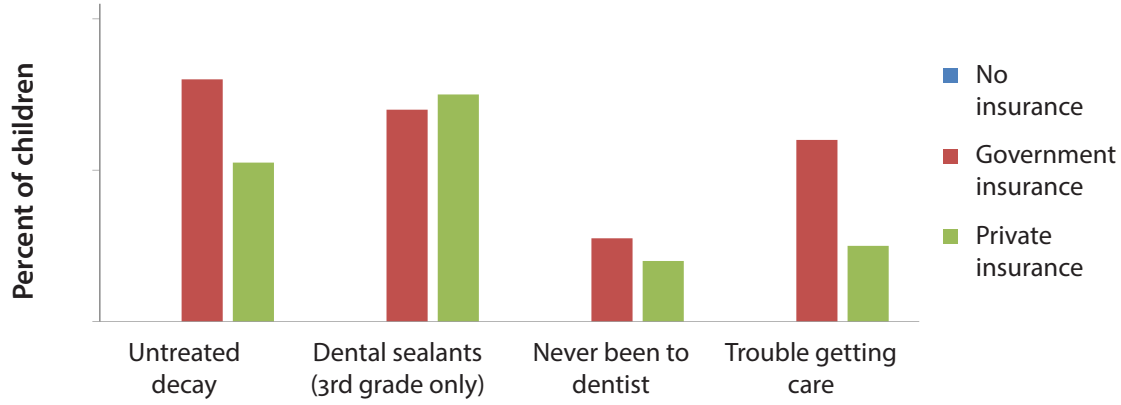


Figure 53b. Oral health of California's kindergarten and third-grade children by dental insurance status, 2005



Source: Dental Health Foundation, 2006

Mental Health

What is mental health?

The World Health Organization defines mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community." Depression is the focus here because it is common and affects many Californians with chronic disease.

Major depression is a common and treatable condition, but if untreated, it can have serious consequences.

- 12 percent of Californians have been told they have depression.
- 9 percent of Californians have thought about committing suicide.
- 11 percent of Californians have seen a health care provider for emotional–mental and/or alcohol–drug issues in the past year.

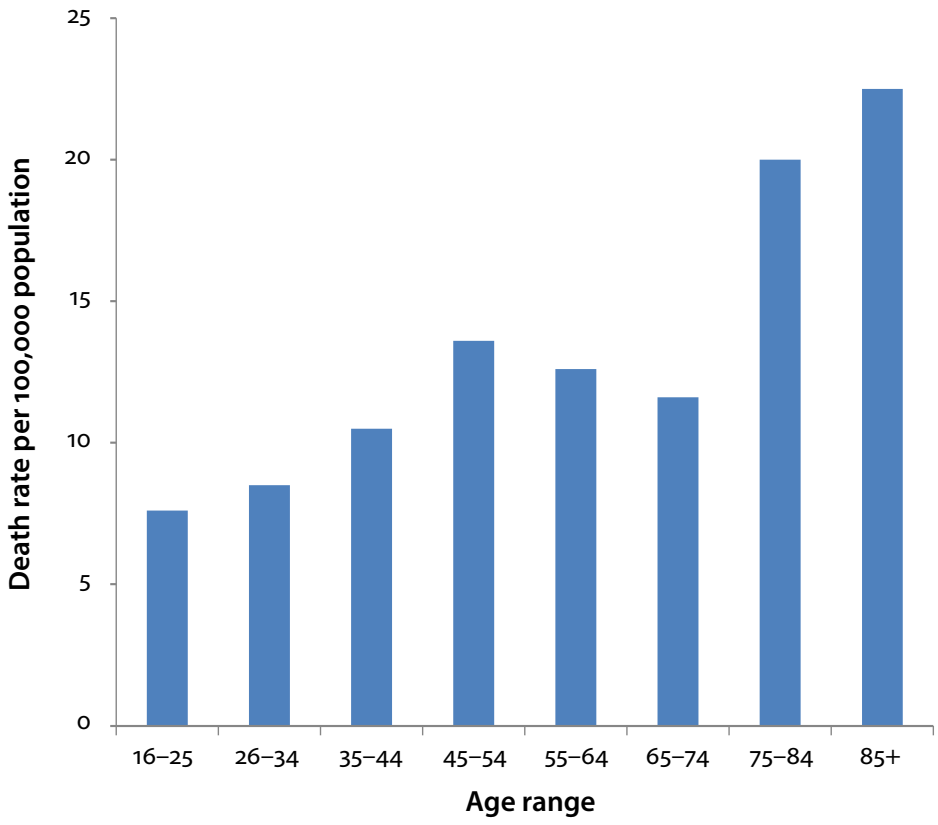
Suicide is a leading cause of death among young people in California.

- There were 3,835 suicides in California in 2010.
- Suicide is the third leading cause of death for 15–34 year-old men, and the second leading cause of death in 20–24 year-old women.

Depression is more common among persons with chronic disease and can worsen existing chronic diseases.

- Depression is a risk factor for the development of cardiovascular disease, for adverse outcomes after cardiovascular surgery, and other chronic disease.

Figure 54. Suicide rates by age, California, 2005



Source: California Department of Mental Health, 2007

Mental Health: Unequal Impacts

Mental health impacts all races and ethnicities and all socioeconomic and educational levels. However, issues such as stress and trauma related to immigration, racial discrimination, generational poverty, language barriers, and cultural differences play an especially important role, not only in the risk of having mental illness, but also in access to culturally and linguistically appropriate quality mental health services.

The percentage of Californians who report needing services varies; however, access is limited.

- During fiscal year 2007–2008, the California Department of Mental Health reported that African Americans used services relatively more than Whites and Latinos, but less than 1 percent of California's African-American population used Department of Mental Health services.

Mexican Americans have even more dramatic mental health disparities compared to other Latino groups and other ethnic minorities, due in large part to lack of availability, accessibility, and affordability.

- Almost three of four Mexican Americans who have a diagnosable mental disorder and need services remain untreated.
- Only 9 percent of Mexican immigrant agricultural workers who need mental health counseling obtain services. Members of this population tend to receive care only when they are extremely dysfunctional or a danger to themselves or others.

Rapid assimilation to American culture can be associated with negative mental health outcomes.

- Newly arrived Mexican-origin Latino immigrants in California have better mental health status than Latinos born in the United States who are the same age. As immigrants live longer in the United States, this protective effect wears off, and mental health outcomes become similar to or worse than their U.S.-born counterparts.

More Native Americans and African Americans under 35 have seriously thought about committing suicide (27% and 18%, respectively) than other groups, and White men have the highest age-adjusted rates of suicide (22 per 100,000 population) among all racial/ethnic groups.

Exposure to Environmental Pollution

Exposure to environmental pollutants includes living close to busy roads, energy plants, contaminated sites, and both agricultural and in-home pesticide use. Poor and minority populations in California are disproportionately exposed.

Pesticides are substances that are designed to control or destroy specific living organisms. About 350 pesticides are used on the foods we eat and to protect our homes and pets.

California leads the nation in the number of pounds of pesticides applied.

- 173 million pounds of pesticides were reported applied statewide in 2010, an increase of nearly 15 million pounds (10%) from 2009.
- The most pesticide pounds were applied in Fresno, Kern, Tulare, San Joaquin, and Madera Counties in 2010.

Pesticides cause acute and chronic health problems.

- Long-term exposures have been linked to chronic conditions such as adult and childhood cancers, Parkinson's disease, reproductive harm, and developmental problems in children.
- Each year pesticides poison hundreds of workers.
- 1,474 occupational pesticide illnesses were reported in 48 of the 58 California counties from 1998 to 2006.
- 84 percent of these pesticide illnesses were reported by farmworkers.

The counties that were the top pesticide users and the counties that reported the greatest number of illnesses related to pesticides all have similar demographic characteristics.

They are all:

- Impoverished areas of the state.
- Have a larger percentage of Latinos than the state average.
- Have lower educational attainment than the rest of the state.

Poor and minority populations are disproportionately affected by pesticide use inside their own homes.

Poor housing conditions in low-income homes, such as overcrowding and disrepair, are associated with pest infestations and increased home pesticide use in both urban and agricultural communities. Children and adolescents are more susceptible to pesticides because they absorb more pesticides per pound of body weight.

Figure 55. All agricultural pesticides applied in California in pounds, 2008

Source: California Department of Public Health, California Environmental Health Tracking Program, 2008

Substance Use Disorders

What are substance use disorders?

Substance use disorders are disorders of intoxication, dependence, abuse, and withdrawal caused by various legal and illegal substances.

Binge drinking contributes to interpersonal violence, death, illness, and sexually transmitted diseases.

- Binge drinking is defined as five or more drinks on one occasion for men or four or more drinks on one occasion for women.
- Binge drinkers are 14 times more likely to report driving drunk than non-binge drinkers.
- In 2010, 29 percent of California adults reported binge drinking in the past 30 days.
- 88 percent of impaired driving events are caused by binge drinkers.

Substance abuse is a major cause of disease in California regardless of age, race/ethnicity, or socioeconomic status.

- There were 311,575 hospitalizations and $342,853 spent on emergency department visits due to alcohol and other drugs in 2010.

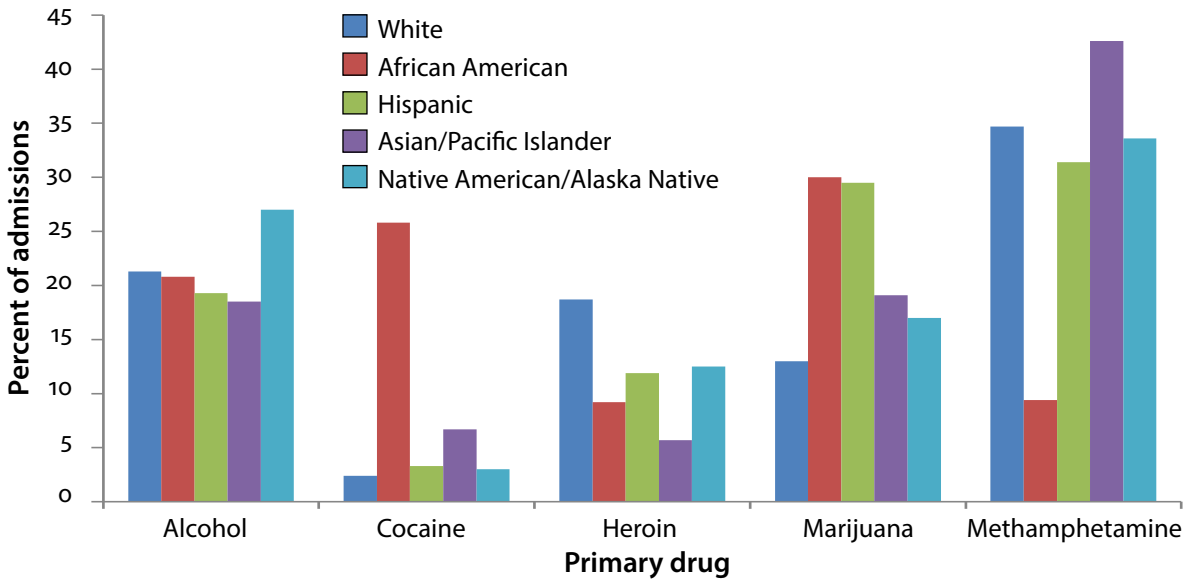
From July 1, 2010, through June 30, 2011, there were 179,332 in-patient and out-patient admissions for substance abuse to publicly funded and/or monitored treatment services.

- Forty-seven percent were parents of children under the age of 18.
- Nearly half (43%) were referred through the criminal justice system.
- Only 35 percent reported being in a stable living environment.
- Sixteen percent reported having one or more physical or mental disabilities.
- Three percent were veterans.

For those in treatment, the type of drug reported varies based on demographics.

- Methamphetamine is the primary drug reported among men and women and all racial/ethnic groups except for African Americans, for whom marijuana is the primary drug.
- Nearly 7 of 10 of youth under 18 report marijuana as the primary drug.
- Alcohol is the top primary drug reported in individuals 65 and older.

Figure 56. Primary drug reported on admission to state-funded and/or monitored treatment facilities, by race/ethnicity, California, 2010–2011



Source: California Department of Alcohol and Drug Programs, 2012

Community in Focus: The Vietnamese Community of Santa Clara County

The Vietnamese community in Santa Clara County experiences health and social disparities not experienced by other Asian residents in the county and the state.

- Vietnamese residents have a higher rate of poverty than all other Asians/Pacific Islanders.
- English proficiency is limited, which can limit economic opportunities and cause difficulty navigating the health system.
- Because of lower income levels, many Vietnamese are at risk for food insecurity.
- Vietnamese residents face housing challenges: From 2007 to 2009, the majority of Vietnamese renters (54%) spent 30 percent or more of their household income on rent, the second highest rate among the major racial/ethnic groups.

Vietnamese residents have many unique and emerging needs.

- In a 2009 needs assessment of the county's Vietnamese community, leaders identified domestic violence, substance use, problem gambling, intergenerational conflict, and youth gang membership as causes for concern.

Vietnamese residents face significant health challenges.

- Vietnamese adults had a higher incidence rate and death rate for several types of cancer, compared to adults from other major racial/ethnic groups.
- Vietnamese adults had the second highest lung cancer incidence rate and death rate, compared to other major racial/ethnic groups.
- In 2011, nearly one in four Vietnamese men were smokers.
- In 2011, more than one in four Vietnamese adults (26%) in the county lacked health care coverage.

III. The Road Ahead

Highlights

- Millions of Californians have multiple chronic diseases.
- Chronic diseases and injuries affect families and communities unequally.
- Health care costs are increasing
- Money could be saved with prevention.

What Is in this Section?

This section summarizes the main points of this report, highlights the challenges faced by individuals and communities, models public health efforts already underway, and describes ways in which we can move forward together to address the burden of chronic disease and injury.

The toll poor health is taking on Californians is untenable, the health disparities that exist within our country and our state are indefensible, and the pace of health care spending is unsustainable. Chronic disease and injury account for a majority of these negative consequences.

Forecasting the future.

As a state and as a nation we are becoming increasingly unhealthy, and health disparities are growing.

- The obesity rate nationwide is 35 percent, but in 2030, it is expected to be 42 percent.
- The CDC recently reported that by 2050, one in three to five Americans will have diabetes, depending on racial and ethnic background. The current rate in California is one in ten adults.

Health care costs in the United States are rising.

- As baby boomers age, a larger percentage of Californians will be over 65, and they will require more health care resources.
- According to the Centers for Medicare and Medicaid Services, by 2019, national health spending is expected to reach $4.5 trillion and comprise 19 percent of the gross domestic product (GDP). In 2008, national health spending was $2.3 trillion and comprised 16 percent of the GDP.
- The public share of total health care spending is expected to rise from 47 percent in 2008 to nearly 52 percent by 2019.

Money could be saved with prevention.

Nationwide, $550 billion could be saved between 2012 and 2030 if the obesity rate stayed the same or decreased.

Preventing and controlling chronic disease and injury require more than providing people with information to make healthy choices.

Although an individual's knowledge and behavior change are crucial and should always be encouraged, it is imperative that we start thinking about individuals in the context of their family, their community, and their environment.

Consider a woman with diabetes and heart disease. The impacts of her diseases are not isolated. Her diseases affect her well-being, and through her, her family, community, employer, and the health care system. Conversely, her surroundings constantly affect her physical, mental, and emotional health. The safety and economic stability of her community and family, the air she breathes, the transportation she has access to, the parks and markets she can walk to, the amount of money she makes, and more, all affect her health every day.

Almost half of Californians with a chronic disease have more than one chronic disease, and the 7 million Californians who have one chronic disease are at greater risk for getting another during their lifetimes.

Having multiple chronic diseases tends to have a compound effect on an individual, their family, their community, and society. For example, a woman with type 2 diabetes is also likely to be obese, have arthritis, and be at risk for having a stroke or heart attack. This combination could lead to disability from pain or other side effects, which affect employment, greater financial pressure from health care and medication costs, increased stress, or risk of mental illness.

Communities must reinforce and support health, and government partnerships must assure conditions in which people can be healthy. Health results from choices that people are able to make given the options from which they can choose.

Conditions in the social and physical environment determine the range of options that are available, their attractiveness, and their relative ease or difficulty of use.

This web of interdependence of the individual, community, and numerous sectors contributes to our individual health, as well as our community health, economic stability, and success as a state.

We will succeed in creating healthy environments when the air and water are clean and safe; when housing is safe and affordable; when transportation and community infrastructure provide people with the opportunity to be active and safe; when healthful food choices are made available to all; when people have access to safe jobs with a living wage; and when each Californian has access to quality health care services.

Californians are already addressing the social, environmental, and chronic disease health disparities in their communities.

There is much work to be done, but many California communities are already working to make their communities healthier for all residents. The following two examples represent the broad spectrum of health innovation that is occurring in California to achieve health for all.

Kern County

Highlighted in the "Community In Focus" Section of this report, Kern County has responded to critical health concerns of its community. In September 2011, the county was awarded a five-year Community Transformation Grant (CTG) by CDC to support and promote active living and healthy eating, tobacco-free living, and clinical and other preventive services. The grant provides for a "Capacity Building Project to Engage Community" through a range of community strategies including:

- Coalition building and planning;
- Community health assessment;
- Capacity building;
- Strengthening the leadership team; and
- Promoting and educating stakeholders about CTG program activities and a common vision for community wellness and prevention.

Alameda County

Alameda County, also highlighted in a "Community in Focus" section, is addressing the health inequities in their county. In 2008, the Alameda County Health Department published *Life and Death from Unnatural Causes: Health and Social Inequity in Alameda County.* This seminal work, as well as the *Framework for Achieving Health Equity,* adapted from the *Bay Area Regional Health Inequities Initiative,* has guided their efforts. The Health Department is working to achieve health equity through several strategies:

- Transforming their own organization through institutional change;
- Working with residents on neighborhood initiatives and building partnerships to address the root causes of health inequities;
- Addressing local, state, and federal policies that impact social and health inequities;
- Supporting this innovative work with data and research; and
- Connecting health department programs and services to all of these areas.

Partnerships for a Healthy California

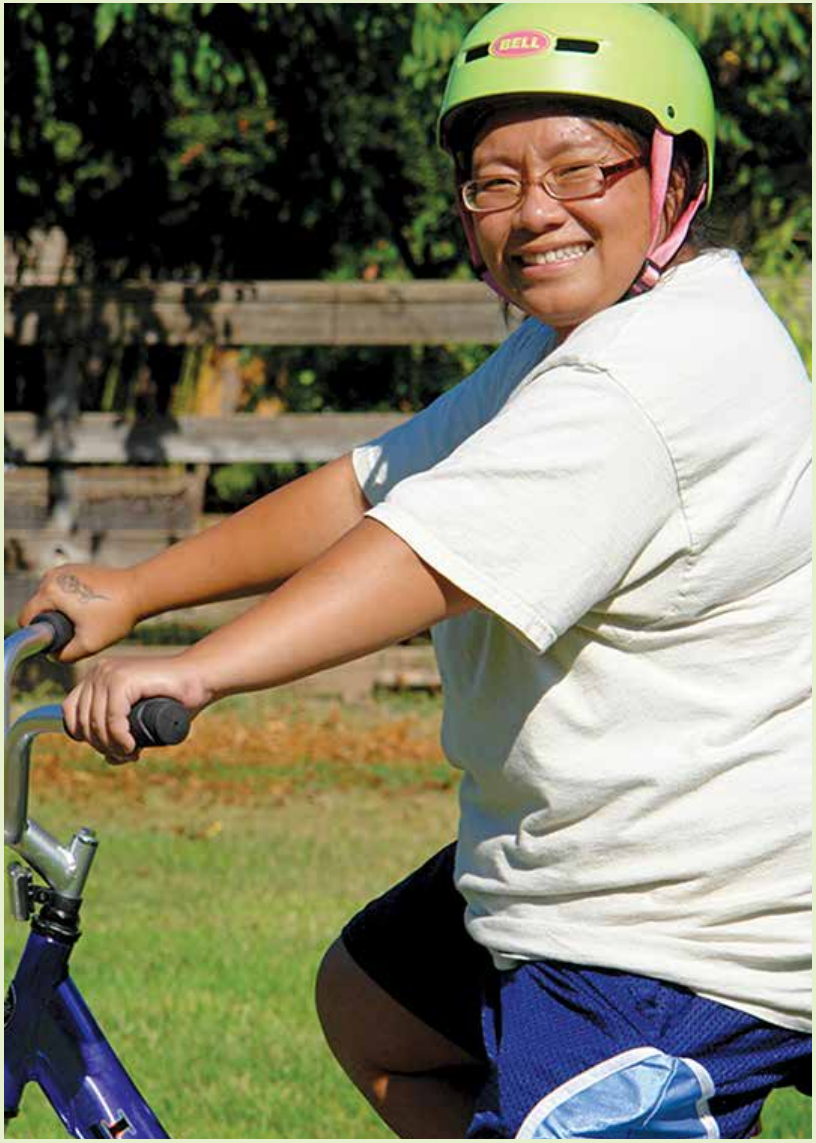
It is imperative that we all collaborate—governmental agencies and non-governmental organizations, foundations, local agencies, and community and faith-based organizations—to eliminate health disparities and make California a healthier place to live, work, learn, and play. These partnerships will strengthen the capacity for each of us to become more effective in our common goal of making California healthier for all.

Our work will be guided by the National Prevention Strategy, state initiatives addressing chronic disease, such as Let's Get Healthy California Taskforce, Health in All Policies, and Healthy California 2020 Recommendations, as well as chronic disease prevention initiatives by partner organizations.

Final Thoughts

The problems discussed in this report are complex and multifactorial. Often, the solutions to lower the burden of chronic disease and eliminate health disparities are not simple or the responsibility of any one organization or government department. The answers are being developed and implemented collaboratively in many settings to make sustainable change and improve the health of communities. Good health is a fundamental component of quality of life, and a healthy population is a critical aspect of a thriving California economy.

This report provides a baseline snapshot of the current state of chronic disease in California, and highlights health disparities and the social and environmental disparities that contribute to them. We hope this empowers us collectively to work collaboratively and build capacity to create healthy and safe environments, improve clinical and community preventive services, and achieve health equity. We all benefit when everyone has the same opportunity to live a long, healthy, productive life.



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Glossary

Incidence: The number of new cases in the population in a given time period, usually expressed as a rate.

Mortality: Death

Mortality rate: The number of people dying from a disease during a specified time period, divided by the total number of people in the population during that time period. This is a way of standardizing so that comparisons can be made between geographic areas with different populations. For example, Los Angeles County has by far the largest population of any county in California so they would be expected to have the greatest number of health outcomes (deaths, hospitalizations, etc.), compared to less populated counties. Thus, to assess the risk, population must be taken into account.

Morbidity: The presence and/or severity of a disease or health condition in question.

Morbidity rate: Similar to mortality rate, the number of people compromised by a disease during a specified time period, divided by the total number of people in the population during that time period.

Age-adjusted rate: Similarly, certain geographic areas have older populations and we would expect different health outcomes in these areas. To control for age differences, an adjustment is made by applying a standard population, usually the 2000 U.S, "standard million" population, to each population being compared.

Prevalence: The number of existing cases of the disease in the population at a specified time, usually expressed as a rate.

Percentile: The percentile is a value ranging from 1 to 100 that indicates the proportion of the data that lies below it. For example, a value at the 60th percentile means that 60 percent of the observations lie below this value and thus, 40 percent lie above it.

Risk factor: A personal habit/behavior or characteristic, clinical condition, or environmental exposure that is associated with an increased probability or severity of disease.