Chapter 6

Chronic Diseases

Chronic diseases, such as heart disease, cancer, and diabetes, are the leading causes of death and disability in the nation. These diseases account for 7 of every 10 deaths and affect the quality of life of 90 million Americans. Although chronic diseases are among the most common and costly health problems, they are also among the most preventable. Adopting healthy behaviors such as eating nutritious foods, being physically active, and avoiding tobacco use may prevent or control the effects of many of these diseases.[1]

Information in this chapter is based on local data when possible. State and national estimates have been used to estimate county prevalence when local data were unavailable.

Highlights of this chapter include:

- Heart disease and cancer are the leading causes of death in Sonoma County, and were responsible for over half (50.7%) of all deaths during 2000-2002.
- The death rate for heart disease has decreased significantly over the last four years. For 2000-2002, Sonoma County met the Healthy People 2010 goal of heart disease death rate below 166.0/100,000.
- The age-adjusted death rate for lung cancer in Sonoma County for the period 2000-2002 was significantly higher than the comparable rate for California.

In this chapter:

Heart Disease

Heart disease is the leading cause of death in California and in the nation. Until 2000, it was also the number one cause of death in Sonoma County. Since then, the age-adjusted death rate for heart disease has decreased significantly (Figure 6.1). In 2001 and 2002 cancer was the leading cause of death in Sonoma County.

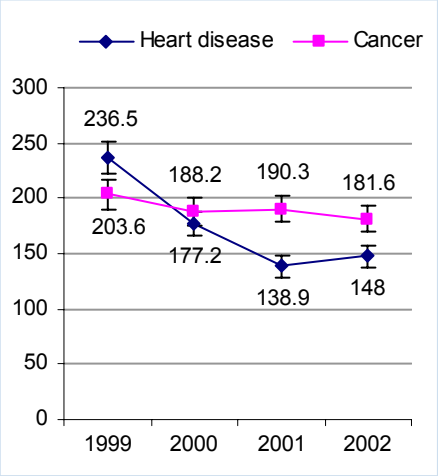
In the 2001 California Health Interview Survey, an estimated 25,000 adults (7.3%) age 18+ in Sonoma County reported that they had been diagnosed with heart disease. This is similar to the California prevalence of heart disease (6.9%).[2]

In 2000-2002, heart disease was a leading cause of death for both men and women in Sonoma County. The age-adjusted death rate for heart disease was significantly higher for Sonoma County males (237.6/100,000) than for females (156.4/100,000).

The age-adjusted death rate for heart disease was significantly higher for non-Hispanic, Whites in Sonoma County than Hispanics (161.9/100,000 compared to 93.1/100,000).

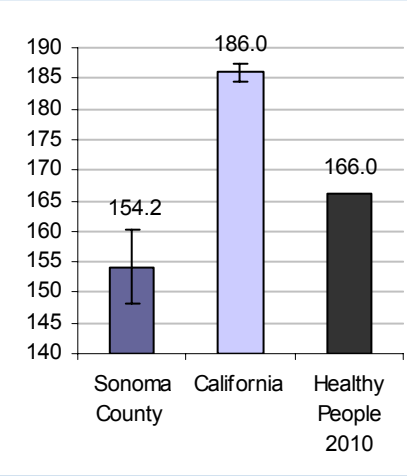
In 2000-2002, the Sonoma County death rate for heart disease was significantly lower than the California rate (Figure 6.2). Sonoma County met the Healthy People 2010 goal of 166.0/100,000.

Figure 6.1
Heart Disease and Cancer Death Rates*, Sonoma County 1999-2002



*Rates are age-adjusted and are per 100,000 population.
Source: California Department of Health Services, vital statistics death records 1999-2002.

Figure 6.2
Heart Disease Death Rate*, Sonoma County and California 2000-2002



*Rates are age-adjusted and are per 100,000 population.
Source: California Department of Health Services, vital statistics death records 2000-2002.

Table 6.1
Modifiable Risk Factors for Heart Disease by Prevalence*, Adults Age 18+, Sonoma County and California 2001

	Sonoma County	California	Healthy People 2010
Tobacco use (smoking)	18.1%	17.1%	12%
High blood pressure	23.7%	22.2%	16%
High cholesterol*	29.5%	32.2%	17%
Physical inactivity**	21.3%	28.5%	20%
Obesity	14.1%	19.3%	15%
Diabetes	4.8%	6.2%	2.5%

*Asked of adults with high blood pressure/heart disease. The Healthy People 2010 goal is for all adults in the population.
**Physical inactivity defined as no vigorous/moderate activity at all most days of week.
Source: California Health Interview Survey, Sonoma County and California 2001.

In 2002, there were approximately 4,000 hospitalizations for heart disease in Sonoma County. The age-adjusted hospitalization rate for heart disease was significantly higher for Sonoma County males than for females (909.0/100,000 compared to 559.4/100,000, respectively). Additionally, the age-adjusted hospitalization rate for heart disease was significantly higher for Sonoma County White, non-Hispanic residents than for Hispanic residents (724.9/100,000 compared to 225.9/100,000, respectively).[3]

Primary and Secondary Prevention

The American Heart Association has identified several risk factors for heart disease. Some of these risk factors can be modified (Table 6.1), treated or controlled, and some such as age and gender cannot. The more risk factors you have, the greater your chance of developing heart disease.[4]

In 2001, about one in four Sonoma County adults reported having been diagnosed with high blood pressure. About 62% of these individuals reported taking medication to treat their high blood pressure. In addition, 30% of Sonoma County adults who reported having high blood pressure or heart disease also reported having high cholesterol.[5]

Table 6.2
Cancer: New Diagnoses and Deaths by Type, Sonoma County 1998-2002

	New diagnoses	Deaths
All cancer	11,443	4,595
Lung	1,521	1,192
Colon & rectum	1,275	458
Breast	1,906	367
Prostate	1,386	280

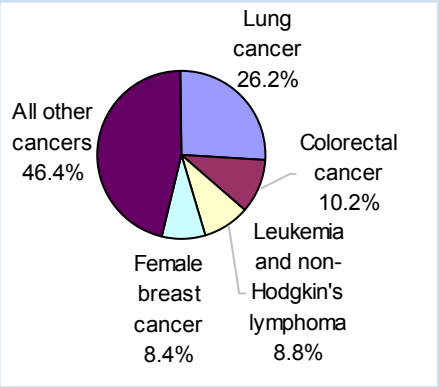
Source: California Cancer Registry, Cancer in Northern California, 1998-2002.

Cancer

For 2000-2002, cancer was the leading cause of death in Sonoma County and the second leading cause of death among adults in the nation. In addition to cancer deaths (mortality), new cancer diagnoses (incidence) also contributed to the annual burden of the disease. According to the most recent cancer statistics from the California Cancer Registry, 11,443 new cancers were diagnosed and 4,595 cancer deaths occurred in Sonoma County from 1998-2002 (Table 6.2).[6]

With advances in early diagnostic procedures and treatment, survival rates for many cancer have improve over the past two decades. The five-year survival rate for several cancers for which the American Cancer Society (ACS) has specific early detection recommendations (breast, colon, rectum, prostate, testis, oral cavity and skin) is about 82%. (The five-year survival rate represents persons living five years after cancer diagnosis, whether disease free, in remission or under treatment.) If all Americans had early detection according to ACS recommendations, the five-year survival rates for people with these diseases would increase to about 95%.[7]

Figure 6.3
Leading Causes of Cancer Deaths, Sonoma County 2000-2002



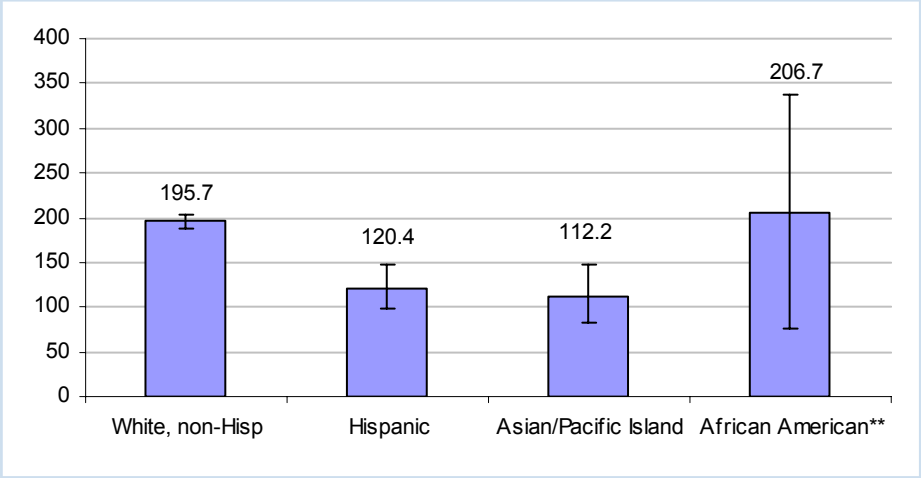
Source: California Department of Health Services, vital statistics death records 2000-2002.

The Sonoma County age-adjusted death rate for all cancers combined during 2000-2002 was significantly higher than the California cancer death rate (186.5/100,000 compared to 172.7/100,000, respectively). Sonoma County did not meet the Healthy People 2010 goal for cancer deaths (159.9/100,000).

Lung cancer accounted for more than one in every four cancer deaths and occurred twice as frequently as the next highest cause of death from cancer (colorectal cancer, 10.2%) (Figure 6.3).

In Sonoma County, White non-Hispanics had a significantly higher age-adjusted cancer death rate than Hispanic or Asian/Pacific Islander racial/ethnic groups (Figure 6.4). Small numbers of cancer deaths for African Americans resulted in unstable death rates. Rates for American Indian/Alaska Natives were not calculated due to very small numbers.

Figure 6.4
Cancer Death Rates* by Race/Ethnicity, Sonoma County 2000-2002



*Rates are age adjusted per 100,000 population.
**Due to small numbers rates are unstable. Data for American Indian/Alaska Native are not provided due to very small numbers.
Source: California Department of Health Services, vital statistics death records 2000-

Lung Cancer

Lung cancer is the leading cause of cancer-related death for both men and women in Sonoma County, accounting for over one quarter of all cancer deaths in 2000-2002. From 1998 to 2002, there were 1,521 newly diagnosed cases of lung cancer and 1,192 deaths in Sonoma County.

The age-adjusted death rate for lung cancer in Sonoma County for the period 2000-2002 was significantly higher than the California rate (49.6/100,000 compared to 44.8/100,000, respectively).

Age-adjusted lung cancer death rates for men remained unchanged from 1999-2001 to 2000-2002 (55.8/100,000 and 56.2/100,000) as they did for women (44.3/100,000 and 45.2/100,000). Rates among men remained higher than for women in both time periods.

More than 76% of the deaths from lung cancer in Sonoma County occurred to individuals age 65 and older.

Sonoma County did not meet the Healthy People 2010 goal for lung cancer deaths in 2000-2002 (44.9/100,000).

Colorectal Cancer

From 1998-2002, Sonoma County had 1,275 new diagnoses and 458 deaths from colorectal cancer.

The age-adjusted death rate for colorectal cancer did not change significantly from 1999-2001 (19.4/100,000) to 2000-2002 (18.1/100,000). During this time, Sonoma County males had a significantly higher death rate for colorectal cancer than females (24.9/100,000 compared to 15.6/100,000, respectively).

Breast Cancer

Among women nationwide, overall deaths from breast cancer dropped steadily during the 1990s, according to a report from the American Cancer Society. This improvement in survival is attributed to progress in both early detection and better treatments for the disease. The latest figures show more than 90% of breast cancers are now diagnosed at a local or regional stage, when five-year survival rates are 97% and 79%, respectively.[8]

However, in 2000-2002 breast cancer was the second leading cause of cancer-related death in females, and the third leading cause of cancer death in Sonoma County.

Table 6.3
Preventive Cancer Screening, Sonoma County 2001 and Healthy People 2010

	Sonoma County	Healthy People 2010 Goal
Women age 18+ who have had cervical cancer screening in past 3 years	84.8%	90%
Women age 40+ who have had a mammogram in the past 2 years	81.0%	70%
Adults age 50+ who have ever received a colonoscopy /sigmoidoscopy	49.0%	50%
Adults age 18+ that follow protective measures that may reduce the risk of skin cancer	54.4%	75%

Source: California Health Interview Survey, Sonoma County 2001.

The female breast cancer death rate did not change significantly from 1999-2001 to 2000-2002 (28.7/100,000 compared to 26.7/100,000). This rate is similar to the California rate of 24.1/100,000.

About 80% of breast cancer deaths in Sonoma County were to women over age 55. Only 5% of breast cancer deaths occurred to women less than age 45.

The 2000-2002 female breast cancer death rate for Sonoma County did not meet the Healthy People 2010 goal of 22.3/100,000.

Prostate Cancer

In 2004, prostate cancer was the most commonly diagnosed form of cancer (other than skin cancer) for men nationwide.[9] In 2000-2002, it was the second leading cause of cancer death among Sonoma County males.

The age-adjusted death rate for prostate cancer was 28.2/100,000 for Sonoma County males in 2000-2002. This rate meets the Healthy People 2010 goal of 28.8/100,000.

Almost 74% of the prostate cancer deaths from 2000-2002 were among males age 75+. Less than 7% of prostate cancer deaths occurred before age 65.

Prevention and Early Detection

Reducing the burden of cancer involves reducing behavioral and environmental risk factors, while ensuring that screening services are accessible for early detection.[10]

Tobacco use is the leading preventable cause of cancer. It is linked to cancer of the lungs, mouth and pharynx, esophagus, bladder, pancreas, kidney, and other sites. See Table 6.1 for Sonoma County tobacco use.[11]

Other modifiable risk factors for cancer include a high-fat, low-fiber diet and a sedentary lifestyle. Non-modifiable risk factors include age, ethnicity and heredity.[12]

Early detection may improve the survival rate for cancer of the breast (mammograms, clinical breast exams), cervix (Pap smears) and colon/rectum (fecal blood testing and colonoscopy/sigmoidoscopy) (Table 6.3).[13] Studies are unclear as to whether screening for prostate cancer by digital rectal exam or prostate-specific antigen (PSA) blood test (which enables treatment at an early stage) is more effective than no screening in prolonging life.[14]

Stroke

Stroke and heart disease share several risk factors, including high blood pressure, cigarette smoking, high blood cholesterol, and overweight. Screening for risk factors, particularly for high blood pressure and high blood cholesterol, is an important step in identifying individuals whose risk factors may be undiagnosed.[15]

Stroke is also a leading cause of long-term disability in the nation. Among ischemic stroke survivors age 65+ who were observed six months post-stroke, about half were paralyzed on one side of the body (hemiparesis), one in three were unable to walk without assistance and one in four were institutionalized in a nursing home.[16]

The Sonoma County stroke death rate has not changed significantly

from 1999-2001 to 2000-2002 (68.4/100,000 compared to 63.7/100,000, respectively). In 2000-2002, Sonoma County's age-adjusted death rate for stroke was significantly higher than the California rate, and did not meet the Healthy People 2010 goal of 48/100,000 (Figure 6.5).

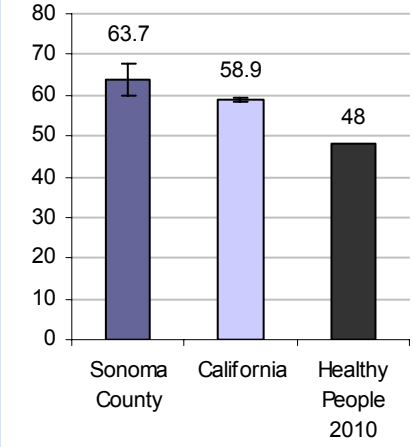
In 2000-2002, more than 92% of the stroke deaths in Sonoma County were to individuals age 65+. More than 81% of stroke deaths were to individuals age 75+. During this time period, the majority of stroke deaths in Sonoma County were to females (63%), but the age-adjusted death rates for Sonoma County males and females were similar (62.2/100,000 compared to 64.2/100,000, respectively). Sonoma County females had significantly higher age-adjusted stroke death rates than California females (57.3/100,000).

In 2002, the Sonoma County hospitalization rate for stroke was 211.3/100,000. This rate was similar for Sonoma County males and females (211.6/100,000 and 193.4/100,000, respectively).

Primary and Secondary Prevention

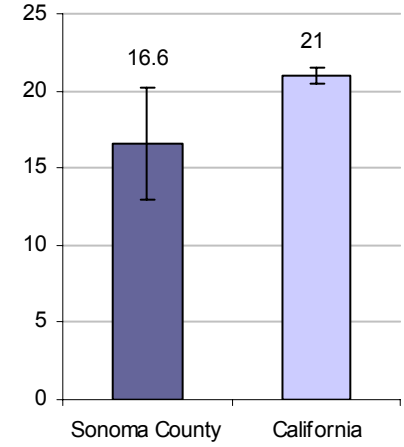
Prevention or early detection and treatment of high blood pressure are the primary ways to lower the risk of stroke. Additional modifiable risk factors for stroke include smoking, diabetes, heart disease, excessive alcohol intake and certain kinds of drug use (see Table 6.1 for some modifiable risk factors).[17] Non-modifiable risk factors for stroke include increasing age, male gender, family history of stroke, and African-American race.[18]

Figure 6.5
Stroke Death Rates*, Sonoma County and California 2000-2002



*Rates are age adjusted per 100,000 population.
Source: California Department of Health Services, vital statistics death records 2000-2002.

Figure 6.6
Diabetes Death Rates*, Sonoma County and California 2000-2002



*Rates are age adjusted per 100,000 population
Source: California Department of Health Services, vital statistics death records 2000-2002.

Diabetes

Diabetes is a disease characterized by high levels of blood glucose resulting from defects in insulin production, insulin action, or both. Diabetes can be associated with serious complications such as renal disease, heart disease, lower extremity amputation, blindness and premature death, but people with diabetes can take steps to control the disease and lower the risk of complications.[19]

There are two major types of diabetes. Type 1 diabetes is usually diagnosed in children and young adults, and was previously known as juvenile diabetes. In type 1 diabetes, the body does not produce insulin. About 5% to 10% of Americans diagnosed with diabetes have type 1 diabetes.[20]

Type 2 diabetes is the most common form of diabetes. In type 2 diabetes, either the body does not produce enough insulin or the cells are insensitive to insulin. Type 2 diabetes increases risk for many serious complications, including heart disease (cardiovascular disease), blindness (retinopathy), nerve damage (neuropathy), and kidney damage (nephropathy).[21]

In 2001, approximately 16,000 (4.8%) Sonoma County adults (age 18+) reported that they had been diagnosed with diabetes. This is similar to the reported diabetes prevalence for California (6.2%).[22]

In 2000-2002, the Sonoma County death rate for diabetes was significantly lower than the comparable California rate (Figure 6.6). The Healthy People 2010 goal is based on underlying and contributing cause of death and cannot be used for comparison (Sonoma County and California data excludes multiple/contributing cause of death).[23]

The age-adjusted death rate for diabetes for Sonoma County men was significantly higher than for women (20.5/100,000 compared to 13.8/100,000, respectively).

Due to a small number of deaths from diabetes in Sonoma County, California data has been used for racial/ethnic comparison. In 2002, the age-adjusted diabetes death rate was significantly higher for African American Californians (49.8/100,000) than all other racial/ethnic groups. White California residents had a significantly lower age-adjusted death rate for diabetes(17.3/100,000) than any other racial/ethnic group (Hispanic 32.2/100,000 and Asian/Other 19.1/100,000).

In 2002, the Sonoma County hospitalization rate for diabetes was 81.3/100,000 and was significantly higher for males than for females (92.6/100,000 and 54.9/100,000).

Primary and Secondary Prevention

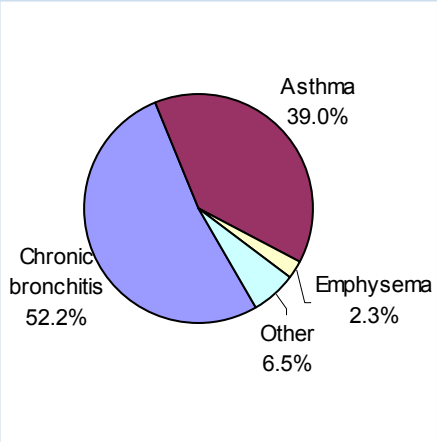
Risk factors for type 1 diabetes include autoimmune, genetic and environmental factors.[24]

Risk factors for type 2 diabetes include age, race/ethnicity, obesity, heredity, prior history of gestational diabetes, impaired glucose tolerance and physical inactivity (see Table 6.1 for prevalence of modifiable risk factors). Research studies in the nation and abroad have found that lifestyle changes can prevent or delay the onset of type 2 diabetes among high-risk adults. Lifestyle interventions included diet and moderate-intensity physical activity (such as walking for 2-1/2 hours each week).[25] Early detection and disease management is crucial in preventing or delaying the onset of chronic complications, such as blindness, kidney disease, circulation problems and heart disease.[26]

Chronic Lower Respiratory Disease

Chronic lower respiratory disease is a group of diseases that causes breathing-related problems and can be divided into two major categories, asthma and chronic obstructive pulmonary disease (COPD). COPD refers to two lung diseases, chronic bronchitis and emphysema.[27]

Figure 6.7
Chronic Lower Respiratory Disease Hospitalizations by Cause, Sonoma County 2002



Source: Office of Statewide Health Planning and Development, patient discharge data, Sonoma County 2002.

In 2000-2002, chronic lower respiratory disease was the fourth leading cause of death in Sonoma County and in California.

In 2000-2002, the age-adjusted death rate for chronic lower respiratory disease in Sonoma County (42.0/100,000) was similar to the California death rate (42.2/100,000). Sonoma County males and females also had similar death rates (46.6/100,000 and 38.9/100,000) during this time period.

In 2002, the Sonoma County hospitalization rate for chronic lower respiratory disease was 14.5/10,000. Chronic bronchitis was the primary cause of chronic lower respiratory disease hospitalization. Emphysema was responsible for only 2.3% of the hospitalizations due to chronic lung disease (Figure 6.7).

Chronic Obstructive Pulmonary Disease

Chronic Obstructive Pulmonary Disease (COPD) is a slowly progressive disease of the airways that is characterized by a gradual loss of lung function. The diagnosis of COPD is confirmed by the presence of airway obstruction on testing with spirometry. There is no known cure for COPD.[28]

In 2000-2002, the Sonoma County age-adjusted death rate for individuals age 45+ was 114.6/100,000, similar to the California rate of 121.2/100,000. Sonoma County did not meet the Healthy People 2010 goal of 60.0/100,000.

Men in Sonoma County had significantly higher death rates for COPD than females (129.4/100,000 compared to 104.2/100,000, respectively). These death rates are similar to California death rates by gender for 2000-2002—132.0/100,000 males and 113.1/100,000 females.

In 2002, the majority (89%) of the approximately 400 hospitalizations due to COPD were for chronic bronchitis. About 77% of all hospitalizations for COPD were to individuals age 65+.

Primary and Secondary Prevention

Nearly all cases of COPD can be prevented. Preventive measures to reduce the risk of developing COPD include not smoking cigarettes and avoiding exposure to dust, fumes and second hand smoke (environmental irritants). Repeated lower respiratory infections—pneumonia and bronchitis—particularly in young children, have been shown to produce scarring that contributes to the development of COPD.[29]

Asthma

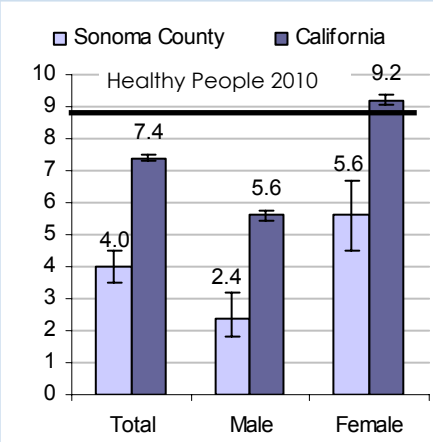
Asthma is a chronic inflammatory lung disease that causes the airways to become constricted, blocking the free flow of air to the lungs. People with asthma often experience breathlessness, wheezing, coughing, and tightness in the chest. Many of the problems caused by asthma are prevented when asthma patients and their health care providers manage the disease according to established guidelines.[30]

In 2003, approximately 16% of Sonoma County residents reported having ever been diagnosed with asthma and over 19% of children in Sonoma County had ever been diagnosed with asthma (lifetime asthma prevalence). Of these children, over 55% reported experiencing an asthma attack within the past year (asthma symptom prevalence).[31]

For 2000-2002, the age-adjusted asthma death rate for Sonoma County was 1.5/100,000. This rate did not change significantly from 1999-2001 (1.3/100,000).

In 2002, the overall asthma hospitalization rate for Sonoma County was 4.7/10,000. Rates have not changed significantly in the past four years.

Figure 6.8
Asthma Hospitalization Rates, Persons Age 5-64 by Gender, Sonoma County and California 2002



*Rate is age-adjusted per 10,000 population.
Source: California Office of Statewide Health Planning and Development, Patient Discharge Data, 1999-2002.

For individuals age 5-64, the asthma hospitalization rate was 4.0/10,000, significantly lower than the California rate of 7.4/10,000. The Sonoma County male hospitalization rate (age 5-64) was significantly lower than the female rate (Figure 6.8). Sonoma County male and female hospitalization rates were significantly lower than California rates and both met the Healthy People 2010 goal of 8.0/10,000.

The asthma hospitalization rate for Sonoma County children under age 5 was 12.7/10,000, significantly

higher than rates for those age 5-64. The hospitalization rate for those age 65+ was 8.5/10,000. Both of these rates meet the Healthy People 2010 goals (25/10,000 and 11/10,000, respectively).

Primary and Secondary Prevention

Certain modifiable exposures, such as air pollution, tobacco smoke exposure, stress, pollen, mold and some chemicals, including pesticides can trigger an asthma attack or have been associated with the development of asthma in some individuals.[32]

Proper management of asthma helps prevent serious consequences of the disease. Established management guidelines include medications compliance, removal of the asthma "triggers" and educating patients to become partners in their own care.[33]

Other Chronic Diseases and Conditions

The following chronic diseases or conditions, as listed in Healthy People 2010, are associated with significant morbidity and health care costs in California and the nation. Many also lead to activity limitation and disability.[34]

Osteoporosis

Osteoporosis is a serious health problem that is characterized by weak or brittle bones. Women are at especially high risk of osteoporosis because of rapid bone loss following menopause. Other risk factors for osteoporosis include small bone structure, high consumption of alcohol, cigarette smoking, low dietary calcium, scoliosis and lack of exercise. Prevention is the best treatment for osteoporosis and includes adequate calcium consumption and weight-bearing exercise by adolescent and young adult women to increase peak bone mass.[35]

In 2001, more than 43% of Sonoma County women age 50+ reported having a bone density test. This is significantly higher than the California rate of 35.2%. Almost 17% of Sonoma County women age 50+ reported being diagnosed with osteoporosis.[36] This does not meet the Healthy People 2010 goal of 8.0%.

Arthritis

Arthritis is a painful and potentially disabling condition affecting the joints and connective tissue. The two most prevalent forms are osteoarthritis and rheumatoid arthritis. Proper management of arthritis can help control the pain and disability associated with this disease. Weight control, physical activity, physical therapy and anti-inflammatory drug therapy are all part of an arthritis management program.[37]

In 2001, approximately one in five (21.3%) Sonoma County adults age 18+ reported ever being diagnosed with arthritis, more than 62% of whom reported having symptoms in the past year.[38]

Chapter 6 References

1. Centers for Disease Control and Prevention. Chronic Disease Overview, 2000.
2. California Health Interview Survey, Sonoma County 2001.
3. Unless otherwise stated all hospitalization data and statistics are from Office of Statewide Health Planning and Development. Patient Discharge Data, Sonoma County, 2002.
4. American Heart Association. Risk Factors and Coronary Heart Disease, 2001.
5. California Health Interview Survey, Sonoma County 2001.
6. Cancer Registry of Northern California-California Health Collaborative. Region 6: Cancer in Northern California 1998-2002, January 2005.
7. American Cancer Society, Prevention and Early Detection, Early Detection, December 2002.
8. American Cancer Society, Breast Cancer Deaths on the Decline: Increase Gap Between White and African American Women, October 2003.
9. American Foundation for Urological Disease. Prostate Specific Antigen Screening: Adult Health Advisor, 2004.
10. American Cancer Society, Prevention and Early Detection, Early Detection, December 2002.
11. Ibid.
12. Ibid.
13. Ibid.
14. American Foundation for Urological Disease. Prostate Specific Antigen Screening: Adult Health Advisor, 2004.
15. Kelly-Hayes, M, Beiser, A, Kase, C, D'Agostino, R and Wolf, P. (2003). The influence of gender and age on disability following ischemic stroke: The Framingham Study. The Journal of Stroke and Cerebrovascular Diseases, Vol. 12 (3).
16. Ibid.
17. U.S. Department of Health and Human Services. *Healthy People 2010. 2nd ed. Heart Disease and Stroke. Washington, DC: U.S.* Government Printing Office, November 2000.

18. Ibid.
19. California Department of Health Services, Vital Statistics, Death Records, 2000-2002.
20. American Diabetes Association. Diabetes Statistics, 2002.
21. Ibid.
22. California Health Interview Survey, Sonoma County 2001.
23. U.S. Department of Health and Human Services. *Healthy People 2010. 2nd ed. Diabetes. Washington, DC: U.S. Government Printing* Office, November 2000.
24. American Diabetes Association. Diabetes Statistics, 2002.
25. Diabetes Information Clearinghouse. Diagnosis of Diabetes. NIH Publication No. 05–4642 January 2005.
26. American Diabetes Association. Diabetes Statistics, 2002.
27. California Department of Health Statistics, Center for Health Statistics. Chronic Low Respiratory Deaths in California, 2002.
28. University of Pittsburgh Medical Center, Chronic Obstructive Pulmonary Disease (COPD) Prevention, March 2005.
29. Ibid.
30. Sonoma County Asthma Coalition. Report to the Community, 2003-2004.
31. California Health Interview Survey, Sonoma County 2001.
32. Sonoma County Asthma Coalition. Report to the Community, 2003-2004.
33. Ibid.
34. U.S. Department of Health and Human Services. *Healthy People 2010. 2nd ed. Arthritis, Osteoporosis and Chronic Back Condidtions.* Washington, DC: U.S. Government Printing Office, November 2000.
35. California Department of Health Statistics, Center for Health Statistics. Osteoporosis Risk in California, 2002.
36. Ibid.
37. California Department of Health Statistics, Center for Health Statistics. Prevalence of Arthritis in California, 2002.
38. Ibid.