CHRONIC DISEASE ~ CANCER

Importance	Cancer is the second leading cause of death among adults in the United States.[1,2] In the United States, men have slightly less than a 1 in 2 lifetime risk of developing cancer, while the risk for women is a little more than 1 in 3.[2] The National Cancer Institute estimates that approximately 12 million Americans with a history of cancer were alive in January 2008.[2] About 1,638,910 new cancer cases were expected to be diagnosed in 2012, and approximately 577,190 Americans were expected to die of cancer.[2,3,4] In the United States, cancer accounts for nearly 1 in 4 deaths.[2,3,4]
Definitions	Cancer: A term for diseases in which abnormal cells divide without control and can invade other tissues. Cancer cells can spread to other parts of the body through the blood and lymph systems.[7] There are more than 100 different types of cancer.[7] There are several main categories of cancer. Carcinomas are cancers that begin in the skin or in tissues that line or cover internal organs. Sarcomas are cancers that begin in bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue. Leukemias are cancers that start in the blood-forming tissues such as the bone marrow, and cause large numbers of abnormal blood cells to be produced and enter the blood. Lymphomas and multiple myelomas are cancers that begin in the cells of the immune system. Central nervous system cancers begin in the tissues of the brain and spinal cord.[7] Lifetime risk: The likelihood of an event occurring at any point in a person's entire lifetime.[8]
Healthy People 2020 Objective[9]	"Reduce the number of new cancer cases as well as the illness, disability, and death caused by cancer." ▪ Reduce the overall cancer death rate. (Target **160.6** deaths per 100,000 population, a 10% improvement) ▪ Increase the proportion of cancer survivors who are living 5 years or longer after diagnosis. (Target **72.8**%, a 10% improvement)

Over 1.2 million Californians have a history of cancer, presently living either with cancer or with no evidence of cancer.[8] In 2012, about 144,800 Californians will be diagnosed with cancer (more than 16 new cases every hour), and 55,415 people (one in every four deaths) will die of the disease.[8] Almost 94,120 (about two out of three) Californians who get cancer this year will be alive five years after diagnosis.[8] The relative five-year survival rate for all cancers combined is 65%.[8]

Table 1 describes the annual incidence of new cancer cases and cancer deaths in California and Santa Cruz County between 2007 and 2009.[10] Santa Cruz County has low rates for lung and colon cancer incidence, ranking among the 8 lowest rates of the 47 counties/county-areas. However, Santa Cruz County ranks 5th worst in the state for deaths from breast cancer and 3rd worst in the state for new cases of prostate cancer.[10]

Table 1: Age-Adjusted Incidence and Mortality Rates by Cancer Type, Santa Cruz County and California, 2007-2009[10]

	Incidence Rate per 100,000				Mortality Rate per 100,000			
	Prostate	**Breast***	**Lung**	**Colon**	**Prostate**	**Breast***	**Lung**	**Colon**
Santa Cruz County	188.7	149.8	45.3	39.1	18.8	25.7	36.6	13.2
California	141.7	154.4	51.2	45.3	22.7	21.9	38.7	14.7
State Rank (among 47 counties and county groups)	45	24	4	8	5	43	13	14

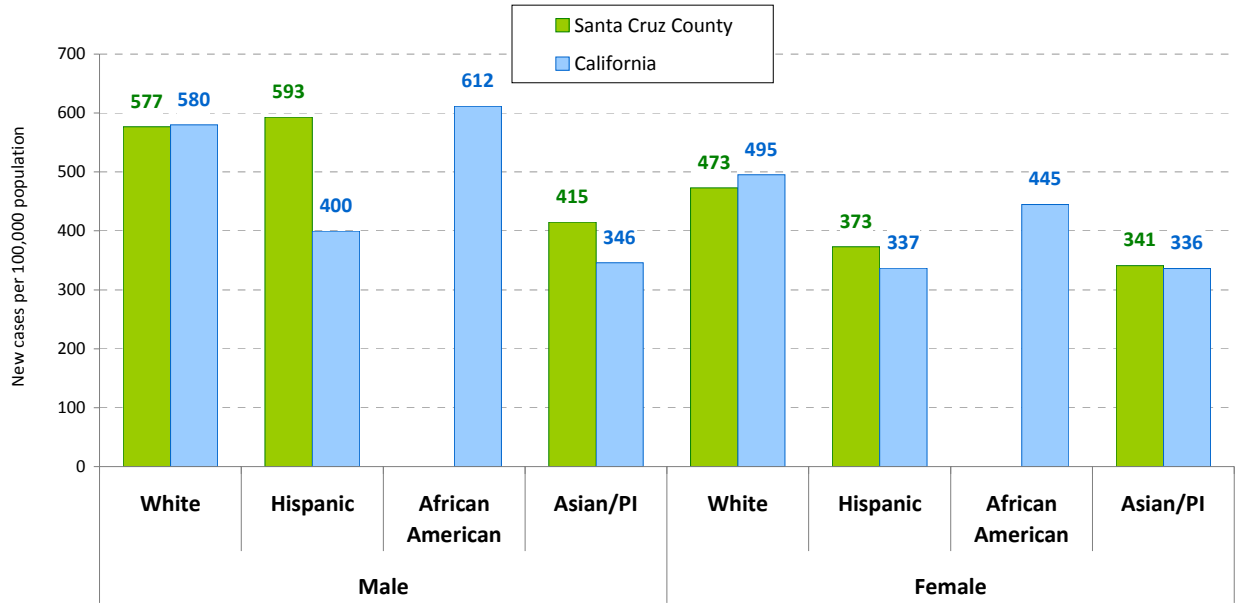
*Breast=female breast cancer only

CANCER

The female breast cancer incidence rate in California decreased by 7% from 1988-2009, and mortality decreased by 30%.[8] New diagnoses of prostate cancer increased by 72% from 1988 to 1992, with the rapid growth of PSA testing, but have since declined almost to the 1988 level; prostate cancer mortality, on the other hand, declined substantially throughout the period from 1988 to 2009.[8] The incidence rates of colon and rectal cancers are declining in most racial/ethnic groups.[8] The most commonly diagnosed cancers among men are cancers of the prostate, lung and bronchus, and colon and rectum, accounting for about half of new cancer cases in men.[11] Prostate cancer accounts for 29% of all newly diagnosed cancer cases among men. The most commonly diagnosed cancers among women are cancers of the breast, lung and bronchus, and colon and rectum, accounting for about half of new cancer cases in women.[11] Breast cancer accounts for 29% of all newly diagnosed cancer cases among women.[11]

California's all-cancers incidence rate declined by 11% from 1988-2009.[8] Incidences of most types of cancer in California are about the same as or lower than elsewhere in the United States.[8] In 2005-2009, all-cancers incidence rates in Santa Cruz County were higher than state rates among Hispanics and Asians, but slightly lower than state rates among non-Hispanic Whites[10] (Figure 1). Rates were much higher among males than among females. There are too few African Americans in Santa Cruz County to generate meaningful local cancer incidence data. California cancer incidence rates for Asian/Pacific Islanders, African Americans, and Whites were 1-3% lower than the corresponding national rates. Hispanics in California had a nearly 9% lower incidence rate than Hispanics nationwide.[8]

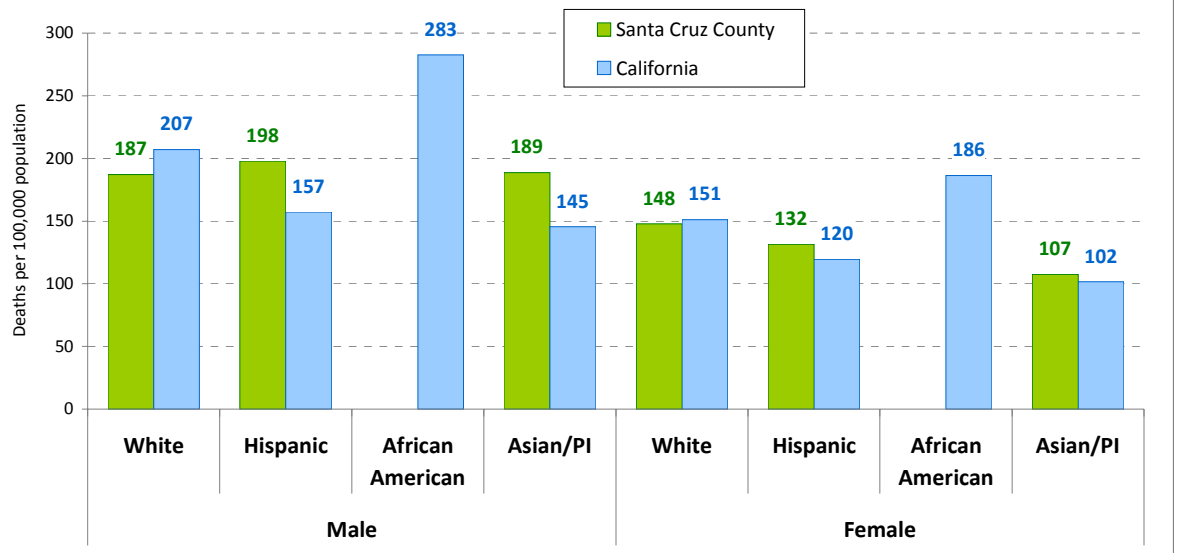
Figure 1: Age-Adjusted Incidence Rates per 100,000 for All Cancers, Santa Cruz County and California, 2005-2009[10]



CANCER

Figure 2 presents all-cancers mortality rates for Santa Cruz County and California from 2005-2009. Cancer mortality rates were higher among males than among females. Santa Cruz County cancer mortality rates were higher than statewide rates for Hispanics and Asians, but slightly lower than statewide rates for Whites. There are too few African Americans in Santa Cruz County to generate meaningful local cancer incidence data. From 1988 to 2009, cancer mortality rates declined by 23%, and declined for all four major racial/ethnic groups in the state.[9] Cancer incidence and mortality rates vary considerably among racial and ethnic groups.[11] Nationwide, for all cancer sites combined, between 2004-2008, African American men had a 15% higher incidence rate and a 33% higher mortality rate than White men, whereas African American women had a 6% lower incidence rate but a 16% higher mortality rate than White women.[11] For specific cancer sites, incidence and mortality are consistently higher in African Americans than in Whites, except for cancers of the breast and lung among women, and kidney among both men and women.[11]

Figure 2: Age-Adjusted Mortality Rates per 100,000 from All Cancers, Santa Cruz County and California, 2005-2009[10]



CANCER DISPARITIES

Factors that contribute to cancer mortality racial disparities vary by cancer site and include differences such as income, exposure to risk factors, access to regular screening, and timely diagnosis and treatment.[11] For all cancer sites combined, residents of poorer counties (those where at least 20% of the population is below the poverty line) have cancer death rates 13% higher in men and 3% higher in women compared with more affluent counties.[12] Differences in cancer survival account for part of this disparity. Socioeconomic factors such as poverty, inadequate education, and lack of health insurance appear to be far more important than biological differences. In 1991, the director of the US National Cancer Institute (NCI) declared, "Poverty is a carcinogen."[12] Socioeconomic factors influence cancer risk factors, such as tobacco use, poor nutrition, physical inactivity, and obesity. Income, education, and health insurance coverage influence access to appropriate early detection, treatment, and palliative care.[12]

Table 2, on the next page, describes the estimated numbers of cases and deaths expected in California and Santa Cruz County during 2012. For Santa Cruz County, almost 600 new cases and 200 deaths from prostate, breast, lung, and colon cancer are expected to occur in 2012. For California, about 75,000 new cases and 25,500 deaths from those four cancers are expected to occur in 2012.

CANCER

These estimates serve as a way to anticipate the future cancer burden.[8] These numbers can be reduced by utilizing cancer prevention and screening methods. The reduction in overall cancer death rates since 1990 in men and since 1991 in women translates to the avoidance of about 1,024,400 deaths from cancer so far.[11]

Table 2: Expected New Cancer Cases and Deaths, Santa Cruz County and California, 2012*

	Expected New Cases of Cancer				Expected Deaths by Cancer			
	Prostate	Breast**	Lung	Colon	Prostate	Breast**	Lung	Colon
Santa Cruz County (8)	215	175	100	85	20	35	90	35
California (8)	20,195	23,280	16,540	14,530	3,085	4,335	13,045	5,120

* These projections are offered as a rough guide and should not be regarded as definitive

**Breast=female breast cancer only

Primary Prevention Activities	**American Cancer Society:** Free transportation for cancer patients to doctor appointments in Santa Cruz County. www.cancer.org Available 24/7 1-800-227-2345 **WomenCARE:** Their mission is to provide free cancer advocacy, resources, education, and support to women, their families, and health care practitioners for all types of cancer. http://www.womencaresantacruz.org/. **Katz Cancer Resource Center:** Among their many services, they provide support and classes facilitated by certified oncology nurses to patients, their families, and their friends at no charge. http://www.dominicanhospital.org/cancercare. **Santa Cruz County Prostate Cancer Support Group:** They hold meetings at 7pm the last Tuesday of every month, except for December, for men with prostate cancer and their loved ones. http://www.scprostate.org/.
Sources	(1) Centers for Disease Control and Prevention, Lance Armstrong Foundation. *A National Action Plan for Cancer Survivorship: Advancing Public Health Strategies*. (2) American Cancer Society. *Cancer Facts and Figures 2012*. Atlanta: American Cancer Society; 2012. (3) Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA (eds.). *SEER Cancer Statistics Review, 1975-2009 (Vintage 2009 Populations)*, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2009_pops09/, based on November 2011 SEER data submission, posted to the SEER web site, April 2012. (4) US Cancer Statistics Working Group. *United States Cancer Statistics: 1999-2006*. Incidence and Mortality Web-Based Report. Department of Health & Human Services, Center for Disease Control and Prevention and National Cancer Institute; 2010. http://www.cdc.gov/uscs. (5) Cancer Trends Progress Report – 2011/2012 update, National Cancer Institute, NIH, DHHS, Bethesda, MD, August 2012. http://progressreport.cancer.gov. (6) California Prevention Institute of California. *2010 Report: The State of Cancer in the Greater Bay Area*. http://www.cpic.org/2010ReportGBA. (7) National Cancer Institute, United States National Institutes of Health. http://www.cancer.gov/cancertopics/what-is-cancer. (8) American Cancer Society, California Department of Public Health, California Cancer Registry. *California Cancer Facts and Figures 2012*. Oakland, CA: American Cancer Society, California Division, September 2011. http://www.ccrcal.org/pdf/Reports/ACS_2012.pdf. (9) Healthy People 2020. http://www.healthypeople.gov/2020/default.aspx. (10) California Cancer Registry. Cancer Incidence and Mortality Rates in California, 2005-2009. http://www.cancer-rates.info/ca, accessed November 2012. (11) Siegel, R., Naishadham, D., Ahmedin. "J. Cancer Statistics, 2012. *CA: A Cancer Journal for Clinicians*. 2012; 62; 10-29. http://onlinelibrary.wiley.com/doi/10.3322/caac.20138/pdf. (12) Ward, E., Jemal, A., Cokkinides, V. et al. "Cancer Disparities by Race/Ethnicity and Socioeconomic Status," 2004. *A Cancer Journal for Clinicians*. 54;78-93.