A Tradition of Stewardship
A Commitment to Service

Cancer Incidence and Mortality in Napa County

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This publication was prepared by the Chronic Disease and Health Equity Unit, Public Health Division, Napa County Health and Human Services Agency

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Executive Summary

The Napa County Public Health Division, Chronic Disease and Health Equity Unit (CDHE) is dedicated to working with health professionals, community groups, the public and other key stakeholders and decision makers to address the burden of chronic diseases in Napa County. The mission of the Chronic Disease and Health Equity (CDHE) Unit is to improve chronic disease-related health outcomes by increasing health equity in Napa County. CDHE is modeled after the 3-4-50 framework developed by the World Health Organization. This framework describes the three factors (poor diet, physical inactivity, and tobacco use), that contribute to four chronic diseases (cancer, heart disease/stroke, type 2 diabetes, and pulmonary diseases such as asthma), that, in turn, cause over 50 percent of deaths.

CDHE programs aim to address the factors contributing to the leading causes of death in Napa County and to provide data to inform and educate the community. Our focus on health equity recognizes that not everyone in our community has the same opportunity to achieve their highest level of health due to factors that influence health such as poverty, lack of educational attainment, neighborhood violence, and lack of healthy food access. Therefore, creating systems and policies that address health inequities is essential for reducing the burden of chronic diseases.

Cancer is the leading cause of death in Napa County, accounting for one in every four deaths. The purpose of this report is to provide updated, local data on cancer burden and to provide science-based and prevention- focused recommendations for individuals and organizations.

Key points from the report include:

Cancer Mortality:

- For the period of 2013-2015, lung cancer outpaced all other cancers as the leading cause of death in Napa County, accounting for 23% of all cancer deaths. The mortality rate of lung cancer, after adjustment for age, is higher than corresponding statewide rates.
- Colorectal cancer is the second most common cause of cancer death in Napa County, leading to 7% of all cancer deaths.
- The County ranks among the lowest in the state for breast cancer mortality.

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Executive Summary (Continued)

Cancer Incidence (newly diagnosed cancers):

- The rate of newly diagnosed lung cancer cases in Napa County, after adjustment for age, is higher than corresponding statewide rates.
- Rates of newly diagnosed cancer have declined over the last 10 years for many cancers; the exception to this is breast cancer, which increased slightly (6%) in Napa County between 2004 and 2014.
- Leukemia is the most common cancer among children under 19; although the childhood leukemia rate was higher than the state rate for the time period 2007-2014, the difference was not statistically significant. The rate of newly diagnosed leukemia among all ages in Napa County has decreased 15% over the last 10 years.
- Geographic analysis did not show clustering of cases or "hot spots" for breast, colorectal, leukemia, prostate, or pancreatic cancer; a lung cancer cluster was identified in the Yountville area, which is likely explained by the presence of the Veteran's Home, the high percentage of seniors, and the high smoking prevalence among veterans.

Risk Factors:

- Approximately 85% of lung cancers and one-third of all cancer deaths are caused by tobacco smoke.
- Approximately 35% of cancers are associated with physical inactivity, poor diet, excess body weight, and/or heavy alcohol consumption.
- At the County level in California, outdoor (non-residential) use of pesticides labeled as carcinogenic does not appear to be correlated with rates of childhood cancer.

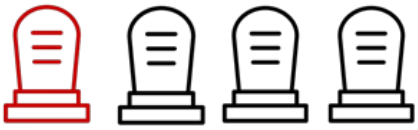
Prevention Strategies:

- Local tobacco control policies and laws help change public acceptance of smoking, prevent youth access to tobacco products and reduce exposure to secondhand smoke; jurisdictions within Napa County currently receive grades of "D" and "F" from the American Lung Association due to lack of local laws that protect residents from tobacco exposure.
- Healthy community planning, such as creating complete streets (streets with sidewalks), safe routes to school, and expanding and diversifying the use of open space, can successfully promote physical activity and active transportation (i.e. making the healthy choice the easy choice).
- Scientific studies suggest that indoor or home pesticide use may be associated with a higher risk of some childhood cancers (households with pregnant women and children may want to consider alternatives to pesticides for pest control in the home).

INTRODUCTION

The Challenge

Cancer is the leading cause of death in Napa County, accounting for nearly 1 in 4 deaths between 2013 and 2015. On average, 797 Napa residents are newly diagnosed with cancer and 295 residents die from the disease every year.



Nearly 1 in 4 deaths are caused by cancer in Napa County

The Hope

Currently, there is no universal prevention or cure for all types of cancer. However, the number of lives lost to this disease can be reduced through the development of innovative treatments, early detection, and reducing exposures to cancer risk factors.

One of the key strategies to reducing the risk of death from cancer is by adopting healthy lifestyle behaviors. Nearly one-third of all cancer deaths could be prevented by eliminating tobacco use. Another one-fifth of cancer deaths could be prevented by adopting healthy diet and exercise practices.

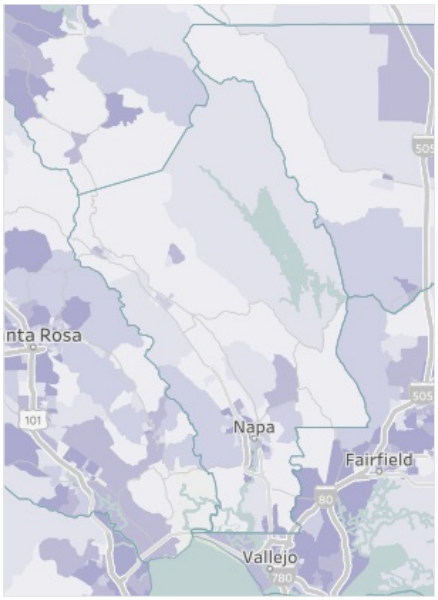
1/3 of all cancer deaths could be prevented by eliminating tobacco use

Purpose of This Report

This report was written to inform health professionals, community groups, the public and other key stakeholders and decision makers on the burden of cancer in Napa County. The report includes:

1) Leading causes of death
2) Age-adjusted cancer mortality and incidence rates
3) Cancer incidence and deaths by sex
4) Cancer incidence and deaths by race/ethnicity
5) Information on specific cancers including breast, colorectal, leukemia, lung, pancreatic and prostate cancers
6) Prevention strategies
7) Supplemental reports:
    a) Cancer incidence maps
    b) Pesticide exposure
    c) Wildfire exposure

ABOUT NAPA COUNTY



2018 Population
- 0 to 846
- 846 to 1,120
- 1,120 to 1,450
- 1,450 to 1,990
- 1,990 to 51,100

Geography:

Napa County encompasses approximately 748 square miles of land and 40 square miles of water including Napa River and Lake Berryessa. Napa is the smallest and most rural of the counties that comprise the San Francisco Bay Area region and is a well-known wine region and tourist destination.

Population:

Napa County has an estimated 136,484 residents, according to the 2010 US Census. The County experienced a 9.8% growth since the 2000 US Census. The City of Napa is the largest city in the county, with a population of 76,915. To the south of the City of Napa lies American Canyon; with a population of 19,454, it is the County's fastest growing city. The area to the north of the City of Napa includes the majority of the County's land, much of it agricultural.

Age/Gender Composition:

Females accounted for slightly more of the county population (50.3%) than males (49.7%), according to the US 2010 Census. The estimated age distribution for Napa County includes 18.9% children (age 0-14), 13.0% teens and youth (age 15-24), 53.0% adults (age 25-64), and 17.4% older adults (age 65+). Compared with the State, Napa had a higher percentage of older adults (7.5% higher) and a lower percentage of children under 5 years of age (0.8% lower).

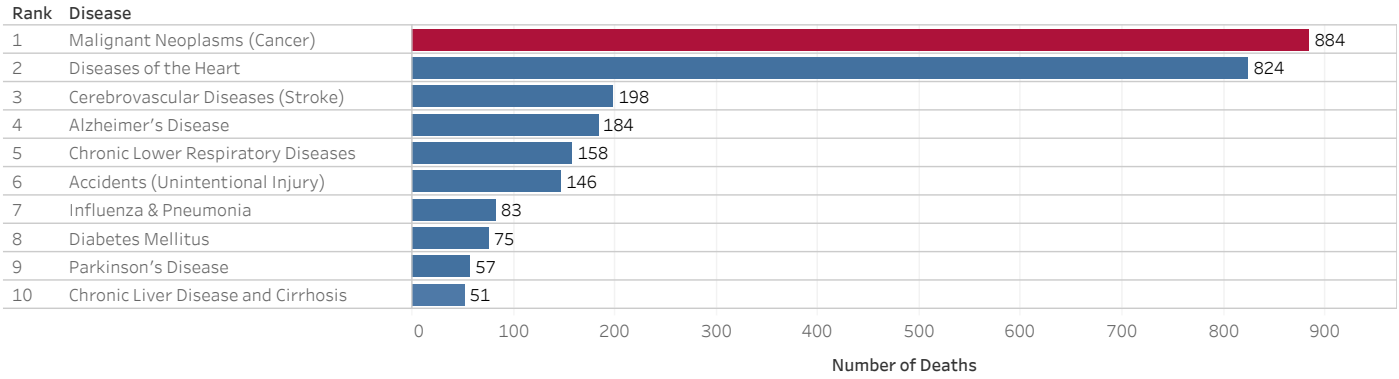
Racial/Ethnic Composition

According to the 2010 US Census, Napa County had proportionately more non-Hispanic white residents (56%) than the State (40%), and proportionately fewer residents who are Hispanic/Latino or Asian (Hispanic/Latino- Napa: 32%, CA: 38%; Asian- Napa: 7%, CA: 13%). Similar to the State, multiracial/ethnic populations represented approximately four percent of Napa County's population. African American, American Indian/Alaska Native, and Native Hawaiian and other Pacific Islander represented approximately three percent of the population. Since the 2000 US Census, all racial and ethnic populations experienced growth, except non-Hispanic white and American Indian/Alaska Native populations. The largest population increase was among the Hispanic/Latino population.

LEADING CAUSES OF DEATH

Between 2013 and 2015, the top three causes of death in Napa County were malignant neoplasms or cancer (25% of all deaths), heart disease (23% of all deaths), and cerebrovascular diseases including stroke (6% of all deaths). These chronic diseases are largely preventable. Nearly 80% of heart disease and stroke and nearly 35% of cancers could be prevented by eliminating four behaviors: tobacco use, unhealthy diet, physical inactivity, and the harmful use of alcohol.

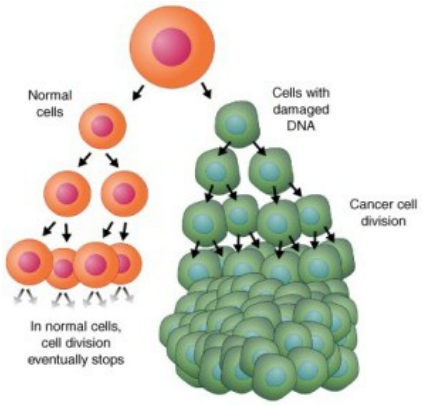
Leading Causes of Death, Napa County, 2013-2015



Sources: California statistics are based on the California Department of Public Health, Vital Records, 2012. Napa statistics are based on the California Department of Public Health, Center for Health Statistics Death Statistical Master Files 2013-2015. Rankable cause of death are from the National Vital Statistics Report (Reference #3).

WHAT IS CANCER?

Cancer is not one disease, but a general term for over 80 different diseases with many different causes and risk factors. Cancer is a disease in which abnormal cells in part of the body grow out of control. These cancer cells can invade nearby tissues and spread to other parts of the body. If the spread is not controlled, it can lead to death.



Despite a decline in the number of people newly diagnosed with cancer, approximately 20 people are still diagnosed with cancer every hour in California. In the US, an estimated 1 in 2 men and 1 in 3 women are expected to develop cancer in their lifetime (1). The age-adjusted cancer incidence rate in Napa County is 456.7 per 100,000 residents. While the survival rate of people diagnosed with cancer varies by cancer type and severity, cancer is the second leading cause of death in the State, and the leading cause of death in Napa County. Approximately 1 in 4 deaths are caused by cancer in both Napa County and the State (1).

WHO IS AT RISK FOR DEVELOPING CANCER?

Anyone can get cancer, and the risks of developing the disease are complicated. Cancer is not caused by a single risk factor, but caused by a combination of environmental (including lifestyle behaviors) and hereditary factors. Unfortunately, it is extremely difficult to link individual cancer diagnosis to risk-specific factors.

For the purpose of this report, cancer risk factors are divided into 1) modifiable risks that we have the ability to change, such as diet and exercise and 2) non-modifiable risks that we cannot change, such as race and genetics. For a list of substances and exposures that are known or suspected to cause cancer, please visit the American Cancer Society website: https://www.cancer.org/cancer/cancer-causes/general-info/known-and-probable-human-carcinogens.html. While it is important to consider all cancer risk factors, this report focuses on risks that individuals and the larger community have the capacity to modify, namely developing a neighborhood environment and lifestyles that reduce the risk of cancer.

Although risk factors are specific to each type of cancer, listed below are the most common risks:

Unhealthy lifestyle behaviors: Nearly 30% of all cancers are associated with tobacco smoke (1). Approximately 40% of all cancers are associated with physical inactivity; poor diet that is high in red meat (beef, pork , lamb, etc.) and processed meat (lunch meat, sausage, bacon, etc.) and low in vegetables, fruit and whole grains (oats, quinoa, brown rice, etc.); excess body weight; and/or heavy alcohol consumption (1).

Certain environmental exposures: Between 2 - 15% of all cancers are associated with environmental carcinogens. These include certain infectious agents (such as human papillomavirus, hepatitis B, hepatitis C, HIV and Helicobacter pylori); radiation through medical imaging, radon and other chemicals found in the workplace and home environment; toxic air contaminants such as diesel particulate matter; and excessive sun exposure among others (1).

NON-MODIFIABLE RISKS

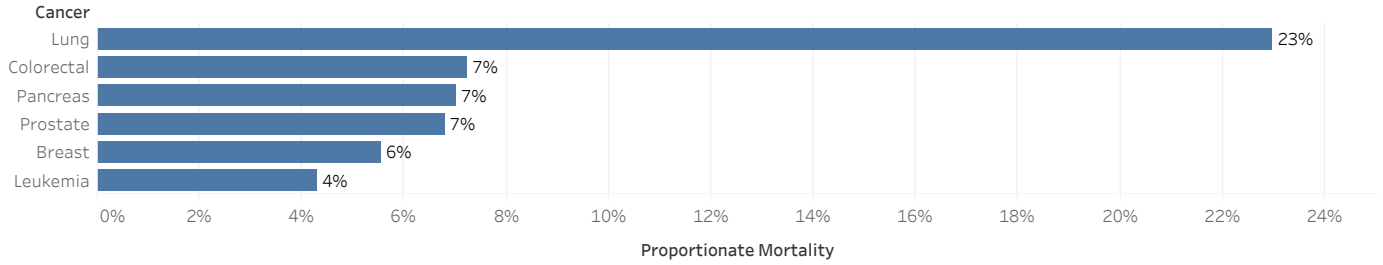
Advancing age: Approximately 86% of all cancers are diagnosed in persons 50 years of age and older (1).

Family history: Although the risk is higher with family history for most types of cancer, there are only a few cancers that are strongly hereditary. Most cancers develop from damage to the genes that occur during a person's lifetime. This damage can occur from internal factors (such as hormones) and external factors (such as a person's home environment, including exposure to tobacco) (1).

PROPORTIONATE MORTALITY

Lung cancer kills more Napa County residents than any other type of cancer. Between 2013 and 2015, lung cancer accounted for nearly 23% of deaths from cancer, more than colorectal, pancreatic and prostate cancers combined. Lung cancer is largely preventable. Approximately 85% of lung cancers are caused by cigarette smoking (1). Smoking also increases the risk of other types of cancers including pancreatic, colorectal, and a certain type of leukemia. Smoking not only increases the risk of cancer but also the body's ability to fight this disease by weakening the immune system (2). See the Section "What can be done" for smoking prevention strategies.

Cancer Proportionate Mortality, Napa County 2013-2015

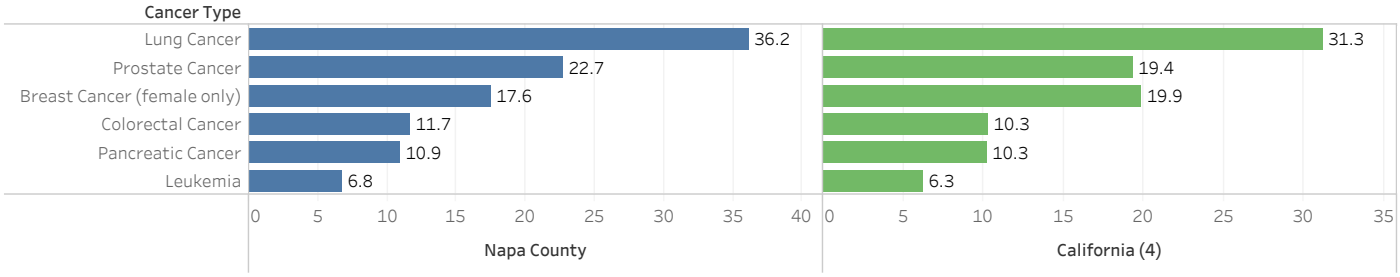


Technical Notes:
1) Cancer incidence and mortality data for the most recent years available were used to calculate rates. The most recent years available for cancer incidence data were 2012, 2013, and 2014 and for mortality data were 2013, 2014, and 2015.
2) Other site specific cancers, such as liver, ovary, and brain cancers, make up less than 4% of cancer proportionate mortality.

AGE-ADJUSTED MORTALITY RATE BY CANCER TYPE

Lung, prostate, and breast cancer had the highest age-adjusted mortality rates for cancer in both Napa County and the State. Napa County had higher age-adjusted rates than the State for lung cancer (Napa: 36.2; CA: 31.3) and prostate cancer (Napa: 22.7; CA: 19.4) and a slightly lower rate for breast cancer (Napa: 17.6; CA: 19.9). Although Napa County ranks high in regard to incidence for female breast cancer compared to other counties in California, it ranks among the lowest for age-adjusted mortality. Napa County's lower mortality rate is largely due to early diagnosis of breast cancer cases and improvements in treatment (3).

Mortality Rate (per 100,000 Population), 2013-2015



Why Age-Adjust?

Age-adjusting rates are a way to make fairer comparisons between groups with different age distributions. For example, a county having a higher percentage of people aged 65 and older, such as Napa, may have a higher rate of death than a county with a younger population, merely because the risk of death increases with age. Age-adjustment can make the different groups more comparable.

Technical Notes:
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AGE-ADJUSTED INCIDENCE RATE* BY CANCER TYPE

Based on the 2015 evaluation conducted by the Cancer Registry of Greater California and Napa County, Napa ranks at the top of California counties for cancer incidence. The county ranks at the top for all cancers combined as well as for colorectal, female breast, pancreatic, and prostate cancers. For more info on incidence rates in Napa, visit: http://www.cancer-rates.info/ca/

Lung, prostate, and breast cancer had the highest age-adjusted incidence rates for cancer in both Napa County and the State. Over the last 10 years, incidence rates for many site specific cancers have declined considerably (Range: 14% - 39% decrease) in Napa County. The only exception was breast cancer which increased slightly (6% increase).

* A cancer incidence rate is the number of new cancers of a specific type, such as lung cancer, occurring in Napa County during a year. The rate is usually expressed as the number of cancers per 100,000 population at risk. Incidence rates are often difficult to interpret. For example, a rise in incidence rates may reflect the use of a new screening test that identifies previously undetectable cancers. These cancers may not cause serious health problems; and consequently, mortality rates would not likely to rise. A rise in incidence could also reflect a real increase in cancer, such as an increase in exposure to a certain risk factor. In the latter scenario, mortality rates would likely rise.

Cancer Incidence Rate by Type, Napa County

Cancer Type	2012-2014 Average Age-Adjusted Incidence Rate (per 100,000 people)	10 Year Percent Change (2004 to 2014)	Trend
Breast (females only)	145	+6%	↑
Prostate (males only)	97	-39%	↓
Lung & Bronchus	45	-38%	↓
Colon & Rectum	35	-37%	↓
Pancreas	12	-14% [a]	↓
Leukemia	15	-15%	↓

a) Because data was not available for pancreatic cancer from 2003-2007, rates from 2008 were used to calculate percent change.

Why Age-Adjust?
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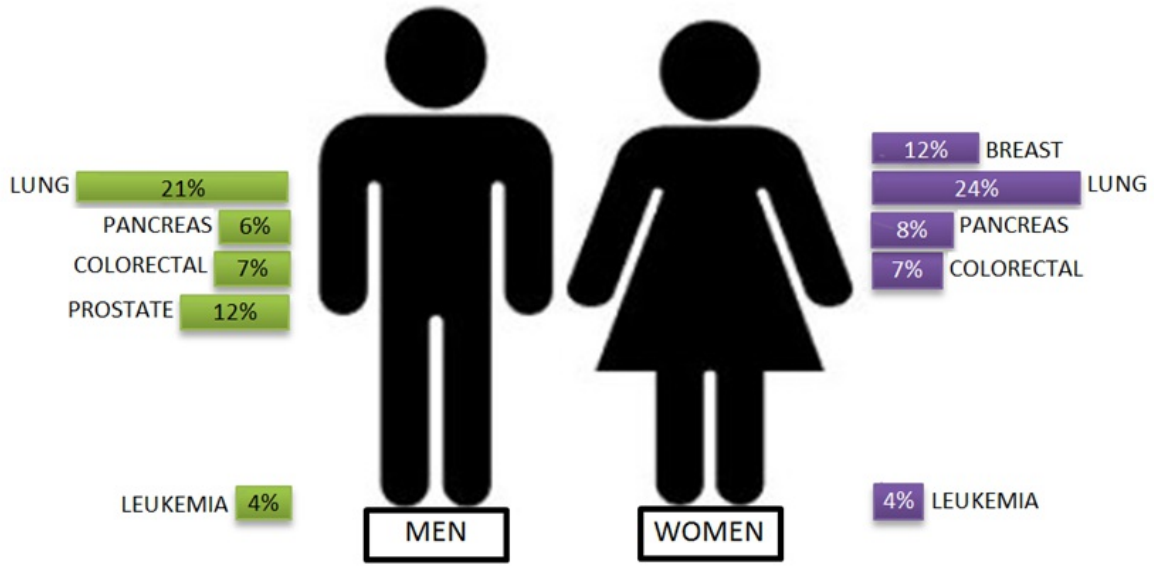
CANCER MORTALITY BY SEX

Between 2013 and 2015, cancer accounted for 26% of deaths in men and 24% of deaths in women. The most common cancers in men were lung (22%), prostate (12%) and pancreatic cancers (6%). Lung cancer was also the most common type of cancer in women (24%), followed by breast (12%) and pancreatic cancers (8%).



Technical Notes:
1) Other site specific cancers, such as liver, ovary, and brain cancers, make up less than 4% of cancer proportionate mortality.
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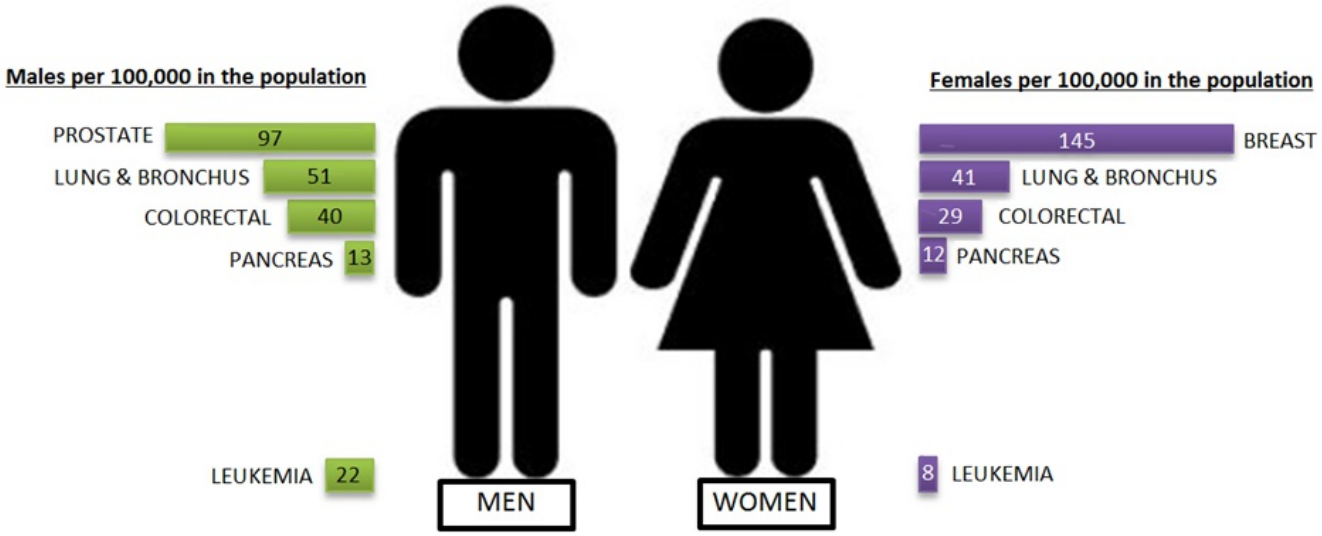
CANCER INCIDENCE RATE BY SEX

Between 2012 and 2014, men had a higher average annual age-adjusted cancer incidence rate then women, 487.3 per 100,000 men and 422.8 per 100,000 women respectively. The most common cancers among men were prostate (97 cases per 100,000 men), lung & bronchus (51 cases per 100,000 men) and colorectal cancers (40 cases per 100,000 men). Lung & bronchus and colorectal cancers were also in the top three most common types of cancer among women (41 cases per 100,000 women and 29 cases per 100,000 women, respectively). However, the highest incidence rate among women was for breast cancer (145 cases per 100,000 women).



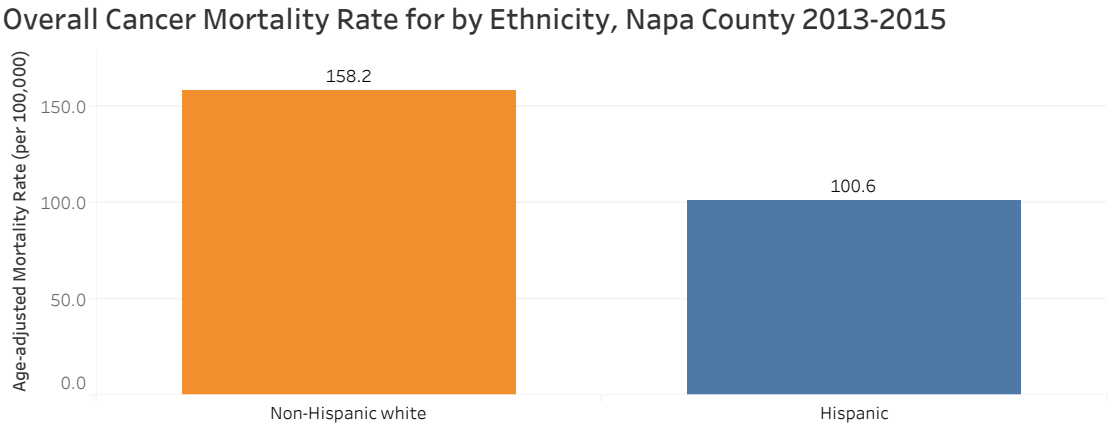
Technical Notes:
Cancer incidence and mortality data for the most recent years available were **used** to calculate rates. The most recent years available for cancer incidence data were 2012, 2013, and 2014 and for mortality data were 2013, 2014, and 2015.

CANCER MORTALITY BY RACE/ETHNICITY

Non-Hispanic whites accounted for the largest proportion of deaths in Napa County. Non-Hispanic whites had a significantly higher age-adjusted mortality rate for all cancers (158.2 per 100,000) compared to Hispanics (100.6 per 100,000).

The leading causes of cancer deaths varied by ethnicity. Among Non-Hispanic whites, lung cancer accounted for the largest proportion of cancer deaths (24%), followed by pancreatic (7%) and prostate (7%) cancer. Among Hispanics, the top causes of cancer death were lung (12%), leukemia (9%), pancreatic (9%), and prostate cancers (9%) (DATA NOT SHOWN).

Note: Due to the small number of mortalities between 2013 and 2015, cancer deaths by race could not be displayed.



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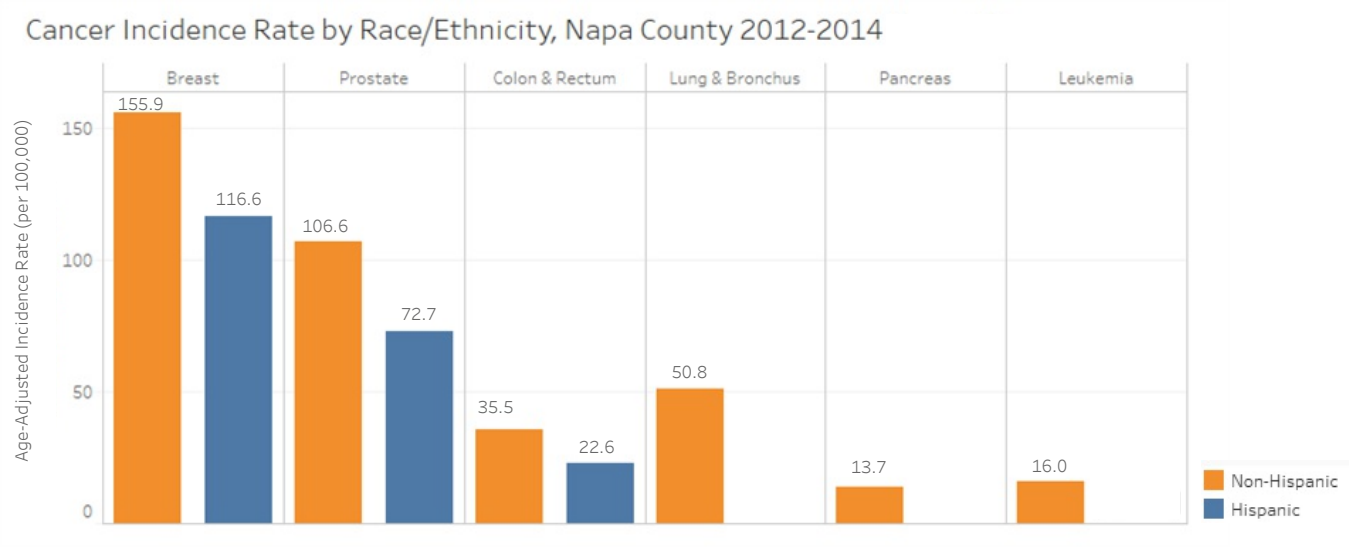
CANCER INCIDENCE RATE BY RACE/ETHNICITY

Between 2012 and 2014, non-Hispanic whites had a considerably higher average annual age-adjusted incidence rate for all cancers (491.1 per 100,000 non-Hispanic whites) than Hispanics (266.6 per 100,000 Hispanics). Non-Hispanic whites also had higher incidence rates for the most common site-specific cancers than Hispanics. However, the most common site-specific cancers to develop were similar among both groups. The highest site-specific cancer incidence rates among both Hispanics and non-Hispanic whites were in breast and prostate cancers respectively.

Due to small numbers, cancer incidence rates by race for Napa County could not be displayed. In general, the cancer types that commonly develop are similar for most race/ethnicities. However, the risk of developing cancer varies considerably. For men, African Americans and non-Hispanic whites have the highest overall cancer incidence rates. For women, non-Hispanic whites have the highest overall cancer incidence rates, but African American women are more likely to die from the disease. Asian/Pacific Islander and Hispanics have lower cancer rates than other race/ethnicities (1).



Technical Notes:
1) Data for lung & bronchus, leukemia, and pancreas cancers were not shown if the number of cases reported was less than 15.
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LUNG CANCER

Lung cancer occurs when abnormal cells grow out of control in one or both lungs. These abnormal cells can form tumors and interfere with the lungs ability to provide oxygen to the body. In Napa County, there was an average of 45.3 newly diagnosed cases per 100,000 residents per year between 2012 and 2014. In the US, approximately 5.4% of men and women will be diagnosed with lung or bronchus cancer during their lifetime. Of those diagnosed, the percent of people who survive five or more years is 18.1% (5). This means that people diagnosed with lung cancer generally have a poor prognosis. Only about 18 out of every 100 people with lung cancer will be alive 5 years after diagnosis. Lung cancer was the leading cause of cancer death in Napa County. Between 2013 and 2015, the age-adjusted mortality rate for lung cancer was 36.2 deaths per 100,000 residents.

Lifestyle, or modifiable, factors play a key role in cancer prevention and are highlighted below.

What are the modifiable risks?

Tobacco use: Approximately 85% of lung cancers are caused by cigarette smoking (1). In Napa County, about 12 of every 100 adults currently smoke cigarettes. These smokers have a 20-fold increased risk for developing lung cancer compared to nonsmokers (6,7).

Approximately 85% of lung cancers are caused by cigarette smoking.

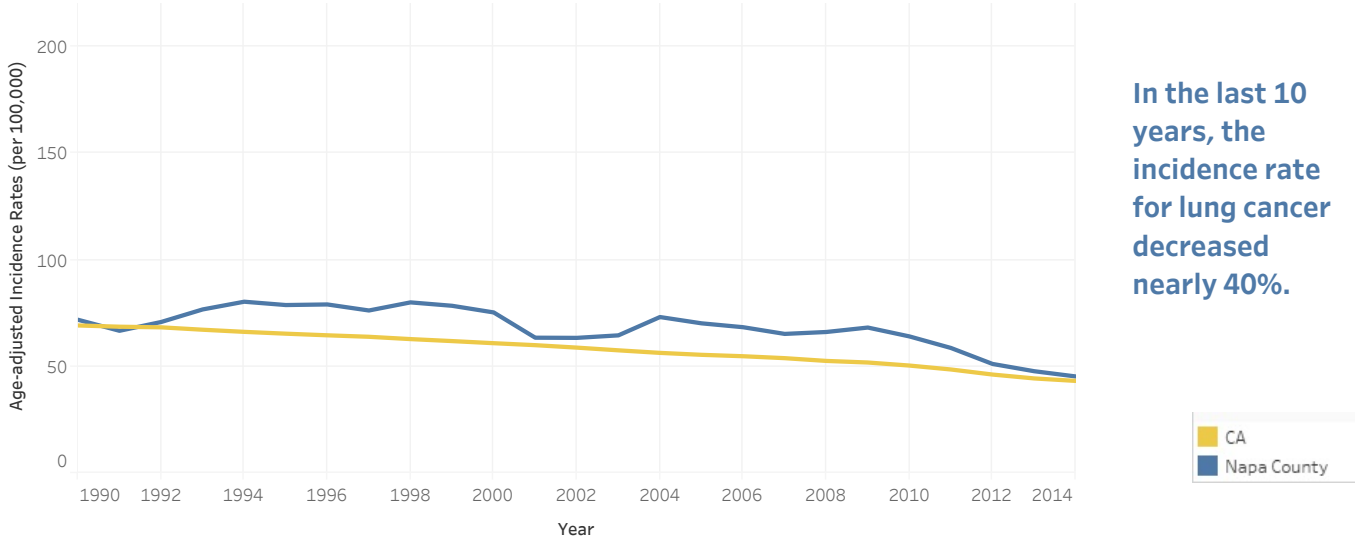
Exposure to second-hand smoke: Exposure to spousal and workplace secondhand smoke accounts for approximately 23% and 27% excess risk of lung cancer, respectively (8). Men exposed to secondhand smoke have a 35% greater risk of developing cancer than men not exposed. Women have a slightly lower risk than men; women exposed to secondhand smoke have a 25% greater risk of developing cancer (9).

Exposure to cancer-causing substances: Exposure to radon, uranium, asbestos, diesel exhaust, arsenic, and some forms of silica and chromium increases the risk of lung cancer. Some of these substances are naturally occurring (10). Other substances are found in the workplace. Smokers exposed to these substances have a higher risk of developing lung cancer than nonsmokers (2).

LUNG CANCER INCIDENCE RATE TIME TRENDS

The graph below displays lung and bronchus incidence rates for Napa County and the State from 1990 to 2014.The fluctuations in the incidence rates in Napa County over time are due to the smaller population in the County compared to the State population. Over the last 20 years, Napa County has maintained a slightly higher incidence rate for lung and bronchus cancer than the State. The higher rate in Napa County may in part be due to the higher use of health care services, including routine exams that can help detect cancer. The incidence rate decreased nearly 40% over the last ten years, and in 2014, the rate for Napa County was not statistically significantly higher than State. Lifestyle factors such as not using tobacco products play a key role in lung cancer prevention.

Averaged Lung Cancer Incidence Rates



In the last 10 years, the incidence rate for lung cancer decreased nearly 40%.

Technical Note: Due to the small number of cases in Napa County, the incidence rates for Napa County and the State are displayed as 3-year rolling averages. For example, the incidence rate displayed at year 2014 is the average of the 2012, 2013, and 2014 incidence rates.Three-year average rates provide more reliable information on time trends than one year rates.

PROSTATE CANCER

Prostate cancer occurs when abnormal cells grow in part of the male reproductive system known as the prostate gland. Prostate cancer is the second most common cancer among men (2). In Napa County, there was an average of 97.4 newly diagnosed cases per 100,000 men per year between 2012 and 2014. In the US, approximately 11.6% of men will be diagnosed with prostate cancer during their lifetime. While prostate cancer can be serious, most men do not die from it (11). The percent of people surviving five or more years after being diagnosed with prostate cancer is 98.6% (5). In Napa County, prostate cancer accounted for 7% of all cancer deaths and the age-adjusted mortality rate was 22.7 deaths per 100,000 male residents.

The established risk factors for prostate cancer include age, African ancestry, and a family history. Although these risk factors are largely non-modifiable, there are several lifestyle factors that play a role in cancer prevention and are highlighted below.

What are the modifiable risks?

Diet: The role of diet in prostate cancer is still unclear. There is some evidence that a diet high in red meat and high-fat dairy products may increase the risk for developing prostate cancer (2, 11). A diet that is very high in dairy foods may increase the risk of fatal prostate cancer (11). However, eating a moderate amount of dairy is still recommended. While a diet very high in dairy foods increases the risk of prostate cancer, no link has been found between prostate cancer and the average consumption of dairy foods. Moderate dairy consumption is an important part of a healthy diet and is rich in calcium, a mineral that has important health benefits including bone growth (2).

Prostate cancer is the 2nd most common cancer among men.

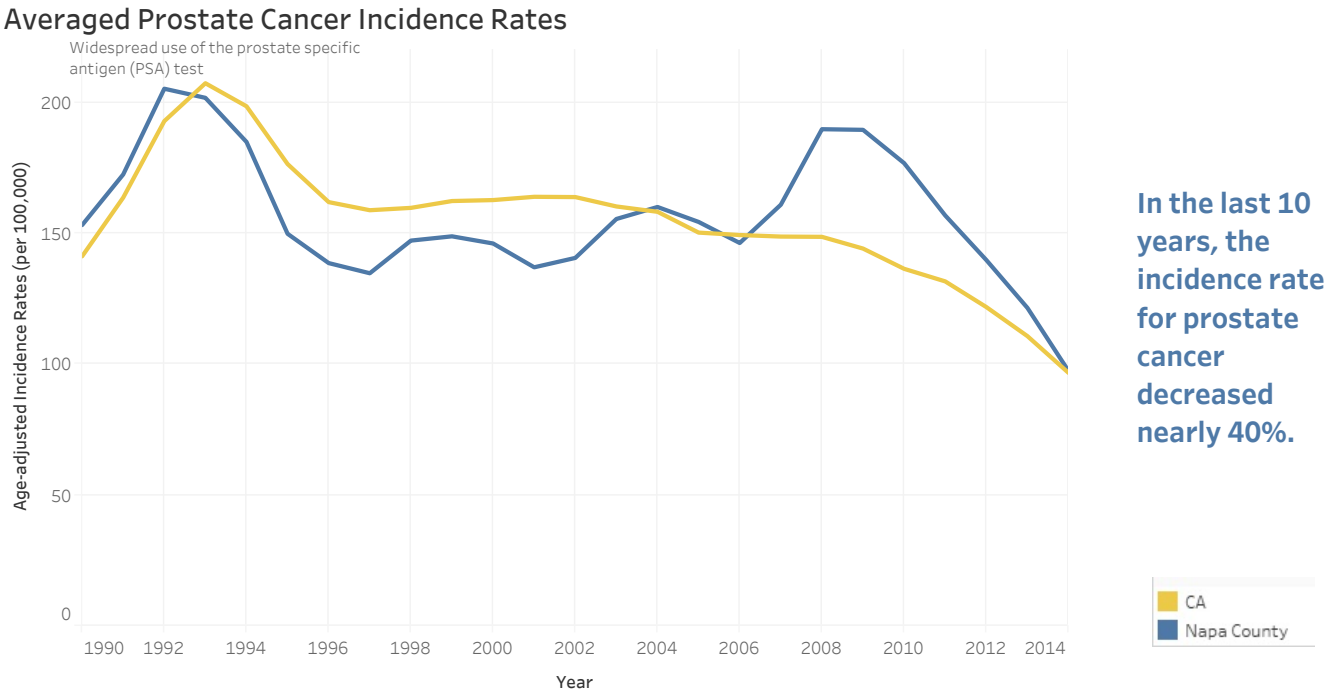
Protective behaviors

Diet: A diet low in fat, high in fruits and vegetables, and with a moderate consumption of dairy foods may decrease prostate cancer risk (12, 13, 14).

Physical activity: Physical activity may be associated with less aggressive prognoses of prostate cancer (14).

PROSTATE CANCER INCIDENCE RATE TIME TRENDS

Over the last 20 years, the incidence rate for prostate cancer in Napa County has fluctuated considerably but has been on the decline since 2010. The incidence rate decreased nearly 40% over the last ten years, and in 2014, the rate for Napa County was not statistically significantly higher than State. This downward trend in incidence rates may reflect changes in diagnostic test recommendations. In 2008, the U.S. Preventive Services Task Force recommended against screening men older than 75 years, and in 2012 against routine screening for all men.



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BREAST CANCER

Breast cancer occurs when abnormal cells grow out of control in the breast tissue. These abnormal cells can form a tumor commonly known as a lump or mass. The tumor is malignant (cancerous) if the cells can spread to surrounding tissues and other parts of the body. Breast cancer is the second most common type of cancer in women in the US (5). Men can also get breast cancer, although it is much less common. In Napa County, there was an average of 145.1 newly diagnosed cases per 100,000 women per year between 2012 and 2014. Approximately 12.4% of women will be diagnosed with breast cancer during their lifetime. Of those diagnosed, the percent of people who survive five or more years is 89.7% (5). In Napa County, breast cancer accounted for 6% of all cancer deaths and the age-adjusted mortality rate was 17.6 deaths per 100,000 women residents.

Although some women are at higher risk because of their personal or family medical history or certain changes in their genes, modifiable lifestyle factors play a key role in cancer prevention and are highlighted below.

What are the modifiable risks?

Heavy alcohol use: Heavy drinking increases the risk of breast cancer (16,17,18). Limiting alcohol consumption to less than three drinks per week can reduce breast cancer risk by more than 30% (18).

Obesity: Excess body weight increases the risk of breast cancer. By maintaining a healthy weight, approximately 17% of breast cancer diagnoses can be prevented (19).

Long term use of oral contraceptives/combined hormone replacement therapies (HRT): Certain oral contraceptives and HRT may increase the risk of breast cancer. Taking hormones to replace missing estrogen/ progesterone for more than five years may raise the risk of breast cancer (2). However, study results have been inconsistent and further research is warranted (16,20,21,22,23).

Protective Behaviors

Breastfeeding: Breastfeeding may slightly decrease the risk of breast cancer. However, this protective effect may fluctuate with different subtypes of breast cancer (22).

Physical Activity: Regular and moderate-to-intense exercise may decrease the risk of breast cancer (2, 24).

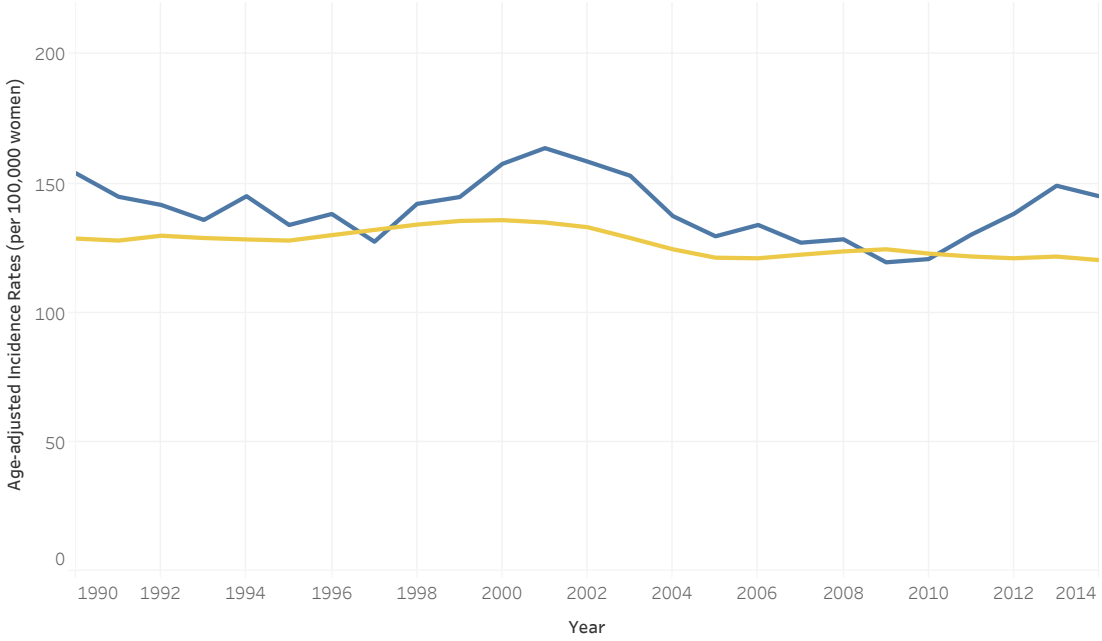
Breast cancer is the second most common type of cancer in women.

By maintaining a healthy weight, approximately 17% of breast cancer can be prevented.

BREAST CANCER INCIDENCE RATE TIME TRENDS

Over the last 20 years, Napa County has maintained a slightly higher incidence rate for breast cancer than the State. The higher rate in Napa County may be due to 1) the higher use of health care services, including mammographies, that can help detect cancer and 2) the increase in obesity (a risk factor for breast cancer) rates seen in Napa County in recent years. The breast cancer incidence rate increased slightly, 6% over the last ten years. In 2014, the incidence rate in Napa County was statistically significantly higher than the State (Napa:145 per 100,000; CA:120 per 100,00). However, similar incidence rates have been seen in neighboring counties including Marin and Sonoma.

Averaged Breast Cancer Incidence Rates



The incidence rate increased 6% over the last 10 years to 145 per 100,000. Similar rates have been seen in neighboring counties.

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PANCREATIC CANCER

Pancreatic cancer occurs when abnormal cells grow out of control in the pancreas, an organ that helps with digestion and managing blood sugar levels. In Napa County, there was an average of 12.3 newly diagnosed cases per 100,000 residents per year between 2012 and 2014. In the US, approximately 1.6% of men and women will be diagnosed with pancreatic cancer during their lifetime. For those diagnosed, the five year survival rate for pancreatic cancer is low, most likely because pancreatic cancer is commonly detected in the later stages of the disease when the cancer has spread. The percent of people surviving five or more years after being diagnosed with prostate cancer is 8.2% (5). In Napa County, pancreatic cancer accounted for 7% of all cancer deaths and the age-adjusted mortality rate was 10.9 deaths per 100,000 residents.

Although some people are at higher risk because of age, race, gender, and certain changes in their genes, among other factors, modifiable lifestyle factors play a key role in cancer prevention and are highlighted below.

What are the modifiable risks?

Tobacco use: Smoking cigarettes increases the risk of pancreatic cancer. Approximately 20%-30% of pancreatic cancer cases are attributed to cigarette smoking. Cigar and pipe smoking and smokeless tobacco may also increase the risk of pancreatic cancer (2,31).

Possible risks that warrant further study:

Diabetes: Diabetes may be associated with an increased risk for pancreatic cancer or as a complication of the disease (1).

Obesity: Excess body weight may increase the risk of pancreatic cancer. People who are very overweight or obese are almost 20% more likely to develop pancreatic cancer(1,32,33).

Diet: Some studies have found that a diet high in red and processed meats and low in fruits and vegetables is associated with increased risk of pancreatic cancer (34).

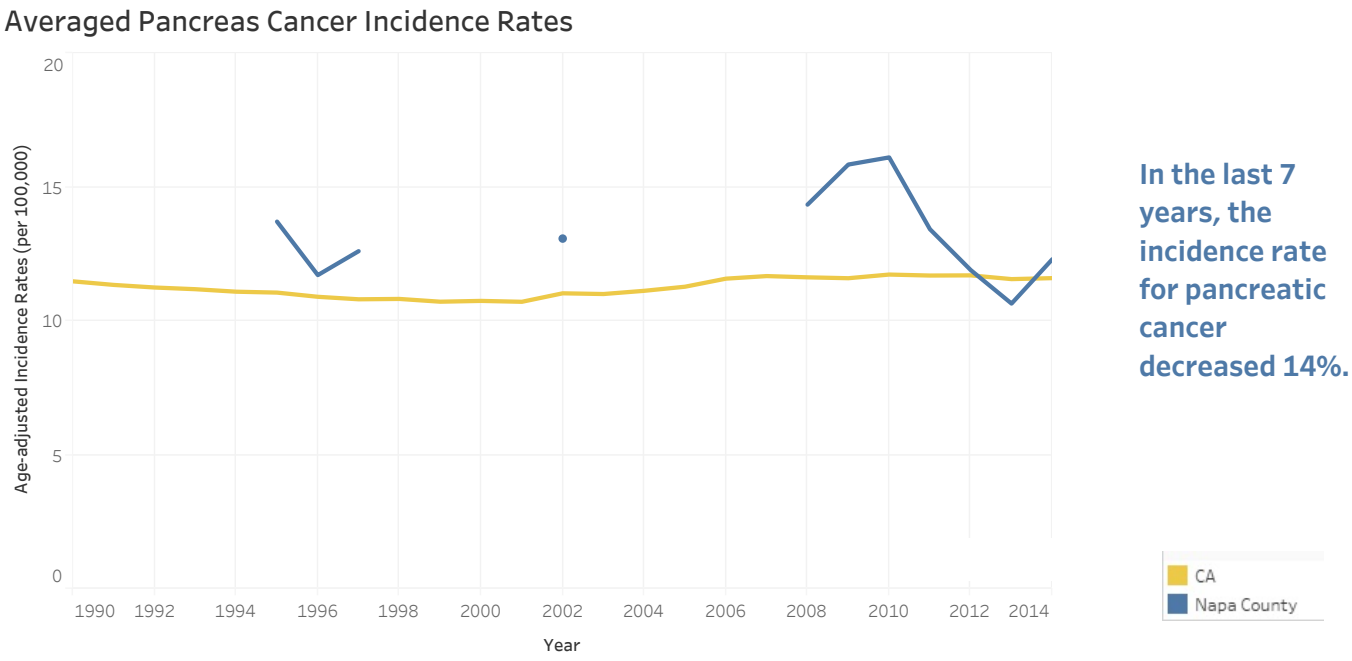
Heavy alcohol use: A direct link between alcohol use and pancreatic cancer is unclear. Heavy alcohol use can lead to conditions such as cirrhosis, which is known to increase risk (34).

Physical inactivity: Some research has found that a sedentary lifestyle with no or very limited exercise increases the risk of pancreatic cancer (34).

Approximately 20-30% of pancreatic cancer cases are attributed to cigarette smoking.

PANCREATIC CANCER INCIDENCE RATE TIME TRENDS

Due to low number of cases reported (less than 15), data could not be displayed for most years prior to 2008. Napa County incidence rate for pancreatic cancer decreased 14% from 2008 to 2014, and in 2014, the rate for Napa County was not statistically significantly higher than State. This downward trend may reflect the decline in smoking. Lifestyle factors, such as not using tobacco products, play a key role in pancreatic cancer prevention.



Technical Notes:
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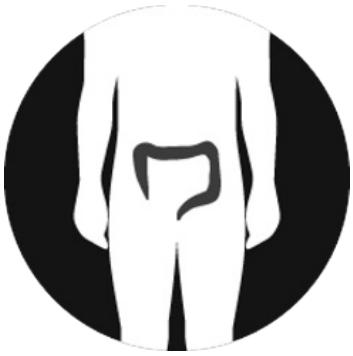
2) Due to the very low incidence rates, a smaller scale was used to display the rates than the scale used to display lung, prostate, breast, and colorectal cancer rates over time.
3) Due to the small number of cases in Napa County, the incidence rates for Napa County and the State are displayed as 3-year rolling averages. For example, the incidence rate displayed at year 2014 is the average of the 2012, 2013, and 2014 incidence rates. Three-year average rates provide more reliable information on time trends than one year rates.

COLORECTAL CANCER

Colorectal cancer occurs when abnormal cells grow in the colon (the large intestine) or rectum. Some of these growths present as polyps, which carry a risk of becoming cancerous. In Napa County, there was an average of 34.8 newly diagnosed cases per 100,000 residents per year between 2012 and 2014. In the US, approximately 4.3% of men and women will be diagnosed with colorectal cancer during their lifetime. The percent of people surviving five or more years after being diagnosed with colorectal cancer is 64.9% (5). In Napa County, colorectal cancer accounted for 7% of all cancer deaths and the age-adjusted mortality rate was 8.4 deaths per 100,000 residents.



Although people are at higher risk for colorectal cancer because of age, personal or family medical history and inherited genetic syndromes among other factors, modifiable lifestyle factors play a key role in cancer prevention and are highlighted below.

What are the modifiable risks?

Diet: A diet high in red and processed meat increases the risk of colon cancer (25,26).

Alcohol and tobacco consumption: Tobacco and alcohol use slightly increases risk of colorectal cancer (27,28).

Obesity: Excess body weight increases the risk of colorectal cancer. This association between obesity and colorectal cancer appears to be stronger in men than women (2,29).

Diabetes: Type 2 diabetes increases the risk of colon cancer and may adversely affect prognosis (2).

Physical Inactivity: A sedentary lifestyle with no or very limited exercise increases the risk of colorectal cancer (26).

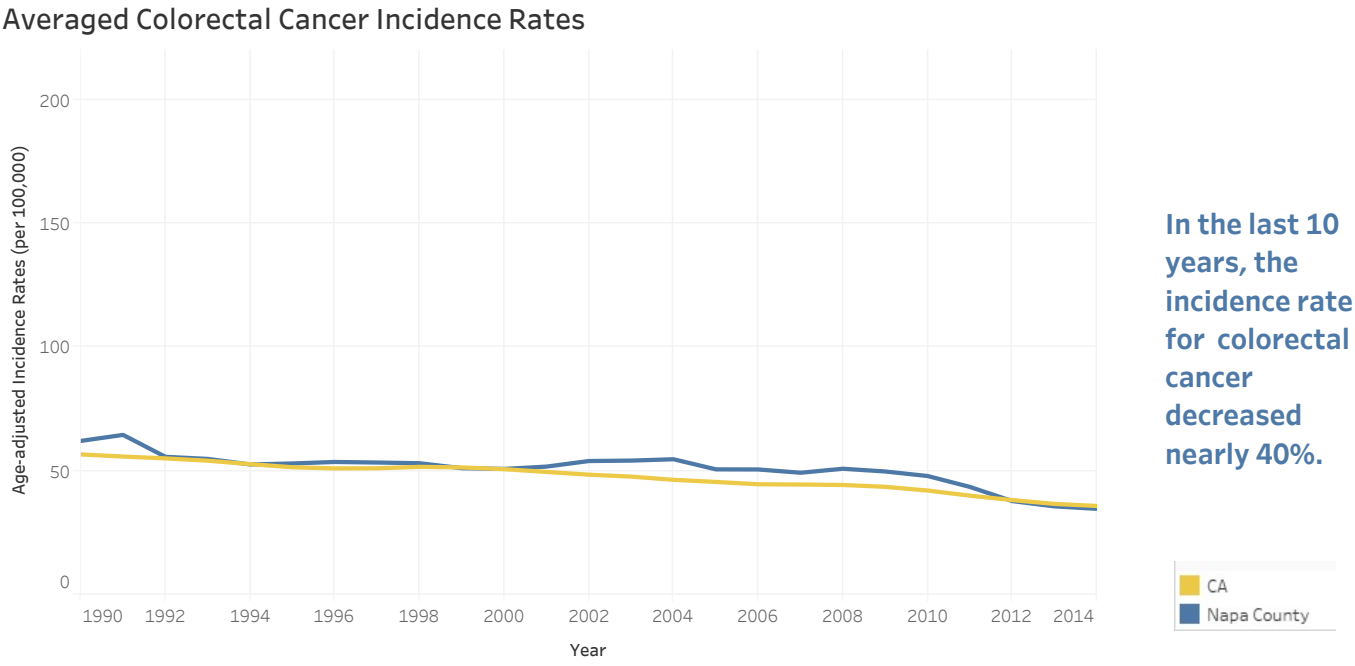
A diet high in red and processed meat increases the risk of colon cancer.

Protective behaviors

Diet: A diet high in fiber, such as whole grains, decreases the risk of colon cancer (26,30).

COLORECTAL CANCER INCIDENCE RATE TIME TRENDS

Over the last 20 years, Napa County experienced a similar downward trend in colorectal incidence rates as the State. The incidence rate decreased nearly 40% over the last ten years, and in 2014, the incidence rate for Napa County was lower than State.



In the last 10 years, the incidence rate for colorectal cancer decreased nearly 40%.

Technical Note: Due to the small number of cases in Napa County, the incidence rates for Napa County and the State are displayed as 3-year rolling averages. For example, the incidence rate displayed at year 2014 is the average of the 2012, 2013, and 2014 incidence rates.Three-year average rates provide more reliable information on time trends than one year rates.

LEUKEMIA

Leukemia is a cancer of the bone marrow and blood. Leukemia is the most common kind of cancer among children and teens. Napa, along with other Bay Area counties, has been noted to have higher rates of childhood cancer when compared with other counties in California (35). In Napa County, there was an average of 14.9 newly diagnosed cases (of all ages) per 100,000 residents per year between 2012 and 2014. Although the childhood leukemia incidence rate for children aged 0-19 years in Napa County was higher than the State, for the 2007- 2014 time period, the difference was not statistically significant (Napa: 8.6 per 100,000 children and CA - excluding San Francisco, San Jose, and LA: 5.2 per 100,000 children). The percent of people surviving five or more years after being diagnosed with leukemia is 60.6% (5). The percent of children surviving five or more years after being diagnosed ranges from 50 - 85%, depending on the type of leukemia (11). In Napa County, leukemia accounted for 7% of all cancer deaths and the age-adjusted mortality rate was 8.4 deaths per 100,000 residents.

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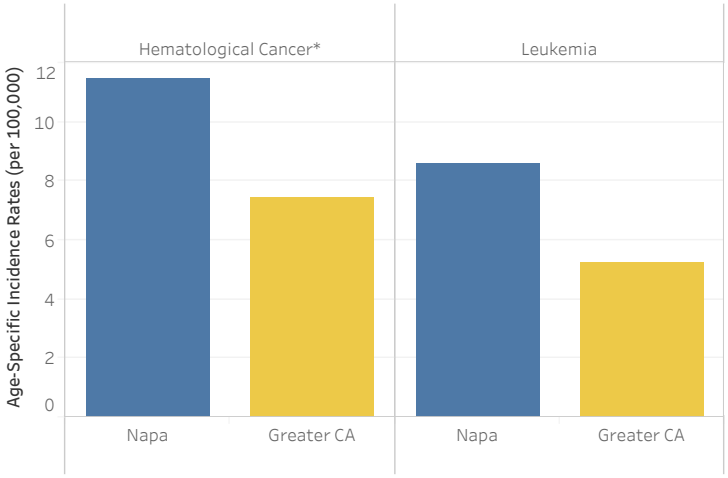
Age-Specific Incidence Rate, 2007-2014, Ages 0-19

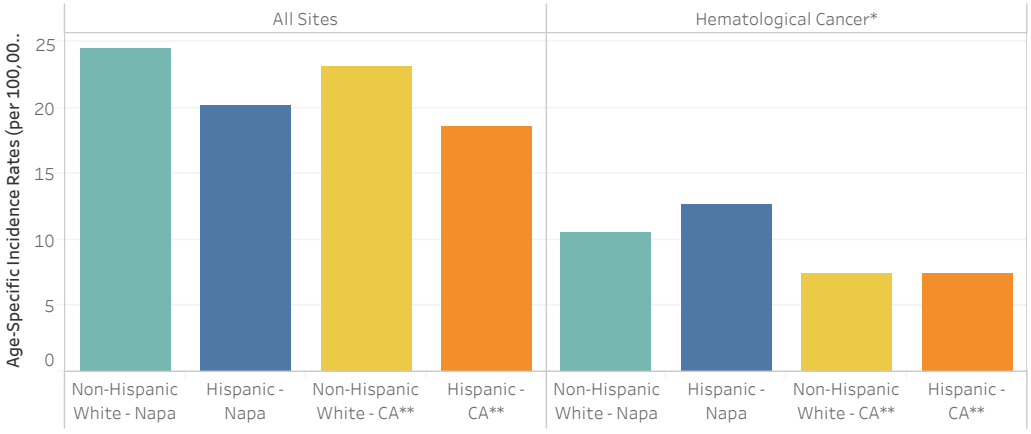


*Hematological Cancers includes lymphoma, leukemia & multiple myeloma
**Greater CA excludes San Francisco-Oakland, San Jose-Monterey, Los Angeles Registries

LEUKEMIA AND HEMATOLOGICAL CANCER

Between 2007 and 2014, the incidence rate for all cancers in children aged 0 - 19 years was higher in non-Hispanic whites than in Hispanics. This trend was seen in both Napa County and the State. Although the incidence rate for hematological cancer in Napa was higher in Hispanics than in non-Hispanic whites, the difference was not statistically significant.

Age-Specific Incidence Rate by Ethnicity, 2007-2014, Ages 0-19



*Hematological cancers include lymphoma, leukemia & multiple myeloma
**Greater CA excludes San Francisco-Oakland, San Jose-Monterey, Los Angeles Registries

What are the modifiable risks?

Children

Researchers have identified child cancer as a "two hit" disease, meaning that two different exposures or risk factors occur preceding cancer illness in children. These "two hits" may take place in pre-conception, conception, in utero, or after birth. Consequently, risk factors for both children and parents should be considered.

Parental risk factors include: cigarette smoking; occupational exposures; reproductive factors that may lead a couple to pursue In Vitro Fertilization (IVF) (but not necessarily IVF itself); and older maternal age (36-45).

Child risk factors include: exposure to in-home pesticides, especially pest strips. Other non-modifiable risk factors include: family history of cancer; high fetal growth; high birth weight (which may be due in part to pre-leukemic cells that secrete growth factor causing the high birth weight); certain viral infections such as Epstein Barr Virus; and Down syndrome (36-46).

Adult

Tobacco use: Smoking has been associated with an increased risk of adult leukemia (47-48).

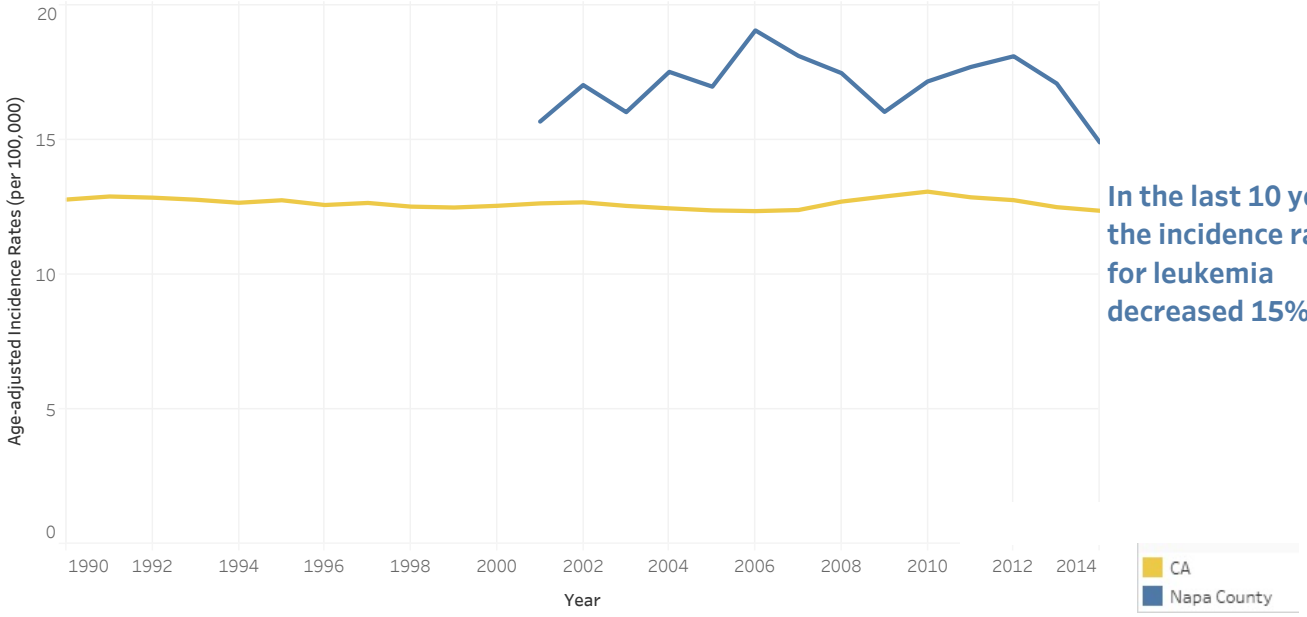
Exposure to cancer-causing substances: Exposure to benzene and ionizing radiation increases the risk of leukemia (2,48).

Other established risk factors for adult leukemia are non-modifiable such as family history, gene mutations, and race (white) (2).

LEUKEMIA INCIDENCE RATE TIME TRENDS

Due to low number of cases reported in Napa County (less than 15), data could not be displayed for most years prior to 2001. Over the last 10 years, Napa County has maintained a slightly higher incidence rate for leukemia than the State. However, Napa's incidence rate decreased 15% between 2004 and 2014, and in 2014, the incidence rate in Napa County was not statistically significantly higher than the State (Napa:14 per 100,000; CA:12 per 100,000). Similar incidence rates have been seen in neighboring counties including Lake, Marin and Sonoma. Higher incidence rates for leukemia appear to cluster in the northeast region of the state.

Averaged Leukemia Incidence Rates



In the last 10 years, the incidence rate for leukemia decreased 15%.

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What can be done to help prevent cancer?

INDIVIDUAL PREVENTION OPPORTUNITIES

Nearly half of all cancer deaths could be prevented by making lifestyle changes. Although prevention strategies vary by type of cancer, listed below are common ways you can reduce the risk of cancer:

Limit alcoholic beverages: Drink no more than 1 drink per day for women and 2 drinks per day for men.

Eat a healthy diet: Eat at least 2 ½ cups of fruits and vegetables each day. Choose whole grain products. Limit consumption of red and processed meats.

Do not smoke: For help quitting, visit smokefree.gov, call 1 (800) QUIT-NOW (784-8669) or 1 (800) NO-BUTTS, or text "QUIT" to 47848 from your cell phone. Smokers who quit, regardless of age, live longer then people who continue to smoke. Smokers who quit before middle age experience a lifespan similar to people who have never smoked. If you do not smoke, do not start. Avoid being near cigarette smoke.

Make time to be active: Adults should get at least 150 minutes of moderate intensity or 75 minutes of vigorous intensity physical activity each week. Children and teens should get at least one hour of moderate to vigorous intensity physical activity daily and should include least three hours of vigorous-intensity activities a week.

(Continued on next tab)

What can be done to help prevent cancer? (Continued)

INDIVIDUAL PREVENTION OPPORTUNITIES

Preventive care can reduce the number of new cancer cases and prevent deaths from certain cancers through early detection.

Following the recommended screening for cervical and colorectal cancers helps prevent these diseases by finding and removing abnormal cells before they become cancerous. Screenings for breast, cervical, colorectal and skin cancers help find these diseases at an early stage, when treatment works best. Talk with your doctor about the benefits of prostate cancer screening.

Vaccination against the human papillomavirus (HPV) helps prevent most cervical cancers and several other kinds of cancer, while the hepatitis B vaccine can help lower the risk for liver cancer.

The Affordable Care Act (ACA) requires most insurance carriers to provide standard cancer screenings and vaccines at no cost to the patient.

Below are some locally available resources for cancer prevention:

https://www.thequeen.org/our-services/cancer-center/ (Queen of the Valley Medical Center)

https://www.adventisthealth.org/napa-valley/pages/services/martin-o'neil%20cancer%20center/prevention-and-screening.aspx (St. Helena Hospital)

http://www.olehealth.org/our-services/adulthealth/ (Ole Health)

https://www.cancer.org/about-us/local/california.html (American Cancer Society)

https://www.plannedparenthood.org/health-center/california/napa/94559/napa-health-center-2702-90200/womens-health (Planned Parenthood)

For more information on prevention, see the American Cancer Society 2017 Report: (https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2017.html)

COMMUNITY PREVENTION OPPORTUNITIES

In order for individuals to successfully participate in cancer prevention activities, public, private nonprofit and other community based organizations should work together to create an environment that reduces cancer risks and supports healthy lifestyles. The following community action is recommended.

1) Establish smoke-free and tobacco-free policies

LOCAL LEVEL

Local tobacco control policies and laws help change public acceptance of smoking, prevent youth access to tobacco products and reduce exposure to secondhand smoke. Tobacco Retail Licensing (TRL) programs require all businesses that sell tobacco products obtain a local license and comply with sales restrictions. TRL policies can be used to control location and density of tobacco retailers, establish minimum pricing or package sizes, and ban sales of flavored tobacco products. Local ordinances can also prohibit smoking in multi-unit housing complexes, youth-sensitive areas, places of employment, and other public areas. Strong local policy can lead to reduced smoking rates and decreased exposure to secondhand smoke by changing norms in the physical and social environment.

Over the next four years, Napa Tobacco Control staff and interested community members plan to work toward adoption of policies that restrict smoking in multi-unit housing, prohibit tobacco retailers within 1000 feet of schools, and include comprehensive definitions of smoking and tobacco products.

Model policies are available at www.changelabsolutions.org

Resources for local advocates, including listings of California jurisdictions that have adopted strong policies, can be found by visiting The American Lung Association's Center for Tobacco Policy and Organizing at www.Center4TobaccoPolicy.org

FEDERAL AND STATE LEVEL

2000 Comprehensive Statewide Tobacco Control Programs Goals: These programs seek to encourage teens and adolescence not to start smoking, promote quitting, and identify and eliminate disparities related to tobacco use.

2009 Family Smoking Prevention and Tobacco Control Act: US Food and Drug Administration regulates the manufacturing, selling and marketing of tobacco products including prohibition of misleading descriptors such as light, low, and mild and prohibition of fruit and candy cigarette flavorings.

2010 Affordable Care Act (ACA): The ACA ensures coverage of evidence-based programs that help people quit smoking.

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COMMUNITY PREVENTION OPPORTUNITIES (Continued)

2) Develop communities that support exercise and healthy diets including access to affordable, healthy foods and environments that are fun and safe for physical activity and active transportation

Well-designed, livable communities, along with policy and systems change, promote the health and wellbeing of all community members. The overarching goal of this work is for communities to help "make the healthy choice the easy choice" for their residents. Resources from Change Lab Solutions for healthy community planning, such as creating complete streets (streets with sidewalks), safe routes to school, and expanding and diversifying the use of open spaces have been successfully utilized by many communities. Locally, the Napa Valley Transportation Authority (NVTA) works with community partners and residents to plan for and promote active transportation opportunities (walking, bicycling, and other means of getting around powered by human energy) within Napa County. NVTA's bicycle and pedestrian plans are located below.

Links to resources:

http://www.changelabsolutions.org/landing-page/healthier-food-environments
http://www.nvta.ca.gov/plans-and-reports

Communities across the United States are also working on building access to healthy, affordable food for all residents. Resources and tools focused on a healthy food environment are available from Change Lab Solutions. Locally, Napa County Public Health and our non-profit partner, Healthy Cooking with Kids, are working on implementing nutrition education and obesity prevention activities throughout Napa County. The objectives of this partnership include increasing the consumption of fruits and vegetables, decreasing consumption of sugar sweetened beverages, and working with retailers to improve product placement and sale of healthier food and beverage items. The Live Healthy Napa County (LHNC) community collaborative has selected Food Insecurity and Livable Communities as two priority areas for its updated community health assessment and improvement plans. LHNC seeks to leverage the work already being undertaken by many community partners in these areas and to achieve community engagement that is broad and diverse. The health assessment will then help guide a new community health improvement plan to be implemented by this public-private partnership.

Links to resources:

http://www.changelabsolutions.org/landing-page/healthier-food-environments
https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/NEOPB/Pages/Nutrition_Education_Obesity_Prevention_Branch.aspx
http://www.livehealthynapacounty.org/food-insecurity.html
http://www.livehealthynapacounty.org/all-age-friendly-community.html

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