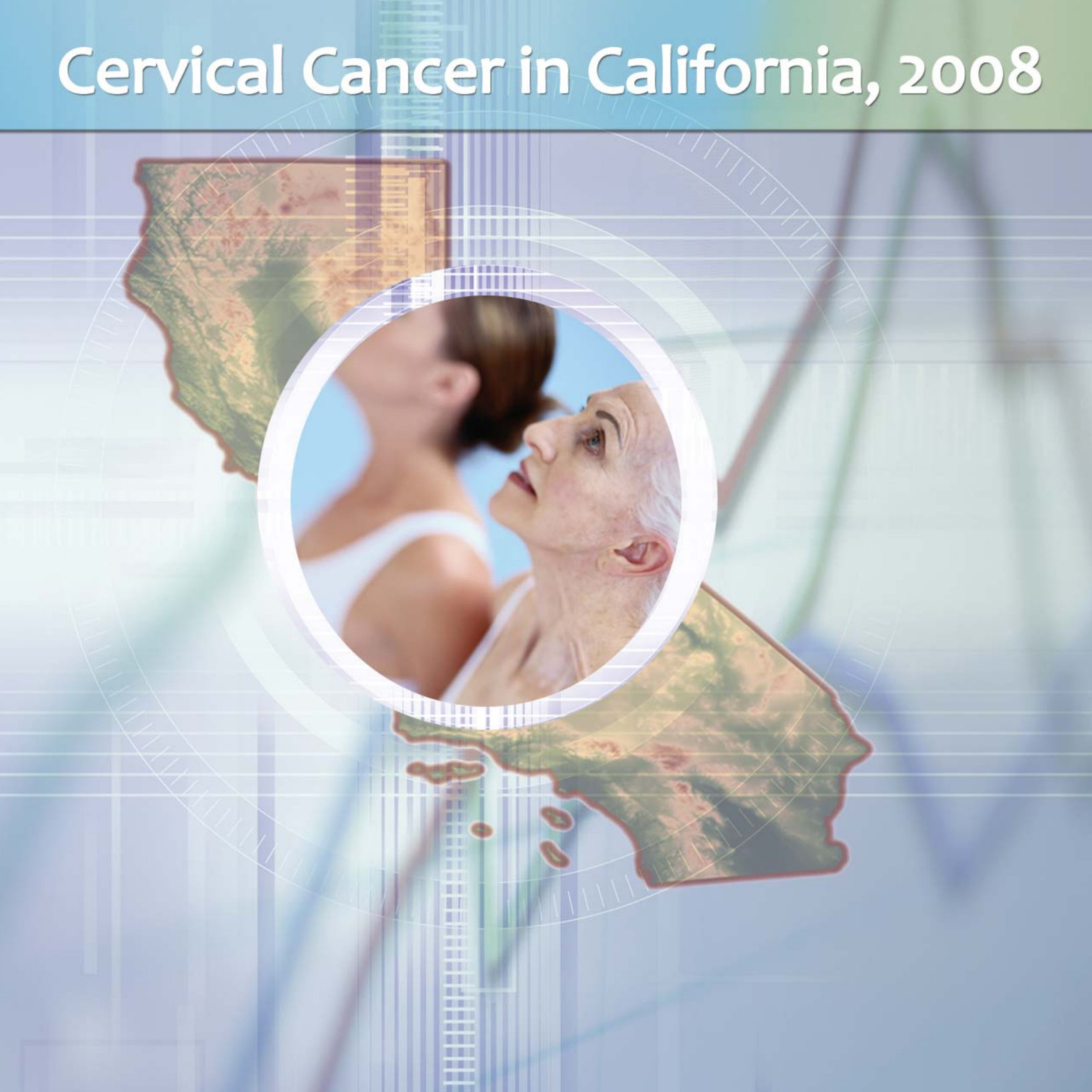
Cervical Cancer in California, 2008



Cervical Cancer in California, 2008

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Contents


Each year, about 1,400 California women are diagnosed with cervical cancer and 400 die from the disease. Cervical cancer is the tenth most common cancer diagnosed among California women. A useful screening test for cervical cancer exists and most cervical cancer is preventable. Each case of cervical cancer represents a missed opportunity for prevention.

Message from the California Cancer Registry

The remarkable reduction in new cervical cancer cases (incidence) and deaths (mortality) from cervical cancer over the past 50 years is a public health success story. The introduction of a simple cervical cancer screening test, the Pap (Papanicolaou) test has saved large numbers of women from developing or dying from cervical cancer. Cervical cancer is unique in that a great deal is known about its causes, an effective screening test exists, and it is mostly preventable. Despite these facts, the California Cancer Registry estimates that in 2008, approximately 1,400 California women will be diagnosed with cervical cancer, and 400 will die from this disease. Each of these cases represents a missed opportunity for prevention.

Although overall incidence and death rates for cervical cancer have declined in California, this decline has not been shared equally among all women. Hispanic women have cervical cancer incidence rates that are twice those of non-Hispanic white women, and death from cervical cancer is higher among non-Hispanic black women than among women of other races and ethnicities. We must make sure that all women in California have access to screening and high quality treatment for cervical cancer.

A promising new development in the fight against cervical cancer is a vaccine approved by the U.S. Food & Drug Administration (FDA) in June 2006. This vaccine prevents infection from two types of the human papillomavirus (HPV) known to cause cervical cancer and two types of HPV associated with genital warts. The vaccine is currently licensed for use in females aged 9 to 26 years and is recommended for routine use in girls aged 11 to 12 years. Widespread use of this vaccine in young adolescent girls has the potential to prevent 70 percent of cervical cancer cases.[1]

It is our hope that this summary booklet will be useful to a wide variety of readers including health care providers, policy makers, researchers, advocates, and women concerned about their health and well-being.

This report is a publication of the California Cancer Registry (CCR). The CCR serves the public by collecting statewide data, conducting surveillance and research into the causes, controls, and cures of cancer, and communicating the results to the public. Additional detailed information can be found in, "Cervical Cancer in California, 2006", a special report published in June 2006 by the Public Health Institute, Tri-Counties Cancer Surveillance Program. "Cervical Cancer in California, 2006" is based upon cases diagnosed in California women from 1988-2002, and provides a detailed look at cervical cancer in the state. For details on how to obtain a copy of this report, see page 21.

1. Saslow D, Castle PE, Cox JT et al. American Cancer Society guideline for human papillomavirus (HPV) vaccine use to prevent cervical cancer and its precursors. CA Cancer J Clin 2007; 57:7-28.

What is Cervical Cancer?

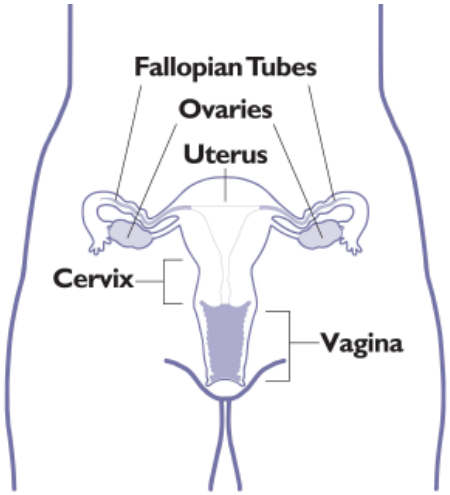


Image courtesy of the Centers for Disease Control and Prevention

Cervical cancer is the uncontrolled growth and spread of abnormal cells in the cervix. The cervix is part of a woman's reproductive system. It is the lower, narrow part of the uterus which is located in the lower abdomen. The cervix connects the uterus to the vagina and the vagina leads to the outside of the body.

When abnormal cell growth is limited to the surface of the cervix, the cancer is called *"in situ."* Nearly all cervical cancers detected at this stage can be cured. If the cancer has grown beyond the surface of the cervix, the cancer is called "invasive." Invasive cervical cancer is categorized into three stages according to how far it has spread. Local stage means the cancer is confined to the cervix; regional stage means the cancer has spread beyond the cervix into surrounding tissues or to nearby lymph nodes; and distant stage means the cancer has spread (metastasized) to other parts of the body. Treatment for cervical cancer is less likely to work once the cancer has spread beyond the cervix.

What Causes Cervical Cancer?

The most common cause of cervical cancer is infection with the human papillomavirus (HPV). There are more than 100 different types of HPV and of these, approximately 30 types (called "genital HPV") infect the genital area of males and females. Genital HPV types can cause genital warts in both sexes as well as cervical cancer in females.

Genital HPV is typically passed from one person to another through sexual contact. Consistent condom use does provide some protection and can reduce the risk of getting a genital HPV infection. However, HPV transmission can still occur in genital areas not covered by condoms.

Genital HPV infection is very common. Most people who have ever had sex will be infected with genital HPV at some time in their life. Genital HPV infection usually shows no symptoms and a person's immune system often clears the infection on its own. Most women infected with genital HPV do not develop cervical cancer. However, in a small percent of women the immune system does not clear the genital HPV infection. These women are at risk for developing cervical cancer.

What are the Risk Factors for Cervical Cancer?

A risk factor is anything that increases a person's chance of getting a disease. Since genital HPV is a known cause of cervical cancer, many of the risk factors for this disease are related to risk of infection with genital HPV. You can reduce your risk of being infected with genital HPV by:

- Limiting your number of sexual partners
- Not having sex with someone who has had many sexual partners
- Using condoms each time you have sex
- Getting the HPV vaccine if you are a female between the ages of 9 and 26 years (see pages 12 and 21 for more information on the HPV vaccine)

If a woman has genital HPV, smoking will increase her chance of developing cervical cancer by two to five times. Also, women with genital HPV who have seven or more full-term pregnancies are four times more likely to develop cervical cancer than women with no pregnancies.

Other risk factors for cervical cancer include:

- **Not getting regular Pap tests:** By getting regular Pap tests, cervical cancer can be caught at an earlier stage of disease which makes it easier to control (see pages 12-13 for more information on Pap tests).
- **Poverty:** Poor women have a higher risk of developing cervical cancer. This is probably because they often do not have access to regular health care and regular Pap tests.
- **A history** of abnormal Pap tests and pre-cancerous cervical lesions.
- **Weakened immune system:** Women with a weakened immune system have a higher risk of developing cervical cancer. Certain medical conditions and medications can lead to a weakened immune system such as HIV infection (the virus that causes AIDS), diabetes, immunosuppressive drugs prescribed to organ transplant patients, and oral steroids prescribed for rheumatoid arthritis and asthma. Women should discuss their individual risk with their health care provider.

What are the Signs and Symptoms of Cervical Cancer?

In the early stages of cervical cancer there are usually no signs or symptoms. This is why it is very important for women to get screened for cervical cancer on a regular basis. There is a very effective screening test for cervical cancer that can detect changes in the cervix when the woman has no symptoms (see pages 12-13 for more information on screening). If the cancer is found early, the chance of recovery (prognosis) is much better.

When cervical cancer spreads, women may experience one or more of the following symptoms:

- Unusual discharge from the vagina
- Blood spots or light bleeding between regular menstrual periods
- Bleeding after sex, douching, or pelvic exam
- Bleeding after menopause
- Pain during sex
- Pelvic pain

Although these symptoms are associated with advanced cervical cancer, they may also be caused by other non-cancerous conditions and should be evaluated by a health care provider.

Can Cervical Cancer be Prevented?

Most cervical cancers can be prevented. Cervical cancer usually develops slowly over time. Before cervical cancer develops, the cells of the cervix go through changes and become abnormal. If these abnormal cells are not detected and treated, they may develop into invasive cervical cancer. There is a very effective screening test for cervical cancer that detects changes in the cells of the cervix. This screening test is called the Pap (Papanicolaou) test. When women get Pap tests done on a regular basis, it is more likely that changes in the cells of the cervix will be detected early (before they develop into invasive cervical cancer). Early detection improves the chances of successful treatment and can prevent abnormal cells from becoming cancerous.

A Pap test requires that a sample of cells be taken from the cervix. To get a sample of cervical cells, a health care professional places an instrument, called a speculum, into the vagina. The speculum holds the vagina open so the cervix can be seen. Next, the health care professional gently scrapes or brushes cells from the cervix and places them on a glass slide (conventional Pap) or in a liquid solution (liquid based Pap) and sends it to the laboratory. At the laboratory, the cells are viewed under a microscope. If abnormal cells are found, your health care provider may recommend additional tests (see page 15 for more information on abnormal Pap tests).

Since genital HPV infection is a known cause of cervical cancer, women can decrease their chances of developing cervical cancer by limiting their exposure to genital HPV. Vaccines have been developed that can protect females from genital HPV infection. So far, one HPV vaccine (Gardasil®) has been approved by the U.S. Food and Drug Administration (FDA). Another vaccine (Cervarix®) may also be approved in the future (for more information on the HPV vaccine see page 21). However, neither vaccine protects against every type of genital HPV that can cause cervical cancer. Therefore, it is very important for vaccinated women to get screened for potential changes in the cervix caused by other genital HPV types.

Screening Guidelines for Cervical Cancer

The American Cancer Society recommends that:

- All women have a Pap test about three years after the start of vaginal intercourse, but no later than 21 years of age. Testing should be done every year with the conventional Pap test (cells are placed on a glass slide) or every two years using the newer liquid-based Pap test (cells are placed in a preservative solution). Recent studies show that use of liquid-based Pap tests slightly improves detection of cancers and greatly improves detection of pre-cancers.
- Beginning at age 30, women who have had three normal Pap test results in a row may get tested every two to three years. Women who have certain risk factors such as diethylstilbestrol (DES)[2] exposure before birth, HIV infection, or a weakened immune system should continue to be tested yearly.
- For women over age 30, a DNA test for HPV can be included as part of screening.
- Women aged 70 years or older who have had three or more normal Pap test results in a row and no abnormal Pap test results in the last 10 years may choose to stop having cervical cancer testing. Women with a history of cervical cancer, DES exposure before birth, HIV infection, or a weakened immune system should continue to have testing as long as they are in good health.
- Women who have had a total hysterectomy (surgical removal of the uterus and cervix) may stop having cervical cancer testing unless advised to do so by their health care provider.

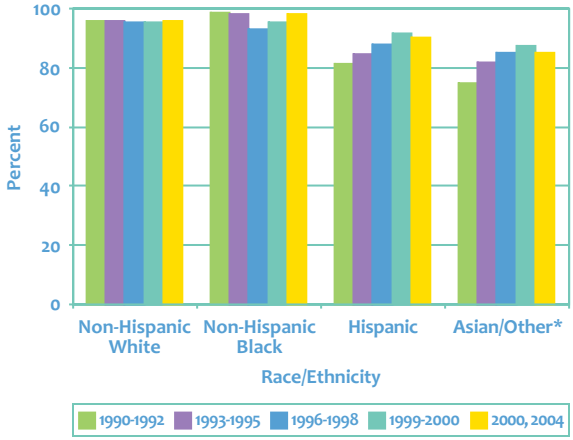
2 Diethylstilbestrol (DES) is a drug that was prescribed to pregnant women to prevent miscarriage and premature birth from the 1940(s) to the 1970(s). Research shows that daughters of women who used DES during pregnancy are at an increased risk for cervical cancer.

Use of Cervical Cancer Screening by California Women

Since 1990, the proportion of California women who report ever having a Pap test has increased from 85 percent to 93 percent in 2004. However, cervical cancer screening rates differ by race/ethnicity, age, and poverty status. This graph shows that although cervical cancer screening rates have increased among Hispanic women (81 percent in 1990 versus 90 percent in 2004) and among Asian/Other women (75 percent in 1990 versus 85 percent in 2004), Hispanic and Asian/Other women are still much less likely than non-Hispanic white and non-Hispanic black women to report ever having a Pap test. Younger women (aged 18 to 24 years) are less likely than women 25 years of age and older to report ever having a Pap test. Also, women living in poverty (below 200 percent of the Federal Poverty Level) are also less likely to report ever having a Pap test.

In California, the *Cancer Detection Program: Every Woman Counts* provides ***free*** breast and cervical cancer screening to women who are poor and have limited or no health insurance. For more information on this program call 1-800-511-2300 or visit the program's website at http://www.dhs.ca.gov/cancerdetection/cdsinfo.htm.

Percent of Women Who Reported Ever Having a Pap Test by Race/Ethnicity, California, 1990-2004



Source: California Behavioral Risk Factor Survey
*"Other" includes non-Hispanics who identify themselves as Native Hawaiian or other Pacific Islander, or American Indian or Alaska Native.
Prepared by the California Department of Public Health, Cancer Surveillance Section.

What Happens if the Pap Test Finds Abnormal Cells on the Cervix?

If the Pap test finds abnormal cells on the cervix then further testing is needed to determine the reason for the abnormality. The National Cancer Institute (NCI) estimates that approximately 1 out of every 20 Pap tests done each year will be abnormal and require follow-up. In most cases, the abnormalities turn out to be caused by benign conditions such as inflammation or infection rather than a cancer. However, because some abnormal cells may be caused by a cancer or a pre-cancer it is very important that a woman keep all follow-up appointments as recommended by her health care provider after an abnormal Pap test. Early treatment of pre-cancerous conditions can, in most cases, prevent the development of cervical cancer. A health care provider will determine the appropriate treatment for each case. This usually involves identifying the area on the cervix where the abnormal cells are located and removing them by taking out a small area of tissue or destroying the cells by other means such as freezing or using a laser. These procedures can be done in a clinic and do not require general anesthesia. For further information see: http://www.cancer.gov/cancertopics/factsheet/Detection/Pap-test.

What is the Treatment for Cervical Cancer?

If further testing following an abnormal Pap test finds that the abnormal cells are due to a cancer, then prompt treatment is needed. Treatment for cervical cancer depends mainly on the size of the tumor, whether the cancer has spread, and the overall health of the patient. Treatment options for cervical cancer may include:

- **Hysterectomy:** A hysterectomy is the surgical removal of the uterus and cervix. For women diagnosed with early stage cervical cancer (when the cancer is confined to the cervix), hysterectomy is the usual treatment of choice.
- **Radiation:** Radiation uses high-energy rays to kill cancer cells in the affected area. Women with cervical cancer, whose health may be damaged by having a hysterectomy, are usually offered radiation therapy as an alternative. Women may also have radiation treatment combined with hysterectomy, chemotherapy, or both.
- **Chemotherapy:** Chemotherapy involves the use of drugs to kill cancer cells For treatment of cervical cancer, chemotherapy is usually combined with radiation therapy.

For further information see: http://www.cancer.gov/cancertopics/pdq/treatment/cervical/patient/page4/.

Cervical Cancer Among California Women

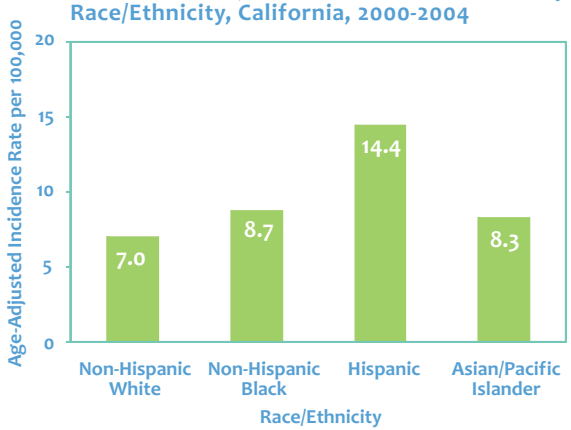
Cervical cancer is the tenth most common cancer diagnosed among California women. About 1,400 cases of cervical cancer are diagnosed in California each year and each case represents a missed opportunity for prevention.

There has been a steady decline in the number of new cases (incidence) of cervical cancer among California women between 1988 and 2004. All four major race/ethnic groups (non-Hispanic white, non-Hispanic black, Hispanic, and Asian/Pacific Islander) have experienced this decline. However, the rate of decline has been different for each race/ethnic group.

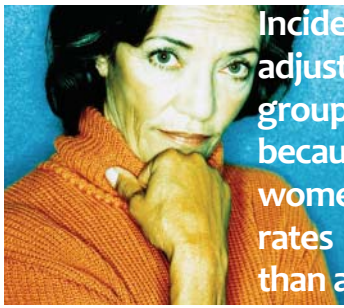
Incidence rates for cervical cancer vary by race/ethnicity, age, and socioeconomic status:

Race/ethnicity: Hispanic women have the highest rate of cervical cancer incidence. They are two times more likely than non-Hispanic white women to be diagnosed with cervical cancer.

Cervical Cancer, Five-Year Incidence Rates by Race/Ethnicity, California, 2000-2004



Source: California Cancer Registry, April 2007
Prepared by the California Department of Public Health, Cancer Surveillance Section.

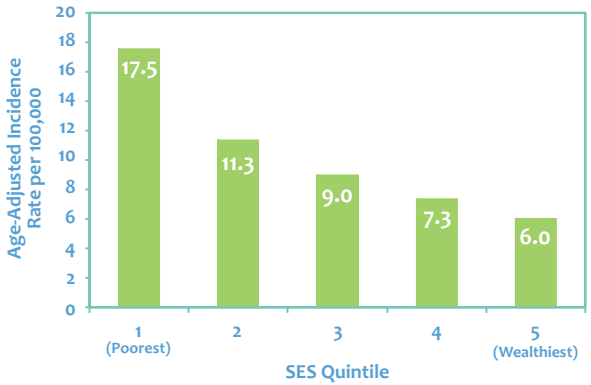


Incidence and death rates for different race/ethnic groups are age-adjusted. This means that the rates are calculated as if all race/ethnic groups in California had the same age distribution. This is important because older women are more likely to get cervical cancer than younger women. Adjusting for age means that differences in cervical cancer rates will not be due to one group having more or less older women than another group.

Age: Cervical cancer incidence increases with age. Incidence begins rising at age 20 years and continues to increase up to around age 40 years in all race/ethnic groups. At this age, the patterns of incidence change for each group. Among Hispanic women, the incidence rate continues to rise throughout the life span and peaks in the 65-69 year age group. Incidence rates also continue to rise throughout the life span in non-Hispanic black and Asian/Pacific Islander women. However, incidence peaks at a later age in these two groups. In non-Hispanic black women, incidence peaks in the 85 years and older age group and in Asian/Pacific Islander women incidence peaks in the 75-79 year age group. In contrast, the incidence rate among non-Hispanic white women peaks at age 40 years and then remains flat (little or no change) throughout the life span.

Socioeconomic Status (SES): California women who live in poor (low SES) neighborhoods are nearly three times more likely than women who live in wealthy (high SES) neighborhoods to be diagnosed with cervical cancer. This is probably because women living in poor neighborhoods cannot afford health care including cervical cancer screening.

Cervical Cancer, Five-Year Incidence Rates by Socioeconomic Status (SES) Quintile, California, 1998-2002



Source: California Cancer Registry, October 2006; 2000 Census
Prepared by the California Department of Public Health, Cancer Surveillance Section.

California women with cervical cancer diagnosed between 1998 and 2002 were divided into five categories of socioeconomic status (SES). These categories were based upon the average income, educational level and type of jobs held by residents in their neighborhoods as reported by the 2000 United States Census. The poorest neighborhoods are classified as SES 1 while the wealthiest neighborhoods are classified as SES 5.

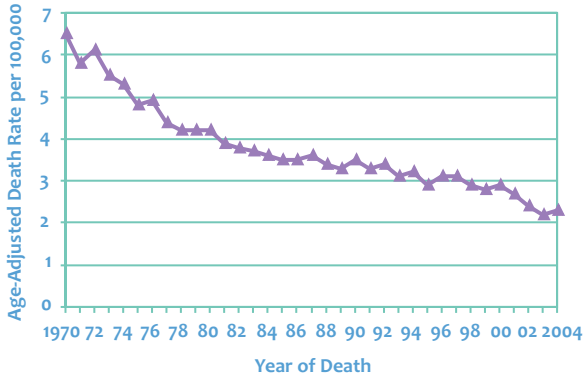
Death from Cervical Cancer

The decline in death from cervical cancer is one of the greatest medical and public health successes of the past century. This success is due to the widespread utilization of the Pap test since its introduction in the late 1940s. Since 1970, the death rate for cervical cancer among California women has decreased by 65 percent.

All major race/ethnic groups in California have experienced a decrease in death from cervical cancer. However, Hispanic and non-Hispanic black women have higher death rates than non-Hispanic white and Asian/Pacific Islander women. The reasons for these differences are not fully known, but may be related to disparities in access to health care that would impact early detection and treatment of cervical cancers.

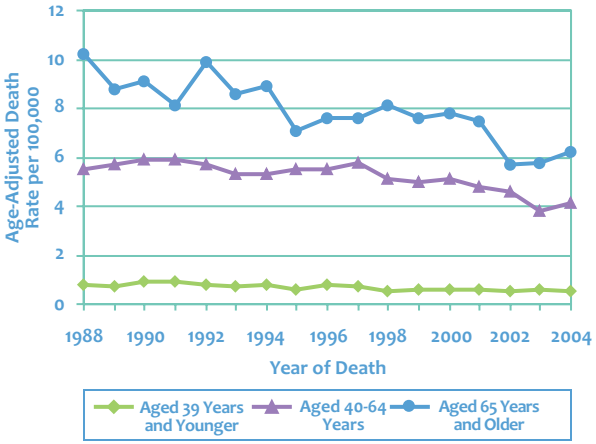
Women aged 65 years and older have the highest rate of death from cervical cancer. However, this age group has also experienced the largest decline in death between 1988 and 2004 (39 percent).

Cervical Cancer Death Rate, California, 1970-2004



Source: California Department of Public Health, Center for Health Statistics Death Master Files
Prepared by the California Department of Public Health, Cancer Surveillance Section.

Cervical Cancer Death Rates by Age Group, California, 1988-2004

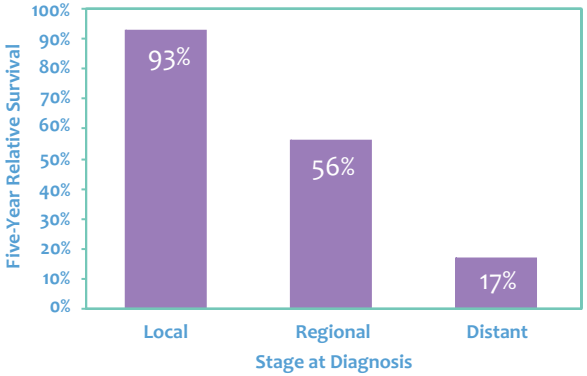


Source: California Department of Public Health, Center for Health Statistics, Death Master Files
Prepared by the California Department of Public Health, Cancer Surveillance Section.

Cervical Cancer Survival

Survival of women diagnosed with cervical cancer is strongly related to stage at diagnosis. Survival rates are much higher when cervical cancer is diagnosed early (local stage). Five-year survival for women diagnosed at the local stage (when the cancer is confined to the cervix) is 93 percent. However, survival rates drop substantially when the disease is diagnosed at a later stage. Women diagnosed with cervical cancer at the regional stage (when the cancer has spread beyond the cervix into surrounding tissues or to nearby lymph nodes) have a five-year survival rate of 56 percent and women diagnosed at distant stage (when the cancer has spread to other parts of the body) have a five-year survival rate of 17 percent. Women are much more likely to survive cervical cancer when the disease is caught early. This is why it is so important for women to get screened for cervical cancer on a regular basis.

Five-Year Relative Survival Among Women With Cervical Cancer by Stage at Diagnosis, California, 1994-2004



Source: California Cancer Registry, April 2007
Prepared by the California Department of Public Health, Cancer Surveillance Section.

Survival of cervical cancer also varies by race/ethnic group and age. Non-Hispanic black women have poorer survival at every stage at diagnosis. Women aged 65 years and older also have poorer survival regardless of stage at diagnosis.

New Hope in the Fight Against Cervical Cancer

In June 2006, the U.S. Food and Drug Administration (FDA) approved a vaccine that protects against four major types of genital HPV – two that cause genital warts and two that cause cervical cancer. This vaccine, called Gardasil®, is currently licensed for use in females aged 9 to 26 years and is recommended for routine use in girls aged 11 to 12 years. The vaccine is a series of three shots given over a six month period and is most effective if given before the onset of sexual activity. Other HPV vaccines are currently being studied and may be approved by the FDA in the future. Young women and/or their caretakers should talk to a health care provider about the HPV vaccine. Widespread use of this vaccine in young women has the potential to prevent approximately 70 percent of cervical cancer cases but will not eliminate the need for screening. This vaccine does not protect against every type of genital HPV that causes cervical cancer. Therefore, it is very important for women to get regular Pap screening even if they receive the HPV vaccine.

For the most current information on the HPV vaccine visit the following websites:

- Centers for Disease Control and Prevention
  - Division of STD Prevention: www.cdc.gov/std/hpv
  - National Immunization Program: http://www.cdc.gov/vaccines
- California Department of Public Health
  - Immunization Branch: www.dhs.ca.gov/ps/dcdc/izgroup
  - Office of Women's Health: http://www.cdph.ca.gov/programs/owh/

For more information on cervical cancer visit the following websites:

- The special report, "Cervical Cancer in California, 2006" is available at: http://www.ccrcal.org/Publications.html
- California Department of Public Health
  - Cancer Detection Section: http://www.dhs.ca.gov/cancerdetection/
  - Office of Women's Health: http://www.cdph.ca.gov/programs/owh/
- American Cancer Society: www.cancer.org
- National Cancer Institute: www.cancer.gov
- Centers for Disease Control and Prevention: http://www.cdc.gov/cancer/nbccedp/

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