Cervical CANCER IN GEORGIA 2003 - 2007

Georgia Department of Community Health | Division of Public Health

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What is Cervical Cancer?

Cervical cancer begins in the lining of the cervix. The cervix is the lower part of the uterus (womb). The uterus has two parts. The upper part, called the body of the uterus, is where the fetus grows. The cervix, in the lower part, connects the body of the uterus to the vagina, or birth canal.

Cancer of the cervix does not form suddenly. First, some cells begin to change from normal to pre-cancer and later to cancer. This can take a number of years, although sometimes it happens more quickly. Having certain risk factors can sometimes speed the progression from pre-cancer to cancer. For many women, low-grade pre-cancerous changes may go away without any treatment. Persistent pre-cancerous changes may need to be treated to keep them from becoming true cancers.

There are two main types of cancer of the cervix. About 85-90 percent are squamous cell carcinomas. The other 10-15 percent are adenocarcinomas. If the cancer has features of both types it is called mixed (or adenosquamous) carcinoma. There are also a few other rare types of cancer of the cervix.

Cervical cancer used to be one of the most common causes of cancer death for American women. Between 1975 and 2007 the number of deaths from cervical cancer decreased dramatically, with mortality rates in 2007 at less than half of what they were in 1975. The main reason for this change is the use of the Pap test to find cervical cancer early.

Cervical cancer is the thirteenth most common cancer in U.S. women. A woman in the U.S. has approximately a 1 in 145 chance of being diagnosed with cervical cancer in her lifetime. It is expected that there will be 12,200 new cases of cervical cancer diagnosed in the U.S. in 2010, and that 4,210 women will die from the disease.

How is Cervical Cancer Detected?

Cervical cancer can usually be found early by having regular Pap tests. During a Pap test, a doctor or clinician collects cells from the cervix, which are then placed on a slide or in a liquid filled container and sent to a laboratory for testing. With regular Pap tests and appropriate follow-up care (if needed), death from cervical cancer is almost completely preventable. The American Cancer Society recommends the following guidelines for receiving Pap tests:

All women should begin having the Pap test about 3 years after they start having sex (vaginal intercourse), but no later than 21 years of age. The test should be done every year if the regular Pap test is used, or every 2 to 3 years if the liquid-based Pap test is used. Either test is effective in detecting abnormalities. Beginning at age 30, women in monogamous relationships who have had 3 consecutive normal test results may be screened every 2 to 3 years. However, women who continue to experience exposure to human papillomavirus (HPV) should have more frequent Pap tests. Women 70 years of age or older who have had 3 or more consecutive normal tests (and no abnormal tests in the last 10 years) may choose to stop having Pap test screening. Women who have had a total hysterectomy (removal of the uterus and cervix) for reasons other than having cancer or a precancerous lesion may also choose to stop having Pap test screening.

Screening Rates for Georgia Women

The following data were collected by the Behavioral Risk Factor Surveillance System for 2003-2007 and represent non-institutionalized civilian women 18 years and older living in Georgia. The age groups analyzed correspond to the target groups served by the Breast and Cervical Cancer Program of Georgia (see page 10).

Pap Test: All women were asked if they had ever had a hysterectomy. Among women 18 years and older who reported that they had not had a hysterectomy, 94 percent reported that they had ever had a Pap test. Of these, 71 percent reported having had a Pap test within the last year, while 92 percent reported having had a Pap test sometime within the past three years.

Screening in Relation to Health Insurance in Georgia

Between 2003 and 2007, approximately 16 percent of all women reported that they did not have health insurance.

Among women of all ages, those who reported not having insurance were slightly less likely to report having ever had a Pap test (95 percent vs. 90 percent).

Among women in each age group, women without insurance were less likely to report that their most recent pap test was within the past year. They were also less likely to report that their most recent pap test was within the past three years.

Women aged 65-70 were less likely than women in younger age groups to report having had a pap test within one year or within three years, and this held true for those with insurance or without insurance.

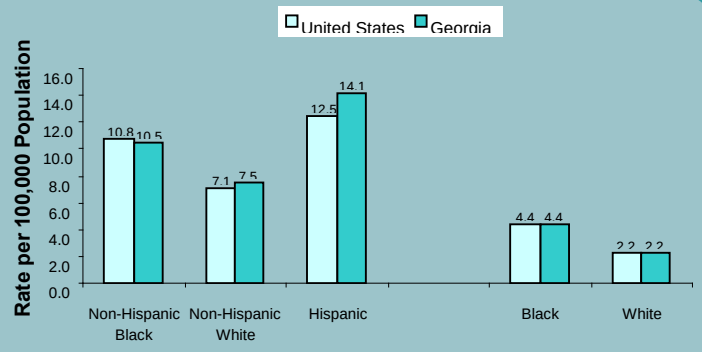
Who Develops Cervical Cancer?

Each year from 2003-2007, about 390 cases of cervical cancer were reported to the Georgia Comprehensive Cancer Registry. Hispanic women were more likely than non-Hispanic black or non-Hispanic white women to be diagnosed with the disease.

Each year from 2003-2007, about 120 Georgia women died from cervical cancer. The mortality rate for black women was higher than that for white women.

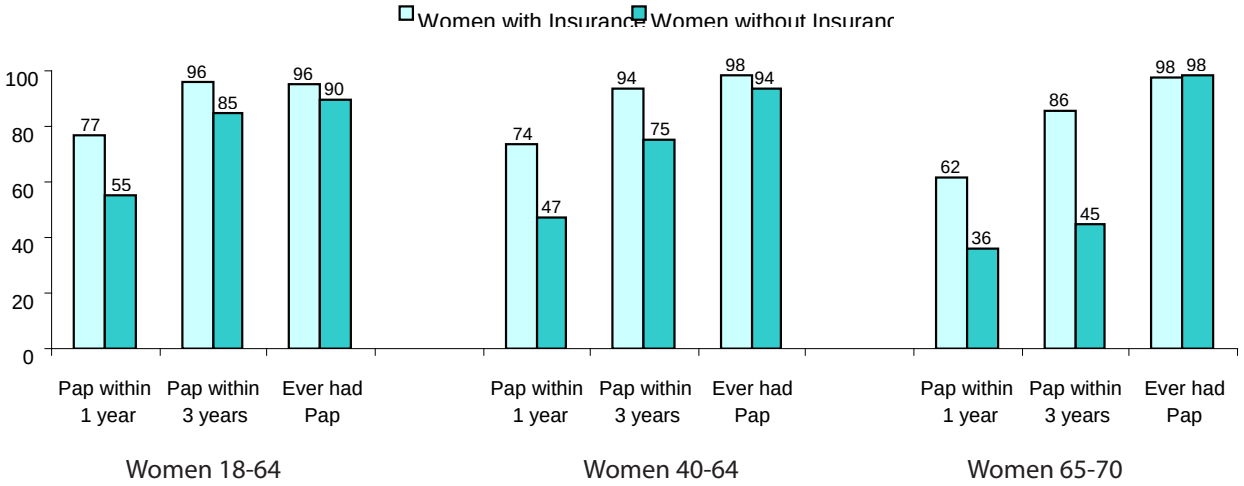
Overall, Georgia's cervical cancer incidence and mortality rates were similar to the U.S. average, except for Hispanic women who had a higher incidence rate.

Cervical Cancer Incidence and Mortality Rates by Race, U.S. (2003-2007) and GA (2003-2007)



Rates are age-adjusted to the 2000 U.S. standard population.

Screening Statistics for Georgia Women Reporting No History of Hysterectomy (BRFSS 2003-2007)



What are the Causes and Risk Factors for Cervical Cancer?

We now have a better understanding of the steps that take place when cells in the cervix become cancerous. Also, there are certain known risk factors for cervical cancer. A risk factor is something that increases a person's chance of getting a disease. Some risk factors, such as smoking, can be controlled. Others, like a person's age or race, can't be controlled. In looking at risk factors, it is useful to focus on those that can be controlled. But those that can't be controlled also can serve to remind women about the importance of getting a Pap test.

Risk Factors That Can Be Controlled

- **HPV infection:** For cervical cancer, the most important risk factor is persistent infection with human papillomavirus (HPV). This disease can be passed from one person to another during sex. Having sex at a young age and having many sexual partners or having sex with men who have had many partners increases one's chance of getting HPV. HPV infection is widespread in the general population, even in healthy women, and although the primary cause of cervical cancer is HPV infection, the likelihood of developing cervical cancer is still very low.
- **HIV infection/Immunosuppression:** Human Immunodeficiency Virus (HIV) is the virus that causes AIDS. It can also be a risk factor for cancer of the cervix. Being immunosuppressed due to HIV infection (or due to medications following an organ transplant) makes a woman's immune system less able to fight both the virus and early cancers. In addition, HIV-positive women may have pre-cancerous lesions develop into more invasive cancer at a faster rate than HIV-negative women.
- **Smoking:** Tobacco smoke contains chemicals that may damage the DNA in cells of the cervix and make cancer more likely to develop. Women who smoke are about twice as likely as non-smokers to get cervical cancer.
- **Chlamydia infection:** This is a rather common sexually transmitted infection. Many women do not know they have it unless samples taken at the time of their Pap test are looked at for the bacteria. Some studies suggest that women who have this infection (or have had it in the past) are at greater risk for cancer of the cervix.
- **Diet:** Diets low in fruits and vegetables are linked to an increased risk of developing cervical and other cancers.
- **Overweight/Obesity:** Women who are overweight/obese are at a higher risk for cervical cancer. Some studies have shown that the excess estrogen produced by excess fat can lead to the development of cervical cancer (specifically adenocarcinoma). In addition, studies have suggested that obese women may be less likely to be screened regularly.
- **Oral Contraceptives:** Long-term use of oral contraceptives (birth control pills) increases the risk of this cancer. Some studies show a higher risk after 5 or more years of use. In one study, the risk was increased four fold in women who used birth control pills longer than 10 years. Stopping use of the pill can reduce a woman's risk back to a normal level, although it may take as long as 10 years. Women considering using birth control pills should talk to a health care professional about the pros and cons of using this form of contraception. In addition, because the birth control pill does not protect against sexually transmitted infections such as HIV, chlamydia, and HPV (which are all risk factors for cervical cancer), condom use is advised.
- **Having many pregnancies:** Women who have had many full term pregnancies have an increased risk of this cancer.
- **Young age at first full-term pregnancy:** The risk of cervical cancer is almost twice as high for women who had their first full-term pregnancy before age 17 than for women who waited until 25 or older.
- **Not getting regular Pap testing:** The majority of cervical cancers occur in women who are never or rarely screened. Women should receive regular Pap tests. The Pap test can detect cervical dysplasia (pre-cancers). Treatment can stop cervical dysplasia before it develops into an invasive cancer.

Risk Factors That Cannot Be Controlled

- **Age:** The risk of having this cancer is very low among girls less than fifteen years old. The risk increases between the late teens and mid-thirties. Unlike many other cancers that rarely affect young adults, cervical cancer can affect young women in their twenties and even in their teens. Although cervical cancer risk doesn't increase very much after 40, it doesn't completely disappear, either. Many older women do not realize that they are still at risk of developing cervical cancer, and that it is important for them to continue having Pap tests.
- **Race and ethnicity:** Several racial and ethnic groups have higher cervical cancer death rates. The death rate for black women is about twice the national average. Based on U.S. statistics, Hispanic, Vietnamese, and American Indian women also have cervical cancer death rates that are above the national average.
- **DES:** Diethylstilbestrol (DES) is a hormone that was used between 1940 and 1971 for some women who were in danger of miscarriages. The daughters of women who took this drug during their pregnancy have a slightly higher risk of cancer of the vagina and cervix. Of every 1,000 women whose mother took DES when pregnant with them, about one develops clear-cell adenocarcinoma of the vagina or cervix.
- **Family history:** Recent studies suggest that women whose mother or sister has had cervical cancer are more likely to get the disease themselves. Some researchers suspect this familial tendency is caused by an inherited condition that makes some women less able to fight off HPV infection than others.

HPV and Cervical Cancer

Human papillomavirus (HPV) is estimated to be the most common sexually transmitted infection in the U.S., and can affect both men and women. There are more than 100 types of HPV (generally referred to by number, e.g. HPV-16), and they can infect various parts of the body including, most commonly, the genitals, but also the mouth and throat. Over 40 types of HPV can affect the genitals alone. Not all people infected with HPV will show symptoms (in fact, most people won't display any signs of infection), and for many, the infection will clear on its own with help from the body's immune system. About 70 percent of cervical cancers that develop are a result of infection with HPV-16 or HPV-18. With regular screening via Pap tests, however, cervical abnormalities usually can be detected and treated before they progress to cancer.

Prevalence of Self-Reported Risk Factors for Georgia Women

Based on the Georgia Behavioral Risk Factor Surveillance System for 2003-2007:

Risk Factor	All Women	Women 18-64	Women without Health Insurance	Women with Health Insurance
Smoking				
Current smoker (everyday)	14%	15%	27%	12%
Current smoker (some days)	5%	5%	7%	4%
Former smoker	18%	16%	13%	19%
Never smoked	64%	64%	54%	65%
Overweight/ Obese				
	55%	55%	59%	55%
Ever tested for HIV				
	50%	50%	55%	49%

- **Smoking:** Participants were asked if they had smoked at least 100 cigarettes in their entire lives (and if they reported no, they were placed in the "never smoked" category). Participants who reported smoking were then asked if they currently smoke cigarettes everyday, on some days, or not at all. Women without insurance were much more likely to report that they were smoking on a daily basis (27 percent vs. 12 percent), but were only slightly more likely to report smoking some days as women with insurance (7 percent vs. 4 percent).

- **Overweight/Obesity:** Participants were asked to report their height and weight, and their resulting Body Mass Index (BMI) was calculated based on those responses. BMI greater than or equal to 25 is considered overweight, and greater than or equal to 30 is considered obese. Women without health insurance were slightly more likely to be considered overweight or obese than women with health insurance (59 percent vs. 55 percent).

- **HIV Status:** Although the Risk Factor Surveillance System does not ask participants their HIV status, it does ask whether a person has ever been tested for HIV. Women without health insurance were actually more likely to report having been tested for HIV than women with health insurance (55 percent vs. 49 percent).

Prevention of Cervical Cancer

In June 2006, the U.S. Food and Drug Administration (FDA) approved a vaccine that protects against four types of HPV. The vaccine is Gardasil, and it targets HPV types 6, 11, 16, and 18. The vaccine is approved for use in females and males aged 9-26, although it is most effective in those who have not already been exposed to the virus (particularly individuals who have not yet become sexually active). The target age group for the vaccine is 11-12, but can be given as early as 9 years at the physician's discretion. Currently there is not enough data to recommend or discourage the use of the vaccine in persons aged 19-26, and those in this age group should talk to their physicians about their sexual history to determine whether the vaccine can offer any benefit. The vaccine is administered in three doses over the course of six months. A second vaccine (Cervarix) was approved by the FDA in October 2009 which targets HPV types 16 and 18 only, and is approved for women aged 10-25. Potential barriers to vaccination include: cost, possible side effects such as pain or redness at the injection site, and the need for multiple injections. Women should be aware that having had the vaccine does not mean that Pap testing is unnecessary; vaccinated women should still maintain a schedule of regular Pap tests because about 30 percent of cervical cancers result from other types of HPV infection.

What are the Symptoms of Cervical Cancer?

Early cervical pre-cancers or cancers often have no signs or symptoms. That's why it's important for women to have regular Pap tests. Symptoms usually appear only when the cancer is more advanced. It is important to report any of the following to a health professional:

- Any unusual discharge from the vagina
- Blood spots or light bleeding other than a normal period
- Bleeding or pain during sex

What are the Top Ten Cancers among Women in Georgia?

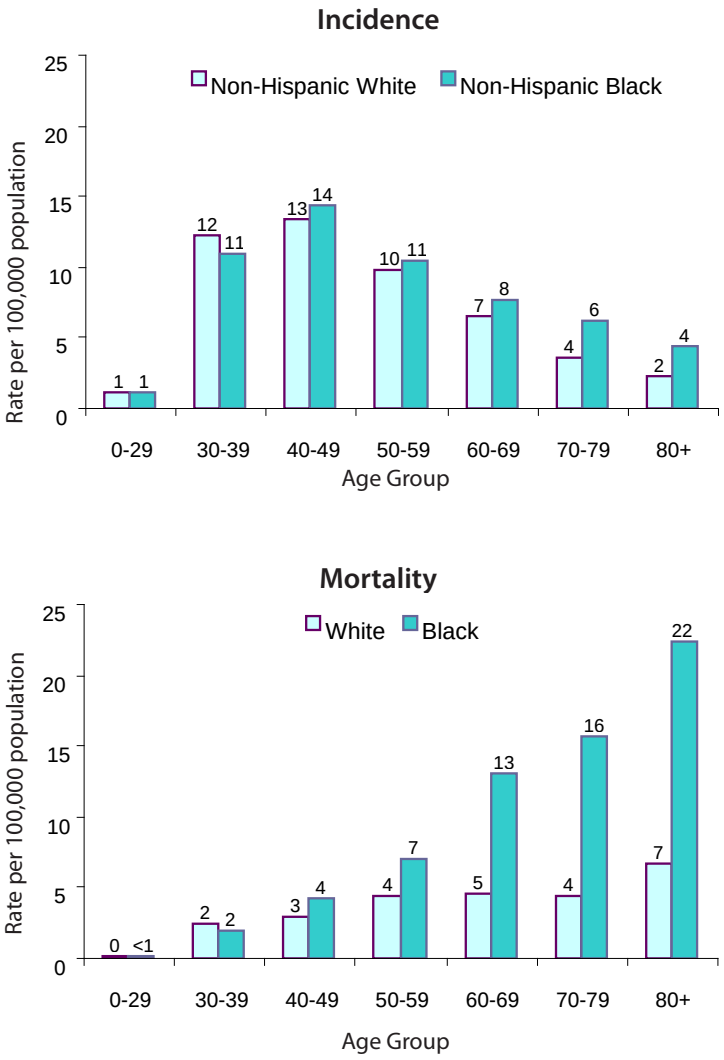
Top Ten Cancer Sites and Cancer-Related Deaths, Georgia Females

Cervical cancer has fallen out of the top ten cancer sites in recent years and is now the twelfth most common cancer diagnosed, and the eleventh most common cause of cancer death among women in Georgia. One in 145 American females will develop cervical cancer in her lifetime.

	Cases	Deaths
1	Breast	Lung & Bronchus
2	Lung & Bronchus	Breast
3	Colon & Rectum	Colon & Rectum
4	Uterine Corpus	Pancreas
5	Melanoma	Ovary
6	Non-Hodgkin Lymphoma	Leukemia
7	Ovary	Non-Hodgkin Lymphoma
8	Thyroid	Corpus and Uterus, NOS
9	Kidney	Multiple Myeloma
10	Pancreas	Brain and Nervous System
	Cervix (12th)	Cervix (11th)

At What Age is Cervical Cancer Most Often Diagnosed?

Georgia Cervical Cancer Incidence and Mortality by Age Group, 2003-2007



Rates are age-adjusted to the 2000 U.S. standard population.

Although cervical cancer incidence and mortality rates are highest in middle-aged and older women, cervical cancer may also occur in younger women. In Georgia, cervical cancer risk increases greatly around age 30 and peaks in the 40-49 age group. After age 50, the risk appears to decrease, although not as sharply for black women who maintain a higher incidence than white women later in life.

Mortality rates steadily increase with age for white women, however they increase dramatically for black women beginning around age 60. For both black and white women, the highest mortality rates are seen in women 80 years of age and older. Before the age of 30, cervical cancer deaths are very rare, but they do occur occasionally. Every year, about three Georgia women under 30 years of age die from cervical cancer.

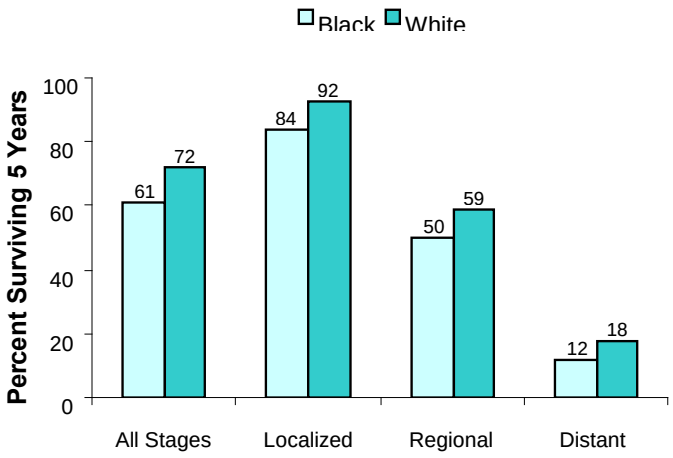
What is the Treatment for Cervical Cancer?

Each type of treatment has benefits and side effects. Age, overall health, the exact location of the cancer within the cervix, the type of cancer, and whether a woman wants to have children are all factors to consider. However, the stage of a cervical cancer is the most important factor in choosing treatment. Staging is a standardized way to summarize information about how far a cancer has spread from its point of origin. In situ cervical cancers are confined to the epithelium (the layer of cells lining the cervix). Localized cervical cancers have invaded through the epithelium into the underlying tissue of the cervix, but do not extend beyond the cervix either by direct or distant spread. Regional stage cervical cancers have spread beyond the cervix either by direct extension to nearby organs such as the corpus uteri, vagina or rectum, or to regional lymph nodes within the pelvis. Distant stage cervical cancers have spread directly or through the bloodstream or lymphatic system to distant sites such as the liver, lung, or bone, or to lymph nodes outside of the pelvis.

- **Surgery:** There are several kinds of surgery for cervical cancer. Some, such as laser surgery and cone biopsy, remove only a piece of the cervix; others involve removing the uterus (total or radical hysterectomy). If the cancer has spread beyond the uterus, it may be necessary to remove other organs such as the colon or rectum as well
- **Radiation Therapy:** Radiation therapy is treatment with high energy rays (such as x-rays) to kill or shrink cancer cells. The radiation may come from outside the body (external radiation) or from radioactive materials placed directly in the tumor (internal or implant radiation). There can be side effects from radiation, but many of these will go away after treatment is completed
- **Chemotherapy:** Chemotherapy refers to the use of drugs to kill cancer cells. Usually the drugs are given intravenously (through a vein) or by mouth. Once the drugs enter the bloodstream, they spread throughout the body. Sometimes several drugs are given at one time. Chemotherapy can have some side effects, which will depend on the type of drug, the amount of drug, and how long it is taken. Many of the side effects go away when treatment is over

Who Survives Cervical Cancer?

Percent of U.S. Women Surviving Five Years after Diagnosis with Cervical Cancer, by Stage of Disease and Race, 1999-2006



		Localized	Regional	Distant
% of tumors found at this stage*	U.S.† Black	43	38	12
	U.S.† White	50	34	11
	GA† Black	39	44	13
	GA† White	49	35	11

* Unstaged tumors are not shown.

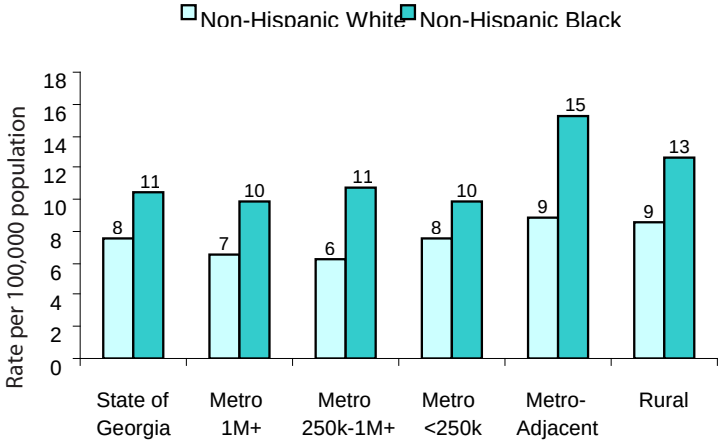
† U.S. data is for 1999-2006; Georgia data is for 2003-2007

Survival rates depend mainly on two elements: how early the cancer is detected, and the pathology of the tumor (how aggressive it is). Early detection is important because survival for early stage cervical cancer is much greater than that for later stage disease. Five-year survival for tumors found in the localized stage is 84 percent among U.S. black women and 92 percent among U.S. white women. In Georgia, about 39 percent of cases among black women and about 49 percent of cases among white women are diagnosed in their localized stage. If the cancer is diagnosed at the distant stage, five-year survival drops to about 12 percent for U.S. black women and 18 percent for U.S. white women. Detection and treatment of cervical cancer has remained steady in recent years, with the five-year relative U.S. survival rate for all stages combined increasing from 69 percent in 1974-1976 to just over 70 percent in 1999-2006.

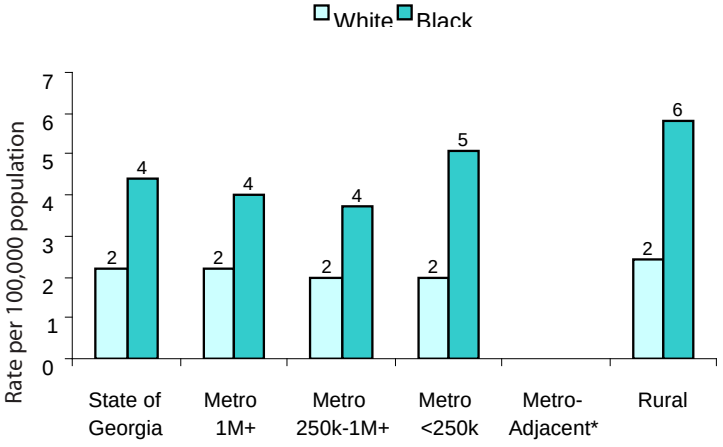
How Does Cervical Cancer Vary by Region?

Georgia Cervical Cancer Incidence and Mortality Rates by Race and Geography

Incidence

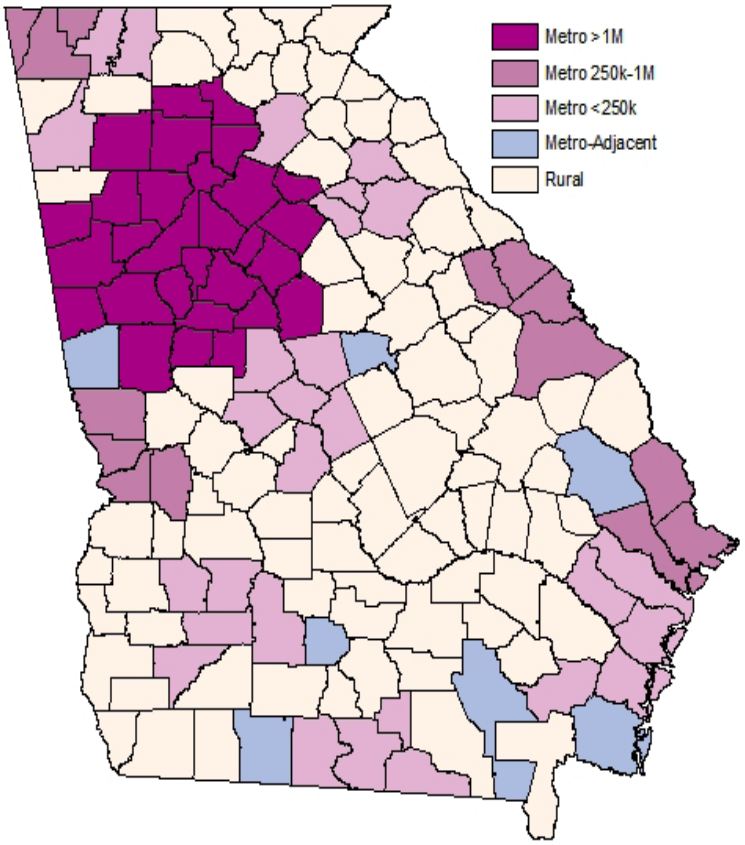


Mortality



Rates are age-adjusted to the 2000 U.S. standard population.

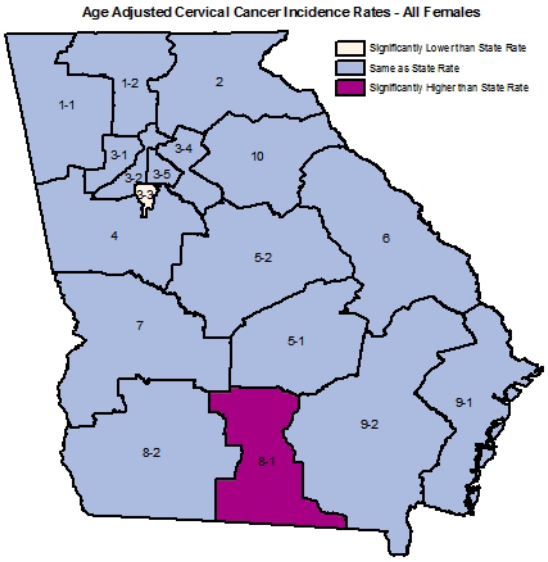
*Fewer than 20 cases; Rates not calculated

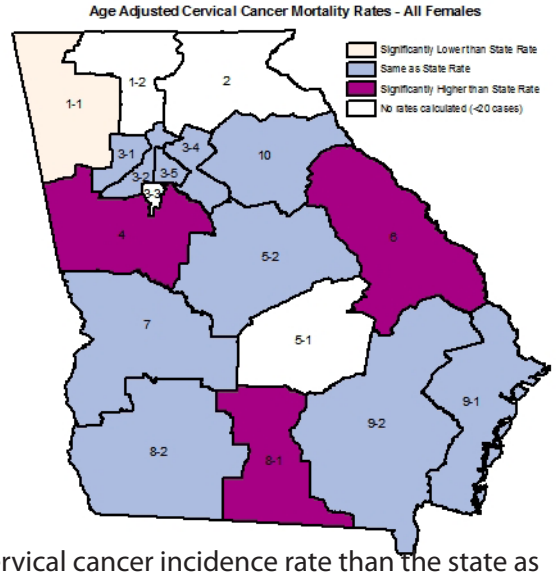


White women in Georgia consistently have lower incidence and mortality rates of cervical cancer than black women in Georgia, regardless of geography. The greatest disparities in incidence rates between black and white women seem to occur in suburban (metro-adjacent) and rural counties.

In the state of Georgia, black women have a 40 percent higher incidence rate of cervical cancer than white women. Black women have anywhere from a 32 to 70 percent higher incidence rate than white women in the various metro counties. In metro-adjacent counties, the incidence rate is 74 percent higher, and in rural counties it is 48 percent higher.

In the state of Georgia, black women have double the mortality rate from cervical cancer than of white women. The mortality rates for black women in the different metro counties range from 82 to 155 percent higher than for white women. In rural counties, black women had a mortality rate almost 2.5 times higher than white women. No rates were calculated for women in metro-adjacent counties due to the small number of deaths. None of the incidence or mortality rates for the various metropolitan classifications were significantly different from the statewide incidence or mortality rates for either race.

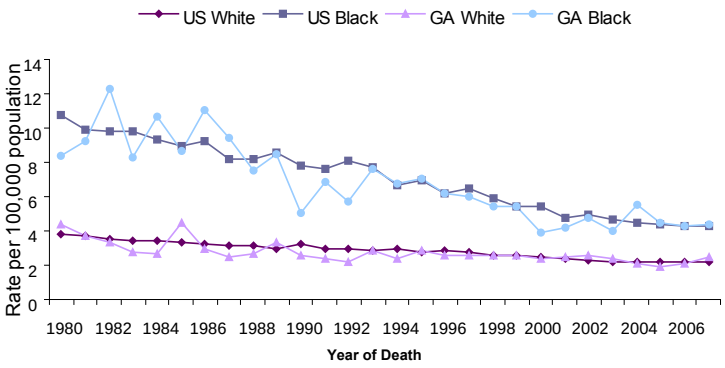




Health district 8-1 (Valdosta) in southern Georgia has a significantly higher cervical cancer incidence rate than the state as a whole, while health district 3-3 (Clayton) in the metro Atlanta area has a significantly lower rate than the state as a whole. In addition, district 8-1 (Valdosta), which had high cervical cancer incidence, also has a significantly higher cervical cancer mortality rate than the state rate, as did districts 4 (LaGrange) and 6 (Augusta). District 1-1 (Rome) in northwest Georgia has a significantly lower cervical cancer mortality rate than the rest of the state. Four districts did not have enough deaths to calculate their mortality rates: 1-2 (Dalton), 2 (Gainesville), 3-3 (Clayton), and 5-1 (Dublin). Several factors may contribute to the variation in incidence and mortality rates such as cervical cancer screening behaviors as well as prevalence of certain risk factors in the population.

How Does Georgia Compare with the United States?

Cervical Cancer Mortality Rates, Georgia vs. the U.S., by race, 1980-2007



Rates are age-adjusted to the 2000 U.S. standard population

From 1980 through 2007, the cervical cancer mortality rates among Georgia women were similar to those for the rest of the United States. Cervical cancer mortality rates are higher among black women than white women.

Between 1980 and 1989, mortality rates for white women in Georgia decreased, and fluctuated for black women although they remained high. During the 1990s, mortality rates leveled off for white women and decreased dramatically for black women. From 2000 through 2007, rates remained steady for white women and began to level off for black wome

Screening and Treatment Options in Georgia

For women who have health insurance and do not live below the poverty line, their private doctor or other health care professional will be the most likely provider for cervical cancer screening. What happens to women who are in need of screening or diagnostic testing for cervical cancer who don't have insurance or the funds to afford the tests?

National Breast and Cervical Cancer Early Detection Program

The National Breast and Cervical Cancer Early Detection Program (NBCCEDP) was created by the Centers for Disease Control and Prevention (CDC) after Congress passed the Breast and Cervical Cancer Mortality Prevention Act of 1990. The purpose of the Early Detection Program is to provide access to breast and cervical cancer screening to low-income, uninsured, or underinsured women. The NBCCEDP works by funding screening programs in all 50 states, the District of Columbia, five U.S. territories, and 12 American Indian/Alaska Native tribal organizations. For cervical cancer specifically, the NBCCEDP will refer eligible women to a local provider for Pap tests, follow-up diagnostic testing if needed, and referral for treatment in the event of a positive diagnosis.

In the state of Georgia, the program is called the Breast and Cervical Cancer Program (BCCP, also known as the Cancer Screening Program and formerly known as BreasTest and More). It was launched in 1994, and is funded primarily by federal and state dollars. Additional funding sources include Susan G. Komen for the Cure (for breast cancer screening only).

Each funding source has specific goals and objectives for the types of women they serve. For example, CDC has a specific cervical cancer screening goal that at least 20 percent of federally funded Pap tests be provided to rarely or never screened women (more than five years since last Pap test) because they are a priority population at greater risk for the disease.

Eligibility

To be considered eligible for the program in Georgia, a woman must:

- Have a household income of less than 200 percent (double) of the Federal Poverty Level
- Have no insurance for cancer screening or be underinsured (and not eligible for Medicare or Medicaid assistance)

- Be age 18-64, with a special focus on women 40-64
- Women whose screening procedures show abnormalities may be referred for additional diagnostic testing.

Following a Positive Cervical Cancer Diagnosis

Women who are diagnosed with cervical cancer through the Georgia Breast and Cervical Cancer Program (or by a private provider and meet eligibility guidelines for BCCP), have options available to assist with treatment.

Women's Health Medicaid Program

The Women's Health Medicaid Program is administered in Georgia through the Georgia Department of Community Health, and was established in 2001 following the passage of the National Breast and Cervical Cancer Prevention and Treatment Act of 2000.

Low-income women who have been diagnosed with cervical cancer and need access to treatment can apply for the program. In order to be considered eligible, women must:

- Meet the financial requirement for the Breast and Cervical Cancer Program
- Be under 65 years of age
- Be a U.S. citizen and Georgia resident
- Not have health insurance for cancer treatment (and not be eligible for Medicare)

Accomplishments and Limitations

The Breast and Cervical Cancer Program of Georgia has helped thousands of women gain access to vital cervical cancer screening over the years. Specifically, during the 2007 calendar year, over 94,000 Pap tests were performed by the program, 17,000 of which were provided to women aged 40-64.

Financial realities are an important limitation of the program, and BCCP cannot serve all women in need. Funding amounts fluctuate over time, and providers can perform only as many screenings as funding allows. The U.S. Census Bureau estimates that in 2007, the state of Georgia had over 384,000 uninsured women age 18-64 living below 200 percent of the federal poverty level (which coincides with the eligibility criteria for the Breast and Cervical Cancer Program), and almost 147,000 were in the target age group 40-64. Thus, only about 12 percent of the eligible women in the age group 40-64 in Georgia received screening and diagnostic services through BCCP due to financial constraints.

American Cancer Society
Telephone: 1-800-ACS-2345
Internet Address: http://www.cancer.org

Cancer Control Planet
Internet Address: http://cancercontrolplanet.cancer.gov/

Gynecologic Cancer Foundation
Telephone: 1-800-444-4441 or 312-644-6610
Internet Address: http://www.thegcf.org/

National Cancer Institute, Cancer Information Service
Telephone: 1-800-4-CANCER or 800-422-6237
Internet Address: http://www.cancer.gov/

National Cervical Cancer Coalition
Telephone: 1-800-685-5531 or 818-909-3849
Internet Address: http://www.nccc-online.org

National Coalition for Cancer Survivorship
Telephone: 1-877-NCCS-YES or 877-622-7937
Internet Address: http://www.canceradvocacy.org/

Breast and Cervical Cancer Program of Georgia
Internet Address: http://health.state.ga.us/programs/bccp/

Data Sources and Methods

Definitions:
Age-adjusted rate: A rate calculated in a manner that allows for the comparison of rates derived from populations with different age structures.
Cancer incidence rate: The number of new cancer cases occurring in a population during a specified period of time. Often expressed per 100,000 population.
Cancer mortality rate: The number of cancer deaths occurring in a population during a specified period of time. Often expressed per 100,000 population.

2003 Rural-Urban Continuum Codes: Rural-Urban Continuum Codes form a classification scheme that distinguishes metropolitan (metro) counties by the population size of their metro area, and nonmetropolitan (nonmetro) counties by degree of urbanization and adjacency to a metro area or areas:
1 = Counties in metro areas of 1 million population or more
2 = Counties in metro areas of 250,000 to 1 million population
3 = Counties in metro areas of fewer than 250,000 population
4 = Urban population of 20,000 or more, adjacent to a metro area
5 = Urban population of 20,000 or more, not adjacent to a metro area
6 = Urban population of 2,500 to 19,999, adjacent to a metro area
7 = Urban population of 2,500 to 19,999, not adjacent to a metro area
8 = Completely rural or less than 2,500 urban population, adjacent to a metro area
9 = Completely rural or less than 2,500 urban population, not adjacent to a metro area
The above codes were regrouped into the following five categories:
1 = Metro >1M
2 = Metro 250K-1M
3 = Metro <250K
4 = Metro-Adjacent
5 = There are no Georgia counties that fit category number 5
6, 7, 8 and 9 = Rural

Data Sources:
The number of deaths and mortality rates for the state of Georgia were obtained from the Georgia Department of Community Health, Division of Public Health, Vital Records Branch. The number of deaths and mortality rates for the United States were obtained from the North American Association of Central Cancer Registries (NAACCR) and from the Surveillance, Epidemiology, and End Results (SEER) program, National Cancer Institute. Mortality data were coded using ICD-9 (1980-1998) and ICD-10 codes (1999-2007). The ICD-9 codes for cervical cancer are 180.0-180.9, while the ICD-10 codes are C53.0:C53.9.

The number of new cases and incidence rates for the state of Georgia were obtained from the Georgia Department of Community Health, Division of Public Health, Georgia Comprehensive Cancer Registry. The number of new cases and incidence rates for the United States were obtained from NAACCR. Incidence data were coded using ICD-O-3 codes. The ICD-O-3 codes used for cervical cancer are C53.0:C53.9.

Cancer stage and survival data for the United States were obtained from SEER.

Population estimates for 1980-2007 and the 2000 U.S. standard population were obtained from the U.S. Bureau of the Census.

Data regarding prevalence of risk factors such as smoking, overweight/obesity, HIV status, insurance status, and cervical cancer screening behaviors for Georgia were obtained from the Georgia Department of Community Health, Behavioral Risk Factor Surveillance System, and were analyzed as weighted averages for the years 2003 through 2007.

Methods:
Incidence rates were calculated per 100,000 population and age-adjusted by the direct method to the 2000 U.S. standard population. The incidence rates are five-year average annual rates for the period 2003 through 2007. Mortality rates were calculated per 100,000 population and age-adjusted by the direct method to the 2000 U.S. standard population. Except where calculated to show trends, the mortality rates are five-year average annual rates for 2003-2007.


Georgia Department of
Community Health