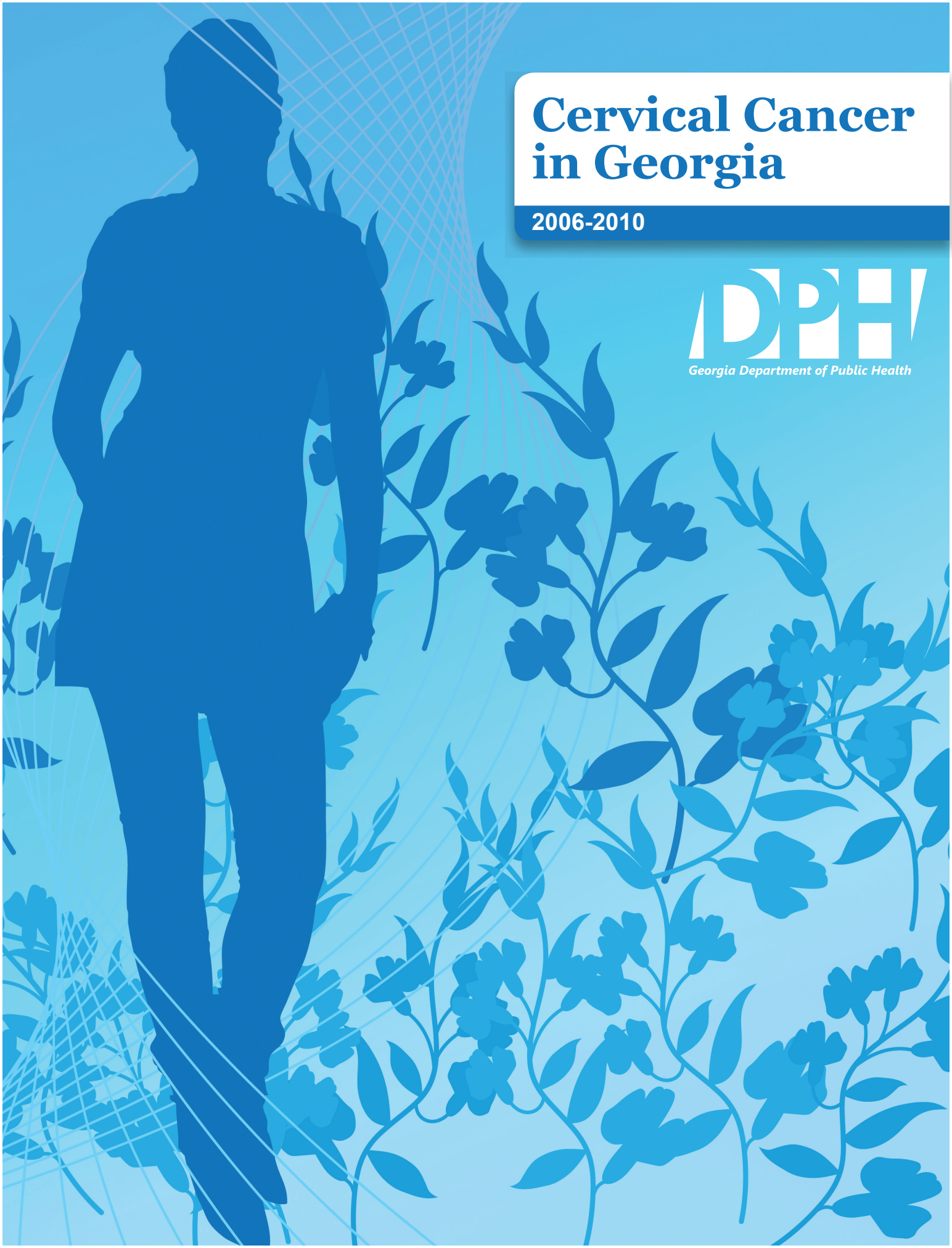

Cervical Cancer in Georgia

2006-2010

DPH

Georgia Department 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 2010 the number of deaths from cervical cancer decreased dramatically, with mortality rates in 2010 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 twelfth most common cancer in Georgia 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 425 new cases of cervical cancer diagnosed in Georgia in 2013, and that 145 women will die from the disease.

How is Cervical Cancer Detected?

Cervical cancer can usually be found early by having routine Pap tests alone, or by co-testing for human papilloma virus (HPV) along with the Pap test. 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 alone or with HPV co-testing and appropriate follow-up care (if needed), death from cervical cancer is almost completely preventable.

Cervical Cancer Screening Recommendations

The American Cancer Society revised their cervical cancer screening guidelines in 2012. The new recommendations advise that all women should be screened with either the conventional or liquid-based Pap test beginning at age 21, regardless of sexual history. Following that:

- Women between the ages of 21 and 29 years should be screened every three years. They should not receive an HPV test unless the Pap test reveals atypical cells (which is an optional choice).
- Women between the ages of 30 and 65 years may be screened with both a Pap test and an HPV test every five years, as the preferred method, or else should receive a Pap test every three years.
- Women over age 65 years who have been screened regularly with normal results can stop being screened, although if a woman has been diagnosed with pre-cancer she should continue to be screened, even after age 65 for at least 20 years following the pre-cancer treatment.
- Women who have received the HPV vaccine should still be screened according to the guidelines for their age group, and women who have had a full hysterectomy (removal of the uterus and cervix) who have no history of cervical cancer or pre-cancer do not need to be screened.
- Women with HIV infection or are otherwise immunosuppressed, or those who have been exposed to the drug DES (hormone therapy given to women between 1940 and 1971 to prevent miscarriages) are at higher risk of cervical cancer and need to be screened annually.

Screening Rates for Georgia Women

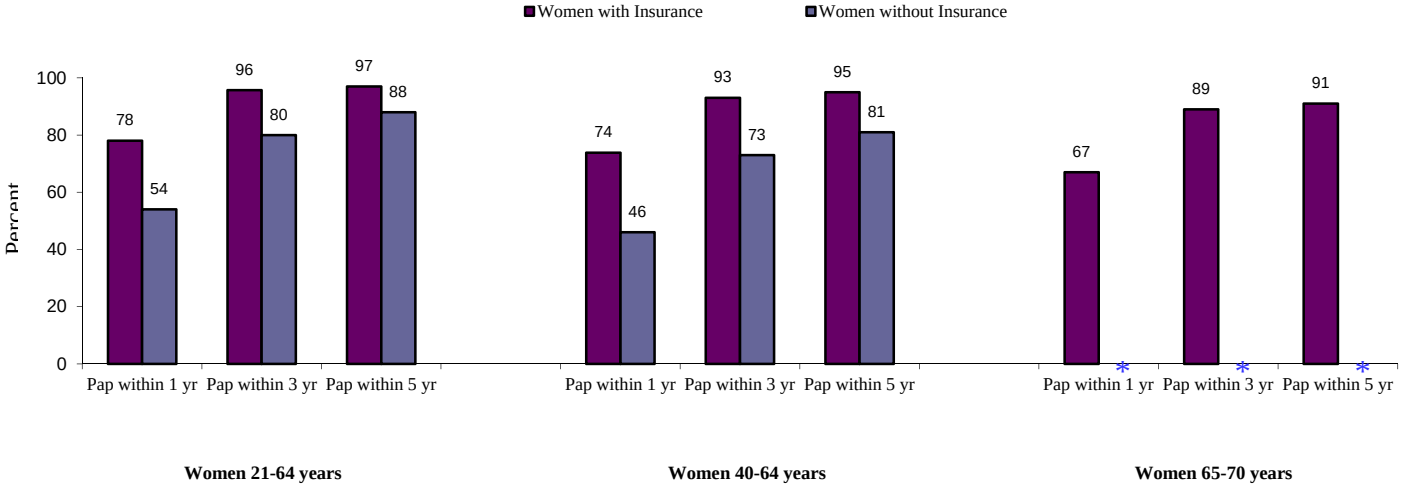
The following data were collected by the Behavioral Risk Factor Surveillance System during 2006-2010 and represent non-institutionalized civilian women 18 years and older living in Georgia. The age groups analyzed correspond to the target groups served by the Breast and Cervical Cancer Program of Georgia (see page 15).

Pap Test: All women were asked if they had ever had a hysterectomy. Among women 21 years and older with no history of hysterectomy, 97 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 91 percent reported having had a Pap test sometime within the past three years.

Screening in Relation to Health Insurance in Georgia

Between 2006 and 2010, approximately 18 percent of women in Georgia reported that they did not have health insurance.

Pap Test Screening for Georgia Women Reporting No History of Hysterectomy, BRFSS, 2006-2010



* **Fewer than fifty respondents per category**

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, or within the past five years.

Cervical Cancer Screening in Relation to Education and Race/Ethnicity, by Health Insurance Status, in Georgia, 2006-2010

	Insured		Uninsured	
	Pap within 3 yr	**Pap within 5 yr**	**Pap within 3 yr**	**Pap within 5 yr**
Education				
Less than high school	86%	90%	80%	85%
High school graduate	93%	96%	79%	86%
Some college	94%	97%	84%	91%
College graduate	97%	98%	80%	90%
Race/Ethnicity				
Non-Hispanic White	94%	96%	73%	83%
Non-Hispanic Black	97%	98%	87%	92%
Hispanic	95%	98%	*	*

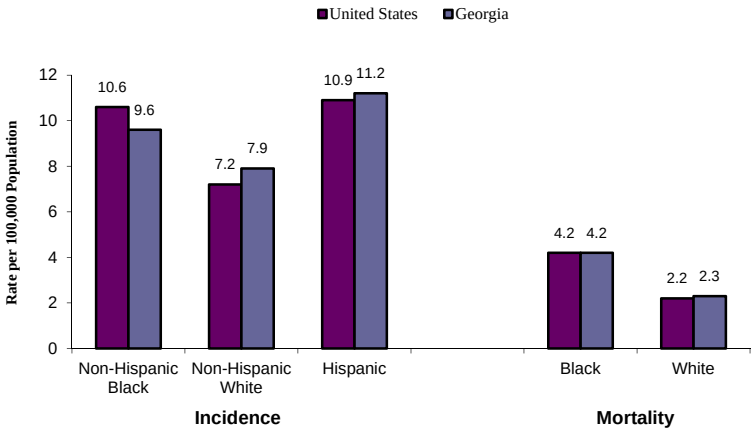
***Fewer than 50 respondents per category

Among women of varying educational attainment, women who had graduated college were most likely to report that their most recent Pap test was within three years (and within five years). The more education a woman had, there was a greater likelihood that she had had a recent Pap test. This finding was true for both insured and uninsured women, although uninsured women in every educational group had lower screening rates than their insured counterparts with the same education level.

Non-Hispanic black women with health insurance were slightly more likely than insured Non-Hispanic white and Hispanic women to report that their most recent Pap test was within the past three or five years. Among uninsured women, Non-Hispanic black women were much more likely than Non-Hispanic white women to report having had a recent Pap test.

Who Develops Cervical Cancer?

Cervical Cancer Incidence and Mortality Rates by Race, US (2006-2010) and GA (2006-2010 Incidence, 2005-2010* Mortality)



Rates are age-adjusted to the 2000 US standard population.

Each year from 2006-2010, 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 2005-2010*, about 130 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 US average, and none of the differences were statistically significant.

* Because of data quality issues, 2009 cancer death data are not used for analysis. This report includes data for 2005-2008 and 2010 combined.

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, cannot 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 infection with HPV (human papillomavirus). 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:** 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 specimens taken at the time of their Pap test are cultured 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.
- **Obesity:** Women who are overweight are at a higher risk for cervical cancer.
- **Birth control pills:** Long-term use of 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 birth control 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 three or more 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 age 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 twenty-one 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. Hispanic, Vietnamese, and American Indian women have cervical cancer death rates above the national average.
- **DES:** This drug 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. For 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 data from the Georgia Behavioral Risk Factor Surveillance System during 2006-2010:

Risk Factor	All Women	Women Aged 21-64 Years	Women without Health Insurance	Women with Health Insurance
Current smoking	16%	19%	32%	15%
Former smoker	19%	17%	13%	18%
Never smoked	65%	65%	55%	67%
Overweight/Obese overall	58%	58%	61%	56%
- Overweight (BMI 25-29.9)	30%	29%	27%	29%
- Obese (BMI >30)	28%	29%	34%	27%
Ever tested for HIV	49%	50%	56%	48%

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 every day, on some days, or not at all. Women without health insurance were more than twice as likely to report being current smokers as women with insurance.

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 (61 percent vs. 56 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 more likely to report having been tested for HIV than women with health insurance (56 percent vs. 48 percent).

Prevention of Cervical Cancer

In June 2006, the US 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 women aged 9-26 years, although it is most effective in women who have not already been exposed to the virus (particularly those women who have not yet become sexually active). The target age group for the vaccine is 11-12 years, 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 women aged 19-26 years, and women 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 years. 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 since almost 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 is 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 right away:

- 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 (2006-2010) and Cancer-Related Deaths (2005-2010*), Georgia Females

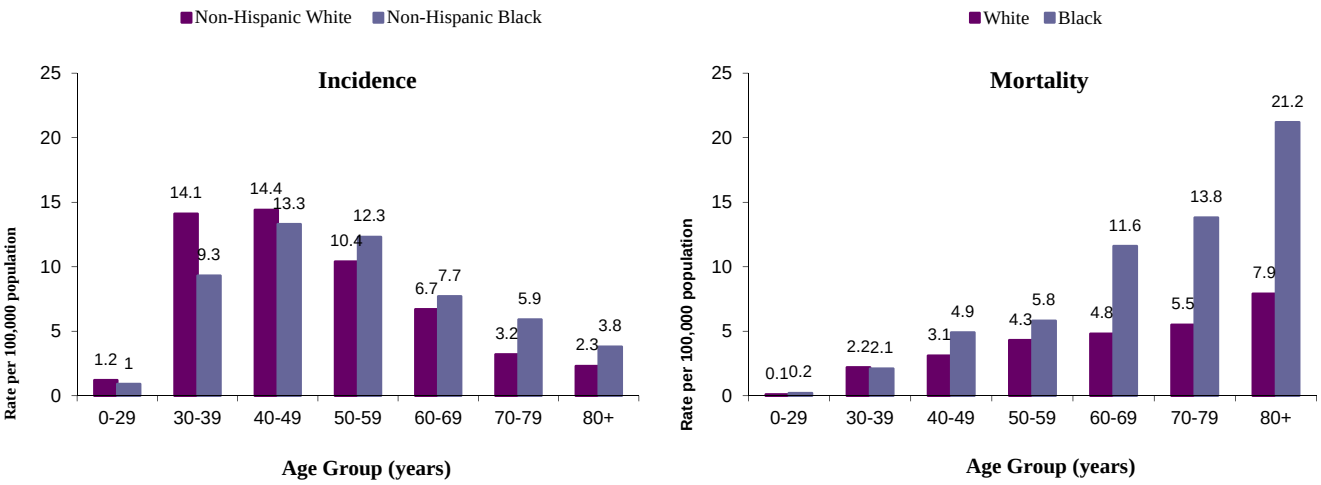
Cancer Sites	Cancer-Related Deaths
Breast	Lung & Bronchus
Lung & Bronchus	Breast
Colon & Rectum	Colon & Rectum
Uterine Corpus	Pancreas
Melanoma	Ovary
Thyroid	Leukemia
Non-Hodgkin Lymphoma	Non-Hodgkin Lymphoma
Ovary	Corpus and Uterus, NOS
Kidney	Brain and Nervous System
Pancreas	Multiple Myeloma
Cervix (12th)	**Cervix (12th)**

Cervical cancer has fallen out of the top ten cancer sites in recent years and is now both the twelfth most common cancer diagnosed, and the twelfth most common cause of cancer death among women in Georgia. One in 147 American females will develop cervical cancer in her lifetime.

* Because of data quality issues, 2009 cancer death data are not used for analysis. This report includes data for 2005-2008 and 2010 combined.

At What Age is Cervical Cancer Most Often Diagnosed?

Georgia Cervical Cancer Incidence (2006-2010) and Mortality (2005-2010*) by Age Group



Rates are age-adjusted to the 2000 US standard population.

* Because of data quality issues, 2009 cancer death data are not used for analysis. This report includes data for 2005-2008 and 2010 combined.

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 non-Hispanic black women who maintain a higher incidence than non-Hispanic 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.

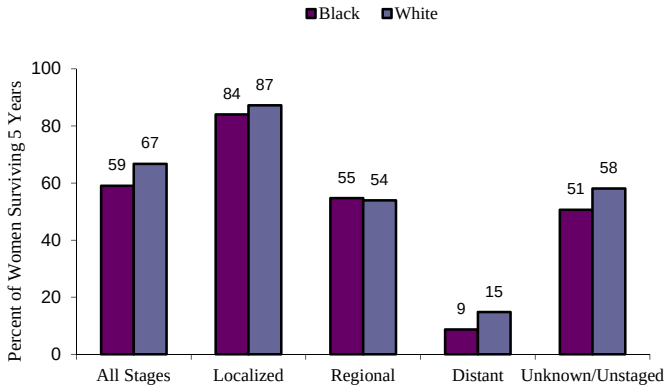
What is the Treatment for Cervical Cancer?

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 Georgia Women Surviving Five Years after Diagnosis with Cervical Cancer, by Stage of Disease and Race, 2003-2009



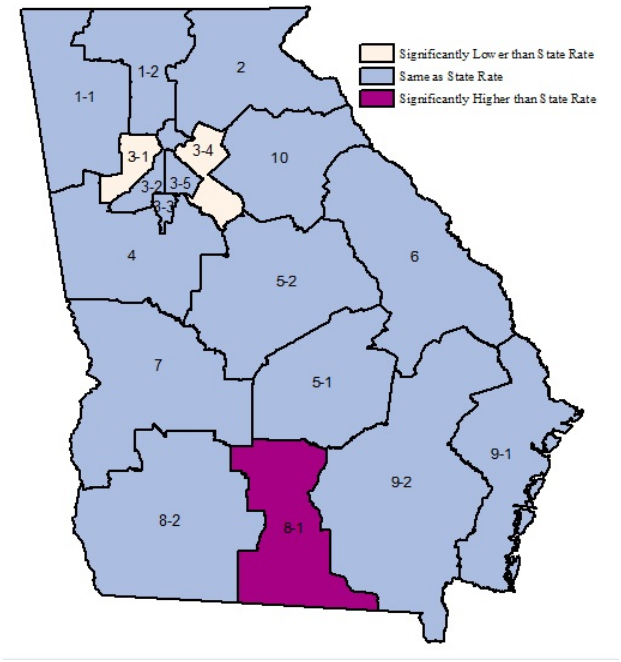
*** Unstaged tumors are not shown.**

Cervical Cancer Stage Distribution among Georgia Women

		Localized	Regional	Distant
% of tumors found at this stage*	GA† Black	37%	43%	16%
	GA† White	47%	37%	12%

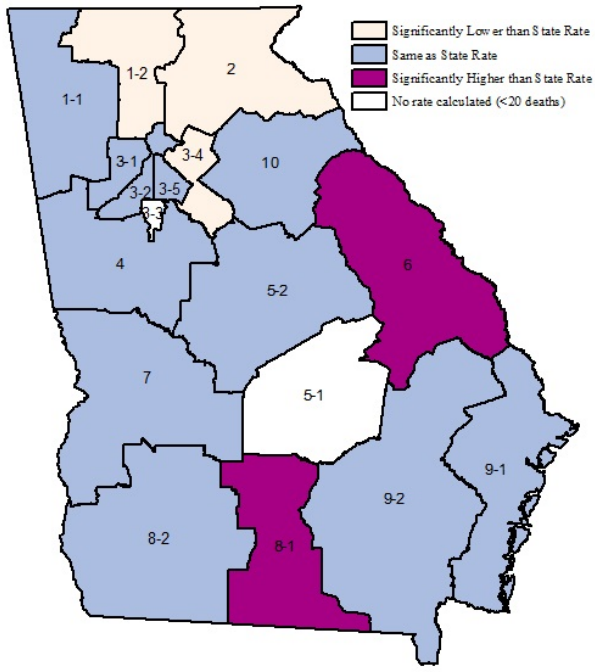
Survival rates depend mainly on two elements: how early the cancer is detected, and the pathology of the tumor (how aggressive it is). Early detection is important because survival for early stage cervical cancer is much greater than that for later stage disease. Five-year survival rate for tumors found in the localized stage is 84 percent among black women in Georgia and 87 percent among white women in Georgia. In Georgia, about 37 percent of cases among black women and about 47 percent of cases among white women were diagnosed in their localized stage. If the cancer is diagnosed at the distant stage, five-year survival rate drops to about 9 percent for black women in Georgia and 15 percent for white women in Georgia. Detection and treatment of cervical cancer has remained steady in recent years, with the five-year relative US survival rate for all stages combined holding steady with 69 percent in 1974-1976 and 69 percent in 2003-2009 (the survival rate for all stages for Georgia women is 65 percent).

Age-Adjusted Cervical Cancer Incidence Rates, Georgia, 2006-2010



Health District 8-1 (Valdosta) in southern Georgia has a significantly higher cervical cancer incidence rate than the state as a whole. Health Districts 3-1 (Cobb/Douglas) and 3-4 (Lawrenceville) in the Atlanta metropolitan area have significantly lower cervical cancer incidence rates. None of the other Health Districts have incidence rates different enough from the overall state incidence rate to be considered statistically significant. Several factors may contribute to the variation in incidence rates, such as cervical cancer screening behaviors as well as prevalence of certain risk factors in the population.

Age-Adjusted Cervical Cancer Mortality Rates, Georgia, 2005-2010*

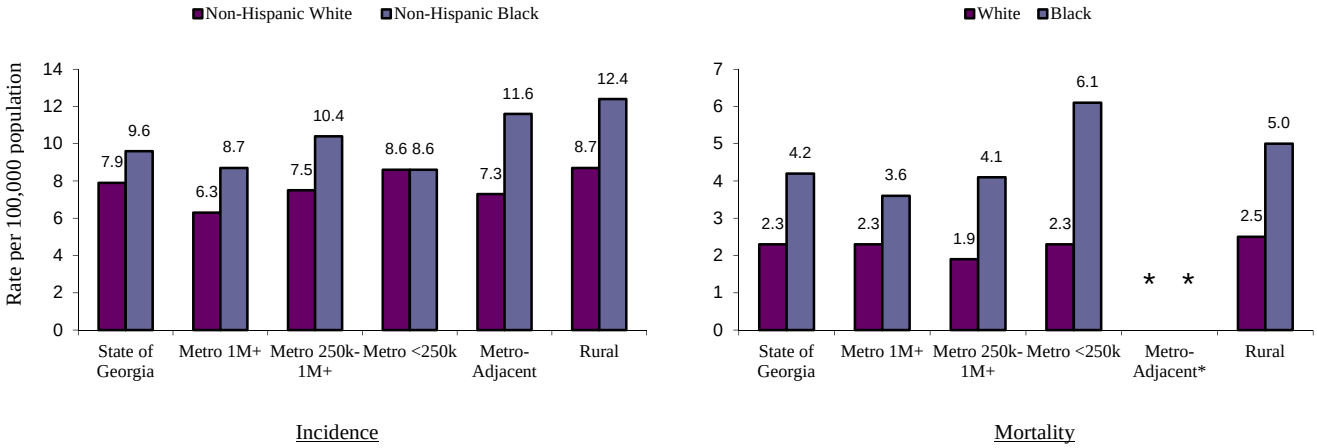


Health District 8-1 (Valdosta), which has a high cervical cancer incidence rate, also has a significantly higher cervical cancer mortality rate than the state rate, as does District 6 (Augusta). Districts 1-2 (Dalton) and 2 (Gainesville) in north Georgia, and 3-4 (Lawrenceville) in metro Atlanta, have significantly lower cervical cancer mortality rates than the rest of the state. Two Districts did not have enough deaths to calculate their mortality rates. As with incidence, several factors may contribute to the variation in mortality rates, such as cervical cancer screening behaviors, prevalence of late stage disease, and access to treatment and care.

* Because of data quality issues, 2009 cancer death data are not used for analysis. This report includes data for 2005-2008 and 2010 combined.

How Does Cervical Cancer Vary by Region?

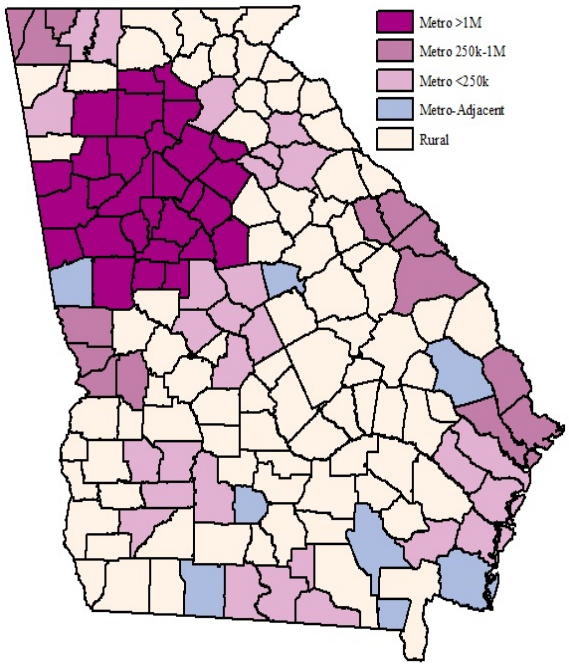
Georgia Cervical Cancer Age-Adjusted Incidence (2006-2010) and Mortality (2005-2010*) Rates by Race and Geography



Rates are age-adjusted to the 2000 US standard population.
*Fewer than 20 cases; Rates not calculated

* Because of data quality issues, 2009 cancer death data are not used for analysis. This report includes data for 2005-2008 and 2010 combined.

Rural/Urban Classification for Georgia, by County



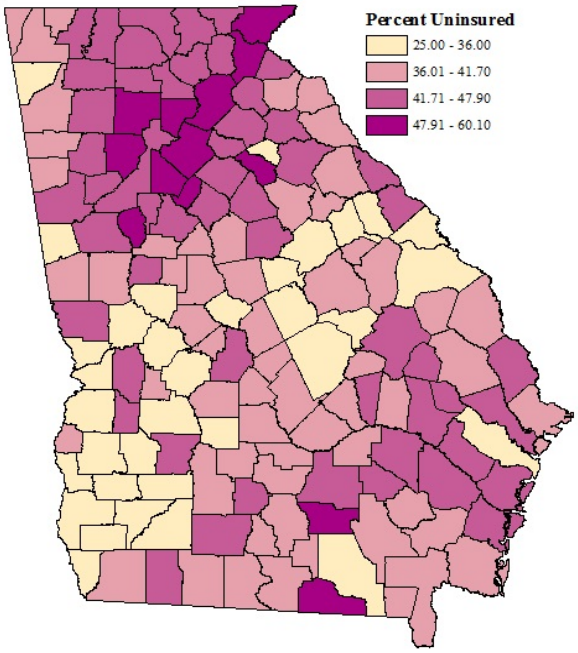
White women in Georgia have a consistently lower incidence and mortality rates of cervical cancer than black women in Georgia, regardless of geography. The greatest disparities in incidence rates between black and white women seem to occur in suburban (metro-adjacent) counties.

In Georgia, black women have a 21 percent higher incidence rate of cervical cancer than white women. Black women in the smallest metro areas have the same cervical cancer incidence rate as white women in those areas, however in metro-adjacent counties, their incidence rate is almost 60 percent higher, and in rural counties it is 42 percent higher.

In Georgia, black women have almost double the mortality rate from cervical cancer that white women have. The mortality rates for black women in the different metro counties range from 55 percent higher to almost three times as high as those for white women. In rural counties, black women had a mortality rate about double the rate for white women. No rates were calculated for women in metro-adjacent counties due to having fewer than 15 deaths in five years. The incidence rate for white women in metropolitan counties of one million-plus residents was significantly lower than that for all white women in Georgia. None of the other incidence or mortality rates for the various metropolitan classifications were significantly different from the statewide incidence or mortality rates for either race.

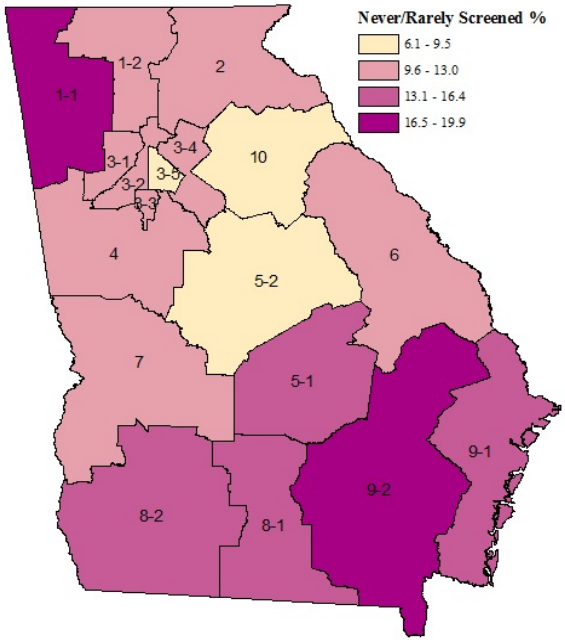
Where is the Greatest Need for Cervical Cancer Screening and Interventions?

Percent Uninsured Among Women 18-64 Years, Below 200% Poverty by County, Georgia, 2010



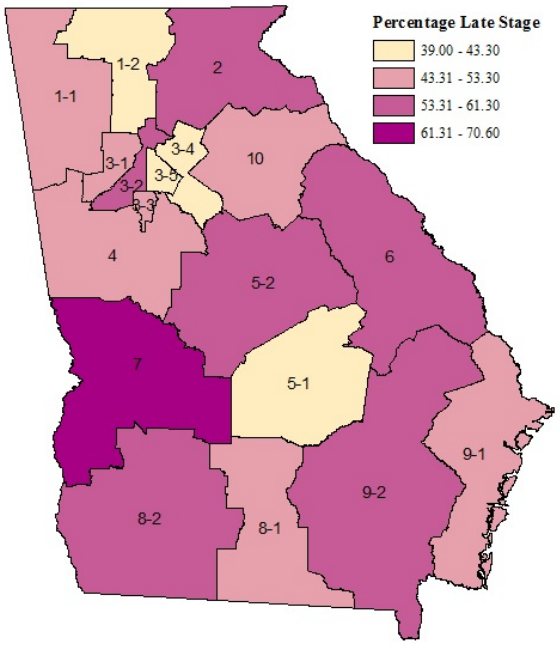
The US Census Bureau puts together annual estimates regarding the number of women in the target age group and income level to determine the size of the population that is eligible for Georgia Breast and Cervical Cancer Program services. The groups are also stratified based on insurance status. This map shows, by county, the percentage of women in the 18-64 age group who are below 200 percent of the federal poverty level who are also uninsured, as of 2009. These areas have the highest proportions of women who are eligible to receive BCCP cervical cancer screening services. Areas in the metro Atlanta area, as well as North Georgia and several coastal and southern counties, have the highest percentages of uninsured women who fall into the specified demographic group.

Percent of Women Never or Rarely Screened (> 5 years) for Cervical Cancer, by Health District, Georgia, 2006-2010

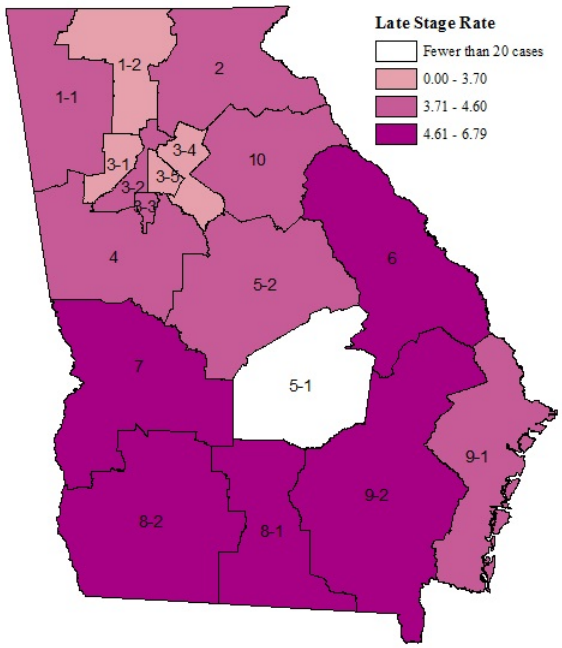


One of the focus areas for cervical cancer screening in the Breast and Cervical Cancer Program is trying to reach women who have never been screened, or who have been rarely screened (as in, their last Pap test was more than five years earlier). The Behavioral Risk Factor Surveillance System, a telephone survey, asks if a woman has ever had a Pap test, and if so, how recent was her last test. This map shows the percentage of women reporting that they had rarely or never been screened, indicating a need for outreach and services. The Public Health Districts that had the greatest percentages of underscreened women were mostly in southern Georgia, as well as Health District 1-1 (Rome), in the northwest corner of the state.

Percent of Cervical Cancers Diagnosed at Late Stage, by Health District, 2006-2010



Late Stage Cervical Cancer Age-Adjusted Incidence Rate, by Health District, 2006-2010

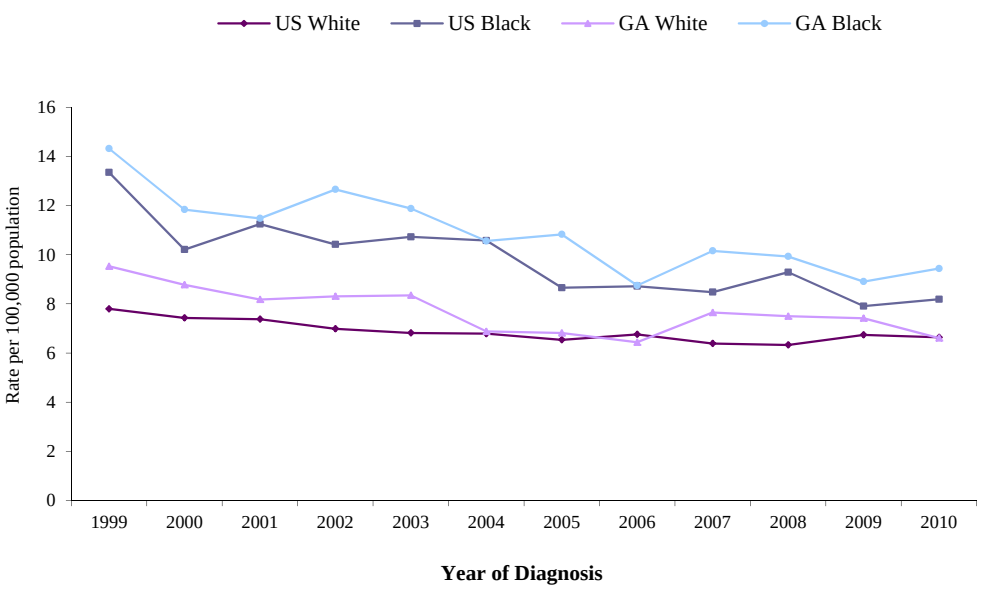


One indicator of a greater need for screening and intervention is the percentage of cervical cancers that are diagnosed at a late stage. When cancers are diagnosed later, treatments may be less effective and the prognosis for survival is worse than if the cancer had been found at an early stage, before it spreads and affects other organs. The above map on the left shows, by Health District, which areas of Georgia have the highest percentages of women who were diagnosed with cervical cancer at a late stage (regional or distant). Most areas with high percentages of late diagnoses are in the southern half of the state, as well as in Public Health Districts 2 (Gainesville) in north Georgia and 3-2 (Fulton) in metro Atlanta.

The map on the right shows the actual age-adjusted incidence rates for late stage cervical cancers by Health District. Areas in darker pink have higher rates of late stage diagnoses than lighter pink areas, and one Health District (5-1, Dublin) did not have enough cases to be able to calculate a rate. The Health Districts with the highest incidence rates of late stage cervical cancer are in the southern half of the state. These Districts also seem to correspond to the areas with the highest percentages of rarely or never screened women (on the previous page), showing the connection between a lack of screening and a higher propensity for late stage cancer diagnoses since the disease is not identified early enough. These areas are more rural and lower-income, so women living in these areas may have barriers to accessing the appropriate screening and care such as lack of transportation, inflexible work schedules, financial issues, etc.

How Does Georgia Compare with the United States?

Cervical Cancer Incidence Rates, Georgia vs. the US (SEER), by Race, 1999-2010

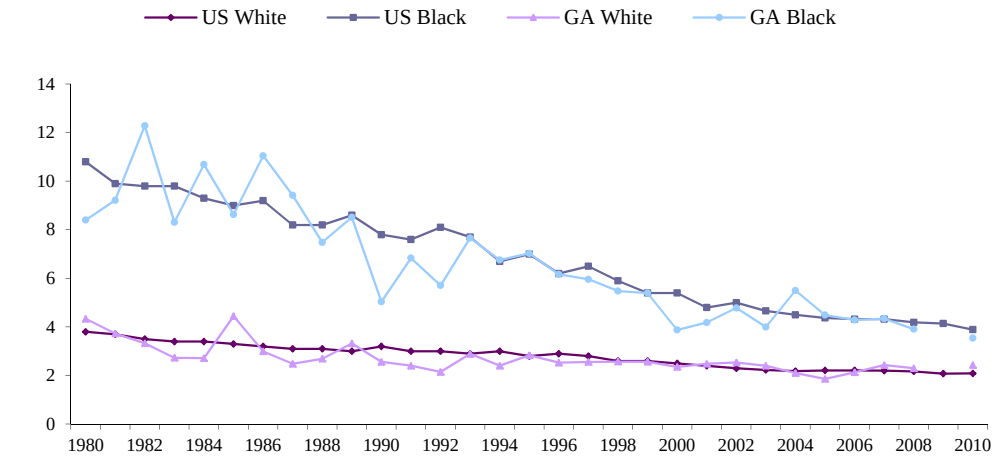


Between 1999 and 2010, cervical cancer incidence rates for white women in Georgia decreased by an average of 2.5 percent per year. Incidence rates for white women in the U.S. decreased by about 1.4 percent annually.

Cervical cancer incidence rates for black women in Georgia decreased by an average of about 3.7 percent per year. Incidence rates for black women in the U.S. also decreased, by about 3.7 percent annually.

White women in Georgia experienced sharper declines in cervical cancer incidence than the U.S. as a whole while the declines for black women in both Georgia and the U.S. were

Cervical Cancer Mortality Rates, Georgia vs. the US, by Race, 1980-2010*



Rates are age-adjusted to the 2000 US standard population.

Between 1980 and 1991, cervical cancer mortality rates for white women in Georgia decreased sharply by about 3.6 percent per year. Between 1991 and 2008, mortality rates continued decreasing, but at an average of 1.2 percent per year. The mortality rate in 2010 had a slight increase over 2008. Cervical cancer mortality rates for white women in the U.S. decreased by about 1.6 percent per year between 1980 and 1997. Between 1997 and 2003, mortality rates decreased more sharply (3.4 percent per year), and then between 2003 and 2010, mortality rates leveled off, only decreasing by 0.8 percent annually.

Between 1980 and 1982, cervical cancer mortality rates for black women in Georgia increased by about 17.6 percent each year, but beginning in 1982 and continuing through 2008, mortality rates decreased by 4.1 percent per year. The mortality rate in 2010 was lower than in 2008. From 1980 through 1993, cervical cancer mortality rates for black women in the U.S. decreased by about 2.5 percent per year, then began a steeper decline (about 4.7 percent annually) from 1993 through 2003, and then leveled off a bit, decreasing at an average of 2.1 percent annually through 2010.

* Because of data quality issues, 2009 cancer death data are not used for analysis.

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 in need of screening or diagnostic testing for cervical cancer who are uninsured and at or below 200 percent of the Federal Poverty Level?

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 provides funding for 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 refers 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 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 with federal and state dollars.

Different funding sources have particular goals, objectives, and priorities for the screening population. For example, CDC has a specific cervical cancer screening goal that at least 20 percent of federally funded Pap tests must be provided to never screened or rarely screened women (i.e. women who had their last Pap test more than five years ago) since this population is at greater risk for cervical cancer.

Eligibility

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

- Have a household income of less than or equal to 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 between the ages of 21-64

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 BCCP (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. Women apply for the program at their local health department. The application for presumptive eligibility is forwarded to Medicaid for the final determination.

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 US citizen, or legal immigrant for at least five years, 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 2010 calendar year, over 77,000 Pap tests were performed by the program, combining both federal and non-federal resources.

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 US Census Bureau estimates that in 2010, Georgia had more than 510,000 uninsured women age 18-64 years living below 200 percent of the federal poverty level, coinciding with the former eligibility criteria for the Breast and Cervical Cancer Program. Thus, less than 15 percent of the eligible women in Georgia received screening and diagnostic services through BCCP due to financial constraints.

Where Can I Find Out More about Cervical Cancer?

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://dph.georgia.gov/breast-and-cervical-cancer-program-bccp

Technical Notes

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: The number of new cancer cases occurring in a population during a specified period of time. Often expressed as a rate per 100,000 population.
Cancer mortality: The number of cancer deaths occurring in a population during a specified period of time. Often expressed as a rate per 100,000 population.

2003 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 categories:

1 = Metro >1M
2 = Metro 250K-1M
3 = Metro <250K
4 = Metro-Adjacent
5 = there are no counties in Georgia that fit category 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 Public Health, Vital Records Office. 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 (1999-2010). 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 Public Health, Georgia Comprehensive Cancer Registry. The number of new cases and incidence rates for the United States were obtained from NAACCR and SEER. 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 Georgia and the United States were obtained from the National Cancer Institute, Surveillance, Epidemiology, and End Results (SEER) program.

Population estimates for 1980-2010 and the 2000 US standard population were obtained from the US 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 Public Health, Behavioral Risk Factor Surveillance System, and were analyzed as weighted averages for the years 2006 through 2010.

Methods:
Incidence rates were calculated per 100,000 population and age-adjusted by the direct method to the 2000 US standard population. Except where calculated to show trends, the incidence rates are five-year average annual rates for the period 2006 through 2010.

Mortality rates were calculated per 100,000 population and age-adjusted by the direct method to the 2000 US standard population. Because of data quality issues, 2009 cancer death data are not used for analysis. Except where calculated to show trends, the mortality rates are five-year average annual rates for 2005-2008 and 2010 combined.

The Rural-Urban classification of Georgia counties was based on the 2003 Rural-Urban Continuum Codes from the United States Department of Agriculture, Economic Research Service. Information about the Rural-Urban Continuum Codes can be retrieved from http://www.ers.usda.gov/Data/RuralUrbanContinuumCodes/.

Appendix 1

Cervical Cancer Incidence (2006-2010) and Mortality (2005-2010*) by Public Health District

Public Health District	Cases	Age-Adjusted Incidence Rate	Deaths	Age-Adjusted Mortality Rate
1-1 Rome	146	9.1	42	2.5
1-2 Dalton	90	8.4	18	1.7
2-0 Gainesville	114	7.5	29	1.9
3-1 Cobb/Douglas	141	6.9	52	2.7
3-2 Fulton	163	7.4	62	3.0
3-3 Clayton	47	7.5	#	#
3-4 East Metro	162	6.6	42	2.0
3-5 DeKalb	141	8.0	43	2.7
4-0 LaGrange	173	8.5	65	3.2
5-1 Dublin	40	9.7	#	#
5-2 Macon	96	7.2	36	2.5
6-0 Augusta	106	9.1	46	3.9
7-0 Columbus	68	7.4	30	3.1
8-1 Valdosta	75	13.0	29	4.7
8-2 Albany	96	10.1	39	3.8
9-1 Coastal	118	8.4	34	2.4
9-2 Waycross	82	9.6	18	2.2
10-0 Athens	110	9.7	43	3.8

Fewer than 16 deaths; no rate calculated

* Because of data quality issues, 2009 cancer death data are not used for analysis. This report includes data for 2005-2008 and 2010 combined.