

CANCER IN SOUTH CAROLINA 20-YEAR TRENDS FOR INCIDENCE, MORTALITY, AND SURVIVAL

South Carolina Central Cancer Registry



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A Message from Dr. Lilian Peake

I am pleased to introduce this report, *Cancer In South Carolina, 20-year Trends in Incidence, Mortality, and Survival*, from DHEC's South Carolina Central Cancer Registry (SCCCR). It is the culmination of much more than 20 years of data collection and analysis. It represents years of planning and development prior to the establishment of the registry infrastructure at DHEC. It showcases the success of the statewide partnership between healthcare providers and DHEC for cancer reporting, as well as the strong collaboration with our national standards setters and federal funding agent, the Centers for Disease Control and Prevention (CDC).

It is well known that cancer is a major public health problem in the United States. South Carolina has unique and complex public health challenges related to cancer throughout our rural communities. Surveillance data are key to gauge our progress in cancer prevention and control over time and to point us in the direction of areas needing improvement and further assessment.

Thanks to CDC's National Program of Cancer Registries (NPCR) that has provided the primary support for the SCCCR. They provide strong leadership for cancer surveillance data standards so that we can compare ourselves nationally. This report provides those national comparisons for the five most common cancers occurring in our state.

Thanks to the South Carolina Cancer Alliance for co-sponsoring this important report. They consistently utilize this rich cancer data resource to guide their efforts to address cancer through the State Cancer Plan objectives that are put into action throughout the state.

Let's continue to work together to increase awareness about the cancers that can be prevented through lifestyle changes, reduce the burden that cancer places on families in South Carolina through screening and early detection, and improve the survivorship of those diagnosed with cancer in our state by providing state of the art treatment for all.



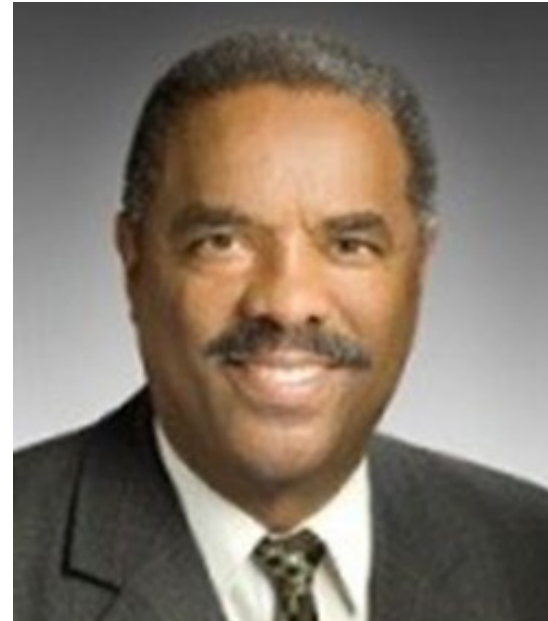
Lilian Peake, MD, MPH
**Director of Public Health,
South Carolina Department of Health and
Environmental Control**

A Message From Dr. Gerald Wilson

The South Carolina Cancer Alliance is pleased to co-sponsor the report, *Cancer In South Carolina, 20-year Trends in Incidence, Mortality, and Survival*, with DHEC's South Carolina Central Cancer Registry (SCCCR). Cancer remains the second leading cause of death in our state, accounting for approximately 1 in every 4 deaths. This disease touches us all whether as a cancer survivor, caregiver, family member, or friend. This groundbreaking 20-year trends report will be utilized as a resource for developing and integrating evidence-based cancer prevention and control activities throughout our state. By implementing the evidence, we have in hand, we can save lives and reduce the suffering of our citizens.

Fortunately, South Carolina has made notable strides against cancer, but we must continue to work together to reduce disparities in our state. This report is a tool that can be used to identify gaps and successes in our efforts, develop education and training resources, advocate for new and better programs and policies, and provide methods for coordinating and communicating about cancer efforts statewide.

No one individual or organization can decrease the state cancer burden alone, although, through the grassroots efforts of committed partners across the state, **together, we can reduce the impact of cancer in South Carolina.**



Gerald Wilson, MD
**Chairman of the Board,
South Carolina Cancer Alliance
Surgeon (retired), Midlands Surgical Associate**

About Us

South Carolina Cancer Alliance (Alliance)

Since 2003, the Alliance has been dedicated to the prevention and early detection of cancer as well as improving the treatment and quality of life of those diagnosed with cancer.

The Alliance consists of over 800 members who represent the state's medical community, academic institutions, public health professionals, nonprofit organizations, and various community groups. Every five years, the members work together to develop the five-year South Carolina Cancer Plan (Cancer Plan). This plan serves as the official road map in the fight against cancer in the state. To view the plan, visit sccancer.org.

The members of the Alliance are divided into workgroups. These workgroups are responsible for developing, implementing, and evaluating specific projects contained in the Cancer Plan. The Alliance is made up of eight workgroups that address breast, cervical, colon, prostate, and lung cancer, as well as policy and advocacy, health disparities, and survivorship. The Alliance provides annual funding opportunities to the workgroups to implement their section of the Cancer Plan.



South Carolina Central Cancer Registry (SCCCR)

The SCCCR is the state's population-based cancer surveillance system that collects, processes, analyzes, interprets, and disseminates cancer incidence (newly diagnosed cases) and cancer mortality (deaths due to cancer) to stakeholders to guide cancer prevention and control efforts, and to researchers in South Carolina and beyond. DHEC's Division of Vital Statistics provides information on cancer mortality to the SCCCR.

Data from the SCCCR are used to study trends in cancer incidence, mortality, and patient survival rates in geographic areas of the state, and how these trends differ by age, race, sex and stage of cancer at diagnosis. Community Cancer Assessments can be provided to local communities to determine if cancer cases or deaths are occurring at a higher rate than expected when compared to the rest of the state. If any excess is found to be actionable based on certain scientific criteria, CDC's guidelines for investigating potential cancer clusters are followed. Treatment patterns and outcomes can also be studied.

The SCCCR is primarily funded by the Centers for Disease Control and Prevention's (CDC) National Program of Cancer Registries (NPCR) along with some state funds. Annually, South Carolina's cancer incidence data are provided to NPCR for inclusion in the official cancer statistics publication for the nation, United States Cancer Statistics. The SCCCR's annual data submissions are "graded" by NPCR and the North American Association of Central Cancer Registries (NAACCR). Measurement of critical data indicators are applied to determine the level of excellence of each state's data. The SCCCR has consistently received the CDC Registry of Distinction award for excellence, as well as Gold Certification from NAACCR, which is their highest level of excellence for data timeliness, completeness, and quality.



The Shifting Portrait of Cancer in South Carolina:

Lessons learned about cancer from 20 years of high-quality surveillance data

Introduction

The data included in this report provided by the South Carolina Central Cancer Registry (SCCCR) summarize 20 years of population-based state cancer reporting for incidence, accompanied by mortality and relative survival for the major cancers occurring in SC, plus all cancers combined. These data provide a data-driven foundation to guide statewide cancer prevention and control efforts.

The value of the SCCCR data for this purpose is that it enables the distribution of cancer occurrence to be characterized according to person, place, and time. With 20 years of high-quality data to report, a major focus of this report is on the trends over time. Disparities in the occurrence of cancer is a major concern, so breaking down the data by gender and by racial/ethnic group is a key step to track progress in addressing cancer disparities. The SCCCR data also enable cancer rates in SC to be compared with the nation as a whole. In the following description when trends are compared to the US, the time frame is 1999 – 2015 for incidence, and 1996-2015 for mortality.

All Cancers Combined

When considering all cancers combined, the good news is that the overall age-adjusted cancer incidence rate (per 100,000) in SC from 1996-2000 through 2011-2015 has decreased 3.1%. Even though the cancer incidence rate in males remains much higher than in females, the overall decrease in males was 12.6%, 10.9% in white males and 18.7% in black males. The sobering result is that during this time period cancer incidence in females did not decrease, but rather increased by 5.5%, 5.2% in white females and 7.7% in black females. Compared with the US as a whole, the decreases in males were comparable to those observed in SC whereas in females the increases observed in SC were not observed nationally as the US incidence rates were relatively constant.

Compared with the incidence trends, the mortality trends were strong and consistent among population subgroups. The overall age-adjusted cancer mortality rate in SC decreased 17.6%, with double digit decreases among all races and both genders. The decreased age-adjusted mortality rates in SC closely paralleled the decreases observed in the US during the same time period. Major factors contributing to cancer mortality rate decreases of this magnitude include primary prevention strategies (e.g., decreasing the prevalence of cigarette smoking) to decrease the number of cancer cases diagnosed and hence incidence rates, secondary prevention/early detection to detect cancer in its early more curable stages, and improved cancer treatments.

Cancer is really a family of diseases. Just as the specific elements of the carcinogenic process, risk factors, diagnosis, treatment, and prognosis vary from cancer to cancer, so too do patterns of occurrence vary by cancer site. So while the 20 year data for

overall cancers summarizes the “big picture” for overarching trends in the occurrence of cancer in SC, the data for each type of cancer provide a more detailed picture. This report summarizes the data for lung, colorectal, breast, and prostate cancer, the four cancers that are responsible for the most cancer diagnoses and deaths. Melanoma of the skin follows as the fifth most commonly diagnosed cancer and is a growing problem in SC.

Lung Cancer

Lung cancer is far and away the leading cause of cancer death in SC. The trends show marked progress in reducing the overall burden of lung cancer in SC, with an 8.5% decrease in the incidence rate and 19.5% decrease in the mortality rate. The lung cancer problem remains most acute among males, so it is encouraging that among both white and black male’s incidence decreased more than 20% and mortality decreased more than 29%. In stark contrast to these favorable trends in males, the increased incidence of lung cancer in females was unexpected and runs counter to the slight decreases observed nationally. Further investigation into the reasons for the lack of decrease in incidence among females is needed. Decreases in female lung cancer mortality rates were observed, but only slightly (0.4% in black females and 5.6% in white females).

Colorectal Cancer

The SC surveillance data for colorectal cancer reveal equally strong downward trends of 24% or greater for white males, black females, white females, and black males for both incidence and mortality rates. Compared to the US as a whole, the downward trends for each of these groups was either comparable to or exceeded the downward trends observed nationally.

These uniformly favorable trends should not obscure the persistent gender and racial disparities. For both incidence and mortality rates, the rates continue to be substantially higher in blacks compared with whites and males compared with females. The incidence and mortality rates are much higher in black males than any other race-gender subgroup.

Breast Cancer

For female breast cancer, the SC data highlight the paucity of strategies to prevent breast cancer from occurring. However, the tremendous impact that screening and improved treatments contributed has enhanced survival and hence reduced mortality rates. Specifically, the incidence rates show a 1.7% decrease in white females (compared with a 5.4% decrease in US) but 11.3% increase in black females (compared with a 7.0% increase in US). Historically breast cancer incidence rates have been substantially higher in white females than black females, but these trends have contributed to a convergence so that now the rates are nearly equal.

Strong favorable downward trends in SC mortality have been observed in both white females (-19.0% compared with -25.1% nationally) and black females (-20.3% compared with -20.1% nationally). Despite the strong downward trend in mortality rates in both races, a large racial disparity in breast cancer mortality rate persists, with rates 43.5% higher in black compared with white women.

Prostate Cancer

The surveillance data for prostate cancer in SC reveal strong downward trends in incidence of 36.8% in white males and 34.2% in black males. The downward trends in mortality rates are even more favorable, with decreases of approximately 44% in both white males and black males. These downward trends are either comparable to or slightly exceed the downward trends that have taken place nationally. Despite the comparable downward trends observed in whites and blacks, the incidence and mortality rates among blacks remain much higher compared with whites.

Melanoma of the Skin

Any complacency about the mostly favorable trends observed in this report are dispelled by inspecting the melanoma data. Major population-level determinants of melanoma risk are exposure to ultraviolet radiation either from sunlight or tanning beds combined with sun-sensitive skin. The surveillance data for melanoma among whites show increases of 21.2% among white males and 24.6% among white females. This upsurge of melanoma in SC mirrors national trends that show even greater increases.

Summary

All those who have been actively involved in supporting the fight against cancer in SC should be very encouraged by the many favorable trends revealed in this report. For cancer sites such as colorectal cancer with such strongly favorable trends the message is to keep up the strong prevention and control efforts to maintain the downward trends.

Not all of the trends were favorable, however. The data revealed problem areas that require renewed efforts. Examples that fall into this category are the slightly increased rates of lung cancer and breast cancer in females, and the pronounced increase in rates of melanoma of the skin.

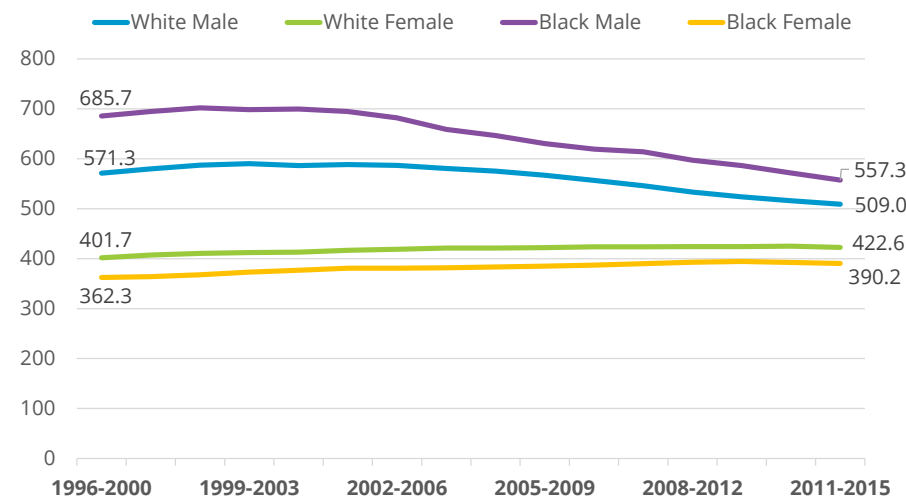
With respect to racial disparities in cancer in SC, for most types of cancer decreases of equal magnitude were observed for both blacks and whites. This is a notable accomplishment. However, because for many malignancies blacks have historically experienced a disproportionate share of the cancer burden significant disparities still remain. To truly narrow the racial differences that persist for most cancers, comprehensive strategies will need to be employed that tackle this problem from every angle.

All Cancers

On average in South Carolina, over 26,000 people are diagnosed with invasive cancer[†] and nearly 10,000 die from the disease each year. Cancer is not one disease, but a group of many diseases with similar characteristics – the growth of abnormal cells. Among U.S. states, South Carolina ranks 31st for cancer incidence and 14th for cancer deaths. Personal lifestyle factors account for most cases of cancer. Not all cancer can be prevented, but the best way to limit your risk is to avoid factors known to be related to cancer and to participate in routine screening programs in order to catch cancer in early stages, as this increases the chances of a favorable outcome.

All-Cancers Incidence Trends by Race & Sex, South Carolina, 1996-2015

5-year age-adjusted rate per 100,000

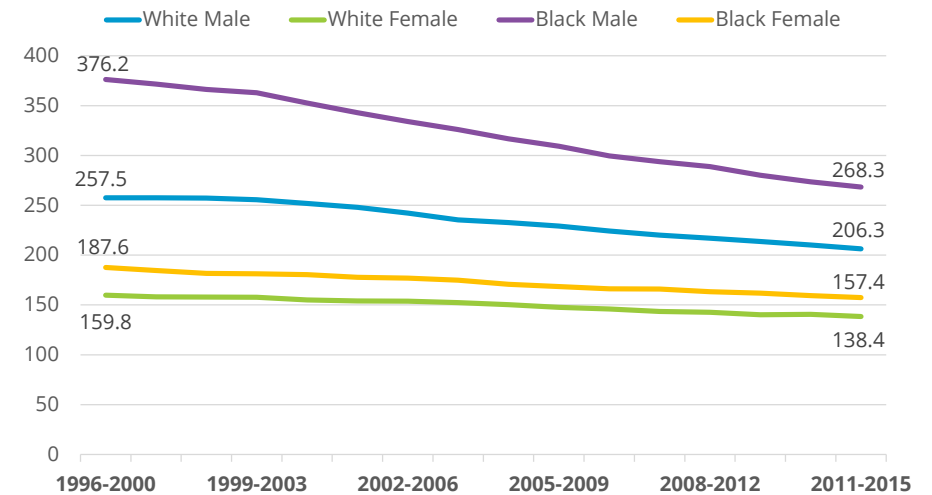


	Percent Change from 1999-2015*			
	SC	US	SC	US
White Male	13.8% ↓	15.1% ↓	White Female	2.5% ↑
Black Male	20.2% ↓	19.5% ↓	Black Female	4.6% ↑

*Percent change is limited to 1999-2015 based on US data availability
[†]includes bladder in situ cases

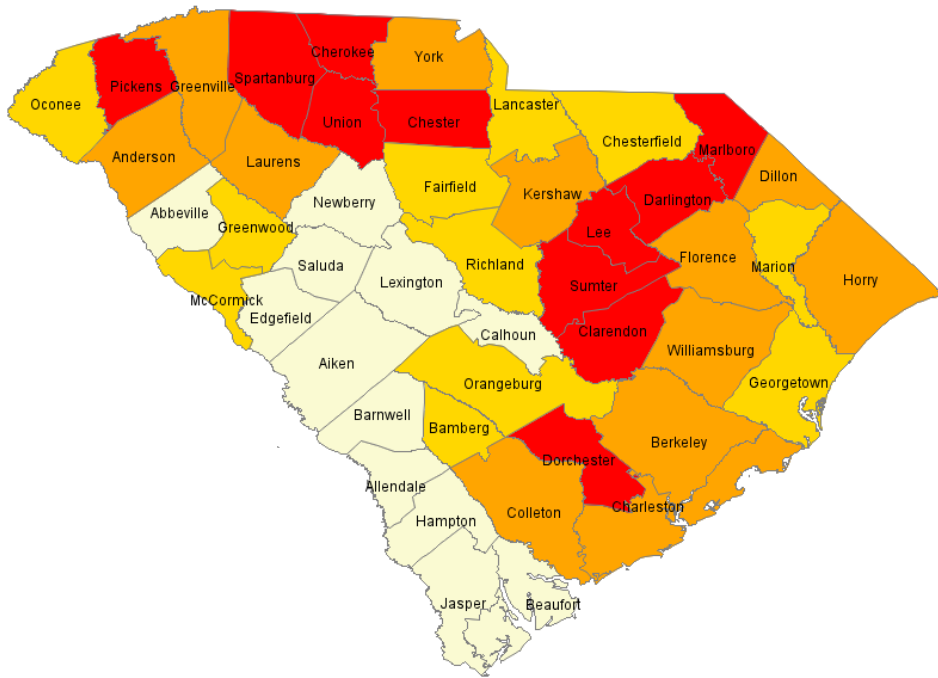
All-Cancers Mortality Trends by Race & Sex, South Carolina, 1996-2015

5-year age-adjusted rate per 100,000

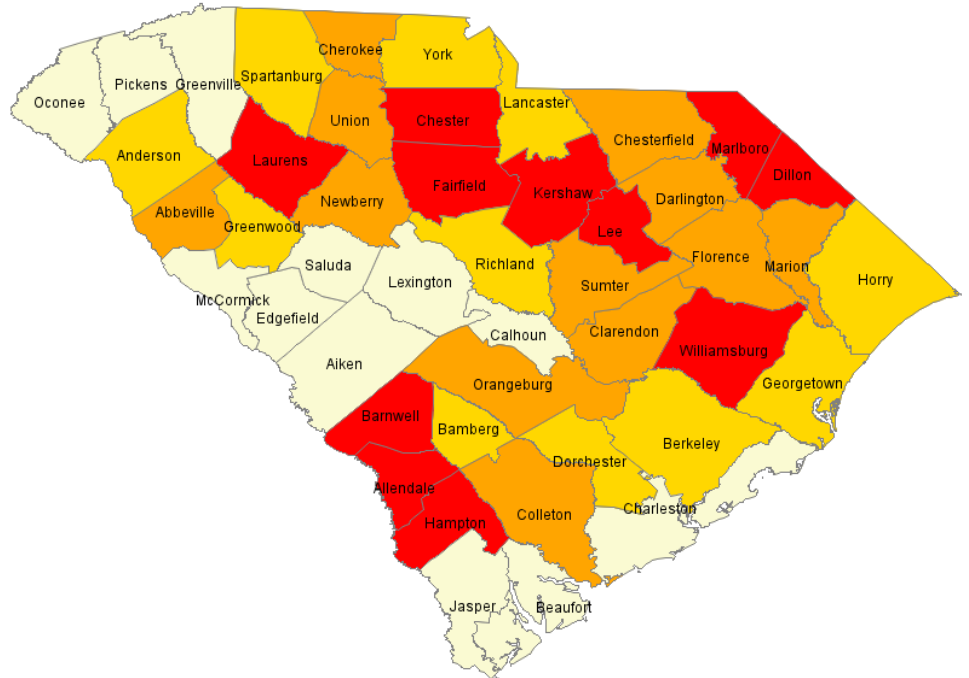


	Percent Change from 1996-2015			
	SC	US	SC	US
White Male	19.9% ↓	21.2% ↓	White Female	13.4% ↓
Black Male	28.7% ↓	32.6% ↓	Black Female	16.1% ↓

All-Cancer 5-year Incidence Rates by County, South Carolina, 2011-2015



All-Cancer 5-year Mortality Rates by County, South Carolina, 2011-2015



SC All-Cancer Incidence Rates, by County, 2011-2015
Age-Adjusted (US 2000 Std Population) All Races, Males and Females

- 377.4-437.8 (Lowest)
- 438.6-456.9 (Lower than state median)
- 457.0-473.2 (Higher than state median)
- 473.5-516.9 (Highest)

State Median: 457.0 (Middle value)
State Rate: 458.4 (Average)

SC All-Cancer Mortality Rates, by County, 2011-2015
Age-Adjusted (US 2000 Std Population) All Races, Males and Females

- 140.9-166.9 (Lowest)
- 171.5-183.0 (Lower than state median)
- 183.5-196.8 (Higher than state median)
- 197.5-224.1 (Highest)

State Median: 183.3 (Middle value)
State Rate: 174.0 (Average)

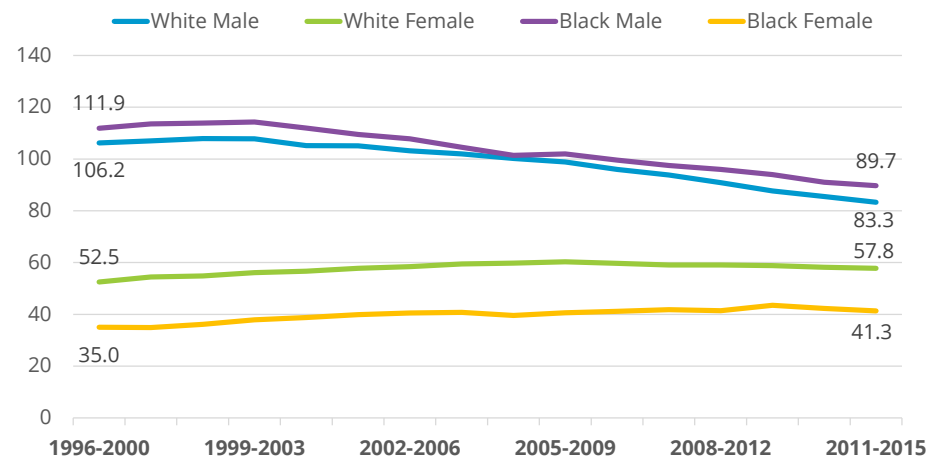
Lung Cancer

On average in South Carolina, 3,896 people are diagnosed with invasive lung cancer and 2,797 die from the disease each year. Lung cancer is the most commonly diagnosed cancer in the state, and ranks number one for cancer deaths. Among U.S. states, South Carolina ranks 16th for lung cancer incidence and 15th for lung cancer deaths. Smoking is the main cause of lung cancer, and exposure to secondhand smoke causes lung cancer for non-smoking adults. The best way to decrease tobacco usage is to offer assistance to those who smoke to quit, prevent youth from smoking, promote policy to create smoke-free places, and increase the minimum legal age of access to tobacco products to 21 years.

For more information, visit www.sctobaccofree.org.

Lung Cancer Incidence Trends by Race & Sex, South Carolina, 1996-2015

5-year age-adjusted rate per 100,000

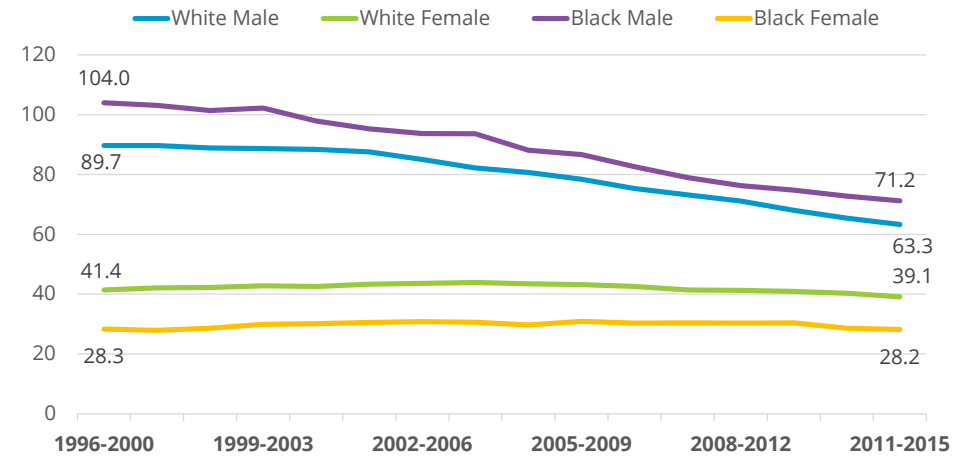


	Percent Change from 1999-2015*			
	SC	US	SC	US
White Male	22.7% ↓	21.9% ↓	White Female	3.0% ↑
Black Male	21.5% ↓	25.9% ↓	Black Female	4.2% ↓

*Percent change is limited to 1999-2015 based on US data availability

Lung Cancer Mortality Trends by Race & Sex, South Carolina, 1996-2015

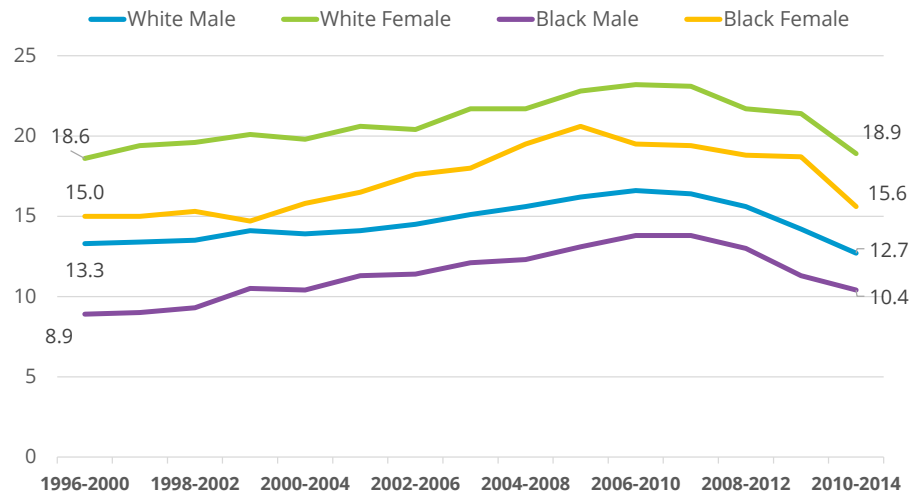
5-year age-adjusted rate per 100,000



	Percent Change from 1996-2015			
	SC	US	SC	US
White Male	29.4% ↓	30.9% ↓	White Female	5.6% ↓
Black Male	31.5% ↓	39.1% ↓	Black Female	16.3% ↓

Lung Cancer 5-Year Relative Survival Trends by Race & Sex, South Carolina, 1996-2014

Relative survival percentage

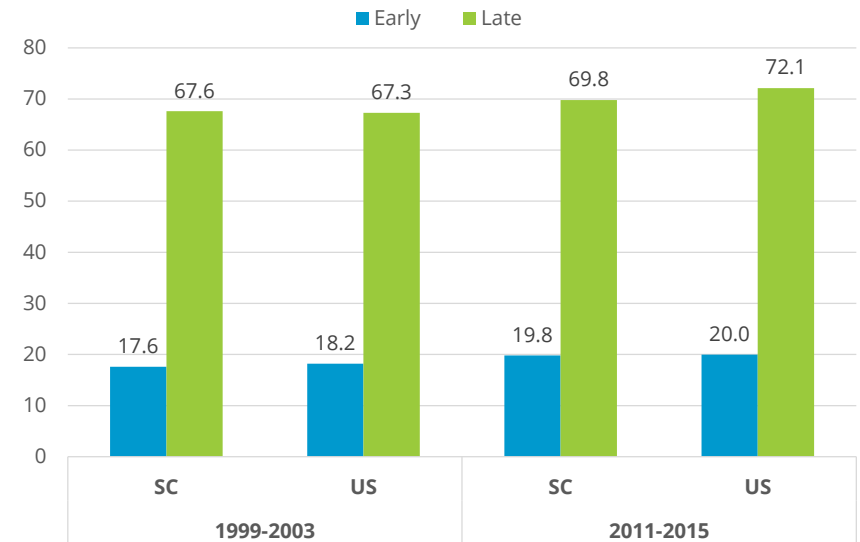


Percent Change from 1996-2014

White Male	4.5%	↓	White Female	1.6%	↑
Black Male	16.9%	↑	Black Female	4.0%	↑

Lung Cancer Early & Late Stage* Proportions, SC and US, 1999-2015

Stage percentage



Percent Change from 1999-2015

	SC	US
Early	12.5% ↑	9.9% ↑
Late	3.3% ↑	7.1% ↑

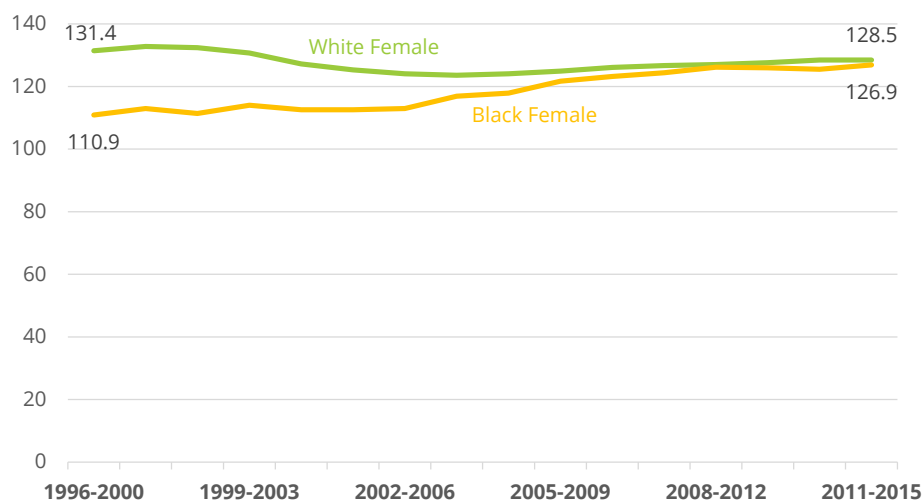
*Early: *in situ* & localized stage
Late: Regional & distant stage

Female Breast Cancer

On average in South Carolina, 3,845 women are diagnosed with invasive breast cancer and 678 die from the disease each year. Female breast cancer is the most commonly diagnosed cancer among women and ranks 3rd for cancer deaths in the state. In the U.S., South Carolina ranks 20th for female breast cancer incidence and 9th for deaths due to the disease. Breast cancer occurs most often in women, but men can be diagnosed as well. There are several risk factors for breast cancer, including a woman's reproductive history, family history and genetic predisposition (BRCA1 and BRCA2 mutations), being overweight, and consuming alcohol.

Female Breast Cancer Incidence Trends by Race, South Carolina, 1996-2015

5-year age-adjusted rate per 100,000 women



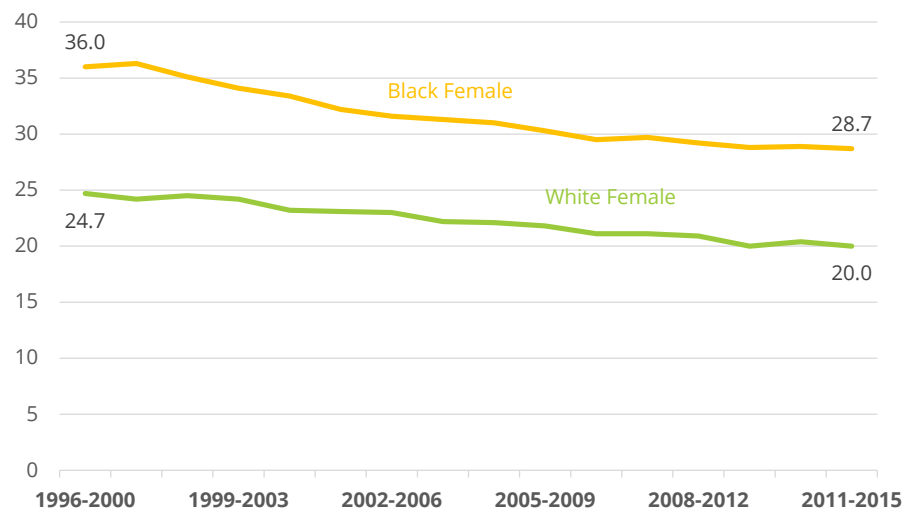
Percent Change from 1999-2015*

	SC	US
White Female	1.7% ↓	5.4% ↓
Black Female	11.3% ↑	7.0% ↑

*Percent change is limited to 1999-2015 based on US data availability

Female Breast Cancer Mortality Trends by Race, South Carolina, 1996-2015

5-year age-adjusted rate per 100,000 women

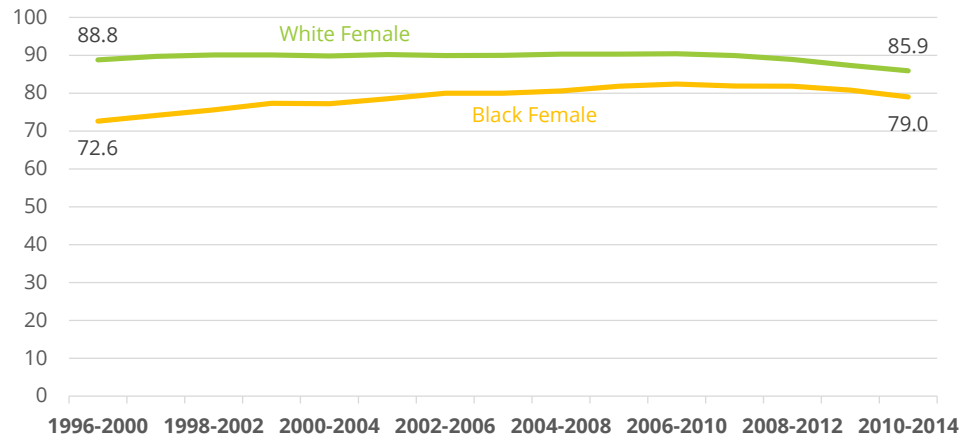


Percent Change from 1996-2015

	SC	US
White Female	19.0% ↓	25.1% ↓
Black Female	20.3% ↓	20.1% ↓

Female Breast Cancer 5-Year Relative Survival Trends by Race, South Carolina, 1996-2014

Relative survival percentage

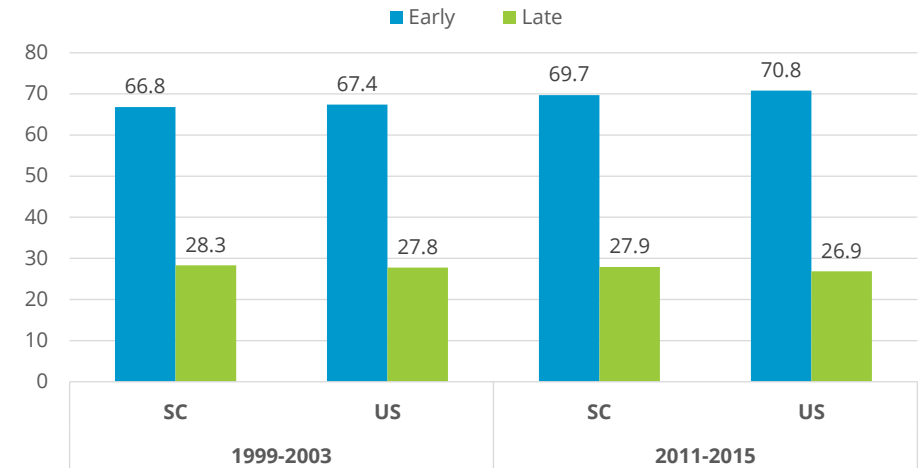


Percent Change from 1996-2014

White Female	3.3%	↓
Black Female	8.8%	↑

Female Breast Cancer Early & Late Stage* Proportions, SC and US, 1999-2015

Stage percentage



Percent Change from 1999-2015

	SC	US
Early	4.3% ↑	5.0% ↑
Late	1.4% ↓	3.2% ↓

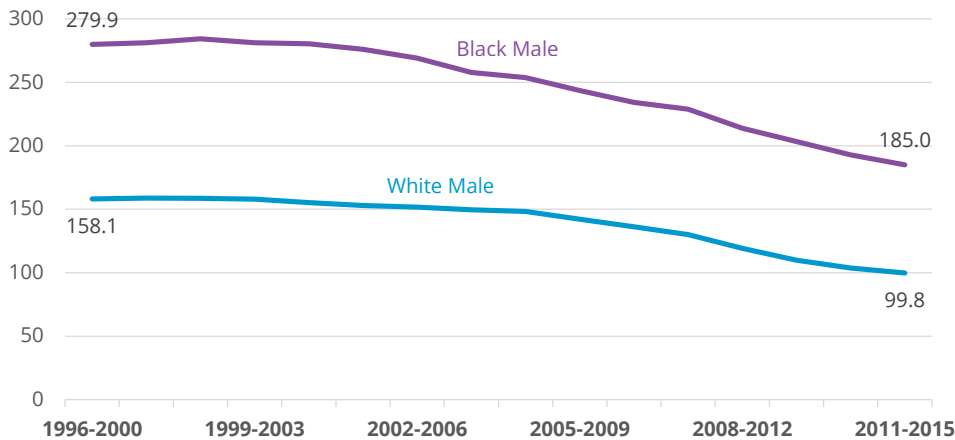
*Early: *in situ* & localized stage
Late: Regional & distant stage

Prostate Cancer

On average in South Carolina, 3,363 men are diagnosed with prostate cancer and 476 die from the disease each year. Prostate cancer is the most commonly diagnosed cancer in men in South Carolina and in the U.S. The rate of new cancers is two times higher for Blacks than for Whites in the state. It is the 5th most common cause of cancer deaths in South Carolina with the death rate for Blacks almost three times higher than for Whites. South Carolina ranks 15th in the U.S. for prostate cancer incidence and 6th for prostate cancer deaths. Although prostate cancer is relatively common, it often grows slowly and many times is unlikely to cause health problems during a man's lifetime. However, as stated, South Carolina is in the top ten ranking nationally for deaths due to prostate cancer. Age is the biggest risk factor; most men with prostate cancer are older than 50 years at the time of diagnosis.

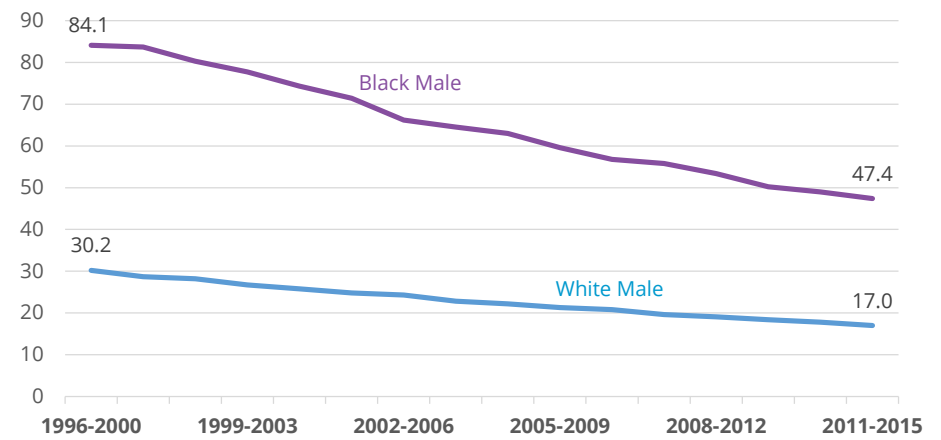
Prostate Cancer Incidence Rates by Race, South Carolina, 1996-2015

5-year age-adjusted rate per 100,000 men



Prostate Cancer Mortality Rates by Race, South Carolina, 1996-2015

5-year age-adjusted rate per 100,000 men



Percent Change from 1999-2015*

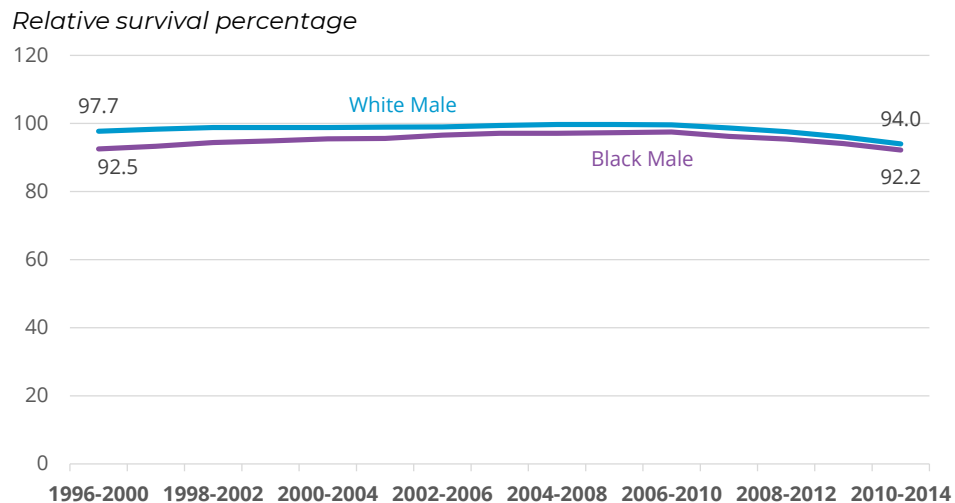
	SC	US
White Male	36.8% ↓	37.8% ↓
Black Male	34.2% ↓	31.5% ↓

Percent Change from 1996-2015

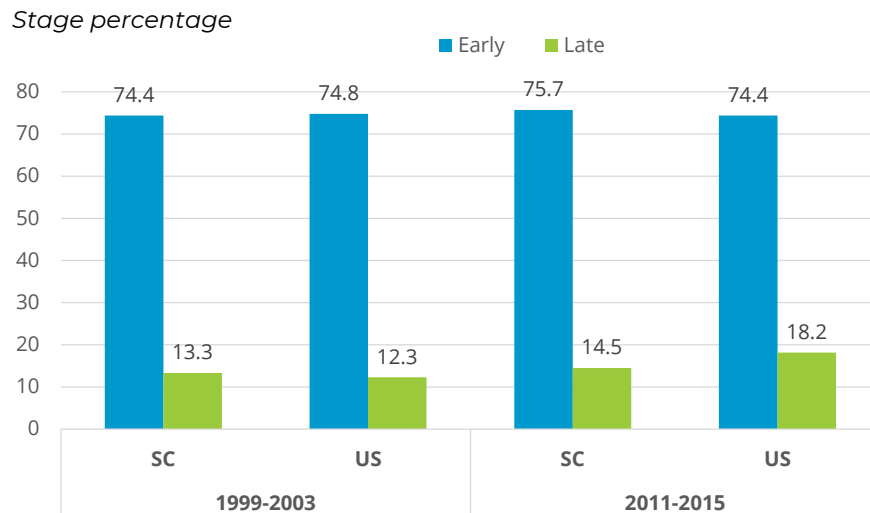
	SC	US
White Male	43.7% ↓	39.5% ↓
Black Male	43.6% ↓	45.3% ↓

*Percent change is limited to 1999-2015 based on US data availability

Prostate Cancer 5-Year Relative Survival Trends by Race, South Carolina, 1996-2014



Prostate Cancer Early & Late Stage* Proportions, SC and US, 1999-2015



Percent Change from 1996-2014

White Male	3.8%	↓
Black Male	0.3%	↓

Percent Change from 1999-2015

	SC	US
Early	1.5% ↑	0.5% ↓
Late	9.0% ↑	48.0% ↑

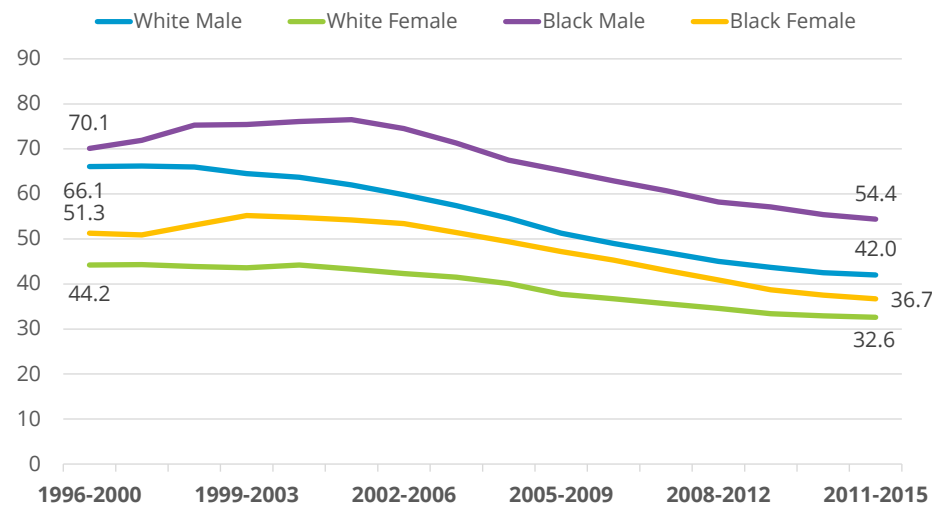
*Early: *in situ* & localized stage
Late: Regional & distant stage

Colon and Rectum Cancer

On average in South Carolina, 2,166 people are diagnosed with invasive colorectal cancer and 829 die from the disease each year. Colorectal cancer is one of the most commonly diagnosed cancers in both men and women, ranking 4th in South Carolina for incidence and 2nd for deaths. In the U.S., South Carolina ranks 26th for colorectal cancer incidence and 22nd for deaths due to the disease. Even though it is one of the more deadly of the leading cancers, it is also one of the most preventable. The main risk factors for developing colorectal cancer are being overweight, having a diet high in red and processed meats, and smoking. Colorectal cancer can start as a growth called a polyp. Polyps become cancer over time, and finding and removing polyps can prevent colorectal cancer altogether. Screening for colorectal cancer is critical to prevention and early detection of this disease.

Colorectal Cancer Incidence Trends by Race & Sex, South Carolina, 1996-2015

5-year age-adjusted rate per 100,000

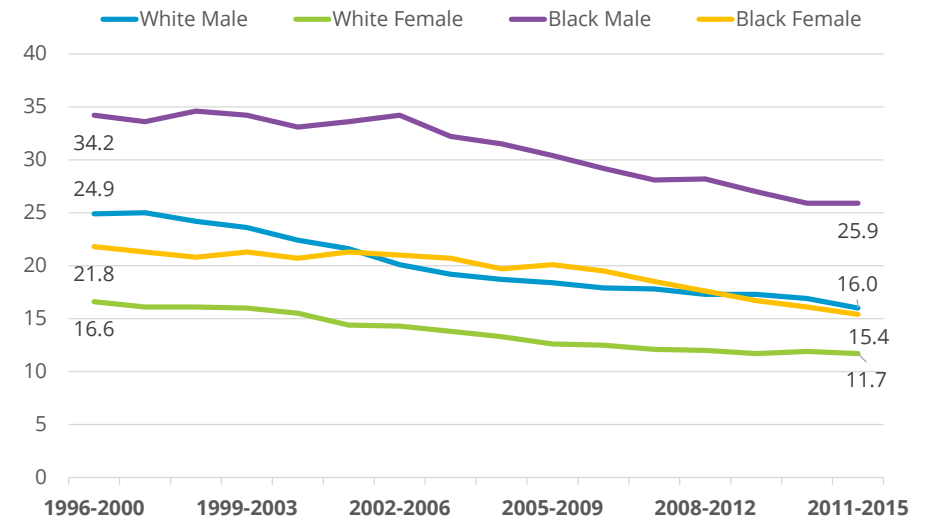


	Percent Change from 1999-2015*			
	SC	US	SC	US
White Male	34.9% ↓	31.4% ↓	White Female	25.2% ↓
Black Male	27.9% ↓	24.8% ↓	Black Female	33.5% ↓

*Percent change is limited to 1999-2015 based on US data availability

Colorectal Cancer Mortality Trends by Race & Sex, South Carolina, 1996-2015

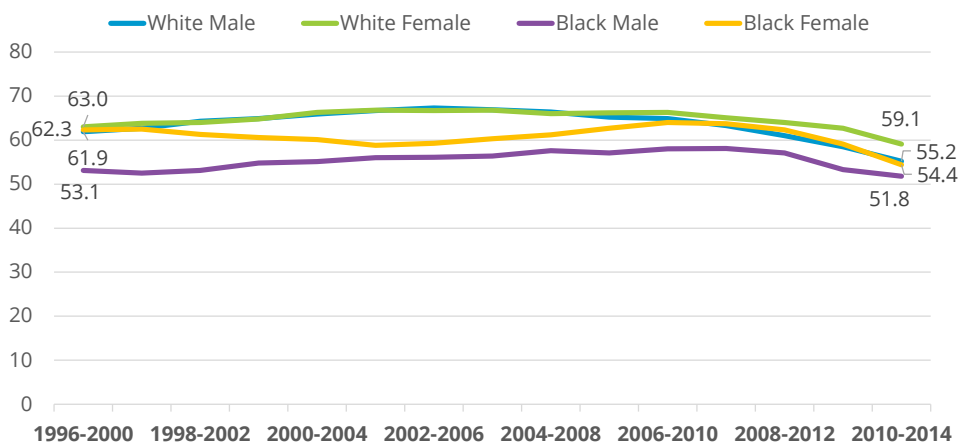
5-year age-adjusted rate per 100,000



	Percent Change from 1996-2015			
	SC	US	SC	US
White Male	35.7% ↓	33.6% ↓	White Female	29.5% ↓
Black Male	24.3% ↓	29.5% ↓	Black Female	29.4% ↓

Colorectal Cancer 5-Year Relative Survival Trends by Race & Sex, South Carolina, 1996-2014

Relative survival percentage

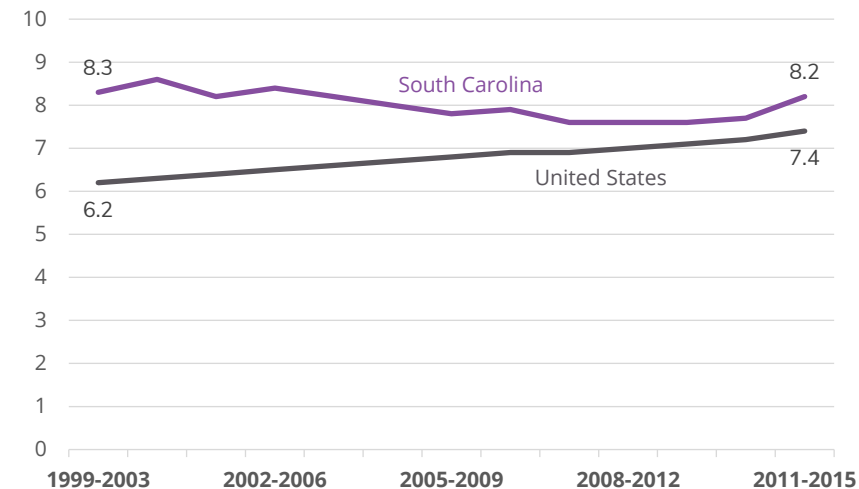


Percent Change from 1996-2014

White Male	10.8%	↓	White Female	6.2%	↓
Black Male	2.4%	↓	Black Female	12.7%	↓

Colorectal Cancer Incidence Rate 0-49 Years, SC and US, 1999-2015

Five-year age-adjusted rate per 100,000



Percent Change from 1999-2015

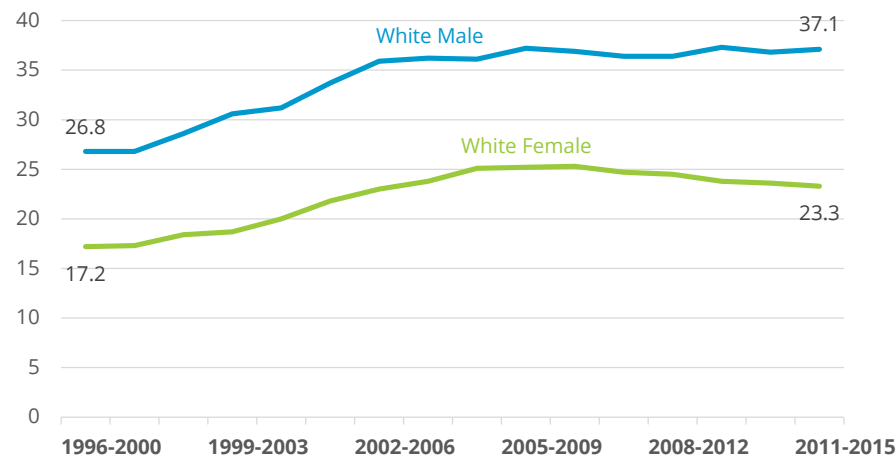
South Carolina	1.2%	↓
United States	19.4%	↑

Melanoma of the Skin

On average in South Carolina, 1,223 people are diagnosed with melanoma and 146 die from the disease each year. It accounts for only 1% of all skin cancers combined, but is by far the most deadly. Melanoma is the 5th most common cancer diagnosed in South Carolina, with melanoma deaths ranking 18th in the state. In the U.S., South Carolina ranks 9th for melanoma incidence and 9th for deaths. The main risk factor for developing melanoma is exposure to ultraviolet (UV) rays from the sun and tanning beds. In South Carolina, 98% of new cases of melanoma occur among Whites and 2% in non-Whites. Since the vast majority of melanoma cases and deaths occur among Whites, the graphs include rates for only Whites.

Melanoma Incidence Trends, White Race by Sex, South Carolina 1996-2015

5-year age-adjusted rate per 100,000 white population



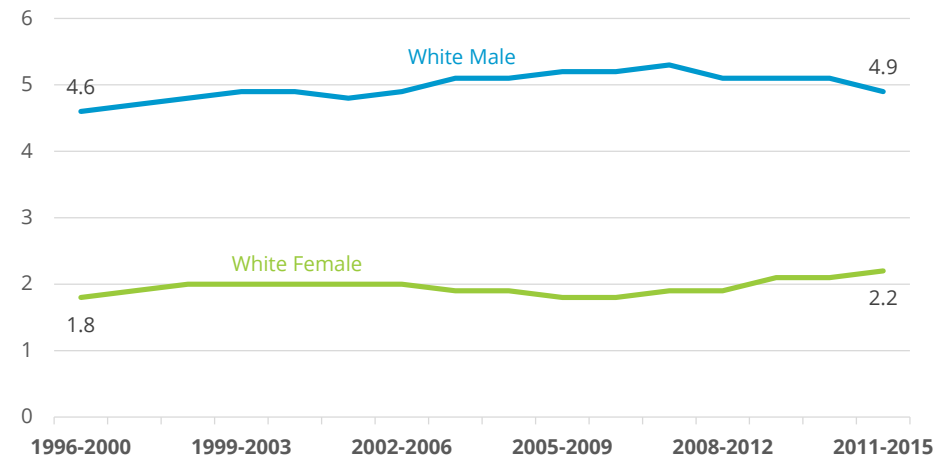
Percent Change from 1999-2015*

	SC	US
White Male	21.2% ↑	29.7% ↑
White Female	24.6% ↑	27.5% ↑

*Percent change is limited to 1999-2015 based on US data availability

Melanoma Mortality Trends, White Race by Sex, South Carolina, 1996-2015

5-year age-adjusted rate per 100,000 white population

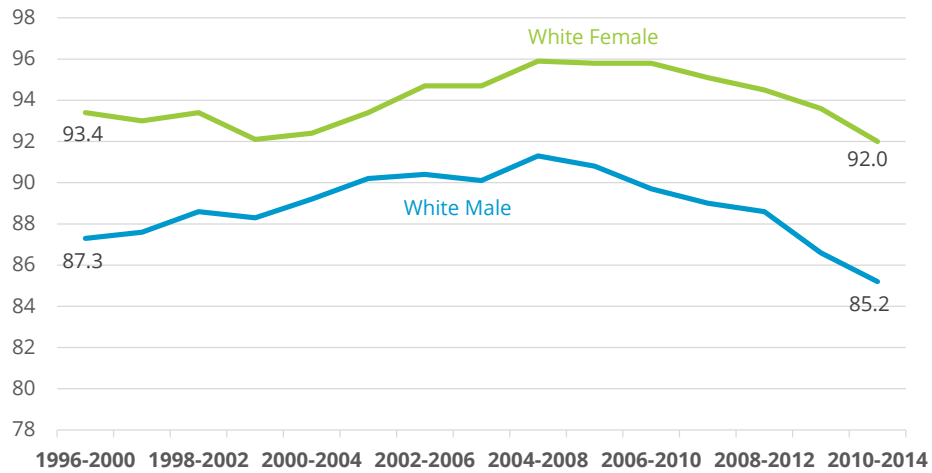


Percent Change from 1996-2015

	SC	US
White Male	6.5% ↑	2.3% ↑
White Female	22.2% ↑	5.0% ↓

Melanoma 5-Year Relative Survival Trends by Sex, South Carolina, 1996-2014

Relative survival percentage

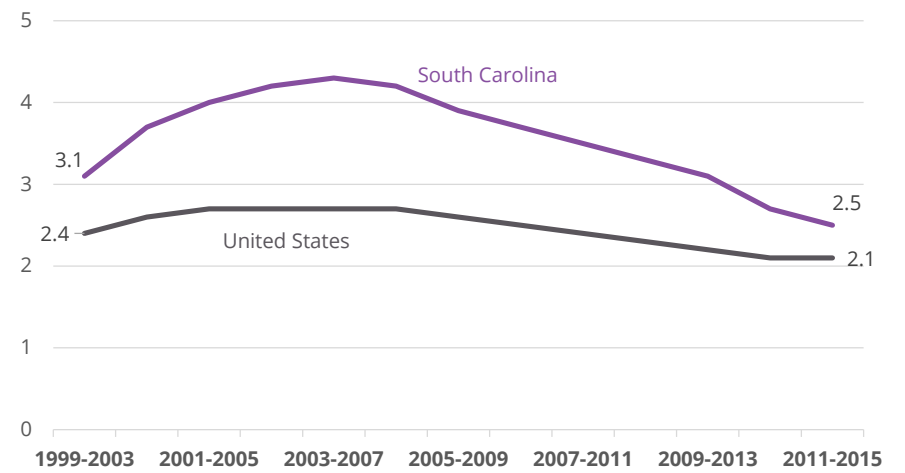


Percent Change from 1996-2014

White Male	2.4%	↓
White Female	1.5%	↓

Melanoma Incidence Rate 0-29 Years, SC and US, 1999-2015

5-year age-adjusted rate per 100,000 white population



Percent Change from 1999-2015

South Carolina	19.4%	↓
United States	12.5%	↓

Glossary

Age-Adjustment: The statistical process applied to rates of disease, deaths, injuries, or other health outcomes that allows areas with different age structure to be compared.

All Cancers: All cancer types combined to provide an overview of the cancer burden in the population.

Cancer Cluster: The term used to define the occurrence of a greater-than-expected number of cancer cases within a group of people in a geographic area over a certain period. There are different categories of clusters potential (or perceived), true, and meaningful cancer clusters. Most cancer clusters are perceived to be a greater-than-expected number of cases or deaths; a true cancer cluster has been statistically proven to be an excess, however it may be a random occurrence; and a meaningful cancer cluster is one with a statistically-proven excess that meets other scientific criteria that warrants further public health action.

Cancer Risk Factors: Any attribute, characteristic or exposure of an individual that increases a person's chances of developing cancer. Certain lifestyle behaviors, genetic predispositions, environmental, and other unknown (and random) factors are considered risk factors for cancers, and may differ widely between cancer types.

Cancer Incidence: Is a measure of the number of new cancer cases that occurred in a certain period.

Cancer Mortality: Is a measure of the number of deaths due to cancer that occurred in a certain period.

Cancer Prevention: Taking proactive measures to lower the risk of getting cancer.

Cancer Survivor: An individual diagnosed with cancer of any type, current or past, who is still living.

Cancer Trends: Pattern of cancer rates over time (in this report, 20 years, 1996-2015) for cancer incidence, mortality, and relative survival in order to see the successes in cancer prevention and control efforts, and to gauge the areas needing more effort and attention. The state cancer trends can be compared to national cancer trends in order to see if the state is following the national pattern for cancer rates.

Centers for Disease Control and Prevention (CDC): The national health agency responsible for protecting the public's health.

Comprehensive Cancer Control: A collaborative process through which a community pools resources to reduce the burden of cancer that results in risk reduction, early detection, better treatment and enhanced survivorship.

Early & Late Stage Proportion Comparisons: The total number of cancer cases for a particular cancer type compared by early stage (in situ and localized stage) and late stage (regional and distant stage) diagnoses. When a high proportion of late stage

diagnoses have occurred, it can be an alert that there are potential problems in areas such as screening, access to care, or the need for increased education in certain geographic areas. It could warrant further public health action.

Incidence Rate: The number of new cases of a disease that occur in a specific time within a specific population, divided by the size of the population at risk. Cancer rates are usually expressed as the number of new cases per 100,000 people.

Invasive Cancer: Cancers that are diagnosed at the localized, regional, or distant stage of disease. Pre-invasive cancers (diagnosed at the earliest stage – in situ) are not included in this category, except for bladder cancer (according to national standards). Invasive cancers are utilized in cancer reporting and national data sets and are used for comparison across the U.S.

Median: Is the middle value separating the upper half values of a data sample from the lower half values.

Morbidity: Illness or disease.

Mortality: Deaths.

Mortality Rate: The number of deaths that occur in a specific time within a specific population, divided by the size of the population at risk for the disease. Like cancer incidence rates, cancer mortality rates are usually expressed as the number of deaths per 100,000 people.

National Cancer Institute (NCI): The federal government's principal agency for cancer research and training.

National Comprehensive Cancer Network (NCCN): Not-for-profit alliance of 21 of the world's leading cancer centers is dedicated to improving the quality and effectiveness of care provided to patients with cancer.

National Program of Cancer Registries (NPCR): The CDC program that funds state cancer registries to collect and report population-based cancer data according to national standards. These data are provided to the NPCR annually. They enable public health professionals to understand and address the cancer burden more effectively. NPCR provides support for states and territories to maintain registries that provide high-quality data.

North American Association of Central Cancer Registries (NAACCR): The professional organization for central cancer registries that develops and promotes uniform data standards for cancer registration; provides education and training; certifies population-based registries; aggregates and publishes data from central cancer registries; and promotes the use of cancer surveillance data and systems for cancer control and epidemiologic research, public health programs, and patient care to reduce the burden of cancer in North America.

Percent Change: The percentage difference, higher or lower, between the first 5-year cancer rate and the last 5-year cancer rate on each trend graph.

Relative Survival: A net survival measure comparing the survival of people who have a specific disease with those who don't, over a certain period of time. This is usually five years from the date of diagnosis or the start of treatment for those with the disease. It is calculated by dividing the percentage of patients with the disease who are still alive at the end of the period of time by the percentage of people in the general population of the same sex and age who are alive at the end of the same time period. The relative survival rate shows whether the disease shortens life.

South Carolina Cancer Alliance (the Alliance): The statewide organization that is responsible for implementation of the South Carolina Cancer Plan. The members of the Alliance are divided into workgroups. These workgroups are responsible for developing, implementing, and evaluating specific projects comprised in the South Carolina Cancer Plan.

South Carolina Central Cancer Registry (SCCCR): The cancer surveillance system within the SC DHEC responsible for collecting cancer patient information on all new cancer cases according to national standards, and for reporting population-based cancer statistics for South Carolina. Cancer reporting is mandated by the state law passed in 1996.

South Carolina Cancer Plan: This publication is the Cancer Plan for South Carolina. Each state in the U.S. is funded through the Centers for Disease Control and Prevention to prepare a plan with data-driven objectives and strategies for cancer prevention and control work in their state.

South Carolina Community Assessment Network (SCAN): The interactive data retrieval system for community assessment, planning, and health practices. Users can create tables, charts, and maps per their interests and specifications at the DHEC Region, County, or ZIP code level.

South Carolina Department of Health and Environmental Control (SC DHEC): The state agency that is responsible for protecting the public's health and the environment of South Carolina.

United States Cancer Statistics (USCS): The official federal report for cancer statistics, including state-specific and regional data for cancer incidence and cancer deaths. Only states meeting stringent criteria for data excellence can be included in USCS.

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An electronic copy of the *Cancer in South Carolina, 20-year Trends in Incidence, Mortality, and Survival Report* can be downloaded from sccancer.org. To volunteer with the South Carolina Cancer Alliance or to request a hard copy, contact us at:

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**Together, we can reduce the impact of cancer in
South Carolina - *and you can too.***

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