

Breast Cancer *statistics*

THE STATE OF BREAST CANCER IN SOUTH CAROLINA



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Additionally, we would like to acknowledge the members of the SCCA Breast & Female Cancer Workgroup for their contributions to this report and dedication to reducing the burden of breast cancer in SC through research and practice.

The men and women of the SCCA Breast and Female Cancer Workgroup represent a wide variety of organizations throughout the state including, but not limited to, the University of South Carolina, Clemson University, Wofford College, Susan G. Komen Affiliates, the SC Department of Health and Environmental Control, McLeod Health, Palmetto Health, 21st Century Oncology and the American Cancer Society.

Upcoming research: A manuscript based on the data collected for this white paper has been accepted for publication in *Southern Medical Journal*. The manuscript will focus on racial/ethnic disparities (African American vs. European American women) in breast cancer incidence, mortality, and treatment across SC.

EXECUTIVE SUMMARY

Breast cancer is the most commonly diagnosed cancer among women in the United States (US) and is the second-leading cause of female death, after lung cancer.[1]

Nearly 1 in 8 women will develop breast cancer in their lifetime,[1] making it imperative that states provide guidelines for breast cancer prevention and promote public health interventions that reduce the incidence and mortality of breast cancer. The purpose of this work is to analyze the current state of breast cancer in South Carolina (SC) to assess potential target areas to reduce breast cancer deaths and increase awareness, resources and allocations by providing comparisons of SC with national standards.

SC is equipped with many resources across the state that are focused on providing quality cancer care. One of the leaders in providing care to the economically disadvantaged is the Best Chance Network (BCN) and its partnering mammography providers. BCN serves uninsured women between the ages of 40 and 64 with annual income at or below 200% of poverty levels.[2] The state is also equipped with Commission on Cancer (CoC)-accredited facilities to achieve national benchmarks related to breast cancer screening and treatment.[3]

After gender,[4] age is the leading contributor to breast cancer risk. The risk of developing breast cancer increases eight-fold by age 60.[5] Other risk factors include race/ethnicity, certain types of oral contraceptives, exposure to estrogen, alcohol intake, weight, exercise and family history.[6] It is of paramount importance that we continue to provide access to routine clinical breast exams and mammograms and provide information for women to protect themselves from the possible detrimental effects of a late-stage breast cancer diagnosis.

Other important metrics presented in this report include the proportion of women receiving needle biopsy for breast cancer diagnosis,[7, 8] and the proportion of women receiving appropriate follow-up care after diagnosis. Our primary conclusions are that COC-accredited facilities are meeting higher standards of quality breast cancer care in SC than all SC hospitals combined. For most quality markers, SC COC-accredited facilities are similar or higher to their national COC-accredited hospital counterparts.

Awareness of quality metrics for breast cancer management is valuable on every level of health care. Tools to guide patients with breast abnormalities can include promoting communication between patients and health care providers, including educational recourse to inform women of best practices for breast cancer treatment options.[9]

BACKGROUND

South Carolina (SC) ranks 13th in the nation for breast cancer deaths.[10] In 2014, there will be an estimated 3,750 new cases of breast cancer, with 670 estimated deaths.[4] This is a slight increase from 2012, which saw 3,291 new breast cancer diagnoses and 614 deaths from the disease.[10]

Since 1989, death rates from breast cancer have been declining, believed to be largely the result of early detection through screening, increased awareness and improved treatment.[11] Early diagnosis is a key factor in determining breast cancer survivorship. The 5-year survival rate for women diagnosed at stage *in situ* to stage III is over 70%; in sharp contrast, the 5-year survival rate for stage IV is only 22%. [12] Recommendations concerning mammography screening differ according to age. The American Cancer Society (ACS) recommends that women age 40 and older have a screening mammogram every year and continue to be screened yearly as long as they are in good health. However, in 2012 only 54.3% of women in SC age 40 and older received a mammogram within the past year.[12] In contrast to ACS recommendations, the U.S. Preventative Services Task Force (USPSTF) recommends that women age 50 and older receive biennial screening mammography.[13]

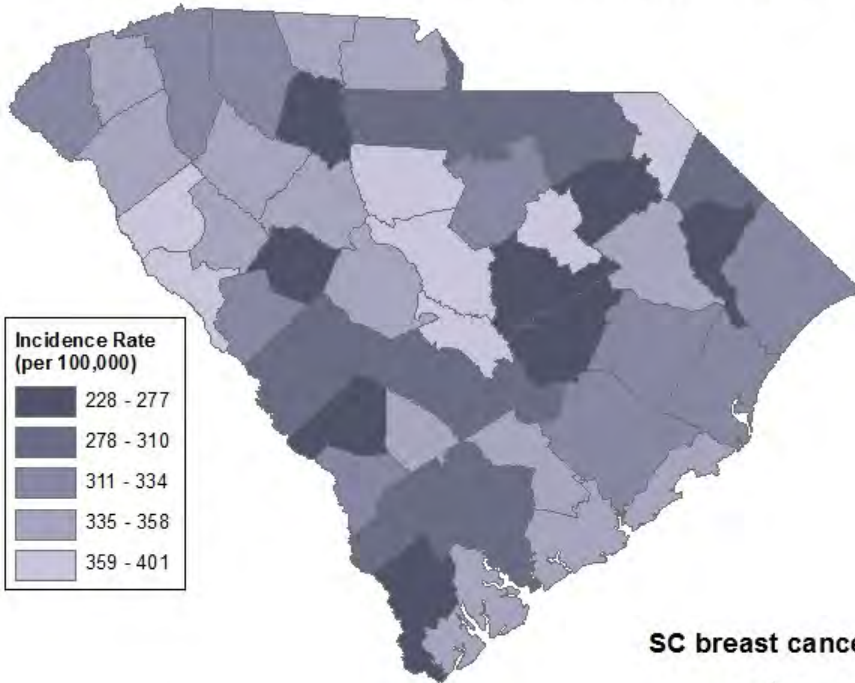
National literature addressing breast cancer is becoming more transparent because of an increase in available data, providing a better understanding of breast cancer in both the US and SC. There has been a growing movement in oncology to measure the quality of cancer care to increase accountability among physicians and improve outcomes for patients.[14-17] In 1999, the Institute of Medicine (IoM) published the report *Ensuring Quality Cancer Care*, which called for a national quality monitoring and reporting system.[15] A key element of such quality monitoring is creating standardized measures of care, which can be used for self-assessment or external reviews of care quality. As a result, professional organizations have begun to create metrics based on evidence gathered from research, literature and national guidelines.[17] Additionally, individual states have taken steps to improve their quality of cancer care. In particular, there are 17 Commission on Cancer (CoC)-accredited hospitals in SC, which regularly monitor a variety of quality metrics related to treatment.

Treatment for breast cancer patients includes breast-conserving surgery, radiation and chemotherapy. These therapies can be combined to help ensure the best results after an initial breast needle biopsy, [18] particularly when the disease is diagnosed at later stages. SC is making progress in reducing the burden of breast cancer through high-quality cancer treatment options and adherence. The number of women receiving these types of treatment has increased in SC in the past 5 years, and SC continues to improve in terms of providing quality care to cancer patients.

This work is important to assess the available quality measures of breast cancer screening, diagnosis and treatment in SC. Investigating the issues relevant to the state can help policymakers focus on SC's limitations to improve standards of care. The report will focus on a description of the nation's goals for breast cancer to measure how well SC is situated.

BREAST CANCER INCIDENCE AND MORTALITY

SC breast cancer incidence among women 50+, 2007-2011



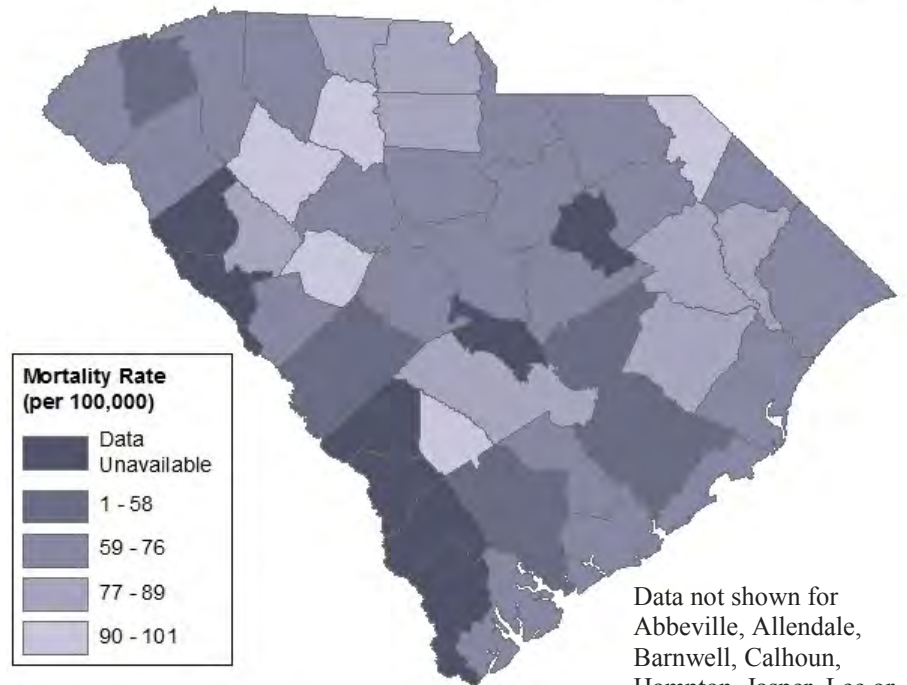
According to the NCI State Cancer Profiles, SC has a slightly lower age-adjusted breast cancer incidence rate (330.0 per 100,000) compared to the nation (332.4 per 100,000) for women 50+.

US states ranged from 295.9 to 382.0 new cases of breast cancer per 100,000 women. SC counties reported incidence rates of female breast cancer ranging from 228.1 (Jasper) to 400.7 (Calhoun) per 100,000.

In women in the US aged 50+, the age-adjusted death rate for female breast cancer is 68.2 per 100,000, while in SC the rate is 70.4 per 100,000.

The female breast cancer death rates in this state are among the highest in the US.[1] Nearly half of SC counties have higher rates than the national average.

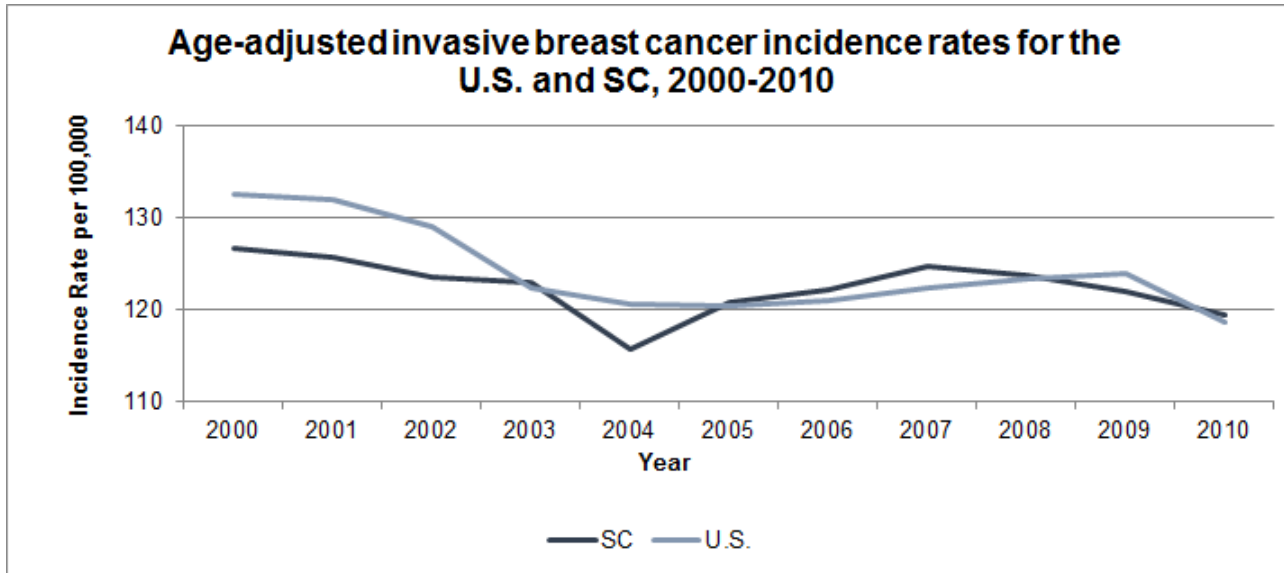
SC breast cancer mortality among women 50+, 2007-2011



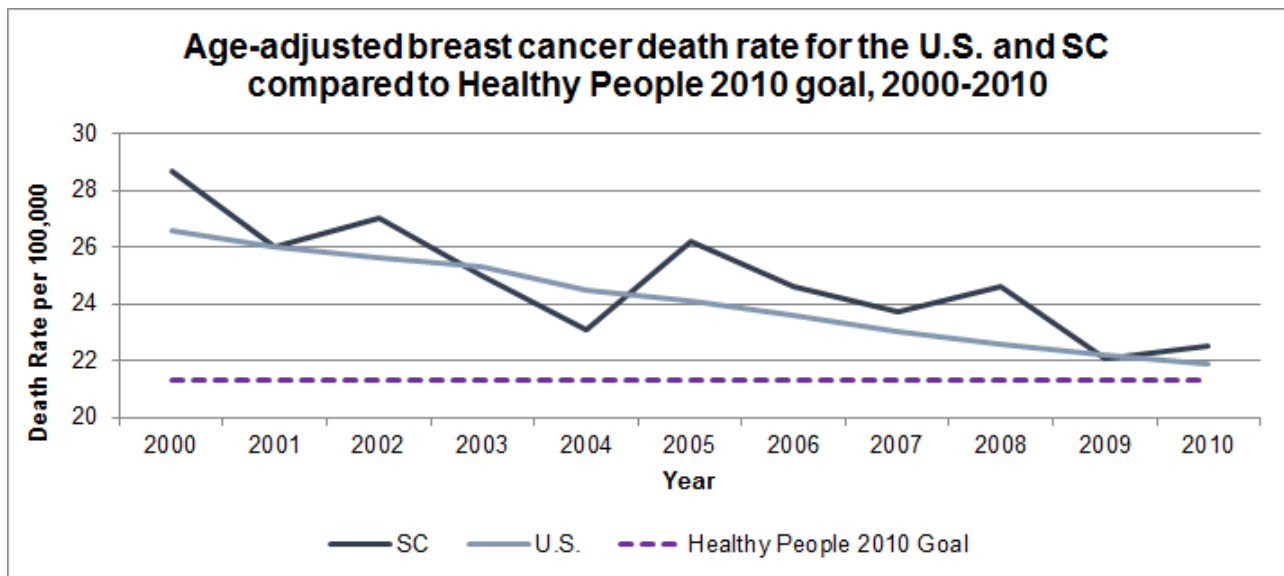
Data not shown for Abbeville, Allendale, Barnwell, Calhoun, Hampton, Jasper, Lee or McCormick counties.

BREAST CANCER INCIDENCE AND MORTALITY

Looking at all ages (not just ages 50+), South Carolina and the United States have similar age-adjusted invasive breast cancer incidence rates. This pattern has been particularly pronounced since 2005.



Age-adjusted breast cancer death rates are higher than the Healthy People 2010 goal,[19] both statewide and nationally.



SCREENING GUIDELINES

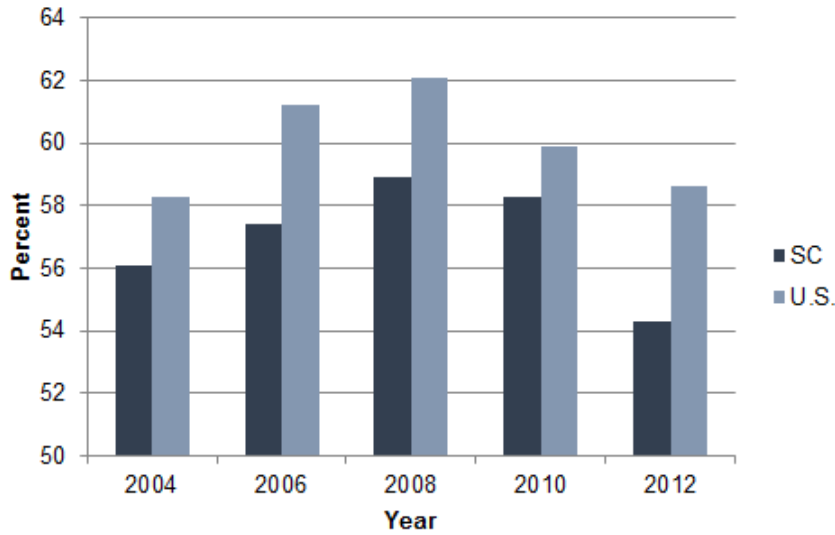
Various agencies take different stances when recommending breast cancer screening. The two most prominent agencies, the American Cancer Society (ACS) and the United States Preventive Services Task Force (USPSTF), have issued differing screening guidelines.

Comparison of USPSTF and ACS Screening Guidelines	
USPSTF	ACS
Biennial mammography screening beginning at age 50	Annual mammography screening beginning at age 40
Evidence is insufficient for assessing the additional benefits of mammography screening in women past age 74	Continue annual mammography screenings for as long as a woman is in good health
Recommends against clinicians teaching women how to perform breast self-examination	Breast self-examination is optimal for women who receive instructions from their health care providers
Evidence is insufficient for assessing the additional benefits of clinical breast examination beyond mammography screenings in women age 40+	Recommends clinical breast examination every 3 years for women in their 20s and 30s and annually for women age 40+

Abbreviations: USPSTF: U.S. Preventive Services Task Force; ACS: American Cancer Society

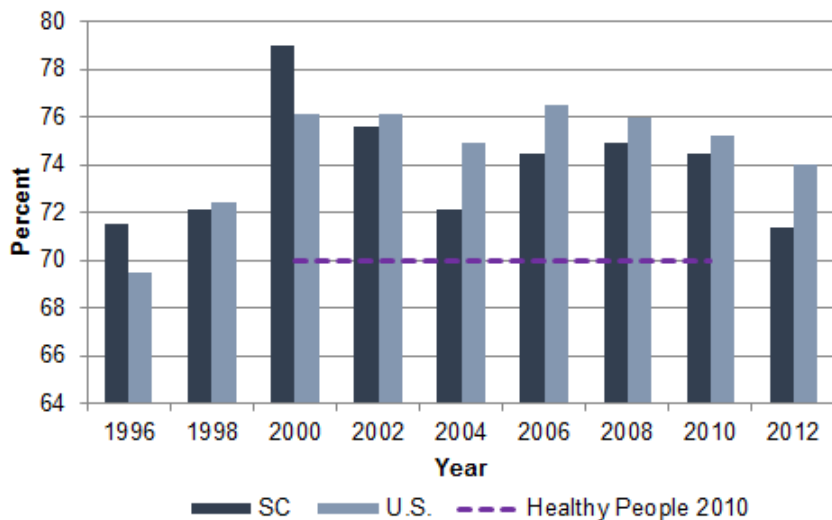
BREAST CANCER SCREENING

Women age 40+ who received a mammogram within the past year



A higher percentage of US women receive mammograms than SC women.

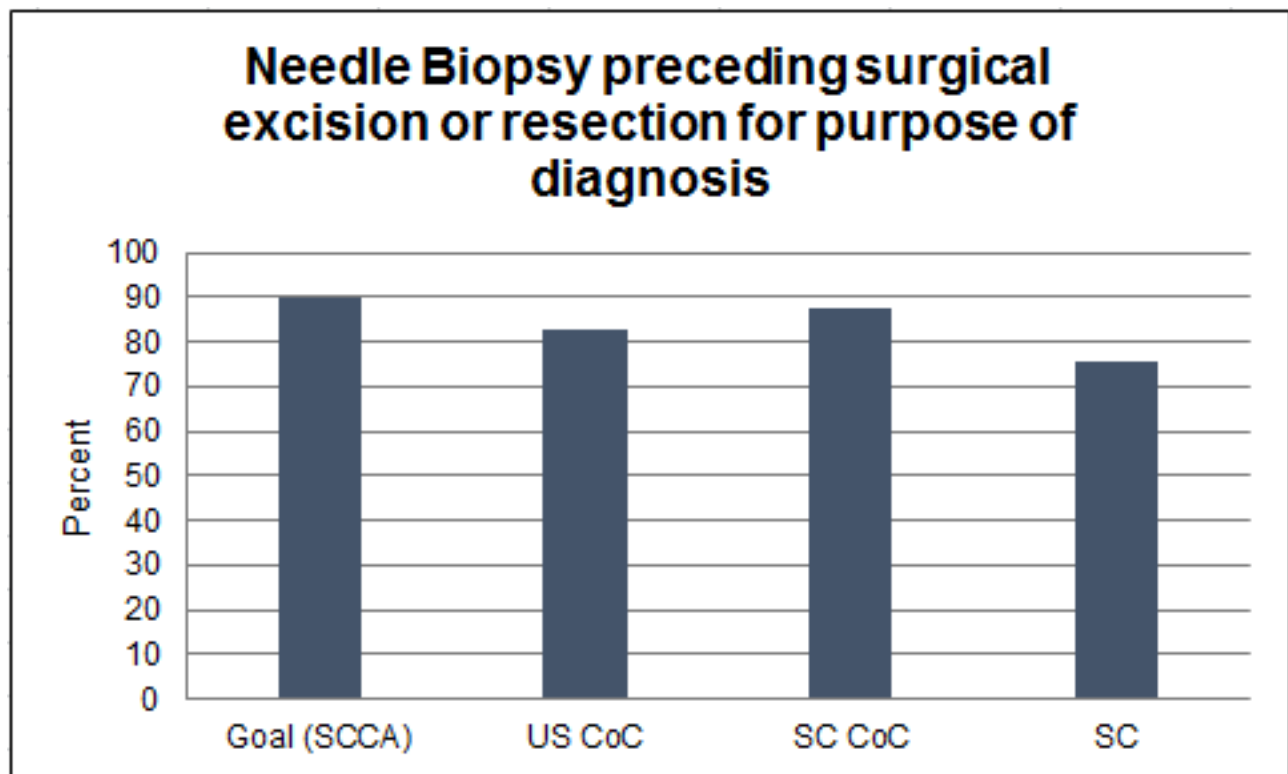
Women age 40+ who received a mammogram within the past 2 years



The proportion of women who were screened increased drastically from 1998 to 2000 but then slowly decreased over the next decade.

BREAST CANCER TREATMENT

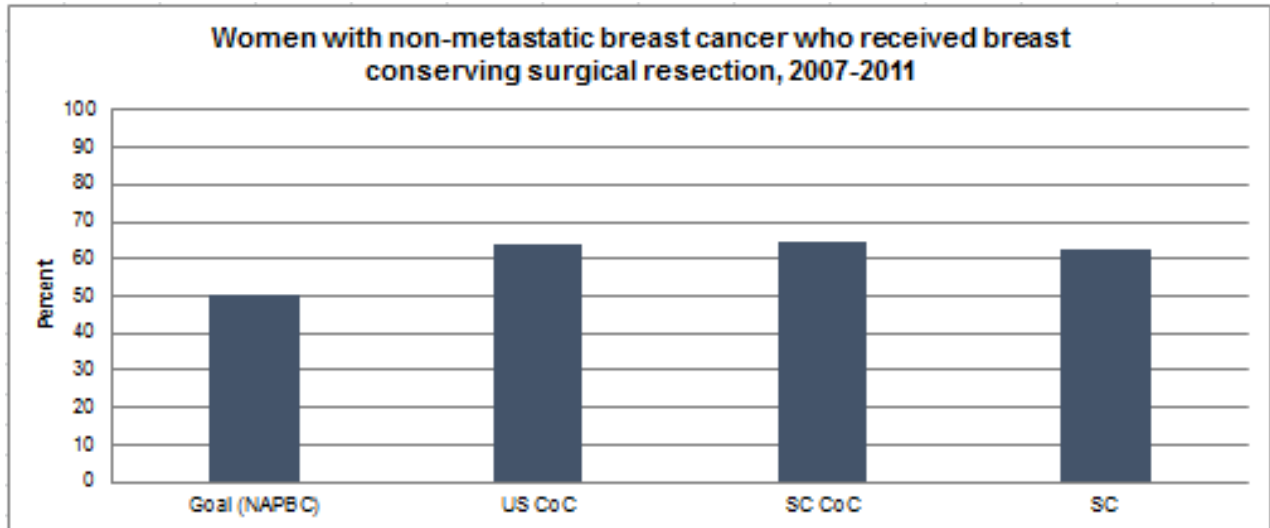
The use of needle biopsy should precede treatment for most women.[7] Needle biopsy is a quality measure of care in the diagnosis of breast cancer.[7, 9] In 2011, CoC-accredited programs in SC and the US perform better than all SC hospitals combined when comparing the percentages of women receiving an initial breast needle biopsy for diagnosis. Accreditation may be important to increase benchmark adherence.



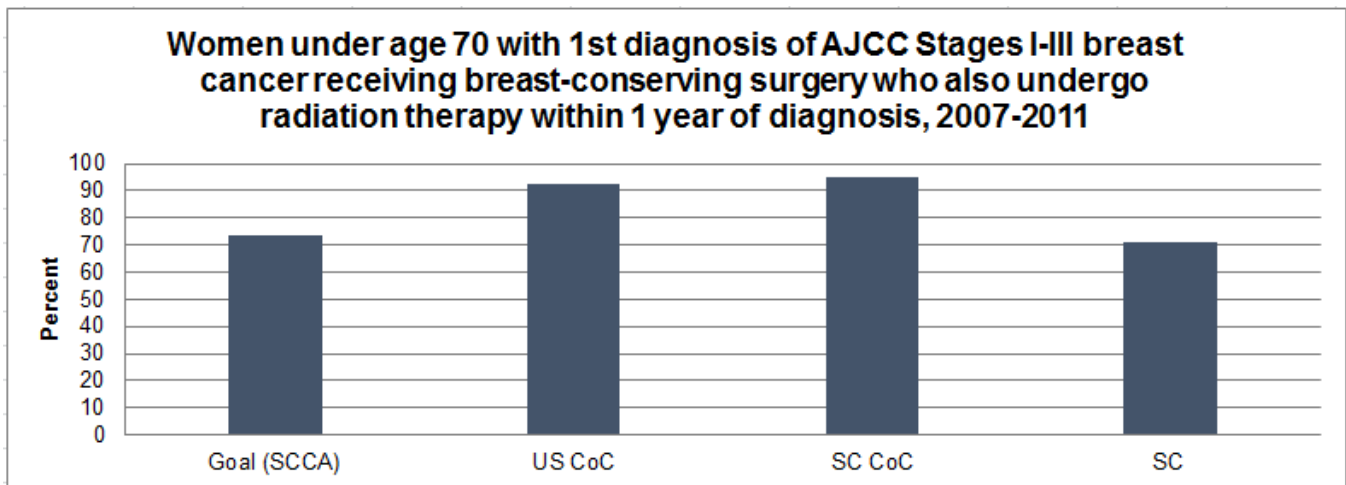
Abbreviations: SCCA: South Carolina Cancer Alliance; CoC– Accreditation: Commission on Cancer

BREAST CANCER TREATMENT

Our goal is to provide information to women to reduce the burden of breast cancer through knowledge of high-quality cancer treatment options and promoting adherence to treatment. Both US and SC hospitals exceed the recommended NAPBC benchmark of 50% of women with non-metastatic breast cancer who receive breast-conserving surgical resection (i.e., lumpectomy).



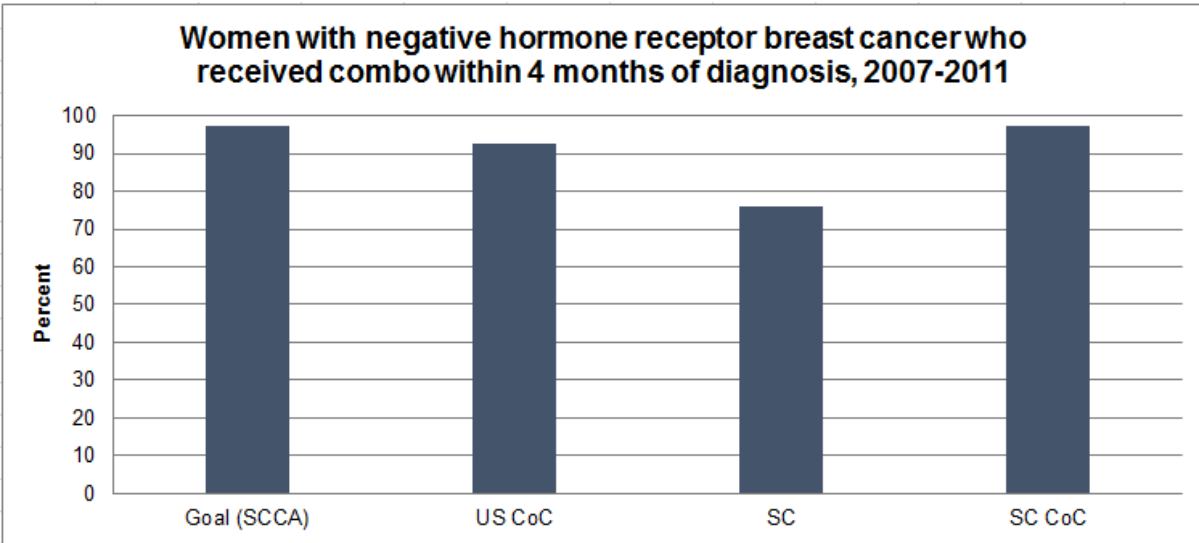
CoC-accredited hospitals in the US and SC perform higher than the goal set by the SCCA. Overall, hospitals in SC (CoC- and non-CoC-accredited combined) are close but do not yet reach this goal.



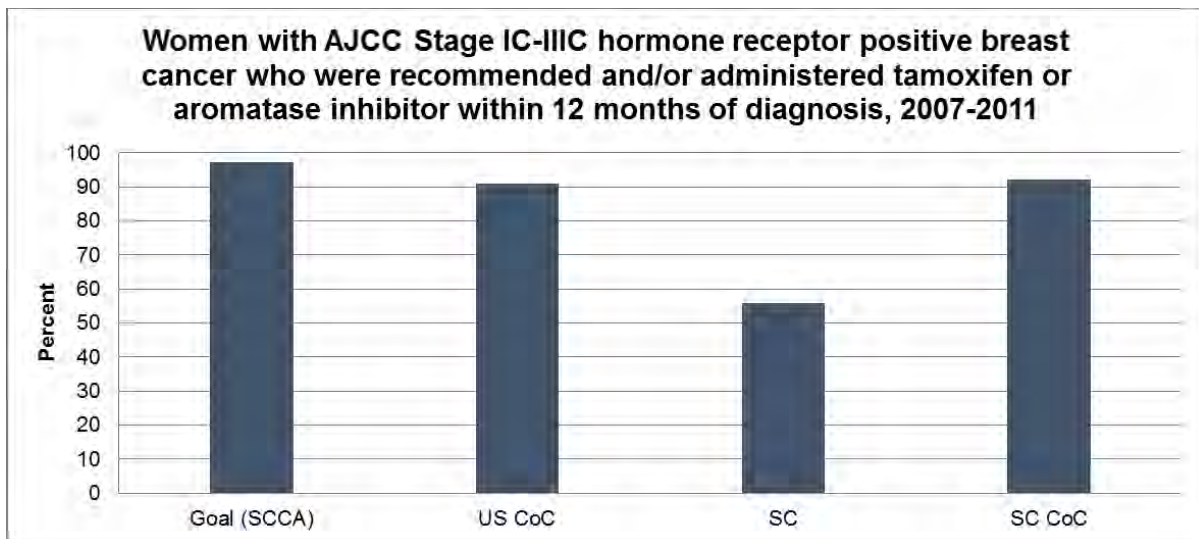
Abbreviations: NAPBC: National Accreditation Program for Breast Centers; SCCA: South Carolina Cancer Alliance; CoC: Commission on Cancer

BREAST CANCER TREATMENT

CoC-accredited programs in SC had the highest percent of hormone receptor-negative breast cancers receiving chemotherapy within 4 months of diagnosis.



CoC-accredited hospitals recommend or administer tamoxifen or aromatase inhibitor within 12 months of diagnosis for women with hormone receptor-positive breast cancer about 90% of the time. Across all SC hospitals, the percentage is just over 55%, showing room for improvement.



Abbreviations: SCCA: South Carolina Cancer Alliance; CoC: Commission on Cancer

BREAST CANCER PROGRAMS AND POLICIES IN SC

National Breast and Cervical Cancer Early Detection Program (NBCCEDP)

The US Centers for Disease Control and Prevention's (CDC) National Breast and Cervical Cancer Early Detection Program (NBCCEDP) provides access to breast and cervical cancer screening services to underserved women in all 50 states, the District of Columbia, 5 US territories and 11 tribes. In SC, this program is the Best Chance Network (BCN) at the SC Department of Health and Environmental Control.

The goal of the BCN is to reduce mortality from breast and cervical cancer among medically underserved women in SC. The BCN helps women who need to be screened for breast and cervical cancer but do not have insurance or have insurance that only covers hospital care, are between the ages of 40 and 64 and meet certain income guidelines (less than 200% of the poverty level). The BCN is funded through a cooperative agreement with the CDC in Atlanta, GA. SC was one of the first states to take part in the NBCCEDP, beginning in 1991.

To find out if you qualify for a free mammogram or Pap smear and learn where you can get screened in SC, call the American Cancer Society's information line at 1-800-227-2345.

South Carolina Healthy Connections

In August 2014, a new program called Healthy Connections Checkup become active through SC's Department of Health and Human Services (SCDHHS). This program is a limited Medicaid benefit program that provides coverage for preventive health care and family planning services to South Carolinians with annual family income at or less than 194% of the federal poverty level, who are ineligible for full Medicaid coverage.

Women aged 50-64 years who are Checkup members can receive a screening mammography once every 2 years through the program with a physician referral. Patients with abnormal findings are then referred to free or subsidized sources of care, including, but not limited to, free clinics, Federally Qualified Health Centers and subsidized hospital clinics.

For updated coverage guidelines for Healthy Connections Checkup, please contact the SCDHHS Provider Service Center at 888-289-0709.

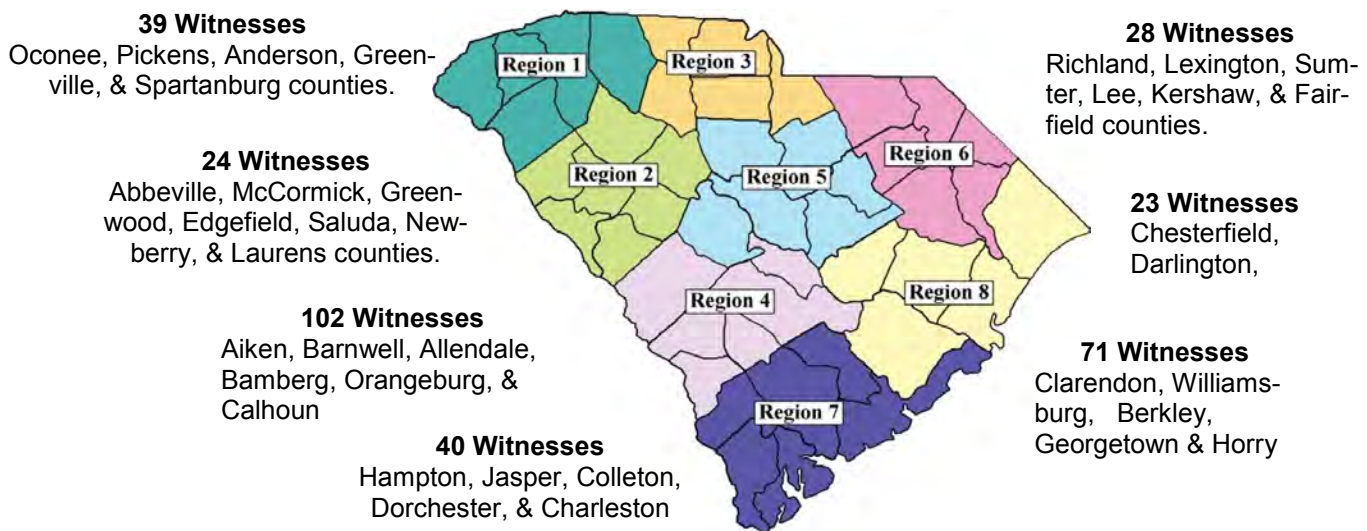
BREAST CANCER PROGRAMS AND POLICIES IN SC

The South Carolina Witness Project Overview

The SC Witness Project (WP) is an evidence-based program to increase breast and cervical cancer education, screening behaviors and HPV vaccination among African-American (AA) women. Since 2008, the WP has trained 404 “Witnesses” as Witness role models, breast and cervical cancer survivors or lay health advisors (non-cancer survivors) in the AA community. These witnesses have conducted 341 community presentations reaching 8,960 women with breast and cervical cancer education across the state. 787 women have been referred for breast and cervical screening through the WP. The SC WP has received funding from the following groups:

- American Cancer Society
- Susan G. Komen Lowcountry Affiliate
- Select Health of SC
- South Carolina Cancer Alliance (SCCA)
- USC-South Carolina Cancer Disparities Community Network/NIH
- Southeastern US Collaborative Center of Excellence in the Elimination of Disparities at Morehouse School of Medicine in Collaboration with Hollings Cancer Center; Legacy Foundation
- Socioeconomic Status-Related Cancer Disparities Program of the American Psychology Association
- Best Chance Network (BCN) (in-kind); BCN has been a source for referral and screening services for women identified through the WP as needing screening assistance.
- Church donations
- Private donations

The WP has a statewide advisory team that has served as a subcommittee of the Breast & Female Workgroup of the SCCA. Future activities include expanding the WP to other areas of the state, providing booster sessions for existing Witnesses, formalizing partnerships with local providers and developing WP educational materials for a web-based platform.



BREAST CANCER PROGRAMS AND POLICIES IN SC

About Susan G. Komen®

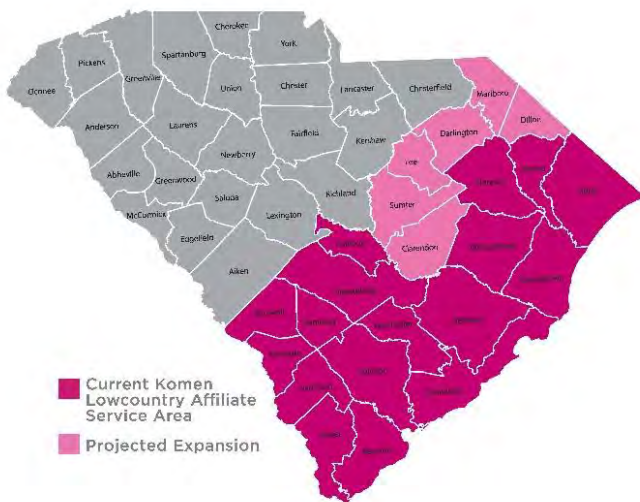
Susan G. Komen is the world's largest breast cancer organization, funding more breast cancer research than any other non-profit while providing real-time help to those facing the disease. Since its founding in 1982, Komen has funded more than \$800 million in research and has provided \$1.7 billion in funding to screening, education, treatment and psychosocial support programs serving millions of people in more than 30 countries worldwide. Komen was founded by Nancy G. Brinker, who promised her sister, Susan G. Komen, that she would end the disease that claimed Suzy's life.

About the SC Mountains to Midlands Affiliate

The South Carolina Mountains to Midlands Affiliate is proud to celebrate our 20th year of progress, local giving and Racing for a Cure. Our Affiliate has funded over \$4.4 million in local breast cancer screening, treatment and patient support and breast health education and \$1.45 million in national research in our 20 years in this community. Some people think of Susan G. Komen and think we are a big national organization. The reality is we are a small but strong, local affiliate supported by our incredible local community so that we may serve our local community. Every dollar we raise makes a difference in the lives of people that live in our 22-county service area. 75% of what we raise stays in the local community to fund education, screening and treatment programs. The remaining 25% goes to fund scientific research in our SC community and around the world. Our largest fundraiser each year is our Race for the Cure, which draws



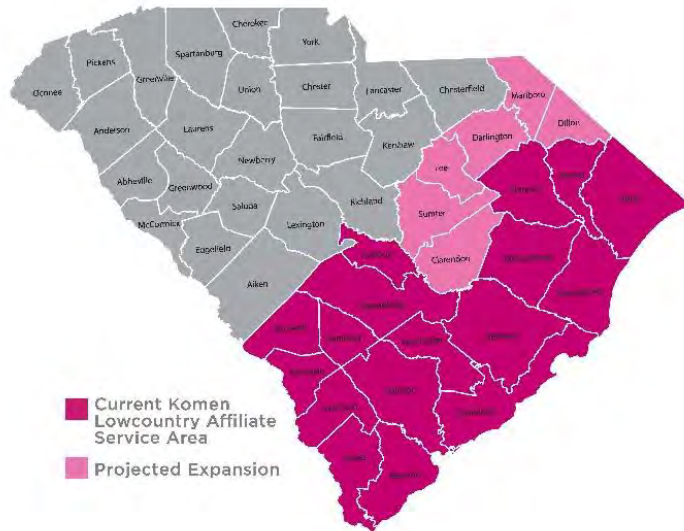
more than 5,000 people, including participants, survivors and volunteers. Whether you run, walk or just enjoy a beautiful day outside, our Race participants make a difference. Additionally, we have a number of other fundraising events throughout the year, including our 2nd Annual Laugh for the Cure, coming in Spring 2015. The SC Mountains to Midlands Affiliate serves Abbeville, Aiken, Anderson, Cherokee, Chester, Chesterfield, Edgefield, Fairfield, Greenville, Greenwood, Kershaw, Lancaster, Laurens, Lexington, McCormick, Newberry, Oconee, Pickens, Richland, Saluda, Spartanburg and Union counties.



BREAST CANCER PROGRAMS AND POLICIES IN SC

About the Komen Lowcountry Affiliate

Komen's mission is to save lives by empowering people, ensuring care for all and energizing science to find cures. Komen Lowcountry is located in coastal SC and serves 17 counties from the coast to the PeeDee region. Since 2001, the Affiliate has given more than \$6 million in community health grants to area non-profits providing access to breast cancer screening, diagnostic and treatment support services for women and men in need. Additionally, the Affiliate has invested more than \$2 million in groundbreaking breast cancer research through the Susan G. Komen Award and Research Grant Programs. The Affiliate's mission programs include breast health education, outreach and advocacy. For more information about Komen Lowcountry's programs, breast health or breast cancer, visit www.komenlowcountry.org or call (843) 556.8011.



Individuals served by Komen Lowcountry-funded grant programs* (2008-2013)

Screening services	35,421
Diagnostic services	5,241
Treatment support services, including financial aid, patient navigation, translation, transportation, etc.	16,017
Breast health education (one-on-one and mass media)	1,202,635

* as reported by grantees

RECOMMENDATIONS – PREVENTION

Women can help reduce their risk of breast cancer and increase their odds that if cancer does occur, it will be found early, at a more treatable stage. This can be done through prevention and early detection. Some risk factors are modifiable; women should take an active role to prevent breast cancer.

Lifestyle Factors

It is estimated that 33% of breast cancer cases in the US could be prevented by being at a healthy weight, being physical active, avoiding alcohol and breastfeeding [20]. Women who exercise regularly have a lower risk of breast cancer. Additionally, postmenopausal weight gain is a significant risk factor for breast cancer. Women should aim to maintain a healthy weight throughout their lifespan. There is convincing evidence that alcohol increases the risk of breast cancer. If consumed at all, alcoholic drinks should be limited to no more than one per day. In addition, meeting the World Cancer Research Fund/American Institute for Cancer Research cancer prevention guidelines (including maintaining a healthy weight, being regularly physically active, consuming a variety of vegetables, fruits and whole grains regularly and limiting intake of red and processed meat, alcohol and energy-dense foods) has been associated with reduced risk of postmenopausal breast cancer [21].

Screening

Breast cancer screening checks for cancer before there are signs or symptoms of the disease. There are three main tests used to screen for breast cancer. A mammogram is an X-ray of the breast and is the best way to find breast cancer early, when it is more treatable. Women age 40 and older should have a mammogram every year. A clinical breast exam is a examination by a doctor or nurse, who uses his/her hands to feel for lumps. A breast self-exam is when you check your own breasts for lumps, changes in the size and shape or the breast or any other changes or abnormalities. The figure below provides a guide for types of screenings recommended for women at average risk throughout their lifetime. Women who are at an increased risk—because of their family history, a genetic tendency or certain other factors—should be screened with MRI in addition to mammograms. Talk with your doctor about your history and what the best screening schedule is for you.

Screening in your 20s

Start doing breast self-exams (BSEs). Women in their 20s should start doing BSEs on a regular basis. BSEs allow for women to know how their breasts normally look and feel so they can notice any changes. Report any changes to a doctor or nurse right away.

Screening in your 30s

Women in their 20s and 30s should start having a clinical breast exam as part of a regular health exam at least every 3 years.

Screening In your 40s

Women in their 40s should have a screening mammogram every year and should continue to do so for as long as they are in good health. Women with abnormal mammograms should receive follow-up care within 3 months.

RECOMMENDATIONS– TREATMENT QUALITY

In the case of an abnormal mammogram, further imaging is warranted. Patients may undergo compression spot mammograms, breast ultrasound or MRI, depending on the abnormality and location. In general, an abnormal mammogram with a BIRADS (Breast Imaging Reporting and Database System) score of 4 or greater constitutes a need for a biopsy. The following guidelines are based on an abnormal mammogram; a benign biopsy should be followed with yearly clinical breast exams and mammograms, whereas a malignant lesion requires further intervention (see Figure on the next page).

Treatment options for a malignant breast lesion depend on the stage of disease and the following factors:

- The size of the tumor in relation to the size of the overall breast tissue
- The results of pathology tests, especially receptor status (estrogen receptor (ER), progesterone receptor (PR) and HER2 receptor)
- Menopausal status
- The general health of the patient
- Age at diagnosis
- Family history or other risk factors associated with a predisposition for developing breast or ovarian cancer

Different types of treatment are available for patients with breast cancer. Some treatments are standard, and some are being tested in clinical trials. Breast cancer standard treatments are methods that experts agree are appropriate, accepted and widely used.

In the setting of DCIS (ductal carcinoma *in situ*), surgical treatments of lumpectomy followed by adjuvant radiation or mastectomy are the general recommendations. With hormone receptor (ER and/or PR)-positive disease, DCIS can also be treated with hormonal therapy (tamoxifen in premenopausal women and aromatase inhibitors in postmenopausal women).

With invasive breast cancer, surgical intervention can be lumpectomy (breast-conservation surgery) or mastectomy, both with a sentinel lymph node biopsy. Neoadjuvant chemotherapy can be offered in an attempt to downsize a large lesion to allow for a lumpectomy in the setting of HER2-positive cancer or triple-negative (ER-negative, PR-negative and HER2-negative) cancer. [22]

RECOMMENDATIONS – TREATMENT QUALITY

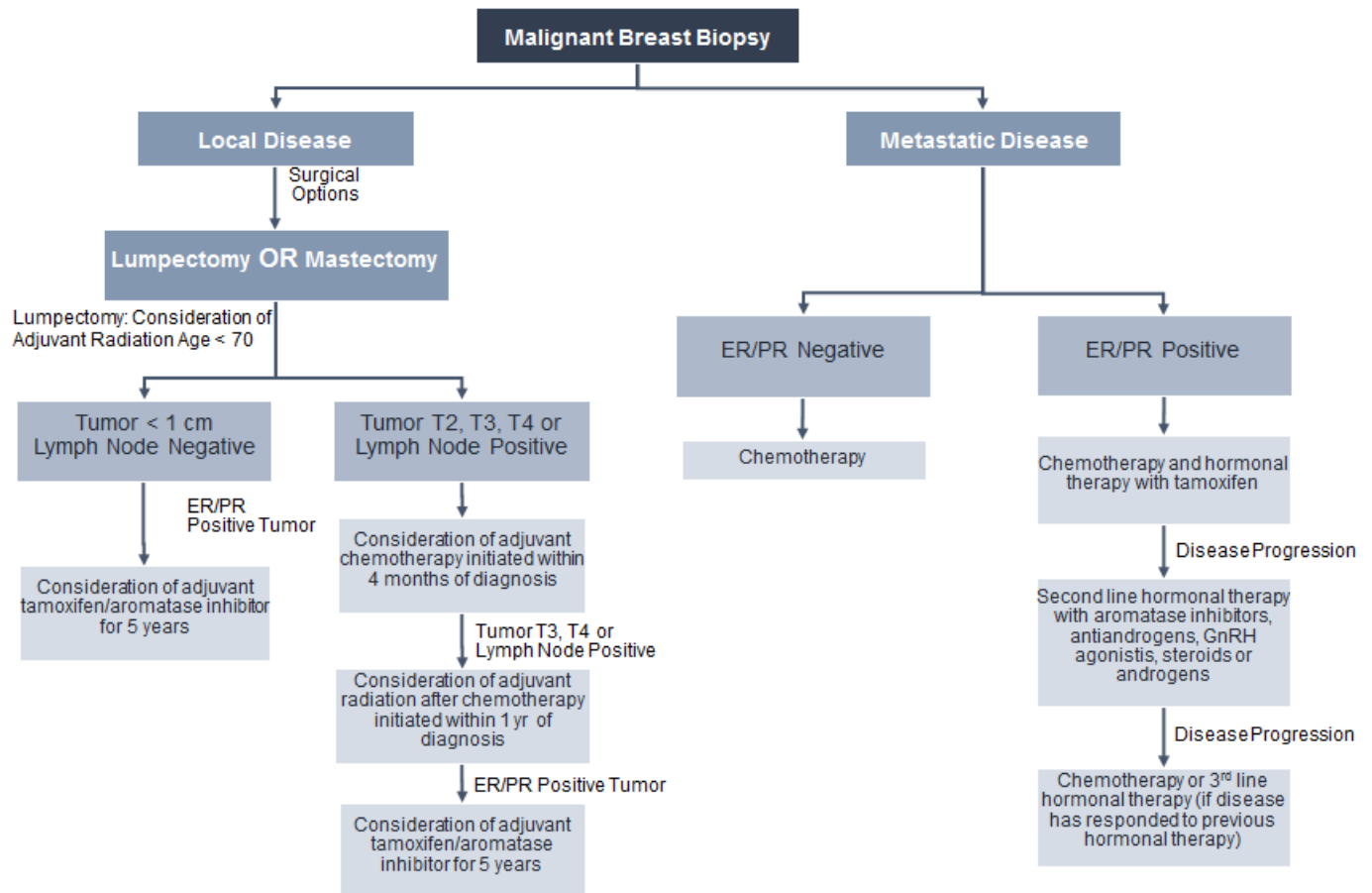


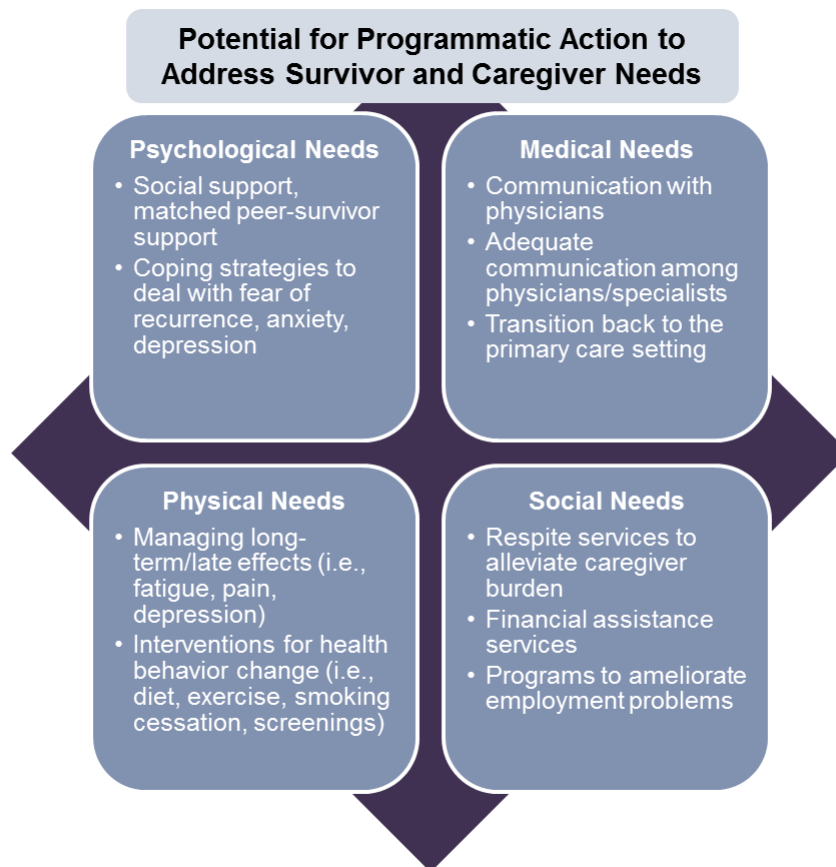
Figure adapted from: NCCN 7th Edition and Annals of Internal Medicine

*HER2 Positive Disease can happen at any stage with any size tumor(s); A HER2 positive case should consider adjuvant chemotherapy with trastuzumab for 1 year.

RECOMMENDATIONS – SURVIVORSHIP

The transition out of active treatment can bring new challenges for cancer survivors and caregivers. Uncertainties about who to contact about symptoms and who will provide ongoing survivorship care are two of the challenges that survivors may face. Guidance for survivors transitioning from acute treatment to post-treatment has been limited; however, increasing utilization of cancer survivorship plans and cancer survivorship navigators are helping with this transition.

There are many contributing factors to a breast cancer survivor's quality of life after treatment. Even though cancer can negatively affect quality of life, studies have shown that many cancer survivors report that cancer brought new meaning to their lives.[23] Factors that may contribute to survivorship quality of life include physical function, body image, sexual function, coping, cognitive function, social support and anxiety.[24] Survivorship programs help address some of these areas. The National Cancer Survivorship Resource Center states "the goal of a cancer survivorship program is to maximize the quality of life of survivors and their caregivers." [25]



Source: Adapted from the IOM report, *Lost in Transition* [26]

APPENDIX A: METHODS

To measure quality performance, we created a table (see next page) of nationally accepted measures and evaluated SC's performance from 2007 to 2012 using cancer registry data, CoC Cancer Program Practice Profile Report (CP³R) measures and Behavioral Risk Factor Surveillance System (BRFSS) data. For each measure, the table includes the measure, benchmark data source (and year), and a detailed calculation of the measure.

Benchmark targets were based on Healthy People 2010, American Cancer Society (ACS), National Accreditation Program for Breast Centers (NAPBC), U.S. Preventive Services Task Force (USPSTF) and the National Quality Forum (NQF) measurements. These benchmarks facilitated comparisons between SC and the US and within SC of CoC-accredited hospitals compared to all hospitals combined.

The American College of Surgeons works alongside the CoC and the NAPBC to uphold the highest standards of care for breast cancer patients. NAPBC monitors each accredited breast center for compliance to quality performance measures. NAPBC focuses on 17 core components that include needle biopsy, imaging (i.e., screening mammography), treatment and education.[28] Approximately 71% of all newly diagnosed cancer patients in the US are estimated to participate in the CoC accreditation of the American College of Surgeons. In SC, there are 17 CoC-accredited hospitals, 10 hospitals nationally accredited by NAPBC and only 1 cancer center accredited by the National Cancer Institute (NCI). CoC-accredited cancer programs set goals, monitor activity, evaluate patient outcomes and strive to improve care.

APPENDIX A: METHODS QUALITY MEASURES

Measures (US/SC)	Benchmark	Calculation	Data Source
Mammography screening of women age 40+ in past year	ACS	Prevalence of self-reported mammography in the past year for age 40+	US/SC: BRFSS 2012 [4]
Mammography screening of women age 40+ in the past 2 years	USPSTF (HP 2010 Target; [19])	Prevalence of self-reported mammography in the past 2 years for age 40+	US/SC: BRFSS 2012 [4]
Women with non-metastatic breast cancer who received breast conserving surgery	NAPBC 2013 [28]	Percent of women 18+ with non-metastatic breast cancer who received breast-conserving surgery	US: CP ³ R Measures 2011 [3] and SCCCR 2007-2011 [27]
Women under age 70 with first diagnosis of AJCC Stage I-III breast cancer receiving breast-conserving surgery who also undergo radiation therapy within 1 year of diagnosis	National Quality Forum Measure 0219	Percent of women under age 70 with first primary breast cancer who received breast-conserving surgery and underwent radiation therapy within 1 year of diagnosis	US/SC: CP ³ R Measures 2011 [3] and SCCCR 2007-2011 [27]
Women under 70 with AJCC Stage T1cN0M0 or Stage IB-III hormone receptor-negative breast cancer for whom combination chemo is considered or administered within 4 months of diagnosis	National Quality Forum Measure 0387	Percent of women under age 70 with first primary breast cancer who received combination chemotherapy within 4 months of diagnosis	US/ SC: CP ³ R Measures 2011 [3] and SCCCR 2007-2011 [27]
Women with AJCC Stage T1cN0Mo or Stage IB-III hormone receptor-positive breast cancer who were recommended and/or administered tamoxifen or aromatase inhibitor within 12 months of diagnosis	National Quality Forum Measure 0220	Percent of women age 18+ who were recommended and/or administered tamoxifen or aromatase inhibitor within 12 months of diagnosis	US:/SC CP ³ R Measures 2011 [3] and SCCCR 2007-2011 [27]

Abbreviations: NAPBC: National Accreditation Program for Breast Cancer Centers; SCCCR: South Carolina Central Cancer Registry; CoC: Commission on Cancer

APPENDIX A: METHODS QUALITY MEASURES

Measures (US/SC)	Benchmark	Calculation	Data Source
Image- or palpitation-guided needle biopsy (core or fine-needle aspiration) is performed to establish diagnosis of breast cancer	National Quality Forum Measure 0221 NAPBC 2013 [28]	Percent of women 18+ with first primary breast cancer who received needle biopsy prior to surgical excision/ resection	US/SC: CP ³ R Measures 2011 [3] and SCCCR 2007-2011 [27]
Age-adjusted invasive breast cancer incidence rate	N/A	Age-adjusted breast cancer incidence rates adjusted to the 2000 US standard population	US/SC: United States Cancer Statistics: 1999–2010 Incidence and Mortality Web-based Report.[4]
Age-adjusted breast cancer mortality rate	N/A	Age-adjusted breast cancer death rates adjusted to the 2000 US standard population	US/SC: US Cancer Statistics: 1999–2010 Incidence & Mortality Web-based Report.[4]

Abbreviations: NAPBC: National Accreditation Program for Breast Cancer Centers

APPENDIX B: METRICS AND SOURCES

Data Analysis

Graphs were created using Excel 2007-2010 for descriptive data. Excel facilitated an easy depiction of breast cancer screening, incidence and mortality.

We used statistics from the 2012 Behavioral Risk Factor Surveillance System (BRFSS) to examine prevalence data for breast cancer in SC and to compare these data to similar national statistics.

To compare the US to SC, age-adjusted invasive breast cancer incidence and mortality rates were ascertained from the National Vital Statistics System (NVSS), the National Cancer Institute and the Surveillance, Epidemiology, and End Results (SEER) Program reports. We included maps of the age-adjusted death and incidence rates for SC from SEER 2006-2010 data for females with breast cancer to show the distribution of events throughout the state of SC.

The SC Central Cancer Registry (SCCCR) is a population-based data system that collects and analyzes information regarding cancer incidence in South Carolina from patient medical records. Using statistics provided from this registry, we calculated a variety of cancer treatment quality metrics (see Appendix A). These metrics align with the CP³R measures regularly measured for CoC-accredited facilities throughout the US.

Various accreditation mechanisms surrounding breast cancer in SC, including the American College of Surgeons CoC program and the National Accreditation Program for Breast Cancers (NAPBC), were assessed to compare the quality of care among hospitals providing breast cancer care. [3,28]

APPENDIX C: LIST OF NAPBC ACCREDITED PROGRAMS IN SC

Hospital	Location	Contact information
Bearden-Josey Center for Breast Health	Spartanburg, SC 29303	Phone (864) 560-6152 www.SpartanburgRegional.com
Breast Health Center	Hilton Head, SC 29926	Phone (843) 682-7384 www.www.hiltonheadregional.com
Greenville Health System Breast Health Program	Greenville, SC 29605	Phone (864) 915-0112 www.ghs.org
Georgetown Hospital System Breast Health Program	Murrell's Inlet, SC 29576	Phone (843) 652-3600 www.coastalbreastcenter.com
Hollings Cancer Center	Charleston, SC 29425	Phone (843) 876-0179 www.hcc.musc.edu
Lexington Medical Center	West Columbia, SC 29169	Phone (803) 936-8050 www.lexmed.com
McLeod Breast Health Center	Florence, SC 29502	Phone (843) 777-5418 www.McLeodHealth.org
Palmetto Health Breast Center	Columbia, SC 29203	Phone (803) 434-3607 www.palmettohealth.org/breastcenter
Pearlie Harris Center for Breast Health	Greenville, SC 29615	Phone (864) 675-4841 www.stfrancishealth.org
Roper Hospital Breast Care Center	Charleston, SC 20401	Phone (843) 958-2670 www.rsfh.com/cancer

APPENDIX D: LIST OF COC ACCREDITED PROGRAMS IN SC

Hospital	Location	Type of Cancer Program
AnMed Health	Anderson, SC 29621	Comprehensive Community Cancer Program
Beaufort Memorial Hospital	Beaufort, SC 29902	Community Cancer Program
Medical University of South Carolina	Charleston, SC 29403	Academic Comprehensive Cancer Program
Ralph H. Johnson VA Medical Center	Charleston, SC 29401	Veterans Affairs Cancer Program
Roper Hospital	Charleston, SC 29401	Comprehensive Community Cancer Program
Trident Medical Center	Charleston, SC 29406	Comprehensive Community Cancer Program
Palmetto Health Cancer Centers	Columbia, SC 29203	Integrated Network Cancer Program
William Jennings Bryan Dorn VA Medical Center	Columbia, SC 29209	Veterans Affairs Cancer Program
McLeod Regional Medical Center	Florence, SC 29506	Comprehensive Community Cancer Program
Bon Secours St. Francis Health System	Greenville, SC 29601	Comprehensive Community Cancer Program
Greenville Health System	Greenville, SC 29605	Academic Comprehensive Cancer Program
Self Regional Healthcare	Greenwood, SC 29646	Comprehensive Community Cancer Program
Grand Strand Regional Medical Center	Myrtle Beach, SC 29572	Community Cancer Program
Regional Medical Center of Orangeburg & Calhoun Counties	Orangeburg, SC 29118-	Community Cancer Program
Piedmont Medical Center	Rock Hill, SC 29732	Comprehensive Community Cancer Program
Spartanburg Medical Center	Spartanburg, SC 29303	Comprehensive Community Cancer Program
Lexington Medical Center	West Columbia, SC 29169	Comprehensive Community Cancer Program

APPENDIX E: SUPPORT GROUPS IN SC

Health care providers and hospitals have cancer support groups for patients and their families

Support Group	Format	Location
2nd Chance (Cancer Survivorship)	Meetings are held on the fourth Monday of the month at 7:00 pm	166 St. Margaret Street For more information, please call Cherry Seabrook at (843) 722-6245
American Cancer Society	7 days/week, 24 hours/day Face-to-face, online, phone	Columbia, SC 29208 (800) 227-2345
American Cancer Society's Hope Lodge	Our lodge provides free accommodations for cancer outpatients who reside outside a 40-mile radius and must undergo treatment at local hospitals	Charleston, SC For more information, please call 1-800-ACS-2345.
American Cancer Society: Reach To Recovery Program	Face-to-face or by phone	5900 Core Road, Suite 504 North Charleston, SC 29406 843-744-1922
Bosom Buddies	Women who have/had breast cancer, meets the second Tuesday of every month from 6:30 to 8:30 pm	Palmetto Health Baptist Columbia, SC 803-296-2378
Breast Cancer Survivors Group	Speakers and support. Meets on the third Monday of the month from 5:30 to 7:30 pm	John Wesley United Methodist Church, 626 Savannah Hwy, Charleston, SC
BreastCancer.Org	Online breastcancer.org/ community	Web-based alternatives, online
Cancer Support Programs/ Groups	Third Mondays of each month from 5:30 to 6:30 pm	Saint James Church, 1872 Camp Road, James Island, SC Jane Horn at (843) 795-2948
East Cooper Breast Cancer Support Group	Meets on the last Monday of the month	East Cooper Hospital, 1st floor classroom, Mt. Pleasant, SC For more information, please call Penny at (843) 881-9499

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