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WELCOME TO THE 2015-2016

Sentara Cancer Network Annual Report

To our Patients, Colleagues and Community,

Every day in the fight against cancer, milestones are achieved—some are large and groundbreaking, while others are small but meaningful. Each success builds on the past. It's the consistent improvements that add up and make a positive impact on the lives in our community – today and in the future.

The Sentara Cancer Network, with its proven track record of quality, advanced care, continues to achieve milestones in cancer treatment, thanks to the highly skilled physicians, experienced providers and innovative technology. Bringing together the best clinicians and the best technology produces the best results for those who entrust us with their care.



left to right:
Richard A. Hoefer, D.O., FACS,
James Schneider, M.D., FACS,
and Thomas A. Alberico, M.D.

It is exciting to be part of the innovative team at Sentara – and at the forefront of cancer treatment. We are proud to serve people across Virginia and North Carolina and honored to work every day, sharing knowledge, conducting research and performing innovative treatments that improve cancer care in our communities.

This annual cancer report reflects how far we have come, growing in scope and depth, and supporting clinicians each year. It is a testament to our teams of skilled physicians who use advanced technology and leading-edge clinical trials to extend their reach constantly, helping to better understand cancer, detect it earlier and treat the disease more effectively. On behalf of our colleagues in the Sentara Cancer Network, we present our most recent quality data and an overview of our services in this report.

Sincerely,

Richard A. Hoefer, D.O., FACS
Surgical Oncologist
*Medical Director,
Sentara Cancer Network*

Thomas A. Alberico, M.D.
Medical Oncologist
*Chair, Oncology High
Performance Team*

James Schneider, M.D., FACS
Surgical Oncologist
*Cancer Liaison Physician (CLP),
Sentara Cancer Network*

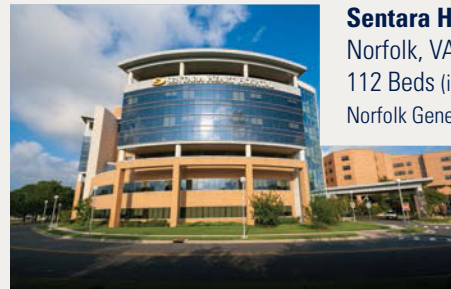
Sentara Healthcare

12 Acute Care Hospitals

7 in Hampton Roads
1 in Northern Virginia
2 in the Blue Ridge Region
1 in South Boston
1 in Northeastern North Carolina



Sentara Albemarle Medical Center
Elizabeth City, NC
182 Beds



Sentara Heart Hospital
Norfolk, VA
112 Beds (included in Sentara Norfolk General Hospital license)



Sentara Norfolk General Hospital
Norfolk, VA
525 Beds

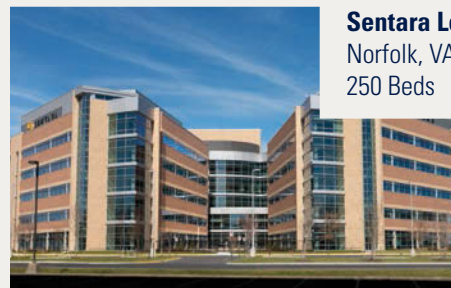


Sentara Northern Virginia Medical Center
Woodbridge, VA
183 Beds



Sentara CarePlex Hospital
Hampton, VA
224 Beds

Orthopaedic Hospital at Sentara CarePlex Hospital
Hampton, VA
18 Beds (included in Sentara CarePlex Hospital license)



Sentara Leigh Hospital
Norfolk, VA
250 Beds



Sentara Obici Hospital
Suffolk, VA
176 Beds



Sentara Halifax Regional Hospital
South Boston, VA
192 Beds



Sentara Martha Jefferson Hospital
Charlottesville, VA
176 Beds



Sentara Princess Anne Hospital
Virginia Beach, VA
160 Beds

SENTARA HEALTHCARE AT A GLANCE

128-Year Not-for-Profit Mission



27,000+ Members of the Team



Four Medical Groups

With more than 1,000 Physicians and Advanced Practice Clinicians at 222 Locations



12 Acute Care Hospitals



Advanced Imaging and Diagnostic Centers



Nursing and Assisted-Living Centers



**Outpatient Care Centers
Physical Therapy Centers**

More than 25 Locations



Home Care and Hospice



Optima Health Plan

Serving 450,000 Members



Sentara College of Health Sciences



**Sentara Quality Care Network –
A Clinically Integrated Network**



**Sentara RMH
Medical Center**
Harrisonburg, VA
238 Beds



**Sentara Williamsburg
Regional Medical
Center**
Williamsburg, VA
145 Beds



**Sentara Virginia Beach
General Hospital**
Virginia Beach, VA
276 Beds



Sentara Cancer Network Overview

Sentara Cancer Network is at the leading edge of delivering the right care at the right place and time. Our integrated network spans two states with 12 acute care hospitals with multiple outpatient settings and a partnership with Eastern Virginia Medical School. As part of our commitment to quality, our data offers comparison to benchmark our successes and compare ourselves with national standards.

The report includes information and data on cancer services in all Sentara regions:

- Sentara Albemarle Medical Center (Elizabeth City, NC)
- Sentara CarePlex Hospital (Hampton, VA)
- Sentara Halifax Regional Hospital (South Boston, VA)
- Sentara Leigh Hospital (Norfolk, VA)
- Sentara Martha Jefferson Hospital (Charlottesville, VA)
- Sentara Norfolk General Hospital (Norfolk, VA)
- Sentara Northern Virginia Medical Center (Woodbridge, VA)
- Sentara Obici Hospital (Suffolk, VA)
- Sentara Princess Anne Hospital (Virginia Beach, VA)
- Sentara RMH Medical Center (Harrisonburg, VA)
- Sentara Virginia Beach General Hospital (Virginia Beach, VA)
- Sentara Williamsburg Regional Medical Center (Williamsburg, VA)

Our goals include improving the skills, technology and experience of the entire network. To that end, we aim to find more ways to customize treatment for individuals, to be more accessible to at-risk populations, to translate clinical research more seamlessly into our care and to continue the mission of improving health every day. We aim to make a difference for our patients today and to improve the future of cancer care. Our relentless pursuit of better, faster, more effective cancer treatment inspires us to do more.

The Sentara Cancer Network is a collaborative of physicians in many specialties, including:

- | | | |
|--------------------------|--|----------------------|
| • Breast Surgery | • Hospice | • Plastic Surgery |
| • Colorectal Surgery | • Medical Oncology | • Primary Care |
| • Dentistry/Oral Surgery | • Neurology | • Pulmonology |
| • Dermatology | • Neurosurgery | • Radiation Oncology |
| • Endocrinology | • Otolaryngology | • Radiology |
| • Gastroenterology | • Pain Management | • Surgical Oncology |
| • General Surgery | • Palliative Care | • Thoracic Surgery |
| • Gynecology Oncology | • Pathology | • Urology |
| • Head and Neck Surgery | • Physical Medicine and Rehabilitation | |
| • Hematology | | |

uterus 2%

pancreas

non-hodgkin lymphoma

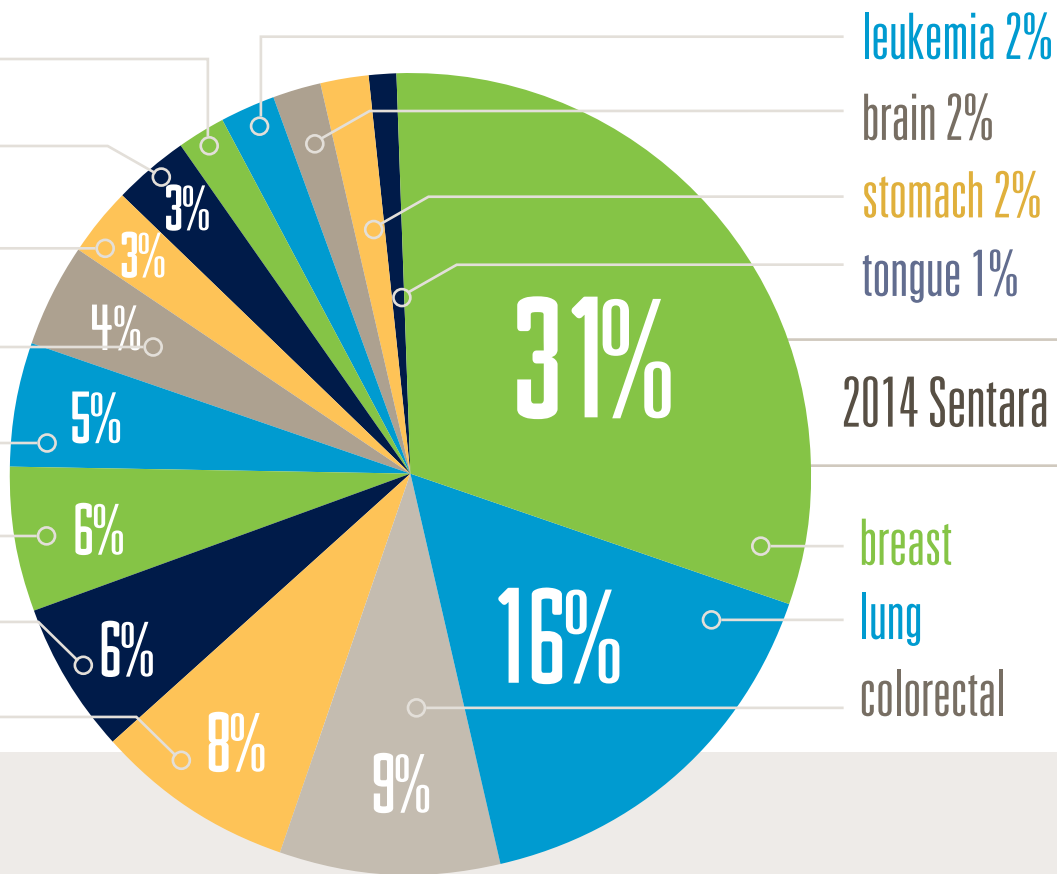
thyroid

kidney/renal/pelvis

bladder

melanoma

prostate



2014 Sentara Cancer Network Top 15 Analytic Cancer Sites

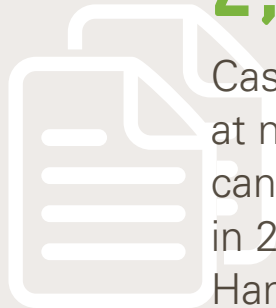


35 Sites of diagnosis & treatment



1,000+

Patients accrued to clinical trials in 2014 in all regions.



2,826

Cases presented at multidisciplinary cancer conferences in 2014 in Hampton Roads



9,139



Patients added to the registries in 2014



100,000+

Patients documented in registry since 1995 in all regions

INNOVATION:

Bringing Advanced Care to our Communities

Bringing the latest in cancer care to the community means putting technology and equipment in capable hands. Our proven outcomes result from highly skilled physicians who use the technology with evidence-based best practices.

Highly skilled physicians and staff, advanced technology and treatments, and a focus on quality have resulted in accomplishments such as offering HIPEC (hyperthermic intraperitoneal chemotherapy) which is offered at fewer than 60 programs in the United States. The addition of 3D mammography is strengthening early detection rates in the network that have already been exceeding the national average when compared to the National Cancer Database. We continue to enhance clinical precision through the adoption of technology including da Vinci® Surgical Systems, TheraSpheres, and CyberKnife robotic surgery.



CLINICAL FIRSTS:

A Sentara Cancer Network Timeline

- Radiosurgery
- Autologous Stem Cell Transplantation
- Monoclonal Antibody Therapy
- High-Dose Rate Remote Afterloading Brachytherapy

1990s

- CT Lung Screening Program
- NRG Oncology membership
- TheraSphere®
- Electromagnetic Navigational Bronchoscopy (ENB)
- Minimally Invasive Esophagectomy
- Cancer Rehabilitation
- Endoscopic Neurosurgery
- Interleukin-2 (IL-2)
- 3D Mammography (Tomosynthesis)

- Alliance for Clinical Trials in Oncology membership
- Laparoscopic Pancreatic Duodenectomy
- Breast Tumor Radioactive Seed Localization
- Microwave Ablation and Cryoablation
- Advanced Neurosurgical Oncology: Awake craniotomy and brain mapping, NICO Brain Path and 6 Pillars Approach, NeuroBlate, Optune

2010s

2000s

- Hyperthermic Intraperitoneal Chemotherapy (HIPEC)
- Robotic Radiosurgery with CyberKnife®
- Intraoperative Radiation (Intrabeam)
- Sir-Spheres
- Nurse Navigator

- da Vinci® Robotic Surgery
- TransOral Robotic Surgery for Head / Neck Cancer (TORS)
- Transanal Endoscopic Microsurgery (TEMs)
- High-Dose Radiation for Skin Cancer

- Radiofrequency Ablation and Cryoablation for Lung Cancer
- Positron Emission Tomography/Computed Tomography (PET/CT)
- Whipple Surgery for Pancreatic Cancer



Lizzette Munoz faced a triple challenge along with her breast cancer diagnosis: the loss of her job and her son's heart transplant. Her cancer care team worked with her through a complicated and difficult time. She came through her treatment at **Sentara Northern Virginia Medical Center**, her son Michael received a new heart and together, they got certified for new careers in medical administrative assisting.

"I've learned that you can go in the darkness," Lizzette says, "and come out. It's important to keep a clear mind."

 **READ MORE AT:** bit.ly/Survivor-Lizzette

CLINICAL SCREENING:

Find It Early

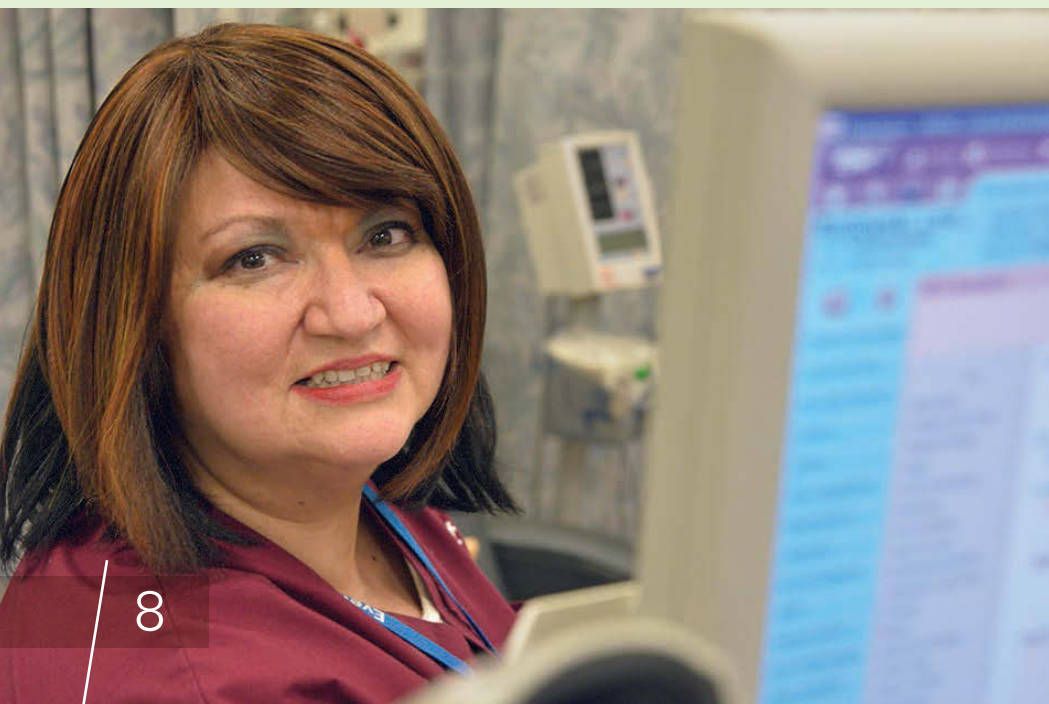
Screening is a key part of catching cancer in the early stages, but many people find the process confusing or they are fearful of the results. To encourage compliance with recommended screenings, Sentara Cancer Network physicians, primary care physicians and cancer educators work together in our communities.

Breast Cancer

Digital mammography offers imaging to increase rates of early detection due to changes in breast tissue. Mammography is considered an invaluable tool against breast cancer, one of the most deadly types of cancer in women. Our mobile mammogram van also makes it easy for women to schedule a convenient visit with the Sentara care team.

Colon and Rectal Cancer

Sentara physicians strongly believe in the effectiveness of colon and rectal cancer screenings. In the U.S., colorectal cancer is the fourth most common cancer in men and women, and is one of the leading causes of cancer-related deaths. A colonoscopy or a FIT Test is recommended for everyone over age 50. People with a first-degree relative who has had colon cancer and African Americans over the age of 45 are also encouraged to be screened with a colonoscopy.



MORE THAN
820

patients have taken
advantage of Sentara's
Low-Dose CT Lung
Screening Program

Lung Cancer

A landmark national study of longtime, heavy smokers over 55, the National Lung Screening Trial (NLST) sponsored by the National Cancer Institute, indicated that screening with low-dose CT scans can help find these cancers early, leading to a higher cure rate. The brief screening is a low-dose CT scan (computed tomography) which covers the entire chest and provides a more detailed look than a standard chest X-ray. Primary care physicians and Sentara Cancer Network specialists have collaborated to create a screening protocol for patients over 55 who have smoked a pack a day for 30 years or more.

Chris Willms, M.D., Thoracic and Cardiac Surgery,
and Jon Ciambotti, M.D., Pathology, Sentara Martha
Jefferson Hospital

ACCURATE DIAGNOSIS:

Imaging and Pathology

An accurate diagnosis is critical to the treatment and care of the cancer patient. At Sentara, board-certified radiologists and pathologists work together using the latest technology to confirm suspicions and accurately diagnose patients. Sub-specialization of our physicians enables the team to diagnose and treat a comprehensive array of cancers with accuracy and skill. With multiple locations throughout Virginia and North Carolina, many of which are accredited by the American College of Radiology or the College of American Pathologists, patients have access to the same high quality imaging and pathology services.

3D Mammography

Available at numerous sites throughout the network

In addition to standard mammography, 3D mammography – or tomosynthesis – has been proven to increase early detection rates by 35 percent*. Because of the groundbreaking success in early detection, Sentara invested in making the 3D technology available throughout the network to give more women access close to home.

*June 2013 issue of the American Journal of Roentgenology (AJR)

Interventional Radiology

Available at numerous sites throughout the network

Interventional Radiology (IR) is a medical specialty that performs diagnostic and therapeutic procedures utilizing minimally invasive techniques and image guidance. The following are some types of IR procedures performed across the network:

- Image-Guided Needle Biopsies
- Bone Marrow Biopsies
- Fiducial Placement for Cyberknife Cancer Treatment
- Percutaneous Drainage Procedures
- Palliative Care: PleurX Catheters (Pleural & Peritoneal)
- Venous Access – PICC Lines, Tunneled Central Lines and Mediport Insertions
- Enteric Access (Feeding Tubes)
- Image-guided cancer treatments such as: chemoembolizations, radioembolization, radiofrequency or microwave ablations, cryoablations



Sentara
Cancer Network
SURVIVOR



Darnell Thoroughgood

Darnell Thoroughgood procrastinated his colonoscopy for years, and was stunned to find out he had colon cancer. He worked with his cancer team, and his surgeon at Sentara Virginia Beach General Hospital removed the cancer. Today, Darnell is an early detection advocate, telling his friends to get screened, and not to wait.

“I thought that was the beginning of the end of my life,” he says. But today, he says: “There is no reason for people to die from this disease.”

 [READ MORE AT: bit.ly/Survivor-Darnell](https://bit.ly/Survivor-Darnell)



Emily Ritchie, M.D., Radiology, Sentara RMH Medical Center

Navigational Bronchoscopy

📍 Sentara CarePlex Hospital, Sentara Martha Jefferson Hospital, Sentara Norfolk General Hospital, Sentara Princess Anne Hospital, Sentara RMH Medical Center, Sentara Virginia Beach General Hospital, Sentara Williamsburg Regional Medical Center

A new outpatient procedure called electromagnetic navigational bronchoscopy uses a new navigation tool (much like a GPS) to provide a road map to better find, diagnose and mark spots on the lung for precision treatment later. Using this new system Sentara pulmonologists snake a catheter through a patient's nose and airways to reach some of the deepest tissue of the lungs. Once the questionable tissue is found in the lung, doctors rely on the fast work of specialized pathologists and within minutes, it's known whether the spot on the lung is cancer or not. Previously, patients would have required one or more procedures to learn of their condition and treatment.

Positron Emission Tomography / Computed Tomography

📍 Available at numerous sites throughout the network

A PET and a CT scan are performed at the same time with the same machine, providing a more comprehensive image than each could produce alone. PET scans take pictures of the function of the organs and tissues using nuclear medicine technology, while CTs create a 3D physical image using X-rays. A PET/CT scan is used often to image the heart, brain, liver or other organs. It is one of the most effective ways to study cancer. Oral contrast medium may be used to outline or highlight organs of the body so that they can be seen more easily.

Endobronchial and Endorectal Ultrasounds

📍 Sentara CarePlex Hospital, Sentara Martha Jefferson Hospital, Sentara Norfolk General Hospital

With a minimally invasive endobronchial ultrasound procedure known as EBUS, doctors are able to diagnose patients with lung cancers before any surgery begins. This technological breakthrough is helping patients with lung and lymph node tumors to be more accurately diagnosed so treatment can begin sooner. The physician uses a bronchoscope equipped with an ultrasound device that is threaded through the patient's nose or mouth into the airways of the lungs. The same technology is used for endorectal ultrasounds, to help diagnose pelvic and colorectal cancers. No incisions are needed and the minimally invasive procedure helps doctors see and stage cancers prior to surgery.

Breast-Specific Gamma Imaging

📍 Dorothy G. Hoefer Comprehensive Breast Center, Sentara RMH Medical Center

While mammography remains the primary method of early detection, diagnostic challenges can occur due to the complexity of the breast tissue. Breast-specific gamma imaging (BSGI) aids in diagnosis when a mammogram is inconclusive and reveals important information that can help more accurately determine if an area of concern is cancerous. During the procedure images are taken showing the metabolic activity of breast lesions using a gamma camera. The high-resolution camera creates pictures so doctors can see cancers as small as 3 millimeters. It can detect early stage cancers, see lesions even in dense tissue, and provide multiple angle views. The result is quicker and more accurate detection of breast cancer than with mammography alone.

Molecular Testing Lab

A molecular testing lab is one of the many behind-the-scenes benefits for patients in the Sentara Cancer Network. Having an in-house molecular laboratory, staffed by a board-certified Molecular Genetic Pathologist, allows critical test results to be made available quickly.

The future of cancer medicine appears to be heavily reliant on the genetics of the person and their cancer. With so much complexity and numerous subtypes within types of cancer, having molecular information can be extremely helpful. With nearly 70 percent of medical decisions based on lab results, it's important to have a state-of-the-art lab to assist with cancer care.

As the laboratory technology advances, other health care providers may need to send their samples to a lab out of state, across the country or many hours away, while the Sentara Lab allows for quicker, coordinated care.

The implementation of Next Generation Molecular Sequencing will allow the lab to analyze in parallel multiple genes in support of diagnosis and treatment recommendations. The technology will improve turnaround time and decrease costs compared with traditional sequencing methods.

At the tissue repository, the tissue removed for diagnosis is preserved in a block of paraffin. Should the patient ever need additional tests, the tissue is readily available. The Sentara Histology Lab has preserved the tissue of thousands of patients dating back to the 1980s. While this can benefit the patient who provided the tissue, it could also be used for research into the particular disease states in a retrospective study, preserving patient anonymity and potentially benefiting future oncology patients.

SURGERY:

The Practice of Precision

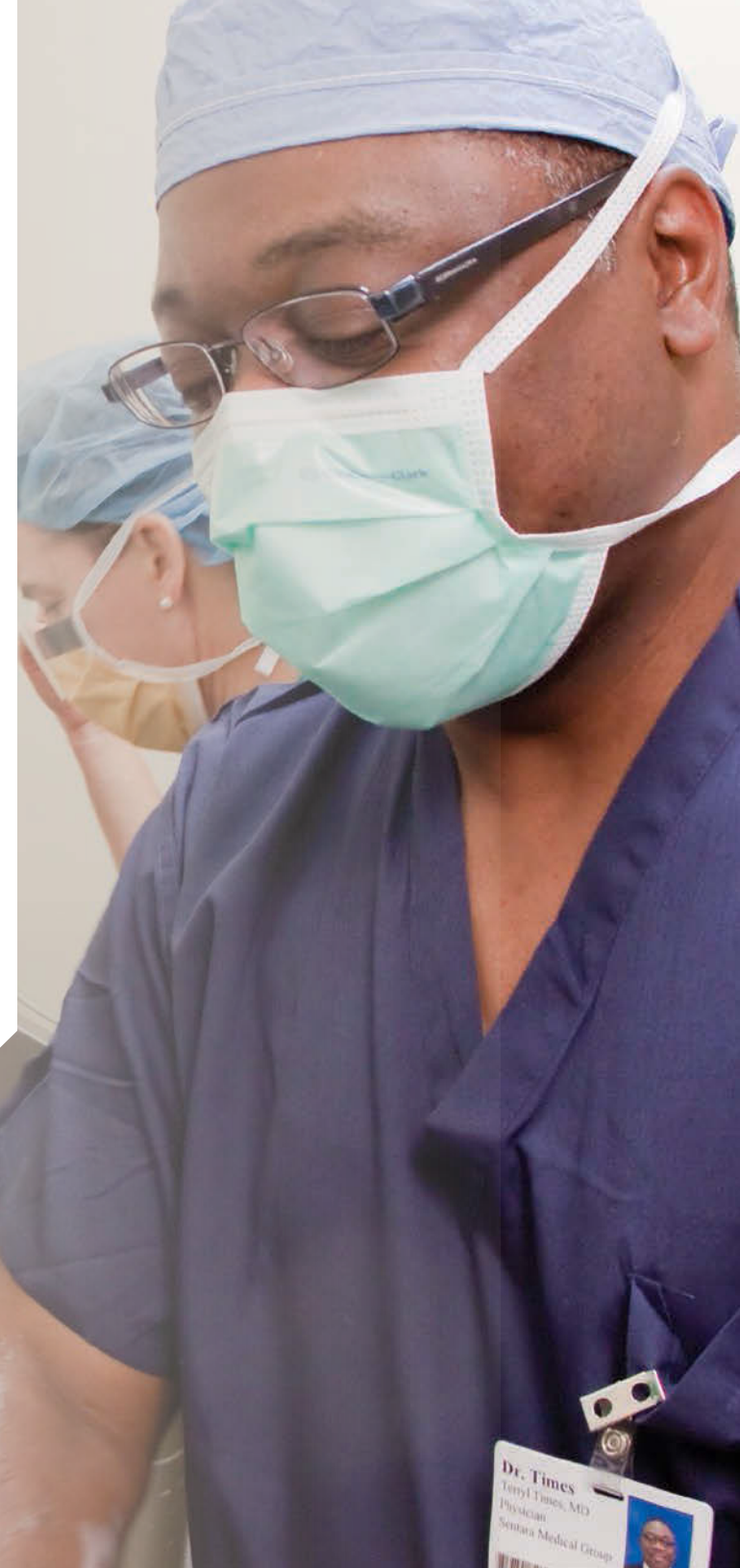
Significant breadth and depth of surgical specialties lies within the Sentara Cancer Network. The value of the network collaboration is that complex, high-end procedures can be piloted at one location to identify best practices and evidence-based outcomes, and then share throughout the network. Proven outcomes come from specialized surgeons with vast experience and the right technological advances.

da Vinci® Surgical Robot for gynecology, head and neck, urology and colorectal surgery

📍 Sentara CarePlex Hospital, Sentara Leigh Hospital, Sentara Norfolk General Hospital, Sentara Northern Virginia Medical Center, Sentara Virginia Beach General Hospital

The da Vinci robot empowers a surgeon to perform a very precise, nerve-sparing operation through several dime-sized incisions. With this minimally invasive surgery, the goal is to accomplish internal repair while leaving the body surface as natural as it was prior to surgery.

The robot dramatically enhances visualization by presenting a 3D view, rather than a two-dimensional view from traditional laparoscopic surgery. The precision, control and dexterity offered by the da Vinci system allow physicians to perform complex surgery in a more effective manner than open surgery or traditional laparoscopic surgery.



For example, head and neck cancer teams at our quaternary facility, Sentara Norfolk General Hospital, use the da Vinci surgical system to perform transoral robotic surgery, a significantly less invasive treatment for cancers in the voice box, throat and tongue. Surgeons use the advanced components of the da Vinci Robotic Surgery System, and patients benefit with less trauma, faster recovery, shorter hospital stays and fewer scars.

Additionally, use of the da Vinci prostatectomy surgical robot has revolutionized prostatectomy surgery by making it a more precise, minimally

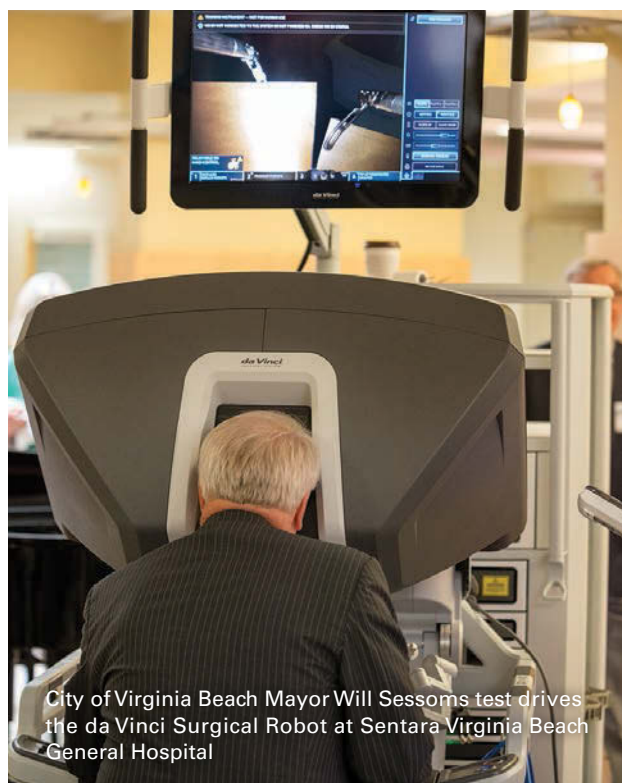
invasive procedure with excellent results. One of the most common treatments for prostate cancer, traditional radical prostatectomy, requires an 8- to 10-inch incision which results in substantial blood loss, a lengthy recovery and the risk of impotence and incontinence.

A da Vinci Robotic Surgery System is also used to enhance the gynecology, urology and colorectal surgery programs at Sentara Virginia Beach General Hospital. This system supports oncology services and development of a comprehensive women's health program for women in midlife.

Transanal Endoscopic Microsurgery

 Sentara CarePlex Hospital, Sentara Virginia Beach General Hospital

The minimally invasive Transanal Endoscopic Microsurgery (TEM) offers a quicker recovery, with less scarring and fewer complications. This surgical procedure uses a natural orifice to remove select rectal tumors that traditionally would require a more involved and invasive surgery.



City of Virginia Beach Mayor Will Sessoms test drives the da Vinci Surgical Robot at Sentara Virginia Beach General Hospital

Richard Barfield

Sentara
Cancer Network
SURVIVOR



Richard Barfield sang at his church for years, but when it became painful to sing, he knew something was wrong. He was diagnosed with oropharynx cancer, located behind his tonsil. After TransOral Robotic

Surgery by his head and neck surgeon, his cancer was removed. Richard recovered quickly and he's impressed with the results.

“When I was admitted to **Sentara Norfolk General**, it was my first time as a patient in a hospital,” he says. “Naturally, I was nervous, but I was confident in Dr. Karakla and I knew what to expect going into surgery.”

 **READ MORE AT:** bit.ly/Survivor-Richard

Neurosurgical Oncology

 Sentara Norfolk General Hospital

New surgical advances for brain tumors are offered at our quaternary hospital. Endoscopic neurosurgery allows lesions and tumors that may have previously required an open craniotomy to be accessed through natural pathways. Intraoperative brain mapping allows surgeons to map functional areas of the brain and remove the tumor without damaging the critical areas. With the 6 Pillars Approach and the NICO BrainPath, further precision and safety are introduced to the patient. The NeuroBlate® System offers minimally invasive robotic laser thermotherapy with MRI-guided neurosurgical ablation and real-time imaging to support a surgeon's clinical decision making. And the Optune™ portable medical device produces alternating electric fields that can slow or stop cancer cells from dividing for at least 18 hours per day for adult patients with recurrent glioblastoma.



Negar Golesorkhi, M.D., Breast Surgery,
Sentara Northern Virginia Medical Center

Minimally Invasive Pancreaticoduodenectomy

 Sentara CarePlex Hospital

What was once a major operation is now performed at Sentara using a minimally invasive technique, offering the benefits of smaller incisions and faster recovery. Pancreaticoduodenectomy, often called the Whipple Procedure, involves the removal of part of the pancreas, a portion of the bile duct, the gallbladder and the duodenum.

Minimally Invasive Esophagectomy

 Sentara Leigh Hospital

This cutting-edge, minimally invasive technique for removing esophageal cancer gives patients significant advantages over a traditional open esophagectomy. This procedure requires surgeons to be specially trained with advanced laparoscopic and thoracoscopic techniques. The approach results in potentially less blood loss, fewer blood transfusions, shorter hospital stays and quicker recovery.

Video-Assisted Thoracic Surgery

 Sentara CarePlex Hospital, Sentara Leigh Hospital, Sentara Martha Jefferson Hospital, Sentara Norfolk General Hospital, Sentara RMH Medical Center, Sentara Virginia Beach General Hospital

This surgical procedure of the chest is performed with a thoracoscope (a small video-scope) using small incisions. Surgeons can more easily remove masses close to the outside edges of the lung and test them for cancer, requiring a much smaller surgery than in the past.

Hyperthermic Intraperitoneal Chemotherapy (HIPEC)

📍 Sentara CarePlex Hospital, Sentara Norfolk General Hospital

Complex and advanced abdominal cancers are difficult for physicians to treat because cancer cells are woven through the thin membranes of the peritoneum that wraps around the abdomen and internal organs. These microscopic cancer cells are often left behind during surgical procedures that remove abdominal tumors. HIPEC uses high doses of chemotherapy to penetrate and destroy the cancer cells that remain in the abdomen after surgery. Physicians apply the high-dose solution of chemotherapy locally within the abdomen, minimizing side effects and improving the absorption.

HIPEC can be administered as a palliative measure to help control disease and prevent fluid collection. It can also be used preventively.

Advanced Breast Reconstruction

📍 Sentara Martha Jefferson Hospital, Sentara Obici Hospital, Sentara Princess Anne Hospital, Sentara RMH Medical Center

Reconstructive surgery is an option many women choose following breast cancer surgery and treatment. Innovative procedures that use a woman's own tissue are an option. Advanced microsurgery techniques, including the Deep Inferior Epigastric Artery Perforator (DIEP) flap method, complete the reconstruction while also preserving the abdominal muscle.



**The Reverend
Laura Minnich Lockey**

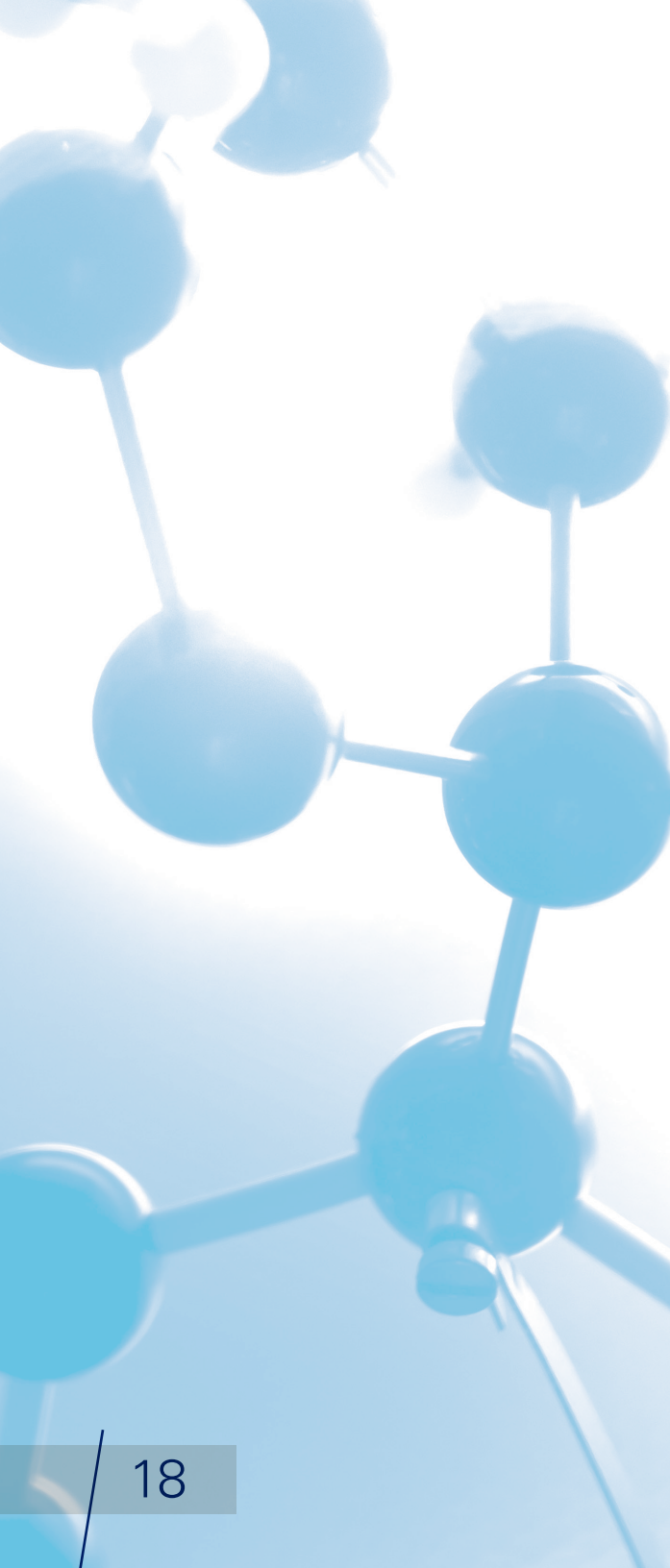
Sentara
Cancer Network
SURVIVOR



After she found a lump in her breast, The Reverend Laura Minnich Lockey decided to have tandem breast surgery. Her **Sentara RMH Medical Center** team guided her through chemotherapy, then bilateral mastectomies and reconstruction, followed by radiation. Having advanced treatment options played a role in her choices and her recovery.

“My doctors explained that by doing chemo before surgery, they could see if the tumors were shrinking, and that would tell them the chemo was the right one, in case the cancer happened to come back,” Laura says.

 [READ MORE AT: bit.ly/Survivor-Laura](https://bit.ly/Survivor-Laura)



RADIATION ONCOLOGY:

Targeted Treatment

Radiation oncology provides a variety of both inpatient and outpatient radiation therapy services. Our team consists of radiation oncologists who prescribe the treatment regimens, which are then delivered by a collaborative team of medical physicists, dosimetrists, nurses and radiation therapists.

External Beam Radiation Therapy

📍 Sentara Albemarle Medical Center, Sentara CarePlex Hospital, Sentara Martha Jefferson Hospital, Sentara Norfolk General Hospital, Sentara Northern Virginia Medical Center, Sentara Obici Hospital, Sentara RMH Medical Center, Sentara Virginia Beach General Hospital

External beam radiation therapy is a method for delivering a beam of high-energy X-rays to the location of the patient's tumor. This strategy exposes the cancerous tumor to a much larger dose than the surrounding healthy tissue. Ionizing radiation works by damaging the DNA of exposed tissue.

To prevent non-cancerous tissue from being damaged, the radiation beams are shaped and aimed from several angles of exposure to intersect at the tumor.

CyberKnife®

📍 Sentara Norfolk General Hospital

At Sentara, we understand that being a leader in treating tumors means investing in promising new technologies. Our CyberKnife® robotic radiosurgery system, available at the Sentara Advanced Radiosurgery Center, is the most advanced system of its kind in Hampton Roads.

CyberKnife is a non-invasive alternative to surgery for the treatment of both cancerous and non-cancerous tumors anywhere in the body, including the prostate, lung, brain, spine, liver, pancreas and kidney.

The treatment delivers beams of high-dose radiation to tumors with extreme accuracy and offers new hope to patients.

Though its name may conjure images of scalpels and surgery, the CyberKnife treatment involves no cutting. In fact, the CyberKnife system is the world's first and only robotic radiosurgery system designed to treat tumors throughout the body non-invasively. It provides a pain-free, non-surgical option for patients who have inoperable or surgically complex tumors, or who may be looking for an alternative to surgery.

For more information about CyberKnife at Sentara,

📺 [WATCH OUR VIDEO ONLINE: bcove.me/xsqqrnyn](https://bcove.me/xsqqrnyn)



Stereotactic Radiosurgery (SRS)

📍 Sentara Martha Jefferson Hospital, Sentara Norfolk General Hospital

SRS is a minimally invasive form of surgical intervention which uses a three-dimensional coordinates system to locate small targets inside the body. Using highly focused beams of ionizing radiation with high precision is a means to target tumors and other lesions that could be otherwise inaccessible or inadequate for open surgery.

Intraoperative Radiation Therapy (IORT)

📍 Sentara CarePlex Hospital, Sentara Northern Virginia Medical Center

IORT delivers a concentrated beam of radiation to cancerous tumors with high doses of radiation. The tumor is irradiated while it is exposed in an operative suite. The Xofig Electronic Brachytherapy System offers mobility and shielding during the process. Sentara Northern Virginia Medical Center offers IORT with the Xofig platform. Sentara CarePlex Hospital introduced IORT to the network during a clinical trial with IntraBeam® in 2007.



Sentara
Cancer Network
SURVIVOR
★

Donna Southard

Living to see her 50th birthday was an achievement for Donna Southard who was diagnosed with lung cancer, and then, a year later, brain cancer. She attributes her recovery to her excellent relationship with her doctor and care team at **Sentara Martha Jefferson Hospital**, and the innovative stereotactic radiosurgery technique she received.

“I trusted my doctors completely,” said Donna. “I was encouraged by the fact that they all worked together — it really felt like a team effort on their part — as well as by the fact that they included my family and me in that team.”

📖 READ MORE AT: bit.ly/Survivor-Donna

Brachytherapy/Radioactive Seed Implant Therapy

📍 Dorothy G. Hoefer Comprehensive Breast Center, Sentara CarePlex Hospital, Sentara Martha Jefferson Hospital, Sentara Norfolk General Hospital, Sentara Obici Hospital, Sentara RMH Medical Center

Brachytherapy is a form of radiotherapy where a radioactive source is placed inside or next to the area requiring treatment. It's commonly used for gynecologic cancers, urological cancers and early breast cancers. For breast cancer, the radioactive seeds are used to mark the tumor for more precision during surgery.

SIR Spheres® and TheraSphere®

📍 Sentara Norfolk General Hospital

Selective Internal Radiation (SIR) Spheres Therapy uses microscopic radioactive resin beads to target advanced liver cancer. Millions of microscopic radioactive resin beads (spheres) travel through the bloodstream with one mission: to target and destroy liver cancer cells. SIR Spheres® can safely deliver many times more radiation than conventional techniques.

TheraSphere® is a similar therapy using microscopic glass microspheres to target liver tumors. This selective internal radiation therapy delivers radioactive glass beads directly to the liver tumor, for effective concentration of radiation and minimal impact to the surrounding non-targeted tissue. SIR Spheres® and TheraSphere® treatments are a collaboration of experienced medical oncologists, radiation oncologists and interventional radiologists.

High-Dose Rate (HDR) For Skin Cancer

📍 Sentara CarePlex Hospital, Sentara Norfolk General Hospital, Sentara Obici Hospital, Sentara RMH Medical Center, Sentara Virginia Beach General Hospital

A mobile radiation option for certain types of skin cancers gives patients a more convenient and targeted treatment. A high-dose rate iridium device, called an HDR unit, uses specially designed applicators in conjunction with the high-dose rate treatments applied directly to the skin. It allows more precise treatment especially for curved or irregular surfaces including those on the face, arms and legs while sparing the surrounding healthy tissue.

Accelerated Partial Breast Irradiation

📍 Sentara CarePlex Hospital, Sentara Martha Jefferson Hospital, Sentara Norfolk General Hospital, Sentara RMH Medical Center

APBI is a form of brachytherapy (internal breast radiation) in which radioactive substances are placed directly into the breast via a specialized catheter after a lumpectomy. APBI delivers the entire course of radiation within 5-7 days, reducing the time and travel required for the patient. It also radiates the area most likely to have recurrence and reduces the side effects of radiation by sparing normal tissues.



Sentara is a member of the Alliance for Clinical Trials in Oncology. This cooperative group is part of the National Cancer Institute and is composed of a number of institutions working together. The Alliance consists of nearly 10,000 cancer specialists at hospitals, medical and community clinics across the United States and Canada. More recently, the network's clinical trial participation was extended with membership in another cooperative group, NRG Oncology.

MEDICAL ONCOLOGY:

Progressive Medicine and Clinical Trials

Within the Sentara Cancer Network, clinicians and academic researchers work together to elevate care for patients. This collaborative philosophy fosters innovation in the network and drives access to clinical trial options for our patients. Medical oncologists in our Sentara Cancer Network communities are especially instrumental in connecting patients with clinical trials — helping to achieve the Commission on Cancer's principle to deliver quality care close to home.

There are promising clinical trials being conducted all over the country for patients with cancer, and many of these are accessible to patients in the Sentara Cancer Network. Patients report being motivated to help others in the future as well as having the opportunity to benefit from emerging cancer care practices. Opportunities to participate in clinical trials have opened up patient care options, including access to cutting-edge medicine. Our participation in clinical trials also contributes to cancer lab research via tissue donation, retrospective chart studies on control groups and participation.

Through collaboration with the NCI National Clinical Trials Network (NCTN), the Alliance for Clinical Trials in Oncology and NRG Oncology develop and conduct clinical trials with promising new cancer therapies. Through these collaborative efforts we utilize the best science to develop optimal treatment and prevention strategies for cancer, as well as research methods to alleviate side effects of cancer and cancer treatments.

Our longstanding partnership with the US Oncology Network, including Virginia Oncology Associates, provides access to the network's more than 300 active clinical trials, contributing to research and approved cancer therapies.

Shannon Kriz, BSRS;
Janete Mills, M.D.;
Haley Wosk, RT, Sentara
Albemarle Medical Center





Clinical Trials

Fluorescein Trial for Intracranial Lesions

📍 Sentara Norfolk General Hospital

Neurosurgeon Dr. Wylie Zhu is the primary investigator, and the study looks at expanding the use of fluorescein angiography. While it has been in use since the 1960s, mainly for ophthalmology, the applications for the use of fluorescein angiography in patients with brain tumors is being assessed. Patients who are undergoing surgical intervention for the treatment of their brain aneurysm, tumor, arteriovenous malformation or fistula will have Yellow 560 Fluorescein Sodium injected to assess for conditions to be corrected. The advent of computer-assisted neuroimaging allows for more precise localization and more postoperative evaluations, and it's possible that the use of fluorescein angiography may further improve surgeons' ability to see and assess tumors.

Surgical Process for Endobronchial Navigation

📍 Sentara Martha Jefferson Hospital

This quality study assessed use of a foot pedal controlled by the surgeon during an endobronchial navigation biopsy (ENB) to reduce the amount of patient exposure to fluoroscopy radiation. Prior to the study, patient exposure was approximately 10 minutes. During the case study reviews, the surgeon-controlled exposure time was 1½ to 1¾ minutes, reducing patient exposure by 83 to 85 percent. The conclusion of the study was that installing a foot pedal for surgeon use reduced patient exposure significantly.

Xoft Axxent eBX Clinical Trial

📍 Sentara Northern Virginia Medical Center

The purpose of this trial is to assess the safety and efficacy of the Xoft Axxent eBx System when used for single-fraction IORT in early stage breast cancer. Sentara Northern Virginia Medical Center is one of 50 U.S. and international sites participating in the study.

Subjects in this study will be followed for 10 years comparing the Xoft Axxent System at the time of breast conserving surgery for early stage breast cancer compared to WBI. The objectives are to assess: the efficacy of single-fraction intra-operative radiation therapy; the rate of regional recurrence; the safety of single-fraction IORT; the rate of overall survival; cosmetic outcomes; and quality of life.

Clinical Trials Included:

- Efficacy and Safety trials for investigational biologics
- Combination trials for oncology drugs
- Surgical and radiation therapy research trials
- Adjuvant and maintenance drug trials
- Postoperative oncology options
- Retrospective chart review

ACCREDITATION:

Quality is our First Priority

As a community-based, not-for-profit organization, our physicians and clinicians are involved in direct patient care every day. We achieve this by constantly communicating, sharing best practices and collaborating on behalf of our patients.

The Sentara Cancer Network diligently focuses on quality improvement. We've earned national accreditations but choose to go beyond them. We

continue to create and promote a culture of excellence that attracts and retains experts in cancer care and research.

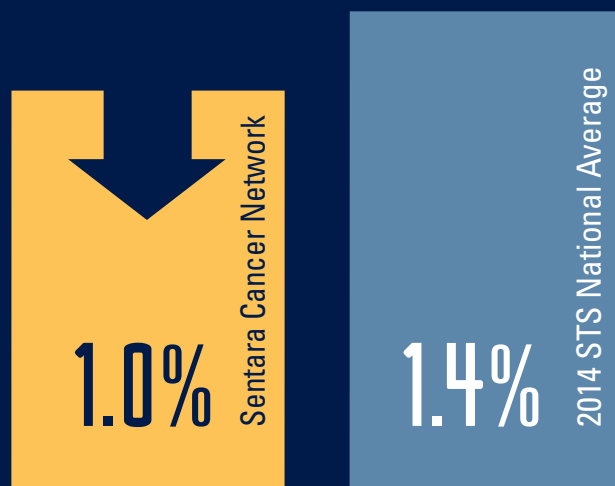
We are constantly inspiring each other to exceed national benchmarks and set new goals for the care of our patients. Our teams lead innovation and quality improvement while seeing patients in clinics, diagnostic centers, operating rooms and radiation therapy centers. Together, we've

Lobectomy Mortality*

Sentara Cancer Network vs. Society of Thoracic Surgeons (STS) National Database Benchmark 2010-2014

📍 Sentara CarePlex Hospital, Sentara Leigh Hospital, Sentara Norfolk General Hospital, Sentara Obici Hospital, Sentara Virginia Beach General Hospital, Sentara Williamsburg Regional Medical Center

* Data source: Society of Thoracic Surgeons database

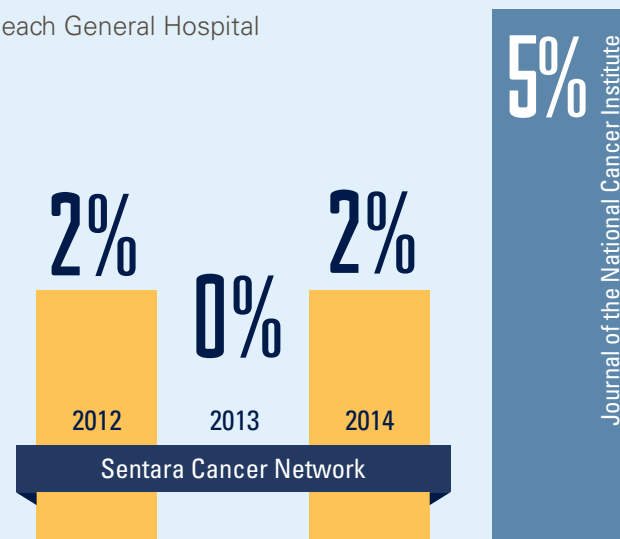


Pancreatic Resection Mortality*

Sentara Cancer Network consistently meets or exceeds the data presented in the Journal of the National Cancer Institute.

📍 Sentara CarePlex Hospital, Sentara Leigh Hospital, Sentara Norfolk General Hospital, Sentara Virginia Beach General Hospital

* Data source: CareDiscovery database, Sentara Decision Support

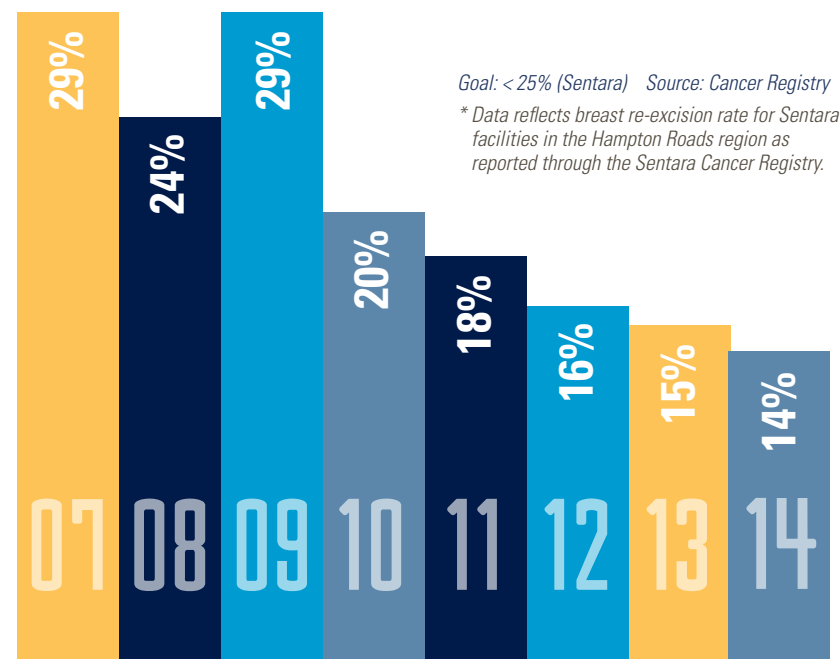


created a multidisciplinary team that focuses on continuous process improvements that benefit our communities and our patients with the ultimate goal of defeating cancer.

Accreditation helps our patients in ways that may be invisible to them, but those quality measures and processes support their treatment and recovery. A focus on patient-centered care, improving quality of care and patient outcomes offers a complete infrastructure for cancer care.

We are at the forefront of cancer advances providing services with:

- A network of hospitals and cancer centers throughout Virginia and northern North Carolina
- Multidisciplinary cancer conferences, where physicians from across medical disciplines contribute their specialized expertise
- Fellowship-trained physicians
- Groundbreaking clinical expertise including clinical trials and integrative care
- National accreditations from the American College of Surgeons' Commission on Cancer, the National Accreditation Program for Breast Centers and the American College of Radiology Breast Imaging Center of Excellence
- Information technology that facilitates coordination of care
- Named one of the nation's "Most Wired Health Systems" by Hospitals & Health Networks magazine multiple times
- Nine comprehensive breast centers



Breast Re-Excision Rate*

A national study of breast cancer patients established a benchmark that no more than **25.7%** of women undergoing breast surgery had to have a "re-excision" or second surgery. In the Sentara Cancer Network, our teams have worked hard to reduce that number to **14%** in 2014, giving more women the advantage of having all cancer removed during the first surgery.



Jay Fertile, M.D., Radiology,
Sentara Martha Jefferson Hospital

Hospitals within the Sentara Cancer Network have achieved or are on the path to achieving accreditation from the American College of Surgeons' Commission on Cancer. The Commission on Cancer key principles of accreditation include measurement and proof of performance in providing:

- Quality care close to home
- Comprehensive care
- A multidisciplinary, team approach
- Information and education
- Patient-centered services
- Options for genetic assessment and counseling, and palliative care services
- Care monitoring and quality improvement
- Treatment planning based on evidence-based national treatment guidelines
- Clinical trials and new treatment options
- Follow-up care including a survivorship care plan
- Patient tracking through the cancer data system

Sentara Cancer Network

Hampton Roads, Virginia

ACCREDITATION: Integrated Network Cancer Program (Only network accreditation in Virginia)

Sentara Martha Jefferson Hospital

Charlottesville, Virginia

ACCREDITATION: Comprehensive Community Cancer Program with Silver Commendation

Sentara Northern Virginia Medical Center

Woodbridge, Virginia

ACCREDITATION: Community Cancer Program

Sentara RMH Medical Center

Harrisonburg, Virginia

ACCREDITATION: Comprehensive Community Cancer Program



National Accreditation Program for Breast Centers – NAPBC

All Sentara Comprehensive Breast Centers are fully designated with the National Accreditation Program for Breast Centers (NAPBC) and work with the American College of Surgeons cancer programs to maintain this status. NAPBC standards focus on breast health and dedication to the improvement of quality care and outcomes through evidence-based standards. The NAPBC defines 28 program standards and 17 program components of care that collectively provide the most efficient and contemporary care available for patients.



American College of Radiology Accreditation

Since 1987, the ACR has accredited more than 35,000 facilities in 10 imaging modalities. The ACR offers accreditation programs in CT, MRI, breast MRI, nuclear medicine and PET as mandated under the Medicare Improvements for Patients and Providers Act (MIPPA) as well as for modalities mandated under the Mammography Quality Standards Act (MQSA).



American College of Radiation Oncology Accreditation

All Sentara Cancer Network radiation therapy centers are fully accredited by the American College of Radiation Oncology (ACRO) – with the exception of Sentara RMH Medical Center, which is accredited by the American College of Radiology (ACR) – and follow practice standards for radiation oncology. Accreditation is a voluntary process in which professional peers identify standards indicative of a quality practice, and an audit is conducted to assure that these standards are followed.



College of American Pathologists Accreditation

The College of American Pathologists (CAP), the leading organization of board-certified pathologists, created the CAP Laboratory Accreditation Program. Designed to go well beyond regulatory compliance, the program helps laboratories achieve the highest standards of excellence to positively impact patient care. The program is based on rigorous accreditation standards that are translated into detailed and focused checklist requirements. This comprehensive program helps achieve a consistently high level of service throughout a healthcare system.



Vivian F. Wu, M.D., Head & Neck Surgery,
Sentara Norfolk General Hospital

OUTREACH ACTIVITIES:

Education, Prevention and Support

Education and Prevention

The Sentara Cancer Network aims to make an impact on reducing the incidence of cancer in our communities, and especially on the incidence of late-stage cancers and mortality. We encourage residents to know their risks and talk to their doctors about the most appropriate screening schedule. And in the geographic areas where cancer incidence and mortality are exceptionally high, we bring the physicians and resources into the community for education and screenings. Teams are focused on delivering education and screenings for the most prominent, and most deadly, cancer types in our service areas – breast cancer, lung cancer, colorectal cancer, prostate cancer, skin cancer and head/neck cancer. The highlights below, which illustrate only a few from among extensive outreach activities, demonstrate the role of our creative outreach partnerships in Virginia and Northeastern North Carolina.



Sentara Northern Virginia Medical Center team promoting breast cancer awareness in the community.

Population Health Approach

Breast cancer awareness goes well beyond the pink ribbon. Through partnerships and grants, our educators are reaching more and more women in areas where cancer mortality is higher than it needs to be. For example, the National Coalition of 100 Black Women, an organization dedicated to advocacy in health, education and empowerment for black women and girls, helped the Sentara Northern Virginia Medical Center team reach more than 700 women in historic black churches. Cancer educators and physicians specifically addressed the prevalence of triple negative breast cancer.

Partnership with Primary Care Physicians

With changes to the national recommendations and reimbursement of early lung cancer screening for longtime smokers, the team at Sentara Martha Jefferson Hospital took steps to ensure that the Charlottesville primary care community was educated. Referrals from primary care physicians to the CT Screening program spiked, bringing in residents who otherwise may have waited until symptoms appeared and lung cancer would have been untreatable. For any patients found to have early-stage lung cancer, the screenings were backed up with the comprehensive lung cancer program.

Expanding Geographical Access

In Hampton Roads, head and neck cancer surgeons from Eastern Virginia Medical School and Sentara Norfolk General Hospital partnered with a local otolaryngology practice to reach potential patients on the Virginia Peninsula. Bringing the advanced services to a local community campus resulted in seeing more patients, including some with potential cancers, by bringing care closer to home.



The new **Sentara Cancer Caregivers support group** on Facebook gives caregivers easy access to reach out and give or receive support with others who are going through similar experiences. A licensed clinical social worker moderates the group.

[REQUEST TO JOIN HERE!](#)

www.facebook.com/groups/1657462991151741/

Support

Throughout the network, we know that during and after cancer treatment, our patients benefit from support services. In addition to traditional support groups where participants find comfort and strength in the safe environment of their peers, the Sentara Cancer Network also provides health and wellness activities customized to cancer patients and caregivers. From massage therapy, exercise classes and yoga, our educators help keep people moving and feeling the best they can. Partnerships with the American Cancer Society, Susan G. Komen, community health departments and our own hospital auxiliaries help maintain a dynamic range of programs and services. Image recovery centers have been particularly popular for patients dealing with changes to their physical appearance during treatment. The communities lend their support through donations of time and talents by volunteering, participating in fundraising walks and 5K runs and creating special care items for patients. While cancer can be a devastating disease, it can also bring out tremendous empathy and compassion.



THE CANCER TEAM:

Centered Around the Patient

Each member of the care team plays a specialized role:



Physicians

Nurses

Therapists



Christine Urbanski, M.D.,
Hematology & Oncology,
Sentara RMH Medical Center

Additionally, the Sentara Cancer Care team who may be involved may include:

Oncology Certified Nurses and Chemotherapy Trained Nurses

At Sentara, nurses demonstrate commitment and specialized knowledge in cancer patient care. The nurses of the cancer program place a strong emphasis on patient, family and community education. Oncology certification enhances professional practice and patient care and validates an oncology nurse's knowledge and skills while increasing self-confidence.

Infusion Specialists

Infusion specialists are trained personnel who assist in delivering medicines, equipment and nursing services to people who need intravenous (IV) fluids, nutrition, or treatments.

Radiation Therapists

Radiation therapists play an important role on the Sentara cancer care team. Working with a radiation oncologist, they help to develop a patient's treatment plan, explain the plan to the patient, answer questions and administer the radiation using the appropriate technology.

Nurse Navigators

Sentara Nurse Navigators specialize in guiding patients dealing with any kind of cancer through the process and assessing their individual needs. They offer resources, support referrals and answers to any questions that patients or family members may have during the process.

Oncology Social Workers and Case Managers

Case managers review the needs of each patient and refer social issues and complicated discharge needs to a social worker, discharge planner or other community resource. Licensed clinical social workers provide one-on-one emotional and mental support for patients and families.

Nutritionists

Since nutrition is such an important part of the cancer patient's care, registered dietitians are available at a number of our sites and in our hospitals for patients who are at risk. The nutrition staff has a variety of teaching materials to offer cancer patients eating tips and recipes for better nutrition during cancer treatment.

Genetic Counselors

Certified genetic counselors provide patients with the necessary information to make informed decisions about genetic testing and work with patients to develop personalized plans for screenings and prevention options. The counselor and a physician review the results from genetic tests during a follow-up appointment and fully explain what the results mean. Together with the patient, they'll discuss a plan to carefully monitor the patient's health based on their level of risk. Research Nurses and Coordinators screen and get patient consent for clinical trials, and provide patient support throughout their treatment.

Physical, Speech and Occupational Therapists

The physical, speech and occupational therapists that staff Sentara Therapy Services have special expertise in the care of patients with cancer. Through therapeutic exercise, neuromuscular training, patient and family education, and pulmonary rehabilitation, our therapists help patients decrease the burden of disease and its treatment and gain their highest level of functional independence.

Palliative Care Specialists

At Sentara, cancer patients and their families may request and benefit from a special program of support called palliative care. Palliative care is given to improve the quality of life for patients who have a life-threatening disease. Palliative care is used to treat disease symptoms, side effects caused by treatment, and psychological, social and spiritual challenges related to the disease. It is also called comfort care, supportive care and symptom management.

Home Care & Hospice Nurses and Staff

Sentara Home Care Services and Sentara Hospice offer an innovative and progressive range of services to patients and families who choose to receive medical/nursing care in the nurturing confines of their home.



Sentara
Cancer Network
SURVIVOR



Zoe Kirk

After seeing an advertisement about CT lung scans that were offered for pack-a-day smokers over age 55, Zoe Kirk called the Sentara Cancer Network to schedule her scan at **Sentara Virginia Beach General Hospital**. She didn't want to be "another statistic." It didn't take long to get the results – a nodule was spotted in her left lobe. She had a biopsy followed by surgery at **Sentara Norfolk General Hospital**. Zoe continues to get scans every three months, and a year after her original scan, Zoe shows no evidence of cancer.

"I had my first CT scan on November 6th and the surgery on December 30th, so it all went very quickly and there wasn't a lot of time to worry," says Zoe. "I've told friends – the scan saved my life. The entire Sentara experience was, from start to finish, just wonderful."

 [READ MORE AT: bit.ly/Survivor-Zoe](https://bit.ly/Survivor-Zoe)

PATIENT-CENTERED CARE:

A Guide for Your Journey

Care Coordination

The Care Coordination staff at Sentara includes a team of registered nurses, master's-prepared social workers, LPNs and administrative support personnel who help patients and families to ensure they have appropriate resources available for transitioning from the hospital.

Care coordinators serve as gatekeepers and guiding lights. They work with physicians, the health care team and insurance companies to coordinate the plan of care and assure all prescribed treatment resources are provided, both in the hospital and upon discharge. They also help determine which care setting is appropriate for patients and what support is available through insurance, family and Sentara.

Centralization, automation and a patient-focused commitment make today's care coordinator a vital bridge between patients' good health and their financial stability.

Patient Navigation

The cancer patient navigator program at Sentara offers a single point of contact who is available to guide patients and survivors every step of the way. They provide patient education, information about community resources, emotional support and assistance overcoming obstacles to care.

Patient navigators:

- Help patients and family members understand the diagnosis and treatment options.
- Ensure patients have the information they need to actively participate in their own care.
- Support communication between patients and the medical team to ensure questions, concerns and clinical issues are addressed.
- Serve as a medically knowledgeable resource committed to each patient's individual cancer journey.
- Connect patients with available resources in the community as needed.
- Support patients during the transition to survivorship.

DATA-DRIVEN:

Improving Quality and Patient Care

At Sentara Healthcare, the practice of evidence-based medicine is organically part of our culture. Throughout the Sentara Cancer Network, proof of performance is benchmarked, internally and nationally. The collection of data helps lead to better outcomes for important procedures such as breast cancer surgery. With a change in practice, positive margins are being eliminated and re-excision rates are declining. Across the network, a focus on tracking outcomes and sharing best practices offers benchmarking and collective foresight from experts in the field.

Beyond collecting the data for our own benchmarks, we also take on the complex task of contributing to national data collection. This is an accomplishment in itself, because only a fraction of hospitals participate. We remain committed to contributing to national efforts to fight cancer in this way. We base our cancer care on national evidence. We share what we learn. And as a result, we learn, too.

Cancer Registry Department

We work with national and state agencies to provide local data for generating national cancer statistics and looking at data trends. The Cancer Registry Department plays an important role in maintaining cancer data and shares it with the National Cancer Institute, the Virginia Department of Health, and the North American Association of Central Cancer Registries. The department monitors trends in incidence and mortality rate as well as evaluates prevention and control measures.



Hunt MacMillan, M.D.,
Pathology, Sentara
Martha Jefferson Hospital

Cancer Conferences

Our physicians take a collaborative approach in all of the care they provide. Regularly scheduled cancer conferences bring together multidisciplinary teams to focus on the best treatment plan for the patient.

A group of trained professionals from across the region reviews the patient's case, looking critically at the diagnostic test results and the patient's medical history. Together they assess the treatment options, and rely on their collective experience to determine the best course of treatment. Customized and multi-faceted solutions may be found more quickly.

In many cases, they meet formally in weekly cancer conferences—much more often than they are required to do by the Commission on Cancer. Our providers continually learn from past patients and each other—and immediately put their new knowledge to work for new patients.

2014 Sentara Cancer Network Primary Site Tables

We collect data on cases diagnosed and treated at each facility in our network. Analytic cases are cases diagnosed and/or treated during the first course of treatment at the assigned institution. Please note that the sum of the individual facilities may not add up as some cases are shared among multiple facilities, which affects the totals.

This table's data is collected by the Sentara Cancer Network Registry Subcommittee from the Hampton Roads region and other regional registrars.

CANCER REGISTRARS

Sentara Albemarle Medical Center
Nannette Jones, CTR

Sentara Martha Jefferson Hospital
Rebecca Lewis, CTR
Maria Barnes, CTR
Jessica Washington, CTR

Sentara RMH Medical Center
Eunice Wines, CTR
Trisha High, CTR

Hampton Roads
Tammy Berryhill, CTR
Karrie Brickhouse, CTR
Kristy Bridgeman, CTR
Diana Coates
Rhonda Despinis, CTR
Mary Seemueller
Cressetta Peterson
Cynthia Freeman, CTR
Holanda Harding
June Harlow
Marlene Kelly
Kathleen Marcia, CTR
Terry Reich
Lana Tyree, CTR

HAMPTON ROADS

Grouping	Primary Site	Sentara CarePlex Hospital		Sentara Leigh Hospital		Sentara Norfolk General Hospital	
		Total	Analytic	Total	Analytic	Total	Analytic
Head/Neck	Lip	0	0	2	2	1	1
	Tongue	7	7	1	1	58	53
	Salivary Gland	1	1	2	1	12	10
	Floor of Mouth	3	3	0	0	9	8
	Gum/Other Mouth	2	1	1	1	33	24
	Nasopharynx	0	0	0	0	3	1
	Tonsil	7	7	2	2	43	35
	Oropharynx	1	1	2	2	8	3
	Hypopharynx	4	4	0	0	15	10
	Other Oral Cavity and Pharynx	0	0	0	0	0	0
Digestive	Esophagus	12	10	21	13	16	7
	Stomach	20	17	12	9	33	31
	Small Intestine	11	9	6	5	15	12
	Colon	51	45	53	48	72	59
	Rectosigmoid Junction	2	1	7	4	3	2
	Rectum	20	17	13	9	28	21
	Anus, Anal Canal, and Anorectum	5	5	11	6	13	3
	Liver	7	6	8	5	19	14
	Intrahepatic Bile Duct	2	2	2	1	2	2
	Gallbladder	2	2	3	3	2	2
	Other Biliary	4	4	3	3	10	9
	Pancreas	34	27	32	24	50	44
	Retroperitoneum	1	1	1	1	0	0
	Peritoneum, Omentum, and Mesentery	1	1	4	2	1	0
	Other Digestive Organs	3	3	2	1	3	2
Respiratory	Nose, Nasal Cavity and Middle Ear	2	2	0	0	10	7
	Larynx	12	12	5	5	53	48
	Lung, Bronchus - Small Cell	23	18	16	13	39	27
	Lung, Bronchus - Non Small Cell	113	99	140	98	301	253
	Lung, Bronchus - Other Types	3	2	6	4	11	9
Bones and Joints	Pleura	0	0	0	0	1	1
	Trachea, Mediastinum, Other Respiratory	0	0	2	1	4	3
	Bones and Joints	0	0	0	0	2	1
Soft Tissue Including Heart	Soft Tissue Including Heart	10	8	5	5	23	17
Skin Excl Basal and Squamous	Melanoma - Skin	113	110	20	15	119	97
	Other Rare Skin Types	5	4	0	0	11	8
Breast	Breast	312	300	332	311	522	286
Female Genital System	Cervix	7	7	10	8	16	9
	Uterus	10	9	75	71	41	16
	Ovary	5	4	24	18	10	6
	Vagina	1	1	3	2	3	1
	Vulva	1	1	15	3	9	1
Male Genital System	Other Female Genital Organs	1	1	0	0	1	1
	Prostate	47	33	28	19	219	177
	Testis	1	1	0	0	6	5
Urinary System	Penis	0	0	0	0	3	2
	Other Male Genital Organs	0	0	0	0	0	0
	Bladder	36	31	64	51	132	106
	Kidney/Renal/Pelvis	10	7	32	26	238	213
	Ureter	0	0	4	2	5	5
Eye and Orbit	Other Urinary Organs	1	1	4	3	8	4
	Eye and Orbit	0	0	0	0	5	2
Brain and Other CNS	Brain	6	6	9	9	85	67
	Other CNS	0	0	0	0	1	1
Endocrine	Thyroid	18	17	48	47	115	107
	Other Endocrine, Thymus	3	2	6	4	27	23
Lymphoma	Hodgkin Lymphoma	3	3	3	2	13	9
	Non-Hodgkin Lymphoma	34	24	30	19	98	62
	Myeloma	12	8	8	2	36	13
Leukemia	Leukemia	11	11	23	14	63	21
Mesothelioma/Kaposi Sarcoma	Mesothelioma	4	3	5	3	5	4
	Kaposi Sarcoma	0	0	0	0	0	0
Miscellaneous	Miscellaneous	12	10	24	17	80	18
TOTAL		1016	909	1129	915	2764	1983

Grouping	Primary Site	Sentara Obici Hospital		Sentara Princess Anne Hospital		Sentara Virginia Beach General Hospital		Sentara Williamsburg Regional Medical Center		Total	Analytic	Sentara Cancer Network Total Caseload
		Total	Analytic	Total	Analytic	Total	Analytic	Total	Analytic			
Head/Neck	Lip	0	0	0	0	0	0	0	0	1	1	Sentara Cancer Network Total Caseload
	Tongue	1	1	3	3	7	6	6	6	57	50	
	Salivary Gland	1	1	1	0	6	6	0	0	21	17	
	Floor of Mouth	1	1	1	0	0	0	0	0	8	6	
	Gum/Other Mouth	1	1	0	0	2	2	0	0	20	20	
	Nasopharynx	0	0	0	0	0	0	1	0	11	8	
	Tonsil	1	1	0	0	5	3	3	3	36	27	
	Oropharynx	1	1	0	0	3	2	0	0	13	9	
	Hypopharynx	2	2	0	0	0	0	0	0	13	11	
	Other Oral Cavity and Pharynx	0	0	0	0	0	0	0	0	1	1	
Digestive	Esophagus	5	4	5	4	12	10	2	1	63	45	Sentara Cancer Network Total Analytic Caseload
	Stomach	7	7	10	8	14	12	5	4	85	72	
	Small Intestine	1	1	6	3	4	3	1	1	30	23	
	Colon	25	23	50	43	80	71	24	21	346	303	
	Rectosigmoid Junction	1	1	4	4	5	4	2	1	25	15	
	Rectum	11	9	15	14	27	21	2	2	134	110	
	Anus, Anal Canal, and Anorectum	3	3	2	2	7	4	1	0	41	31	
	Liver	0	0	3	3	7	6	1	1	38	36	
	Intrahepatic Bile Duct	0	0	2	2	2	2	0	0	9	8	
	Gallbladder	0	0	0	0	0	0	0	0	9	7	
Respiratory	Other Biliary	1	1	6	4	6	5	0	0	25	21	
	Pancreas	3	2	7	4	22	18	2	2	126	104	
	Retroperitoneum	0	0	0	0	0	0	0	0	0	0	
	Peritoneum, Omentum, and Mesentery	0	0	0	0	1	1	0	0	3	3	
	Other Digestive Organs	1	1	0	0	3	2	0	0	17	12	
	Nose, Nasal Cavity and Middle Ear	1	1	0	0	2	0	1	1	12	8	
	Larynx	7	6	2	2	7	7	1	1	67	56	
	Lung, Bronchus - Small Cell	7	6	9	7	17	13	15	14	126	100	
	Lung, Bronchus - Non Small Cell	72	69	89	62	133	110	67	57	800	627	
	Lung, Bronchus - Other Types	7	7	3	1	7	6	3	2	36	26	
Bones and Joints Soft Tissue Including Heart Skin Excl Basal and Squamous	Pleura	0	0	1	1	0	0	0	0	1	1	
	Trachea, Mediastinum, Other Respiratory	0	0	0	0	2	2	0	0	3	3	
	Bones and Joints	0	0	0	0	0	0	1	1	5	5	
	Soft Tissue Including Heart	1	1	4	3	12	8	2	2	42	30	
	Melanoma - Skin	19	18	14	4	73	41	16	15	324	244	
	Other Rare Skin Types	3	2	1	0	5	2	3	2	31	22	
	Breast	140	130	176	159	230	196	132	126	1611	1292	
	Female Genital System	18	17	0	0	2	2	1	1	41	33	
	Uterus	13	13	4	2	17	14	15	15	134	118	
	Ovary	1	1	6	5	12	12	2	2	57	48	
Male Genital System	Vagina	1	0	1	0	2	0	0	0	5	0	
	Vulva	1	1	0	0	4	1	2	0	19	5	
	Other Female Genital Organs	0	0	0	0	1	1	1	1	3	3	
	Prostate	41	23	10	4	59	36	26	17	405	292	
	Testis	0	0	3	2	2	1	1	1	18	14	
	Penis	0	0	1	1	1	1	0	0	6	6	
	Other Male Genital Organs	0	0	0	0	0	0	0	0	0	0	
	Urinary System	18	16	13	8	33	29	25	21	243	191	
	Kidney/Renal/Pelvis	8	4	3	1	11	7	15	15	239	208	
	Ureter	0	0	2	2	1	1	1	1	14	13	
Eye and Orbit Brain and Other CNS Endocrine Lymphoma Leukemia Mesothelioma/Kaposi Sarcoma Miscellaneous	Other Urinary Organs	0	0	1	1	0	0	1	0	5	3	
	Eye and Orbit	0	0	0	0	1	0	0	0	6	3	
	Brain	8	8	4	4	7	5	1	1	125	99	
	Other CNS	0	0	0	0	1	1	0	0	3	3	
	Thyroid	12	12	4	4	18	14	10	10	195	176	
	Other Endocrine, Thymus	0	0	0	0	2	1	0	0	5	4	
	Hodgkin Lymphoma	2	2	2	2	5	5	3	2	34	26	
	Non-Hodgkin Lymphoma	24	19	15	11	34	25	27	18	250	169	
	Myeloma	7	6	2	2	5	3	1	0	74	33	
	Leukemia	12	11	5	3	19	14	3	2	161	72	
Mesothelioma/Kaposi Sarcoma	Mesothelioma	2	2	2	1	1	1	1	1	19	16	
	Kaposi Sarcoma	0	0	0	0	0	0	0	0	2	1	
Miscellaneous	Miscellaneous	15	14	7	6	15	13	8	6	150	71	
TOTAL		506	449	499	392	954	750	435	377	6403	4961	

BLUE RIDGE REGION

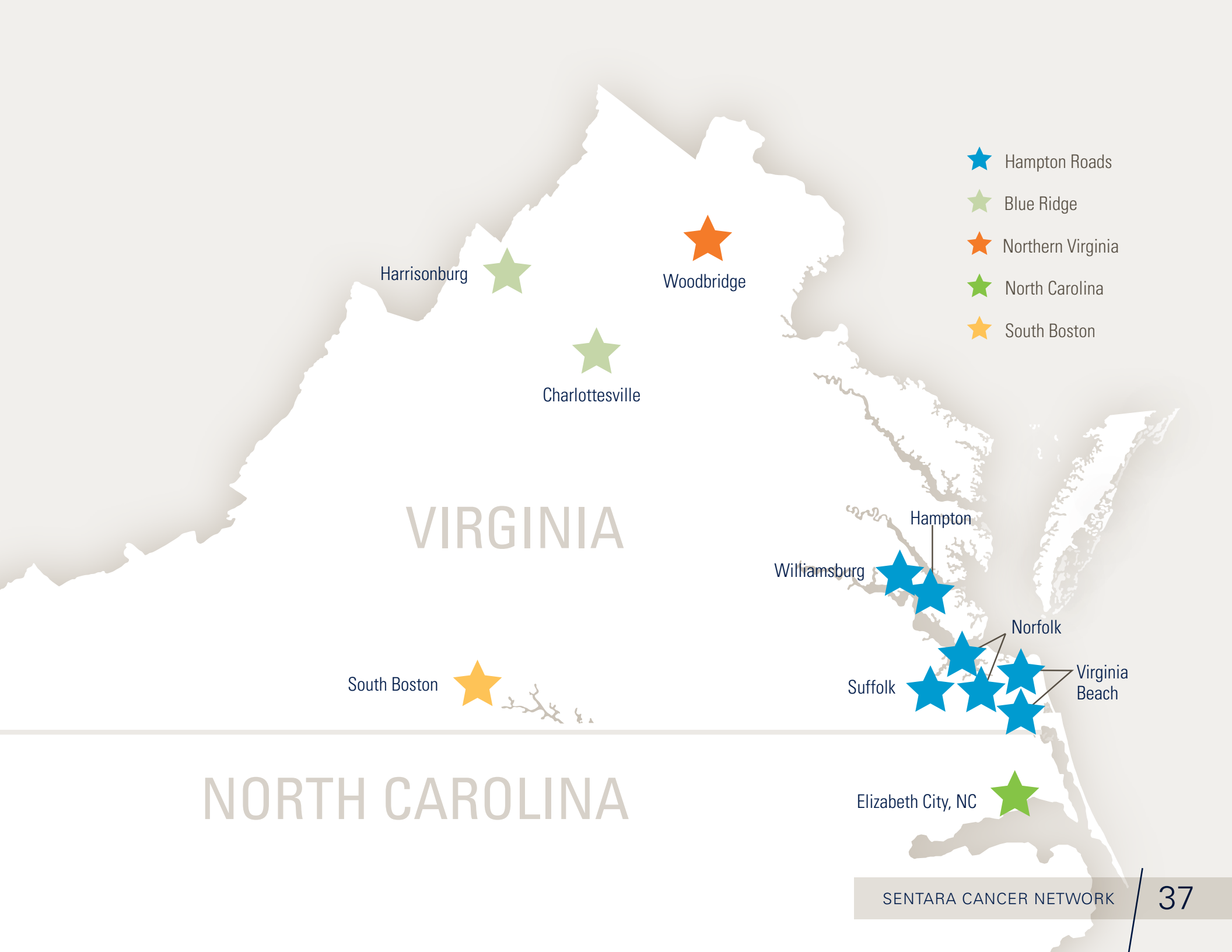
Primary Site	Sentara RMH Medical Center		Sentara Martha Jefferson Hospital	
	Total	Analytic	Total	Analytic
ORAL CAVITY	8	7	20	20
Lip	0	0	1	1
Tongue	2	2	7	7
Oropharynx	1	1	1	1
Hypopharynx	0	0		
Other	5	4	11	11
DIGESTIVE SYSTEM	168	144	168	133
Esophagus	17	16	8	5
Stomach	13	12	12	8
Colon	69	52	74	56
Rectum	21	19	24	15
Anus/Anal Canal	3	2	7	6
Liver	10	9	7	7
Pancreas	18	17	22	22
Other	17	17	14	14
RESPIRATORY SYSTEM	114	103	103	103
Nasal/Sinus	3	3		
Larynx	9	8	8	8
Lung/Bronchus	100	90	93	93
Other	2	2	2	2
BLOOD & BONE MARROW	58	50	47	44
Leukemia	34	29	24	21
Multiple Myeloma	11	10	14	14
Other	13	11	9	9
BONE	1	1		
CONNECT/SOFT TISSUE	5	5	4	3
SKIN	99	78	58	32
Melanoma			55	31
Other			3	1
BREAST	156	142	248	240
FEMALE GENITAL	51	38	41	28
Cervix Uteri	39	28	3	1
Corpus Uteri	8	7	28	20
Ovary	2	1	4	4
Vulva	2	2	5	2
Other			1	1
MALE GENITAL	86	84	82	61
Prostate	78	78	77	56
Testis	6	4	5	5
Other	2	2		
URINARY SYSTEM	78	76	77	77
Bladder	39	38	46	46
Kidney/Renal	37	36	28	28
Other	2	2	3	3
BRAIN & CNS	20	15	13	13
Brain (Benign)				
Brain (Malignant)			7	7
Other			6	6
ENDOCRINE	17	17	22	22
Thyroid	16	16	21	21
Other	1	1	1	1
LYMPHATIC SYSTEM	50	46	41	40
Hodgkin's Disease	10	10	4	4
Non-Hodgkin's	40	36	37	36
UNKNOWN PRIMARY	14	14	17	17
OTHER/ILL-DEFINED	6	3	4	4
TOTAL	931	823	945	837

NORTH CAROLINA

Sentara Albemarle Medical Center	
Total	Analytic
22	22
1	1
10	10
1	1
2	2
8	8
49	49
4	4
3	3
21	21
8	8
3	3
2	2
6	6
2	2
91	90
0	0
1	1
87	86
3	3
3	3
0	0
2	2
1	1
1	1
2	2
13	5
10	3
3	2
105	95
11	9
4	4
6	4
0	0
1	1
0	0
44	43
44	43
0	0
0	0
18	17
15	14
3	3
0	0
4	4
0	0
3	3
1	1
9	8
7	6
2	2
8	6
1	1
7	5
8	8
2	2
390	364

NORTHERN VIRGINIA

Primary Site	Sentara Northern Virginia Medical Center	
	Total	Analytic
Lip	1	1
Tongue	3	3
Salivary Gland	2	2
Floor of Mouth	1	1
Gum/Other Mouth	1	1
Nasopharynx	1	1
Tonsil	2	2
Oropharynx	1	1
Other Oral Cavity and Pharynx	1	1
Esophagus	4	3
Stomach	12	11
Colon	33	30
Rectosigmoid Junction	2	2
Rectum	6	6
Anus, Anal Canal, and Anorectum	2	2
Liver & Intrahepatic bile duct	4	4
Pancreas	10	7
Nose, Nasal Cavity and Middle Ear	1	1
Larynx	4	4
Lung	40	34
Bones and Joints	1	0
Soft Tissue Including Heart	3	2
Melanoma - Skin	14	13
Breast	126	111
Cervix	1	1
Uterus	10	8
Ovary	8	7
Vagina	1	1
Other Female Genital Organs	1	1
Prostate	46	38
Testis	4	2
Penis	1	1
Bladder	39	35
Kidney/Rena/Pelvis	23	21
Eye and Orbit	1	0
Brain	1	0
Other CNS	3	3
Thyroid	11	10
Hodgkin Lymphoma	2	2
Non-Hodgkin Lymphoma	15	10
Myeloma	8	5
Leukemia	1	1
Mesothelioma	3	1
Kaposi Sarcoma	1	1
Miscellaneous	15	14
TOTAL	470	405



- ★ Hampton Roads
- ★ Blue Ridge
- ★ Northern Virginia
- ★ North Carolina
- ★ South Boston

Harrisonburg

Woodbridge

Charlottesville

VIRGINIA

South Boston

Williamsburg
Hampton

Norfolk
Suffolk
Virginia Beach

Elizabeth City, NC

NORTH CAROLINA

2013 Quality Measures Data

To earn voluntary accreditation, a cancer program must be evaluated every three years and meet or exceed quality standards established by the Commission on Cancer. A new standard now requires accredited programs to reach specific performance levels on measuring quality for treating patients with breast, colon, and rectal cancers. These quality measures are defined by the Commission on Cancer and endorsed by the National Quality Forum. The Sentara Cancer Network tracked and monitored these measures before they were required by the Commission on Cancer. Multi-year performance is shared here.

Breast

Radiation therapy is administered within 1 year of diagnosis for women under the age of 70 receiving breast conservation surgery for breast cancer

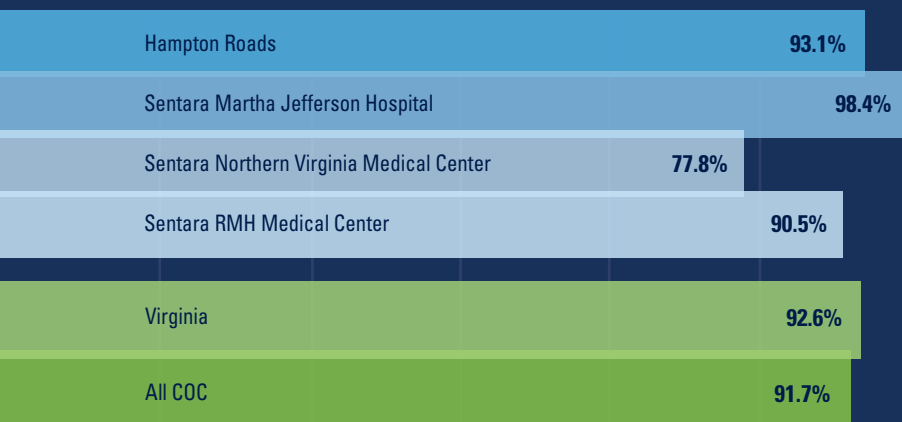
Hampton Roads	94.9%
Sentara Martha Jefferson Hospital	90.2%
Sentara Northern Virginia Medical Center	88.2%
Sentara RMH Medical Center	100%
Virginia	93.9%
All COC	91.9%

Combination chemotherapy is considered or administered within 4 months of diagnosis for women under 70 with T1cN0M0, or Stage II or III hormone receptor negative breast cancer

Hampton Roads	94.2%
Sentara Martha Jefferson Hospital	100%
Sentara Northern Virginia Medical Center	100%
Sentara RMH Medical Center	100%
Virginia	95.9%
All COC	92.6%

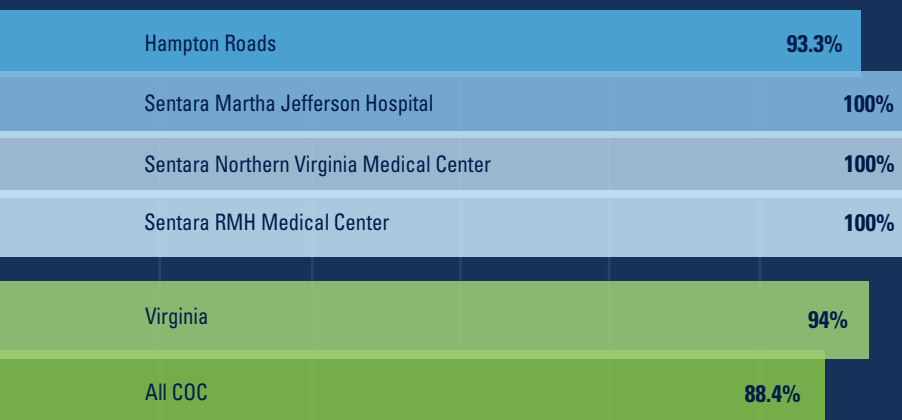
Tamoxifen Administration

Tamoxifen or third generation aromatase inhibitor is considered or administered within 1 year of diagnosis for women with T1cN0M0, or Stage II or III hormone receptor positive breast cancer



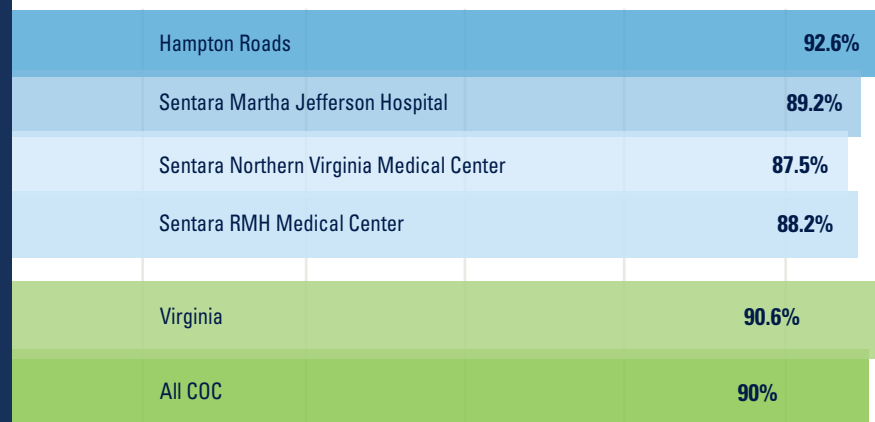
Radiation Therapy Administration Following Mastectomy

Radiation therapy is considered or administered following any mastectomy within 1 year (365 days) of diagnosis of breast cancer for women with ≥ 4 positive regional lymph nodes

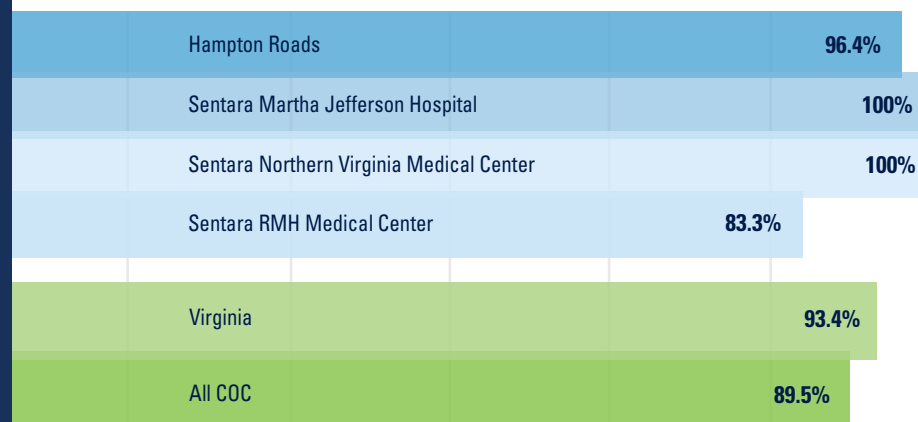


Colorectal

At least 12 regional lymph nodes are removed and pathologically examined for resected colon cancer

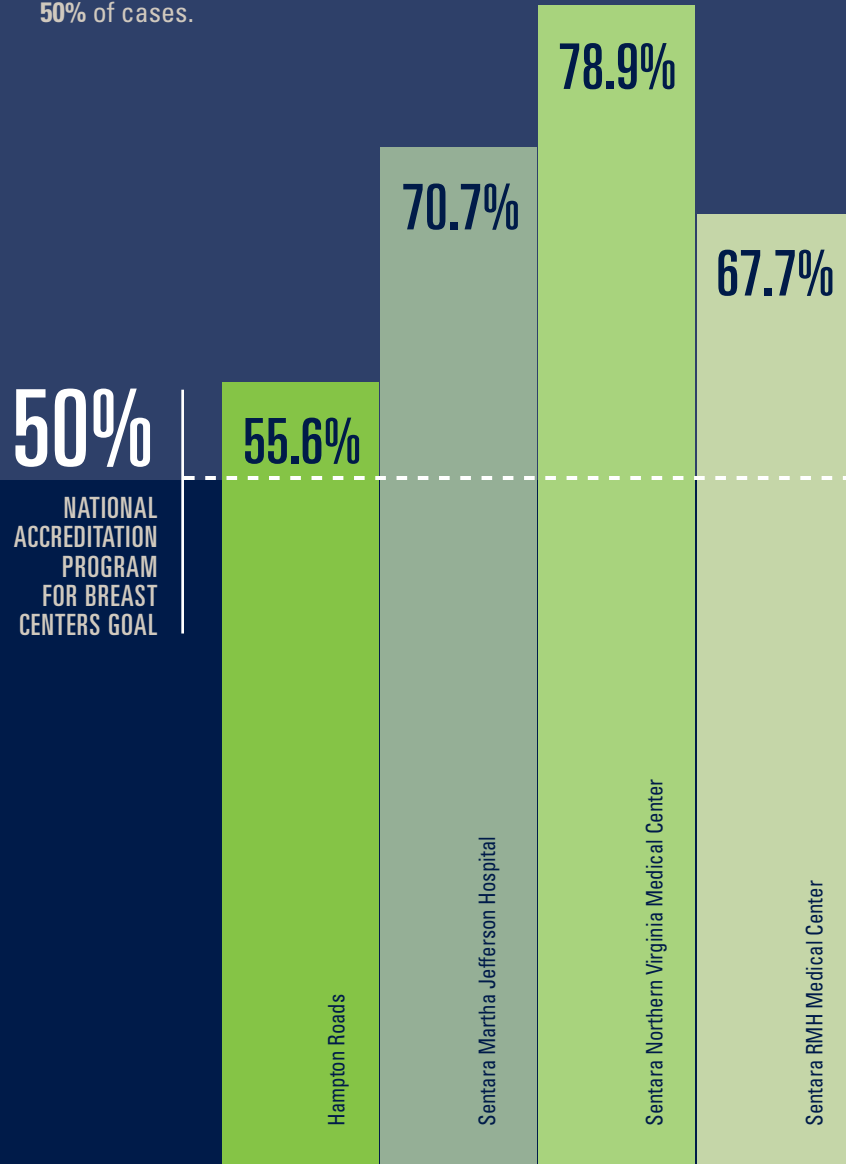


Adjuvant chemotherapy is considered or administered within 4 months of diagnosis for patients under the age of 80 with Stage III (lymph node positive) colon cancer



Breast Conservation Rate for Women with AJCC Stage 0, I or II Breast Cancer

Sentara exceeds the NAPBC goal of at least 50% of cases.



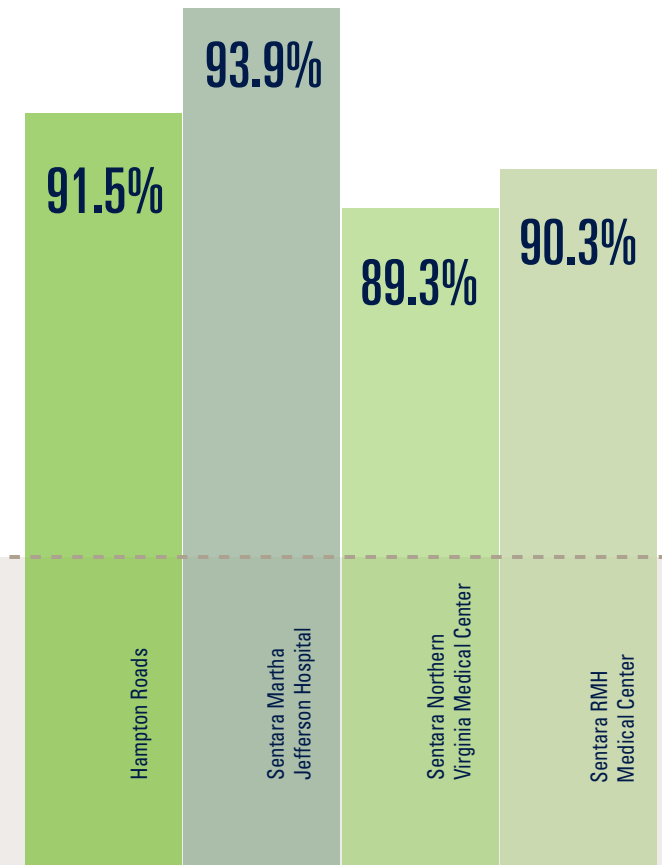
2013 NAPBC Quality Measures Data

In compliance with Standard 6.1 of the National Accreditation Program for Breast Centers, the Sentara Cancer Network conducts and shares studies to measure quality and outcomes. The breast program leadership communicates the findings and discusses the outcomes and importance with the breast center staff, participants of the interdisciplinary conferences and the network steering committee.

Needle Biopsy Performed Prior to Surgical Treatment of Breast Cancer

Sentara exceeds the NAPBC goal of at least 80% of cases.

80%
NAPBC GOAL



Resources for Clinicians



Patient Evaluation Services

To refer a patient for an evaluation or second opinion, please contact your regional services:

Charlottesville

1-800-SENTARA or www.sentaracentralvirginia.com

Northern Virginia

1-800-SENTARA or www.sentara.com/cancer

Hampton Roads

1-800-SENTARA or www.sentara.com/cancer

Northeastern North Carolina

252-384-4122 or www.sentara.com/cancer

Harrisonburg

1-800-SENTARA or www.sentara.com/cancer

South Boston

1-800-SENTARA or www.sentara.com/cancer



Continuing Medical Education

Sentara Healthcare Continuing Medical Education (CME) facilitates the development and provision of educational programs and materials of the highest quality. The overall purpose of CME is to provide educational opportunities for the physicians and other health care teams to enhance and improve knowledge and skills in order to provide the highest quality patient care in the region.

Sentara Healthcare is one of two organizations in the Medical Society of Virginia that has been awarded accreditation with commendation. The Physician Education department oversees and assists in the planning of regularly scheduled series throughout the system, several computer-based training modules, conferences, maintenance of certification series, and is looking at how technology can be best used for future programs. Physician Education will continue to provide CME programs of the utmost quality to meet the ultimate goal of improving health every day.

Sentara Cancer Network Leadership Team

Physicians

Thomas Alberico, M.D.

Medical Oncology

Cancer Committee Chair, Sentara Cancer Network

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Surgical Oncology, Sentara CarePlex Hospital

*Medical Director and Cancer Conference Coordinator,
Sentara Cancer Network*

James Schneider, M.D.

Surgical Oncology, Sentara Leigh Hospital

*CoC Cancer Liaison Physician, Sentara Cancer Network;
Chair, Sentara Leigh Hospital Cancer Committee*

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Radiation Oncology, Sentara Obici Hospital

Chair, Sentara Obici Hospital Cancer Committee

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and Sentara Princess Anne Hospital

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Committee Administrator

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American Cancer Society

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Genetic Counseling

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Administration, Sentara Northern Virginia Medical Center

Debbie Brown

Administration, Sentara Leigh Hospital

Connie Bush

Community Outreach

Community Outreach Coordinator

Amanda Colley

Administration, Sentara Virginia Beach General Hospital

Gynecology Oncology Subservice Line Administrative Lead

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Psychosocial Coordinator

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Michele Fortner

Administration, Radiation Oncology

Carol Hodies

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Jon Horton

Pharmacy

James Hoy

Pastoral Care

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Nutrition Counseling

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Thoracic Oncology Subservice Line Administrative Lead
Quality Improvement Coordinator

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Administrative Lead

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Cancer Registry
Quality Control Coordinator

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Executive Director, U.S. Oncology

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Hospice Administrator

Faye Satterly
Administration, Sentara Martha Jefferson Hospital

Lesley Scott
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Terri Sim
Administration, Sentara Williamsburg Regional
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Meredith Strand
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Research Coordinator

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Oncology Nurse

Grey Watson
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Lynne Whitlock
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Hematology Subservice Line Lead

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Rehabilitation and Physical Therapy

Sentara Healthcare Corporate Support

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Performance Improvement

Barbara Gerhardt
Performance Improvement

Roland McClendon
Decision Support

Judy Sanders
Information Analytics

Rose West
Customer Development
and Marketing

Michael J. Tozzi, D.O.
General Surgeon, Sentara
Halifax Regional Hospital



Academic Publications

Dengel, LT, Petroni, GR, Judge, J, Chen, D, Acton, ST, Schroen, AT, and Slingluff, CL Jr. Total body photography for skin cancer screening. *Int J Dermatol*. 2015 Nov, 54(11):1250-4.

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Hill, Aaron. Technical Aspects of Performing Perfusion and FDA Regulations about the Devices. Mid-Atlantic Peritoneal Malignancy Workshop. Virginia Beach, VA. June 12, 2015.

Hoefer, Richard. Complications Following Cytoreductive Surgery and HIPEC: Personal Experience and Review of Literature. Mid-Atlantic Peritoneal Malignancy Workshop. Virginia Beach, VA. June 12, 2015.

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Lipsyc, MD, Yaeger, R, **Dengel, LT**, and Saltz, L. Axillary Lymph Node Involvement, a Unique Pattern of Metastasis in BRAF-Mutant Colorectal Cancer. *JAMA Oncol*. 2015 Aug; 1(5):686-7.

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Valicenti, RK, Pugh, SL, Trabulsi, E, Sartor, O, Girvigian, MR, Rosenthal, SA, **Shaves, M**, Schallenkamp, JM, Hoffman-Censits, and Sandler, HM. The First Report of the NRG Oncology/RTOG 0622: A Phase 2 Trial of Samarium 153 Followed by Salvage Irradiation in High-Risk Nonmetastatic Prostate Cancer After Prostatectomy. *International Journal of Radiation Oncology*, 93(3): S134. November 1, 2015. doi: <http://dx.doi.org/10.1016/j.ijrobp.2015.07.319>



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www.sentara.com/cancer