

# 75 years of providing accredited Cancer Care

2022 CAMC CANCER SERVICES REPORT

**75**  
**YEARS**



Charleston Area  
Medical Center



# 2022 CAMC Cancer Services Report

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# CAMC Cancer Center earns reaccreditation for providing quality cancer care

*75 years of providing accredited cancer care*



The CAMC Cancer Center has received reaccreditation by the QOPI Certification Program (QCP™), an affiliate of the American Society of Clinical Oncology (ASCO). The Quality Oncology Practice Initiative (QOPI) was designed by the American Society of Clinical Oncology (ASCO) in recognition of the importance of integrating continuous quality improvement into patient-centered clinical practice. This voluntary program allows facilities to monitor quality initiatives against benchmarks established through ASCO's member oncologists and quality experts using clinical guidelines and published standards.

Having first achieved QOPI certification in December 2012, the CAMC Cancer Center remains the first and only QOPI-accredited center in the state. The recertification is effective for three years. More than 900 oncology practices have registered for the QOPI program and more than 250 practices are currently certified.

"Practices that achieve recertification continue to show their strong dedication to providing patients with high quality cancer care," said ASCO President Julie M. Vose, MD, MBA, FASCO. "The QOPI Certification Program assists practices in maintaining quality and safety excellence by providing assessment measures and information for continual quality improvement."

In applying for recertification, the cancer center had to again meet QCP's requirements, which includes

participating in a voluntary comprehensive site assessment and being successful in meeting the standards and objectives of the QOPI Certification Program.

QOPI® analyzes individual practice data and compares these to more than 160 evidence-based and consensus quality measures. The information is then provided in reports to participating practices. Each facility is also able to compare its performance to data from practices across the country.

To become certified, facilities have to submit to a practice-wide evaluation of their documentation standards. The QCP staff and steering group members then verify through on-site inspection that the evaluation and documents are correct and that they have met core standards in areas of treatment, including:

- Treatment planning
- Staff training and education
- Chemotherapy orders and drug preparation
- Patient consent and education
- Safe chemotherapy administration
- Monitoring and assessment of patient wellbeing

"This certification is only given to facilities that meet the highest standards of care, so the fact that the cancer center has been recognized not just once, but twice, is

a real testament to quality services we provide,” said Dave Ramsey, CAMC President and CEO. “Earning the initial certification, as well as the recertification has taken many years and we are very proud of the dedication and exemplary work of the physicians and staff at the CAMC Cancer Center.”

CAMC has a long history of providing outstanding cancer care in West Virginia. CAMC’s cancer services have been accredited since 1956 and offer the highest trained, nationally-certified health care professionals in the region. In 2015, CAMC built the CAMC Cancer Center to meet the growing needs for advanced cancer care in the state.

Accredited by the DNV and the Commission on Cancer, the CAMC Cancer Center provides personalized multidisciplinary cancer care, access to innovative clinical cancer research trials, and hematological care for a diversity of benign and malignant conditions. The Center also houses the CAMC Breast Center, where breast surgeons, nurse navigators, genetic counselors and radiologists who are experts in breast diseases provide the highest level of care for patients with breast cancer.

Most of the Cancer Center’s nurses are certified in oncology. The Center has two board certified oncology pharmacists and a multidisciplinary CARE Team that includes a social worker, psychologist, dietitian, financial navigators, patient navigators and pastoral care. The Center also offers a boutique for cancer patients needing assistance with wigs, hair care and other products, as well as an outpatient pharmacy for patients’ medication needs.

Physicians help educate internal medicine residents of the West Virginia University School of Medicine Charleston-Division. Trainees also have the opportunity to work with Cancer Center staff physicians on research projects leading to academic presentations/publications that are

integral to their training requirements.

CAMC’s commitment to cancer care also extends throughout the community. CAMC’s Teays Valley Cancer Center offers hematology/oncology services and infusion for patients in Putnam County and surrounding communities. CAMC offers specialized care to patients diagnosed with cancer of the female reproductive system through our gynecology office. And CAMC’s clinical cancer research activities have been central to providing state-of-the-art cancer care opportunities for our patients for more than 25 years.

Most nurses at the Center are certified in oncology.

There are two board certified oncology pharmacists. CAMC’s outpatient pharmacy at the Cancer Center, has been awarded full URAC accreditation in addition to the previously awarded ASHP accreditation. This dual specialty pharmacy accreditation is only achieved by providing the highest level of patient care, including enhanced patient monitoring, detailed follow up assessments and extensive, detailed reporting. These recognitions will allow the pharmacy to access an even greater variety of specialty medications to provide care for more patients with a broader scope of disease states.

Physicians help educate internal medicine residents of the West Virginia University School of Medicine Charleston-Division. Trainees also have the opportunity to work with Cancer Center staff physicians on research projects leading to academic presentations/publications integral to their training requirements.

CAMC’s Clinical Cancer Research activities have been central to providing state-of-the-art cancer care opportunities for our patients for more than 25 years.





# CAMC Cancer Center

The Cancer Center is for adult medical oncology and hematology care.

A DNV accredited facility, the CAMC Cancer Center provides personalized multidisciplinary cancer care, access to innovative clinical cancer research trials and hematological care for a diversity of benign and malignant conditions in a caring environment.

The Commission on Cancer survey was conducted in November 2020. CAMC received an accreditation status for three years without contingency.

The Cancer Center is accredited by the QOPI Certification Program (QCP™), an affiliate of the American Society of Clinical Oncology (ASCO). The Quality Oncology Practice Initiative (QOPI) was designed by the American Society of Clinical Oncology (ASCO) in recognition of the importance of integrating continuous quality improvement into patient centered clinical practice. This voluntary program allows facilities to monitor quality initiatives against benchmarks

established through ASCO's member oncologists and quality experts using clinical guidelines and published standards.

## **Ambray Genetic Testing**

Some patients are at increased risk of developing cancer due to genetic inheritance (i.e., it runs in the family). Approximately 5-10% of cancer is hereditary. The new assessment and testing, provided by Ambray Genetics, evaluates each patient's risk of developing cancer based on questions answered on survey that pertains to the patient's personal family history. Testing is based upon the answered questions



## The Cancer Center:

- Provides infusion for an average of 60–70 patients daily.
- Teays Valley office offers hematology/oncology services and infusion for patients.
- Gynecology oncology office, located in Charleston, offers specialized care to patients diagnosed with cancer of the female reproductive system.
- Sickle Cell clinic is held from 9 a.m. – noon on the last Friday of each quarter at the center. The clinic is staffed by both a pediatric hematologist oncologist and adult hematologist oncologist.
- Features a majority of nurses certified in oncology.
- Has two board certified oncology pharmacists.
- Physicians help educate internal medicine residents of the West Virginia University School of Medicine Charleston-Division. Trainees also have the opportunity to work with Cancer Center staff physicians on research projects leading to academic presentations/publications integral to their training requirements.
- CAMC's Clinical Cancer Research activities have been central to providing state-of-the-art cancer care opportunities for our patients for more than 25 years.
- The resource room, located on the first floor of the cancer center houses our CARE Team, which includes a social worker, psychologist, dietitian, financial navigators, patient navigators and pastoral care.
- The boutique, located on the first floor, offers wigs, hair care and other products to cancer patients being treated at the CAMC Cancer Center.
- The outpatient pharmacy, located on the first floor, is open to the public. Hours of operation are 8 a.m. – 6 p.m. Monday through Friday.

and recommendations by NCCN (National Comprehensive Cancer Network) guidelines. Genetic testing results are a tool to help clarify cancer risk and assist the health care provider in determining the best place of action moving forward. Genetic counseling is also offered by Ambry should genetic testing result in a positive genetic mutation.

### Pretreatment/Posttreatment/Survivorship Clinic

The goal of the clinic is to schedule patient's beginning treatment related to their cancer diagnosis to discuss treatment plans, as well as evaluate any barriers (financial, psychological, physical, etc.) that may prevent the patient from receiving treatment. The clinic also sees patients who are completing treatment and prepares the patient for life after cancer. A survivorship plan of care is designed specifically for each patient and provides the patient with the information regarding their treatment and plans for follow up and testing in the future. This information is also shared with the patient's primary provider.

### Walk-In Clinic

The Cancer Center's walk-in clinic features quick, convenient access for nonemergency care. Staffed by medical providers who specialize in cancer care the clinic treats walk-ins (no appointment or referral required) who are existing patients in active treatment. The clinic is at the Cancer Center, Monday through Friday, 8 a.m. to 3 p.m. For more information, call **(304) 388-8380**.

### Sickle Cell Clinic provides specialized, ongoing care for patients

CAMC's outpatient Sickle Cell Clinic is dedicated to treatment and management of the disease in both adult and pediatric patients.

The CAMC Sickle Cell Clinic is dedicated to delivering comprehensive care for patients with sickle cell disease by providing easy access to specialists for disease management and preventative care. Its physicians specialize in both adult and pediatric sickle cell disease, and its multidisciplinary approach to care ensures patients receive the highest level of care to treat the many complicated facets of the disease.

The clinic provides ongoing care for patients with individualized treatment plans, including rapid access to infusion care services for blood infusion and transfusion therapies. It also provides patient education, coaching and support, and easy access to other hospital services for any complications that may arise.

The clinic is accepting new patients. To schedule an appointment for pediatric patients, call **(304) 388-4979**. Adult patients can call **(304) 388-8380** to schedule an appointment or for more information.

## Project ECHO

Most medical oncologists practice in urban areas, leaving rural communities without the capacity to screen, diagnose and treat patients with cancer, many of whom are diagnosed at later and less treatable stages.

Project ECHO links expert specialist teams at an academic hub, such as CAMC, with primary care clinicians in local communities. Together, they manage patient cases so that patients get the care they need. Although the ECHO model makes use of telecommunications technology, it is different from telemedicine.

The CAMC Cancer Center has conducted Project Echo sessions on topics applicable to breast cancer survivorship. The format includes a short didactic by specialists followed by an in-depth case discussion







**FOR EXTRAORDINARY NURSES**

**HONORING NURSES INTERNATIONALLY  
IN MEMORY OF J. PATRICK BARNES**



## **CAMC Cancer Center nurses win DAISY Award**

In recognition — and appreciation — of their devotion, compassion and skills, two registered nurses in the Cancer Center of CAMC Teays Valley are 2022 recipients of the DAISY Award. Freda Barrett and Donna Francisco were presented their DAISY Awards in February.

The DAISY Award is an international program that rewards and celebrates the extraordinary clinical skill and compassionate care given by nurses every day. CAMC is a DAISY Award partner, recognizing its exceptional RNs and LPNs with the honor.

Nurses can be nominated by anyone in the health care organization — patients, family members, other nurses, physicians, other clinicians and staff — or anyone else who experiences or observes extraordinary compassionate care being provided by a nurse.





## Comprehensive Assistance with Resources and Education (CARE) Team

Coping with cancer can be incredibly stressful. Patients may face many challenges, including completing complicated medical and insurance forms, figuring out how to pay the bills if one cannot work while undergoing treatment, arranging for transportation to treatment, and coping with anxiety and stress. Luckily, the Comprehensive Assistance with Resources and Education (CARE) Team is here to help. Located on the first floor of the CAMC Cancer Center in the Patient Resource Center, this multi-disciplinary team consisting of nurse navigation, financial navigation, social work, psychology, chaplaincy, and nutrition helps patients address stressors and barriers which may interfere with their cancer treatment and care. Patients can also obtain free information on their specific disease in the Patient Resource Center.

Individual and group psychotherapy are offered to cancer patients, survivors, and family members based on the most up-to-date evidence-based treatment. Psychological services include Cognitive-Behavior Therapy (CBT) and Meaning-Centered Psychotherapy (MCP) for Patients with Advanced Cancer. Patients also have the option of participating in

behavioral health service through telehealth platforms. Patients have been able to schedule face-to-face visits through the 24/7 telehealth videoconferencing platform, where they have been able to participate in individual and couples psychotherapy from the comfort of their homes.

In August 2022, CAMC Cancer Center offered a survivorship series in partnership with Living Beyond Breast Cancer. These in-person seminars included topics related to coping with early menopause, managing long-term side effects, sexuality and breast cancer, and self-care after breast cancer.

Preventing cancer and identifying cancer in the early stages encompass goals for the CARE Team. CAMC is working with the American Cancer Society through the Hospitals System Capacity Building Communities of Practice. The overall initiative is to incorporate cancer prevention and screening interventions into the hospital systems mission. The goal is to improve population health outcomes in the next five years in relation to Colorectal Screening in West Virginia by providing evidence-based practice on prevention and screening with



colorectal screening. Currently, CAMC's Primary Care Offices, Family Medicine Center and other offices involved in CAMC (WVHN) are promoting FLU/FIT (colon cancer screening options) as well.

The CARE Team also participated in The CAMC Foundation's Annual Run for Your Life event in June 2022. This event benefits colorectal cancer awareness and screening initiatives to help people who cannot otherwise afford critical screening procedures. The event had 419 total registrations and 310 total participants (132 runners/178 walkers), raising approximately \$113,000 for colon cancer screening initiatives. Educational materials were provided to participants with brochures related to Colon, Lung and Breast Cancer screenings.

In addition to providing support services for adults, the CAMC Cancer Center offers help for children. Gigi's Place is an area dedicated to the emotional and psychological well-being of children who have a loved one undergoing treatment or who have lost a parent to cancer. Counseling services are provided to children by a licensed child psychologist. Gigi's Place was

created in honor of a young mother who lost her battle with cancer.

Referrals to the CARE Team are multi-faceted. An initial visit with the oncologist also includes a visit with a CARE team member who completes an assessment of any potential barriers or stressors which may impede care and aids the patient in accessing resources. Patients also complete the Distress Thermometer, a screener to assess for distress related to various domains including practical and financial, emotional, spiritual, and physical concerns. High distress scores trigger a consultation with the appropriate CARE team member. Patients can also call or stop in at the Patient Resource Center and speak with someone.

To talk with someone from our CARE Team, please stop by the Patient Resource Center, call **(304) 388-8690**.

For more information about Gigi's Place, call **(304) 388-9690** or visit [camc.org/CancerCenter](http://camc.org/CancerCenter).



# In their own words:

**“I wake up every day and try to figure out how this is happening FOR me instead of TO me.”**



*My name is April Bostic.*

*I am a Christian, I am a wife, mother, daughter, sister and in March 2021, I became statistically 1 of 8 women diagnosed with breast cancer.*

*As a mammography technologist I fully understood the importance of annual mammograms. My best friend and I would make it a yearly event. We started with the necessary “smash” and then we would have a fabulous girl’s night out.*

*In 2021, we delayed our screenings because of the COVID vaccines, and she kept pressing me to get us scheduled. The annual event unfolded as it normally does until the next day rendered a Category 5 finding on my mammogram.*

*The CAMC Breast Center team swiftly took me under their wing and a whirlwind of procedures and testing occurred next. I was quickly scheduled for a biopsy that delivered a result of invasive ductal carcinoma on April 7, 2021.*

*Getting that call, no matter what you have imagined in your head, feels like a very hard punch to the gut indeed. Once again, the Breast Center staff set me up with a navigator for gene testing and all the other care and treatment that would follow. By Nov. 1, 2021, I had completed a lumpectomy and node removal, port placement, four rounds of chemo and 32 radiation treatments.*

*A journey that was prompted by disease led me to meet some of the most amazing people in our health care team, as well as patients who are experiencing the same journey with different treatments and surgeries. I cannot stress enough the importance of incorporating therapy for keeping a check on your mental status as it takes a hit for sure.*

*At the CAMC Cancer Center, I was able to schedule therapy the day before chemo as I was waiting for labs to come back and give us the green light for treatment. Somehow the cleansing act of spilling out all my fear, anger, rage and sadness to a complete stranger helped set the stage for a more relaxed and calm treatment space.*

*The overall collaboration of all the departments involved, really gave me a sense of security and appreciation. Cancer is a club that no one wants to join, but it has provided me with an amazing perspective of life. I wake up every day and try to figure out how this is happening FOR me instead of TO me. I like to think of myself as an advocate now for early detection, and more so, for how women can take care of themselves better overall in this busy life we live.*

*We don’t know why cancer randomly chooses a person, but we can most definitely make a choice about the things that we put in and on our bodies. We can educate ourselves on overall cancer prevention such as incorporating movement into your daily routine, as well as adding fruits and vegetables to all your meals and snacks. We can be kinder to our bodies by getting plenty of sleep and developing healthy techniques to combat stress. There are plenty of things we CAN control to decrease cancer risk. It is time we stop waiting for the bad news to make ourselves a priority.*





# CAMC Breast Center

The CAMC Breast Center takes a multifaceted approach to breast health, from routine screenings and diagnosis to innovative treatments and supportive care. It was the first of its kind in the state and the first to be fully accredited by the American College of Surgeons.

The Breast Center team treats the largest number of patients with breast cancer in West Virginia. Board certified surgeons specialize in all aspects of breast health. Experienced radiologists use the latest, most advanced technologies to diagnose a full range of breast diseases.

Experienced nurses and technologists working with you for better health and outcomes. Navigators working behind the scenes to help guide, manage and enhance your experience.

The CAMC Breast Center is a comprehensive system that cares for patients from beginning to end rapidly, using the skills of a multidisciplinary team of experts on a routine basis.

## The Breast Center's services include:

- 3-D mammography (known as digital tomosynthesis)
- Digital 2D mammography
- Breast ultrasound
- Minimally-invasive breast biopsies
- Rapid diagnostic program and rapid consultation program
- Multidisciplinary care from breast specialists, surgeons, medical and radiation oncologists
- Nurse navigators to provide care coordination
- Bone density screenings
- Pelvic ultrasounds
- Genetic risk assessment, education and testing

The Breast Center is located on the third floor of the CAMC Cancer Center at 3415 MacCorkle Ave., SE in Charleston. Office hours are Monday through Friday from 7 a.m. to 4:30 p.m. Please schedule an appointment for any of our imaging services by calling **(304) 388-9677**.



For referrals/appointments to see a breast surgeon regarding breast health issues, please call **(304) 388-2872**. For more information, call **(304) 388-2861** or visit [camc.org/BreastCenter](http://camc.org/BreastCenter).

### Breast Cancer Multidisciplinary Clinic

When you're diagnosed with breast cancer, you need quick and convenient access to skilled and experienced specialists who will help guide you through your diagnosis, treatment and recovery.

At CAMC, our breast cancer multidisciplinary clinic was designed to provide patients with comprehensive, coordinated care from a team of experts who work together to plan and implement your treatment.

In a single-day visit, you will be seen and evaluated by multiple specialists involved in your care. This team-approach allows for efficient, collaborative treatment and ensures a personalized plan of care specific to your type of cancer and individual needs.

Your team of physicians can include your breast surgeon, medical oncologist, radiation oncologist, plastic surgeon and your nurse navigators. Working with you and your family, we will help you navigate the course of your treatment and recovery – every step of the way.

The clinic operates out of the Breast Center located on the third floor of the CAMC Cancer Center. If you receive a positive breast biopsy, talk to your doctor about a referral to the CAMC Breast Cancer Multidisciplinary Clinic. For more information, call **(304) 388-2872**.





## CAMC lung cancer screening saves lives

Lung cancer is the most commonly diagnosed cancer among West Virginia residents. It is also the number one cancer killer in the country, causing more deaths than breast, colon and prostate cancers combined.

That's why physicians and staff with the CAMC Lung Cancer Screening Program are working with patients and referring providers to detect lung cancer early – when it's most treatable.

“One of the big problems with lung cancer is that it often doesn't cause any symptoms at all,” said Nathan Kister, MD, cardiothoracic surgery. “This screening has really revolutionized our treatment because it has allowed us to get to patients earlier who often don't know that they have lung cancer.”

Individuals between the ages of 50-80 who meet specific criteria for the program will be screened and follow up with a multidisciplinary team of experts who specialize in lung nodules.

“The lung cancer screening itself is a very easy test to do,” said Rayan Ihle, MD, pulmonary disease and critical care medicine. “It's a low-dose CT scan that doesn't require dye or an IV and only takes about 15 minutes to complete. As a low-dose CT scan, it means that it's about a tenth of the radiation that a normal CT scan has.”

When lung cancer is found early with a low-dose lung CT scan, patients can more often undergo minimally-invasive surgery and have less lung tissue removed.

A physician's referral is required for the lung cancer screening. To start the referral process, call CAMC Pulmonology at **(304) 388-2303** or visit [camc.org/services/lung-cancer-care](http://camc.org/services/lung-cancer-care) for more information.



# Children's Cancer Center

The CAMC Children's Cancer Center is accredited by the Children's Oncology Group (COG), a National Cancer Institute supported clinical trials group, which is the world's largest organization devoted exclusively to childhood and adolescent cancer research.

Comprehensive care is provided by a multidisciplinary team from CAMC and WVU Physicians of Charleston, which includes pediatric hematology/oncology physicians, a nurse practitioner, an infusion center nurse, psychologist, chaplain, child life specialist, dietitian, social worker, physical therapist, and a clinical research associate.

The Center provides infusions of chemotherapy and other drugs to hematology/oncology patients, as well as infusion services for patients with other illnesses. These include blood or genetic disorders, gastrointestinal, immune, and endocrine disorders.

There are two pediatric oncologists working in the Children's Cancer Center.

**Mohamad H. Badawi, MD**, specializes in pediatrics and pediatric hematology/oncology. He completed a pediatrics residency at CAMC and a pediatric hematology/oncology fellowship at Cohen Children's Medical Center of New York. Dr. Badawi is certified by the American Board of Pediatrics in Pediatrics and in the hematology oncology subspecialty. He is currently the primary investigator for the Children's Oncology Group in Charleston, WV.

**Sana Farooki, MD**, specializes in pediatric hematology/oncology. She completed a combined internal medicine-pediatrics residency at CAMC and a pediatric hematology/oncology fellowship at Children's Mercy Hospital and a pediatric Bone Marrow Transplant and Cellular Therapy



fellowship from Memorial Sloan Kettering, New York. Dr. Farooki is certified by the American Board of Pediatrics in Pediatrics with a subspecialty in pediatric hematology/oncology. She is also certified by the American Board of Internal Medicine.

**Donna Pauley**, BA CCRP, is the clinical research coordinator and Children's Oncology Group (COG)-Lead CRA. She brings more than 20 years of experience to the CAMC Children's Cancer Center. The institutional lead CRA assists the COG member site principal investigator (PI) in the implementation, communications, and oversight for COG research studies (protocols) according to regulatory and institutional requirements. The lead CRA acts as the primary point of contact for all aspects of member requirements, protocol coordination and management. Together, the PI and COG lead CRA are leaders whose responsibilities are diverse, in task, delegation and management regarding their COG institutional member site.

**Melissa Appleton**, RN, is a pediatric certified chemotherapy nurse with more than 20 years' nursing experience and 12 years dedicated for our pediatric cancer patients. Winner of CAMC's Heart and Soul recognition.

**Natalie Alltop**, RN, is a pediatric certified chemotherapy nurse, with more than 15 years' experience, has recently joined our team.

**Linda Ankeney**, LPN with more than 15 years' experience with our pediatric cancer patients.

**Summer Ray**, CLS, Women and Children's Hospital child life specialist, holds a degree in child development and family studies. Child life provides patients with developmentally appropriate education on their oncology diagnosis and helps to prepare and support patients through procedures and visits to the center. Child Life normalizes the hospital environment and helps promote positive coping through a patient's treatment journey.

**Kayla Dew**, MSW, LGSW is the social worker for the children's cancer center. She does an initial psychosocial assessment with the family and offers support by providing financial applications to assist the family while in treatment.

**Jennifer Storer Hughes**, PhD, is a licensed clinical psychologist specializing in child and adolescent psychology. She completed her doctoral training at Ohio University and her residency at CAMC. She is part of the residency clinical training faculty of West Virginia University

School of Medicine and sees outpatients at the CAMC Family Resource Center.

Services provided by this center accommodate those pediatric patients receiving care in which inpatient hospitalization is not required. Care is based on a family-centered approach.

The CAMC Children's Cancer Center started a dedicated cancer survivorship clinic. An oncologist, psychologist, dietitian, and other pediatric subspecialties are available on the third Friday of every month to help our cancer survivors.

Infusion Services at the Children's Cancer Center include:

- IV infusions of chemotherapy
- Blood product transfusions
- Administration of immune disorder solutions
- Enzyme replacement therapy
- IV antibiotic therapy
- Serial laboratory work
- Intramuscular (IM) injections
- Management of centrally placed lines/ports

The Children's Cancer Center has state of the art equipment with each individual patient room providing comfortable recliners and a welcoming atmosphere offering games, televisions, DVDs and a playroom for each child battling cancer or other diseases to have the experience of a home environment during their treatment. All the patient rooms are private which allows for added safety and comfort for those who are sick or are immune compromised. Our goal is to provide family centered care.

#### **Publication in 2022:**

Rehman, R., Solorzano, G., Heist, R., Thompson, S., Badawi, M (2022). Predictors of Suboptimal Follow Up in Pediatric Cancer Survivors. *Oncology Journal*. [www.doi.org/10.46883/2022.25920964](https://doi.org/10.46883/2022.25920964)



## 2021 Center for Cancer Research Status Report

CAMC Institute for Academic Medicine's Center for Cancer Research continues to provide local access to clinically relevant clinical trials, diagnostics and treatments to the people of West Virginia. We have an active clinical trial protocol list that covers a broad range of malignancies. We collaborate with major cancer institutions such as the National Institute of Health/ NCI, Johns Hopkins, Cleveland Clinic, Duke, Ohio State and Sloan Kettering Cancer Centers.

This year we have worked with CAMC Clinical Trials Center on several projects including studies that involve blood and tissue collection for the development of new diagnostic assays for cancer patients.

We welcomed Dr. Amir Kamran to serve as the director of the Hematology and Oncology Fellowship program. He has extensive research experience, and we anticipate his participation will enhance our potential.

Also new to our environment is Dr. Doug Knutson, chief academic officer for CAMC's Institute for Academic Medicine.

Research is a key element in the American College of Surgeons Cancer Center accreditation program. The Center for Cancer Research has consistently met or exceeded the accrual goals required for the Academic Comprehensive Cancer Program with the cooperation of the CAMC Clinical Trials Center and the CAMC Outcomes Research departments.

Working in conjunction with the Outcomes Research department, the following projects have been ongoing and or published or presented:

- ***Drinnon K, Puckett Y. Case Report of Surgical Management of Duodenal Perforation Secondary to Stent in a Patient With Gastric Outlet Obstruction Due to a Rare Neuroendocrine Adenocarcinoma of Duodenum. Cureus 2021; 13(11):e19562. PMID: 34926040***
- ***Ihle R. Lung cancer screening in a pandemic. ACS Lung Cancer Screening Forum Conference, virtual, 11/04/2021***

- **Tobin E, Oliver C.** Rare presentation of breast implant associated with anaplastic large cell lymphoma: A case study. *Plastic Surgery The Meeting, Atlanta GA, 10/30/2021*
- **Shockley K, Chillag S.** Varicella Zoster Encephalitis in a CLL Patient Undergoing Chemotherapy. *WV State ACP, Virtual, 11/05/2021*
- **Deipolyi A.** Immune activation markers and response to radioembolization of breast cancer liver metastasis: A pilot study (Abstract of the Year Awardee). *Society of Interventional Radiology Annual Scientific Meeting, Boston MA, 06/15/2022*
- **Hale, Nathan.** Depression in bladder cancer patients. *AUA 2022, New Orleans, LA, 05/13/2022*
- **Fridman B.** Struggle for Screening: COVID-19's Impact on Lung Cancer in an Underserved Community. *National ACP, Chicago, IL, 04/28/2022*
- **Nagaraju S, Robinson T, Samy K., Goggins W, Koniaris L.** Bilateral renal autotransplantation for retroperitoneal liposarcoma. *American Transplant Congress, Boston, MA, 06/04/2022*
- **Siva N., Siva N., Koirala M., Raiker R., Waris S., Pakhchanian H., Puckett Y.** Evaluation of trends in breast cancer-related content on TikTok. *ASCO, Chicago, IL., 06/03/2022*
- **Du W, Sirbu C, Lucas BD Jr, Jubelirer SJ, Khalid A, Mei L** A Retrospective Study of Brain Metastases From Solid Malignancies: The Effect of Immune Checkpoint Inhibitors. *L.Front Oncol. 2021 Aug 27*
- **Wei Du, Oscar Cinco Estalilla, Tomislav Mijo Jelic , John David Hayes, Edward Charles Tobin, Lin Mei, Bone marrow involvement by breast implant-associated anaplastic large cell lymphoma Affiliations PMID: 35834406**
- **Fraint E, Farooki S S, Klein E, et al.** Durable Engraftment and Excellent Overall Survival After CD34-Selected Peripheral Blood Stem Cell Boost in Pediatric Patients With Poor Graft Function Following Allogeneic Stem Cell Transplantation [published online ahead of print, 2022 Oct 6]. *Transplant Cell Ther. 2022;S2666-6367(22)01666-9. doi:10.1016/j.jtct.2022.09.027*
- **Merry-Sperry AD, Alqudah E, Magner A, Thompson S, Smith P, Meyer A, Badawi M.** Comparison of EMLA Cream versus Lidocaine Injection for Lumbar Puncture Pain Control in Pediatric Oncology Patients. *Avicenna Journal of Medicine. Accepted for publication on 8/18/2022.*
- **Deipolyi AR, Johnson CB, Riedl CC, et al.** Prospective Evaluation of Immune Activation Associated with Response to Radioembolization Assessed with PET/CT in Women with Breast Cancer Liver Metastasis [published online ahead of print, 2022 Aug 16]. *Radiology. 2022;220158. doi:10.1148/radiol.220158*
- **Khanna S, Puckett Y.** Mammographically Occult Invasive Lobular Carcinoma With Intradermal Invasion. *Cureus. 2022;14(7):e27358. Published 2022 Jul 27. doi:10.7759/cureus.27358*
- **Knotts C, Van Horn A, Orminski K, et al.** Clinical and Socioeconomic Factors that Predict Non-completion of Adjuvant Chemotherapy for Colorectal Cancer in a Rural Cancer Center [published online ahead of print, 2022 Jan 4]. *Am Surg. 2022;31348211054708. doi:10.1177/00031348211054708*
- **Rehman R, Solorzano G, Heist R, Thompson SN, Badawi M.** Predictors of Poor Adherence to Follow-up Care in Survivors of Childhood Cancer. *Oncology (Williston Park). 2022;36(6):350-354. doi:10.46883/2022.25920964*
- **Kunin H, Wijetunga NA, Erinjeri JP, Noy A, Deipolyi AR.** Predictors of Major Hemorrhage After Spleen Core Biopsy in Cancer Patients. *J Vasc Interv Radiol. 2022;33(9):1055-1060.e1. doi:10.1016/j.jvir.2022.06.002*
- **Shameem A, Jubelirer SJ, Singh S, Annie F, Welch CA.** Stage IB-III A Non-Small Cell Lung Cancer: Is Adjuvant Chemotherapy Worthwhile? *ASCO Quality Care Symposium. DOI: 10.1200/JCO.2022.40.28\_suppl.029 Journal of Clinical Oncology 40, no. 28\_suppl (October 01, 2022)29-29.*

Also within our oncology research program is in vitro research investigating activity of compounds against various tumors. An example is the ongoing investigation: Impact and mechanism of Nigella sativa Compounds on Anti-Tumor Immune Response lead by Wei Du, MD, PhD. Nigella sativa seeds, also known as black seed oil, has been used world-wide for culinary and medical purposes for over 2000 years. The active compound thymoquinone (TQ) has been shown to have anti-tumor effect in various cancers.

The first phase of the project was to investigate the anti-tumor immune response stimulated by *Nigella sativa* compounds. Using a cell culture system, we have found *Nigella sativa* compound TQ could temporarily increase T cell activation and proliferation, we have found that treatment with TQ during activation could significantly enhance T cell-mediated anti-tumor activity. We are still working on RNA sequencing and data analysis to determine alterations of gene expression at the RNA level of after treatment of *Nigella sativa* compound.

The second phase of the project, focuses on the molecular mechanism of TQ treatment on T cell mediated anti-tumor effect, signaling pathways, as well as various co-stimulatory molecule expression. We expect to find the mechanism involved in the TQ-induced samples to show enhanced anti-tumor effect.

We thank our investigators and staff for their hard work on these important cancer related projects,

Clinical trials have the potential for positively changing the treatment paradigm of cancer patients and we are always looking forward to the opportunity to participate in this process.

CAMC Center for Cancer Research is committed to providing the people of WV access to state-of-the-art clinical trials, our mission is to continue to improve the treatment of cancer through the clinical trial process.

Augusta Kosowicz, PA-C, CCRC

Heather Thaxton, RN, OCN

Donna Pauley, BA, CCRA

Megan Ware, BA, CCRA

Jongie Shelton, BA

## CAMC hires first director for new fellowship program



**Amir S. Kamran**, MD, MS, began work in July 2022 as CAMC's first program director for its hematology/medical oncology fellowship program.

The hematology/oncology fellowship is a three-year program and offers trainees dual-board eligibility in hematology and oncology in accordance with the American Board of

Internal Medicine standards. Our goal is to accept four fellows per year with the first ones starting in July 2024.

"A lot of residents and fellows practice where they have been trained," Kamran said. "The cancer rate is high in our community, but there are not a lot of medical oncologists to provide care."

More medical oncology and hematology faculty are being hired to care for patients and build the fellowship program.

Kamran joined the CAMC medical staff specializing in hematology/oncology. He completed an internal medicine residency at University of Alabama at Huntsville and a hematology/oncology fellowship at Allegheny General Hospital. He is certified by the American Board of Internal Medicine, Hematology and Medical Oncology. He's worked at UPMC in Pittsburgh and Ruby Memorial in Morgantown.

"Oncology care is personal, Kamran said. "We want to train fellows to provide personalized care to each patient while working with the large team of specialists we have here."

Kamran is busy taking care of patients and building the fellowship program.

"It's an opportunity that doesn't happen often," Kamran said. "It's a challenge, but it's also very motivating. CAMC has all of the resources from diagnostic to testing to treatment. I believe we can develop a very good fellowship program with a goal of producing clinicians who are competent in the management of patients with complex hematologic and oncologic diseases."



# Inpatient Oncology Unit

The inpatient oncology unit at CAMC Memorial Hospital is designed for the unique needs of our oncology population.

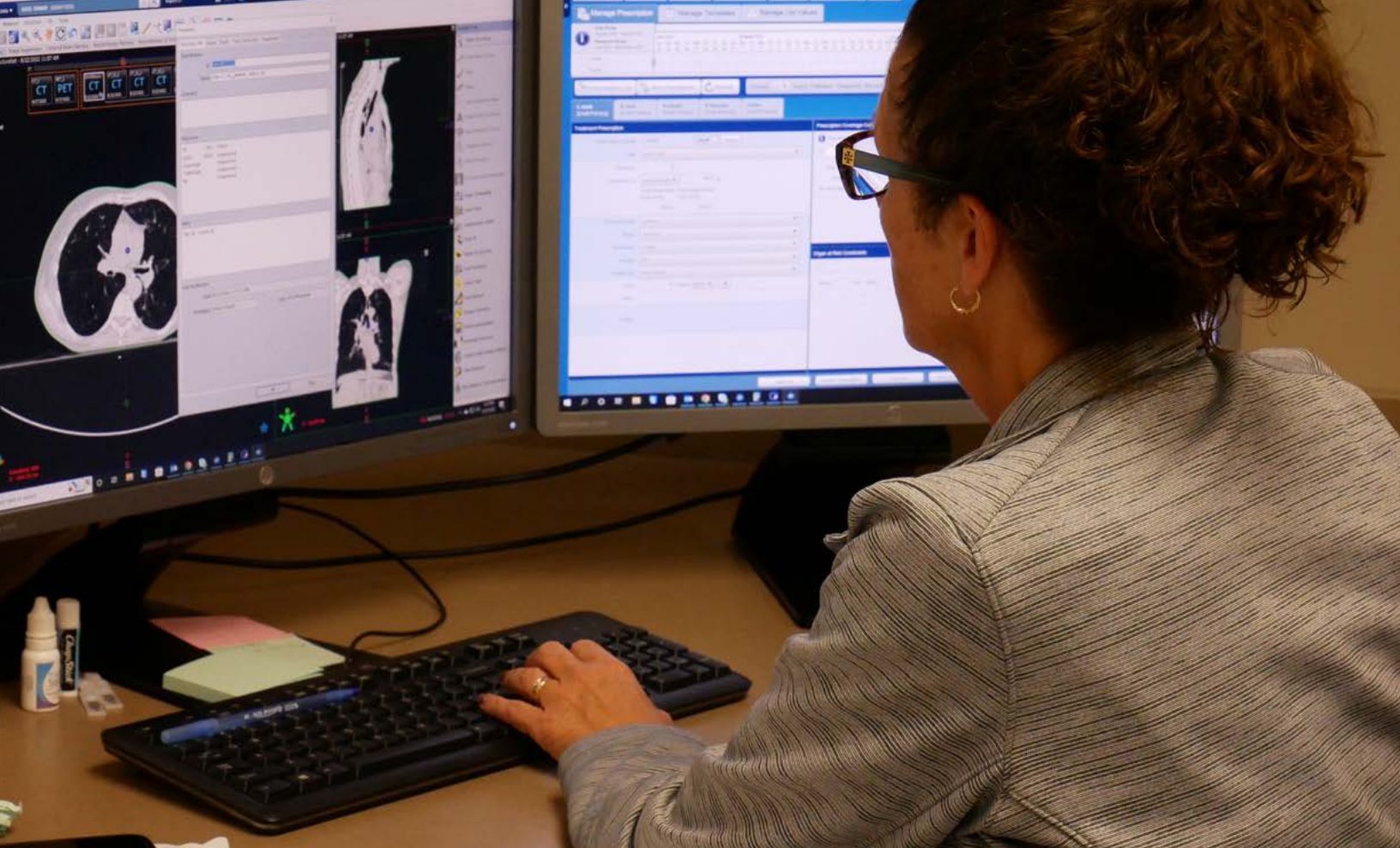
With 29 private rooms, this provides privacy and the convenience for participation of designated care partner to be actively involved in patient's plan of care.

The interdisciplinary care team works together to evaluate and direct the optimal course for the patients and their transition to home or ancillary facilities, with focus on symptom management and necessary in-home services that are available.

We recognize the importance of healing of the spirit and have provided for additional experiences such as arts and crafts, pet therapy and music therapy. We have a piano placed on our unit that anyone is welcome to use.

We strive to provide a healing atmosphere while assisting patients through a stressful and challenging time of their life.





# Radiation oncology services



Radiation oncology services at Charleston Area Medical Center, a department of CAMC in partnership with Akumin/Alliance Oncology, the nationwide leader in radiation oncology and radiosurgery programs, offers current and advanced radiation therapy treatments, provided by an experienced and caring team which includes board-certified radiation oncologists, nurse practitioners, medical physicists, dosimetrists, radiation therapists, radiation oncology nurses, support staff, a physician services representative and a site administrator.

The team at radiation oncology services at CAMC treats early-stage, recurring, and advanced cancer using many radiation therapy techniques, which has been used for more than a century to treat cancer. Radiation therapy is performed as an outpatient procedure, with little to no recovery time. Treatments are quick and painless, with minimal to no side effects, and most patients return to their normal daily routines following each treatment session. Radiation therapy may be an option for patients with medically inoperable or surgically complex tumors or those who seek an alternative to surgery or conventional chemotherapy, patients with recurrent cancer or metastatic tumors that have spread to other areas of the body from the main tumor site, and those who have a high risk of developing complications after surgery.



CAMC Radiation Oncology Services offers several types of state-of-the-art radiation therapy techniques designed to treat all forms and stages of cancer and some noncancerous conditions, including:

- Pluvicto (lutetium Lu 177 vipivotide tetraxetan), a new treatment for metastatic prostate-specific membrane antigen-positive metastatic castration-resistant prostate cancer (PSMA-positive mCRPC), which has spread to other parts of the body and has been resistant to other treatments.
- Stereotactic radiosurgery and body radiation therapy (SRS/SBRT)
- Intensity modulated radiation therapy (IMRT)
- 3-D conformal therapy
- 4D (four-dimension) CT-based treatment planning
- Image guided radiation therapy (IGRT)
- High Dose Rate Brachytherapy (HDR)

Radiation oncology services at CAMC provides individualized, compassionate cancer care using today's most advanced radiation therapies. We provide state-of-the art cancer fighting technology in a location close to home for the cancer patients in our communities. In addition to offering the latest technology, radiation oncology services patient satisfaction surveys yielded exceptionally high marks in the past year with an average 96 percent of patients surveyed reporting a positive experience with their care.

### Pediatric Radiation Therapy

Radiation treatment is often an integral part of optimal treatment for cancers in the pediatric population. Depending on each

child's specific diagnosis, radiation therapy may be used as the primary form of treatment or may be used before or after other types of treatment such as surgery or chemotherapy. Radiation oncology services at CAMC are on the leading edge in offering state-of-the-art radiation therapy options for childhood cancer. The pediatric radiation therapy program builds upon CAMC's well established and experienced pediatric oncology department. Along with CAMC pediatric oncologists and their staff, the radiation oncologists, medical physicists, and other scientists actively participate in research through the national Children's Oncology Group.

### Radiation oncology research and education

Radiation oncology services at CAMC is dedicated to providing patients with the most up-to-date radiation treatment options. We are affiliated with the internationally renowned Radiation Therapy Oncology Group (RTOG) and offer enrollment in RTOG clinical trials for qualifying patients. Through this affiliation, multiple clinical trials for patients with higher risk prostate cancers have recently been made available for enrollment. The radiation oncologists also participate as assistant clinical professors for the West Virginia University School of Medicine and offer elective educational rotations for medical students as well as for CAMC training resident doctors interested in oncology. The multidisciplinary approach to cancer care, coupled with the use of cutting edge technologies and dedication to research and education, help provide better outcomes and experiences for patients.





# CAMC Gastroenterology

We use a patient-centered approach to diagnose and manage gastrointestinal malignancies and associated gastrointestinal conditions. Our advanced endoscopy unit is equipped with cutting-edge technology to provide our patients with the latest diagnostic and therapeutic options, and the best diagnostic approaches are complemented by a broad range of services to improve your overall health and promote wellness.

We provide a wide range of endoscopic procedures including endoscopic ultrasound for diagnosis and tissue acquisition for confirmation of pancreatobiliary cancers in least invasive and safe manner. Our team is capable to debulking of bile duct cancers using ablation techniques to enhance the latency of ducts in progressive malignancies. Close collaboration with pathology department has helped us minimize the wait time for results of biopsies obtained from high risk lesions suspicious for cancer. We practice a wellness-based approach to proper digestive health and improved quality of life. Our team is not only capable of diagnosing early stage esophageal and gastric caners but

also offers organ preserving endoscopic treatment options for precancerous and early stage cancers throughout the GI tract. We provide our patients with a close follow up to ensure their well-being and cancer free survival.

We offer endoscopic resection of large polyps of colon which helps prevent progression to cancer, without undergoing major surgical intervention. We have the opportunity to discuss our case in Tumor Board conference to review many of our diagnostic and treatment plans in concert with a radiologist, surgical oncologist, radiation oncologist, GI pathologist, as well as other specialties as needed.

For patients with advanced stage cancers, our team offers endoluminal stenting of biliary tree, esophagus, duodenum and colon. We have capabilities to perform endoscopic gastrojejunostomy for patient with malignancy associated bowel obstruction. Percutaneous endoscopic gastrostomy and jejunostomy tube placement is offered to patients with limitations of oral intake to assist them with their nutritional requirements.



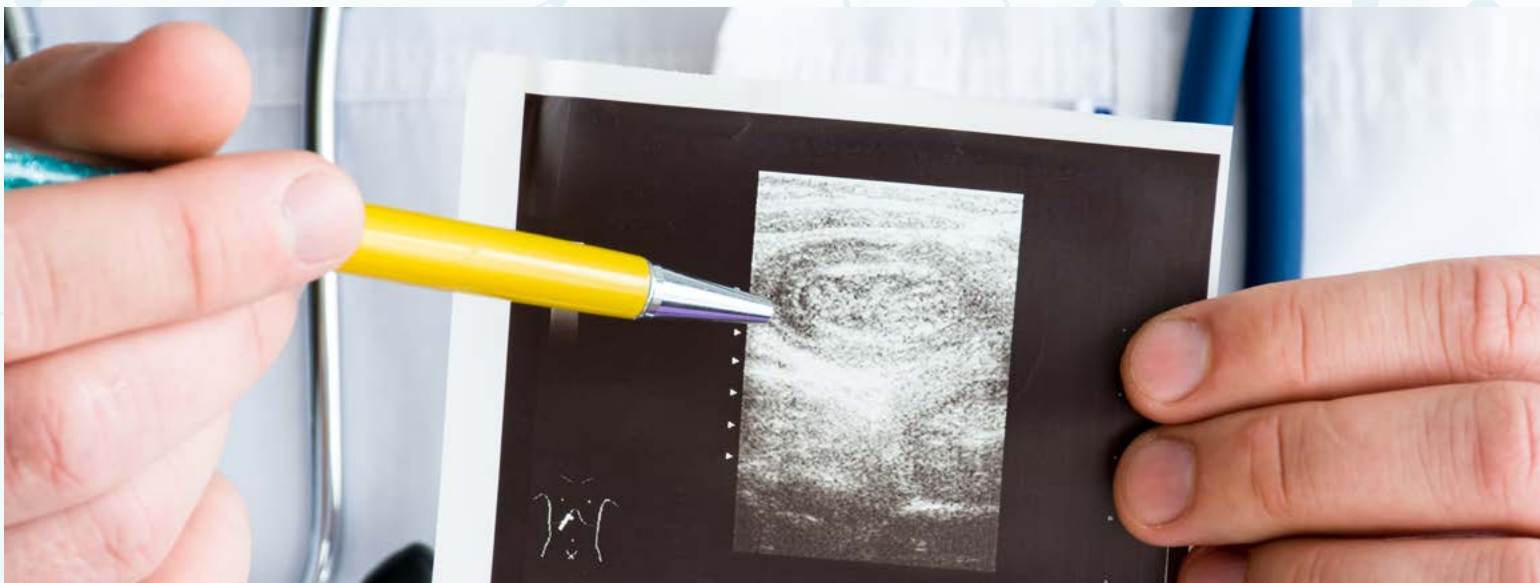
In addition to consultation in GI related cancer diagnosis and their management, we provide screenings and other endoscopic procedures, for patients with higher risk of developing cancer due to genetic predisposition or other reasons. We help our pancreaticobiliary cancer patients by performing pain control procedures such as celiac nerve plexus block and neurolysis. We can also perform endoscopic ultrasound guided liver biopsies for evaluation of liver diseases.

Our center provides a calming environment where patients will be heard and not rushed through their office visit or endoscopic procedures. We answer their questions and engage our patients as an active participant in their health care. Patient education is an integral part of our program. Our service continues to grow and draws patients from the tri-state area. This is one of the busiest and most skilled advanced endoscopy centers in the region.

#### Meet our Providers:

Nadeem Anwar, MD  
Muhammad Bashir, MD  
Emily Battle, MD  
Cheryl Cox, MD  
Ebubekir Daglilar MD  
Sara Iqbal, MD  
Vishnu Naravadi, MD  
Kamran Zahid, MD

Contact our office for referrals at **(304) 351-1700**. CAMC Gastroenterology, is located at 2930 Chesterfield Ave. in Charleston.





# Plastic and reconstructive surgery

CAMC Plastic Surgery is one of the largest divisions of its kind in the state of West Virginia. We provide our patients with the most up-to-date and highest quality of care. We see more than 7,000 patients a year in our outpatient clinics and perform more than 1,600 major operations annually.

Our specialists provide a broad range of reconstructive services related to oncological care including breast reconstruction, post-colorectal and gynecologic reconstruction, and soft tissue reconstruction after resection of malignancies, e.g., melanoma, sarcoma and other skin cancers. We have many well-trained and experienced surgeons able to provide the patients of West Virginia the best reconstruction options available.

The goal of reconstruction is to return the patient to their pre-cancer form and provide them with a sense of well-being and confidence.

## Breast reconstruction

Reconstructive plastic surgery for breast cancer is performed to replace skin, breast tissue, and the nipple removed during mastectomy. Factors contributing to the amount of tissue removed include the size, and location of the original tumor, and its proximity to the armpit (called the axilla), where the lymph glands are located.

Options for reconstruction include both autologous (i.e., the patient's own tissue) tissue flap transfer and/or prosthetic implant-based reconstruction with the goal to restore symmetry between the two breasts.

## Is reconstruction right for me?

The choice that is right for one woman won't necessarily be right for another. That's because the long-term prospects of living without a breast or part of a breast affect every woman differently.

After your mastectomy, you might choose to wear external breast forms or pads or make no attempt to alter your appearance. On the other hand, you might choose breast reconstruction, using either breast implants or your own tissue.

Improvements in plastic surgery techniques offer better results today than ever before and make breast reconstruction an option for most women undergoing a mastectomy.

Many women believe that breast reconstruction not only improves physical appearance, but many scientific studies have demonstrated psychological benefits as well. It's thought to promote a sense of wellness for the woman and her family.

The decision, however, is a personal one and is often not easy to make.

### Is this considered cosmetic surgery?

Restoring the breast is **NOT** considered cosmetic surgery. Operations performed to restore anatomy and symmetry, like breast reconstruction after a mastectomy, are considered reconstructive surgery.

### When is the best time to have reconstruction?

Timing of reconstructive surgery is based on the woman's desires, other medical conditions and cancer treatment. Whenever possible, plastic surgeons encourage women to begin breast reconstruction at the same time they are having their mastectomy. For many women, immediate reconstruction reduces the trauma of having a breast removed, as well as the expense and discomfort of undergoing two major operations.

It is also possible to perform the reconstruction months or years after a mastectomy. If chemotherapy or radiation treatments have been started, reconstruction may need to be postponed until those treatments are completed.

The surgical team can help you decide the best timing and options for reconstruction.

### Does insurance cover breast reconstruction?

**Yes.** Federal law has mandated that insurance companies cover patients undergoing reconstructive breast cancer surgery or after risk reducing breast surgery (lumpectomy). Since breast reconstruction after mastectomy is part of the treatment of a disease and not cosmetic surgery, according to the American Medical Association, health insurance companies are required to pay the cost of any reconstruction surgery or any surgery on the contralateral breast such as breast lift, reduction or augmentation if needed to achieve symmetry.

### Meet our Providers:

J. David Hayes, MD

Justin McKinney, DO

William A. Stewart, MD

J. Chase Burns, MD

Kari Hunter, PA-C – Received her master's degree in Physician Assistant Studies from the University of Charleston

Nathaniel Rainey, PA-C – Received his bachelor's degree in Exercise Science from Marshall University, master's degree in Physician Assistant Studies from Alderson Broaddus University

Lindsay Stahlman APRN-CNP – Received her bachelor's degree in nursing from the University of Charleston and her family nurse practitioner degree from the University of Cincinnati

Mackenzie Summers received her master's degree in Physician Assistant Studies from the University of Kentucky.

Our providers are available and happy to meet with you to discuss any questions or concerns you might have regarding reconstructive surgery. Contact our office for an appointment at **(304) 388-1930**.





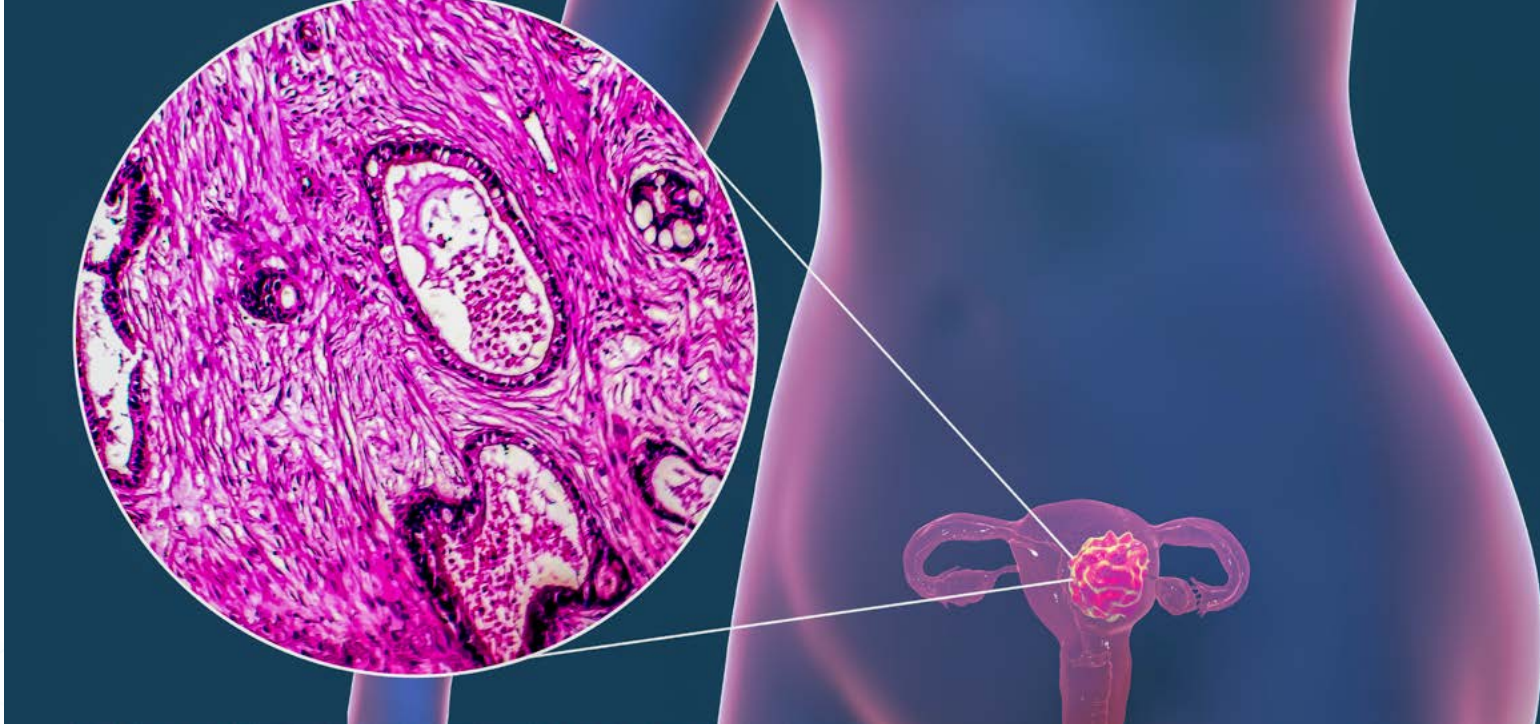
# Gynecologic Oncology

CAMC Gynecologic Oncology provides a patient and family centered approach to treating gynecologic malignancies such as ovarian, uterine, cervical and vulvar/vaginal cancers. We also manage many complex benign gynecologic conditions. Our goal is to provide the highest quality cancer care for gynecologic malignancies to patients in southern West Virginia and the surrounding communities. This includes access to both national cooperative groups and industry sponsored clinical trials. We also offer the most up to date minimally invasive and robotic surgical techniques available.

Gynecologic oncology is a small field with only about 50 new graduates a year. We are lucky to have two full time gynecologic oncologists and a nurse practitioner on staff. Our service continues to grow and draws patients from the tri-state area. This is one of the busiest and most experienced gynecologic oncology departments in the state. A gynecologic oncologist is an obstetrician/gynecologist who completed additional training to specialize in the diagnosis and treatment of women with cancer of the reproductive organs. This includes cancer of the ovary, uterus (endometrial), cervix, vagina, vulva, as well as trophoblastic disease, and complex benign gynecologic conditions.

We offer a twice monthly Gynecologic Oncology Tumor Board conference to review many of our cancer treatment plans in concert with a radiologist, radiation oncologist, gynecologic pathologist, as well as other specialties as needed.

Michael Schiano, MD, is an ABOG board certified gynecologic oncologist having nearly 30 years of clinical practice and research experience. Dr. Schiano completed his residency in obstetrics and gynecology at the San Antonio Uniformed Services Health Education Consortium and his gynecologic oncology fellowship at the University of Miami. Dr. Schiano is also an associate clinical professor for the WVU/CAMC Division School of Medicine and provides clinical/surgical training for resident physicians from the CAMC obstetric gynecology residency training program. Dr. Schiano and his team's



dedication to the education of future specialists and the multidisciplinary approach to female cancer care helps to insure optimal outcomes for women in our community.

Dr. Schiano has won many teaching awards and is particularly adept at complex gynecologic surgery both cancerous and benign. He is actively involved in many research projects. Dr. Schiano has multiple publications in peer reviewed medical journals. Dr. Schiano's experience is invaluable to our patients.

Stephen Bush II, MD, was born and raised in Charleston, West Virginia. He completed his undergraduate degree in biochemistry as well as medical school at West Virginia University. He completed a residency in obstetrics and gynecology as well as a pelvic surgery fellowship at the Medical College of Georgia. Dr. Bush completed a 3-year gynecologic oncology fellowship at the University of South Florida and Moffitt Cancer Center in Tampa, Florida. He is board certified in Obstetrics/Gynecology and Gynecologic Oncology.

Dr. Bush is the one of the few gynecologic oncologists in the region who offers the full spectrum of minimally invasive gynecologic surgery options including robotic surgery, laparoscopic surgery, single incisions laparoscopic surgery, vaginal surgery, reduced port techniques, VNOTES, and contained specimen extraction for large uteri.

Dr. Bush has more than 25 manuscripts published in peer-reviewed medical journals as well as numerous

presentations at national and international conferences. He was awarded the Gynecologic Oncology Group Foundation New Investigator Award in 2019. He has been an invited speaker on minimally invasive techniques and also trains other surgeons on advanced laparoscopic techniques. He was one of the first surgeons in the U.S. to perform a VNOTES hysterectomy. Dr. Bush is a highly skilled surgeon with expertise in both Robotic and Laparoscopic surgery for complex gynecological conditions including cancer. Dr. Bush is PI on numerous cooperative group clinical trials available at CAMC Cancer Center for ovarian cancer, endometrial cancer and cervical cancer patients.

Krista Ellison FNP, has significant experience caring for gynecologic oncology patients. Before graduating from nurse practitioner school she was a nurse on the gynecology floor at CAMC Women and Children's Hospital caring for many of our patients after surgery.

She also was a nurse in the gynecologic oncology office. This gives her a unique understanding of what our patients will experience during and after chemotherapy and surgery care for their needs.

Gynecologic Oncology surgery at CAMC is done at both CAMC Women and Children's Hospital and CAMC Memorial Hospital. Both offer the DaVinci Xi robotic platform. Chemotherapy is administered at the CAMC Cancer Center.



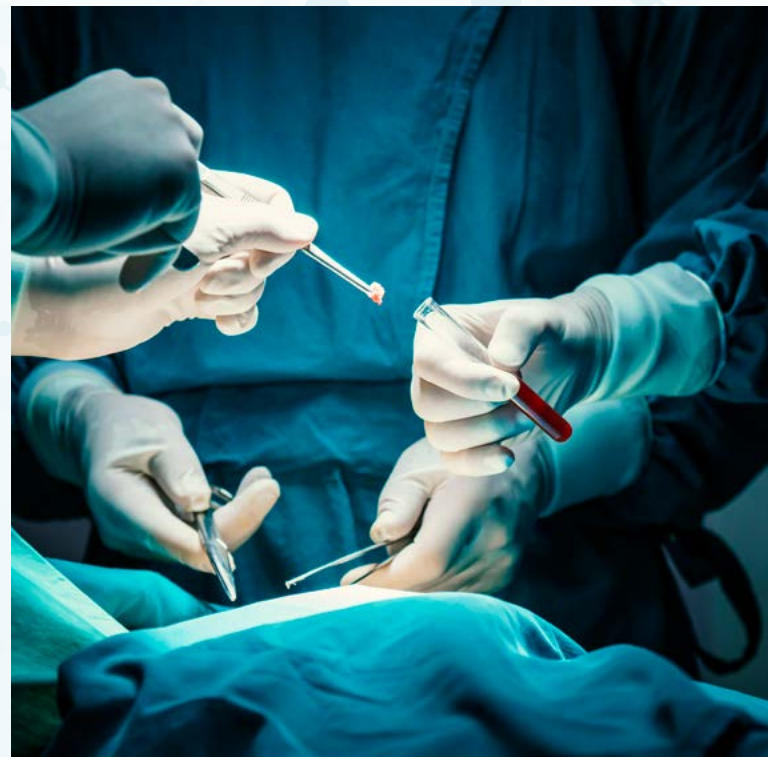
# Surgery

Charleston Area Medical Center is fortunate to have a very experienced and well-trained group of surgeons that can effectively treat the cancer patients of the region.

The section of oncologic surgery has advanced steadily over the years, supported by a long history of cutting-edge approaches to the treatment of solid tumors.

Every week, surgeons treat patients with tumors of the breast, prostate, kidney, thyroid, colon, rectum, gynecologic, pancreas, liver, skin (including melanoma), esophagus, stomach, lung and many others.

A unique feature of the surgeons at CAMC is the collaborative effort put forth to ensure that the best care is provided for each patient. It is not unusual to have surgeons from different specialties or expertise to assist each other on some of the more complicated procedures when a multidisciplinary approach is needed. This teamwork approach assures the patient of better recovery and outcomes.





# Pathology

CAMC department of pathology laboratory medicine is accredited by the College of American Pathologists. The department's 11 experienced pathologists actively participate in the cancer care at CAMC. The pathologists are all certified by the American Board of Pathology. Many of them hold subspecialty board certifications including hematopathology, neuropathology, cytopathology and transfusion medicine. Several pathologists have specialty training and particular areas of expertise and interest in fine-needle aspiration, gynecologic oncology, breast pathology, gastrointestinal pathology and bone and soft tissue (orthopedic) pathology.

The department offers in-house ancillary diagnostic modalities: flow cytometry, immunohistochemistry and automated quantitative image analysis. The department has telepathology capability for intraoperative consultation between all four CAMC hospitals.

Pathologists participate in conferences and tumor boards including: General and breast tumor board, urology tumor board, gynecology tumor board, gastrointestinal tumor board, thoracic tumor board, neuroscience rounds and orthopedic conference.





# Urology Services

The CAMC urology department continues to grow and expand urologic services in West Virginia. CAMC Urology remains a leader in urologic cancer care in this region with two fellowship-trained urologic oncologists who work closely with medical oncology and radiation oncology to provide state of the art medical care. We have an Oncology Fellow in training at UPMC with plans to join us in July 2023.

Our multidisciplinary approach to cancer care is coordinated through the CAMC Genitourinary Tumor Board consisting of medical oncology, pathology, radiation oncology, radiology, urology and other specialties. Bi-weekly the CAMC Genitourinary Tumor Board meets to create a multidisciplinary treatment plan for our patients to ensure best outcomes. All treatment is initially based on the National Comprehensive Cancer Network guidelines then adapted to the specific characteristic of each patient. Our multidisciplinary approach is facilitated by CAMC's standalone state-of-the-art cancer center.

Some of the most modern techniques and services are being offered at CAMC including:

## Prostate cancer

- Now offering Exosome DX urine screening and Prostate Health Index blood screening for prostate cancer
- Transperineal Prostate Needle Biopsy – a technique that virtually eliminates infection from prostate biopsy and improves prostate cancer detection
- 3 Tesla Multi-Parametric MRI of Prostate – most advanced imaging modality for localized prostate cancer detection
- MRI/US Fusion Transperineal Prostate Needle Biopsy – Uronav Software allowing direct biopsy of prostate cancer lesion seen on MRI making biopsy much more accurate
- Multiple Experts in Robotic (Minimally Invasive) Prostate Surgery with same day discharge available
- Stereotactic radiation is available which decreases the number of visits necessary to receive radiation treatment
- Space Oar, a gel developed to protect the intestine near the prostate for the patient receiving radiation therapy for their prostate cancer



- Genetic testing (Prolaris, Oncotype DX, Decipher) for improved management of prostate cancer
- Robust Active Surveillance program avoiding unnecessary treatment in low-risk prostate cancer
- Starting to build a High Intensity Focused Ultrasound (HIFU) program to limit toxicity while treating prostate cancer

### Bladder Cancer

- Cysview Bladder Cancer tool for diagnosis and treatment – technique using fluorescent technology to improve bladder cancer detection
- Use of Gemcitabine and Docetaxel as intravesical chemotherapy to reduce recurrence of certain bladder cancers – adjunct to current use of BCG, Mitomycin, Valrubicin
- Bladder Sparing Trimodal Therapy for Muscle Invasive Bladder Cancer
- Robotic (Minimally Invasive) Surgery for Muscle Invasive Bladder Cancer

### Kidney Cancer

- Minimally invasive robotic partial and radical nephrectomy including robotic retroperitoneal approach
- Firefly technology for immunofluorescence to improve surgery capabilities
- Intraoperative laparoscopic ultrasound technology for improved outcomes with robotic partial nephrectomies
- Advanced genetic counseling and testing for hereditary cancers
- Robust active surveillance program for small renal masses avoiding surgical risks in appropriate candidates
- Ablation therapy available by our trained Interventional Radiologist

Academically, CAMC has an ACGME accredited urology residency with 10 total residents working to make the patient experience better with more attention during their hospital stay. Multiple academic research projects and clinical trials are being completed at CAMC including:

1. *Keynote 866, Keynote 905 and Keynote 902 testing perioperative Pembrolizumab for patients with muscle invasive bladder cancer*
2. *Intravenous Lidocaine versus Placebo study in*

*patients undergoing radical cystectomy to improve pain after the surgery - pending publication*

3. *Proteus Study: Perioperative treatment with Erleada and surgery for high-risk prostate cancer patients*

4. *Mannitol versus Placebo study in patients undergoing partial nephrectomy to improve renal function after surgery - Published*

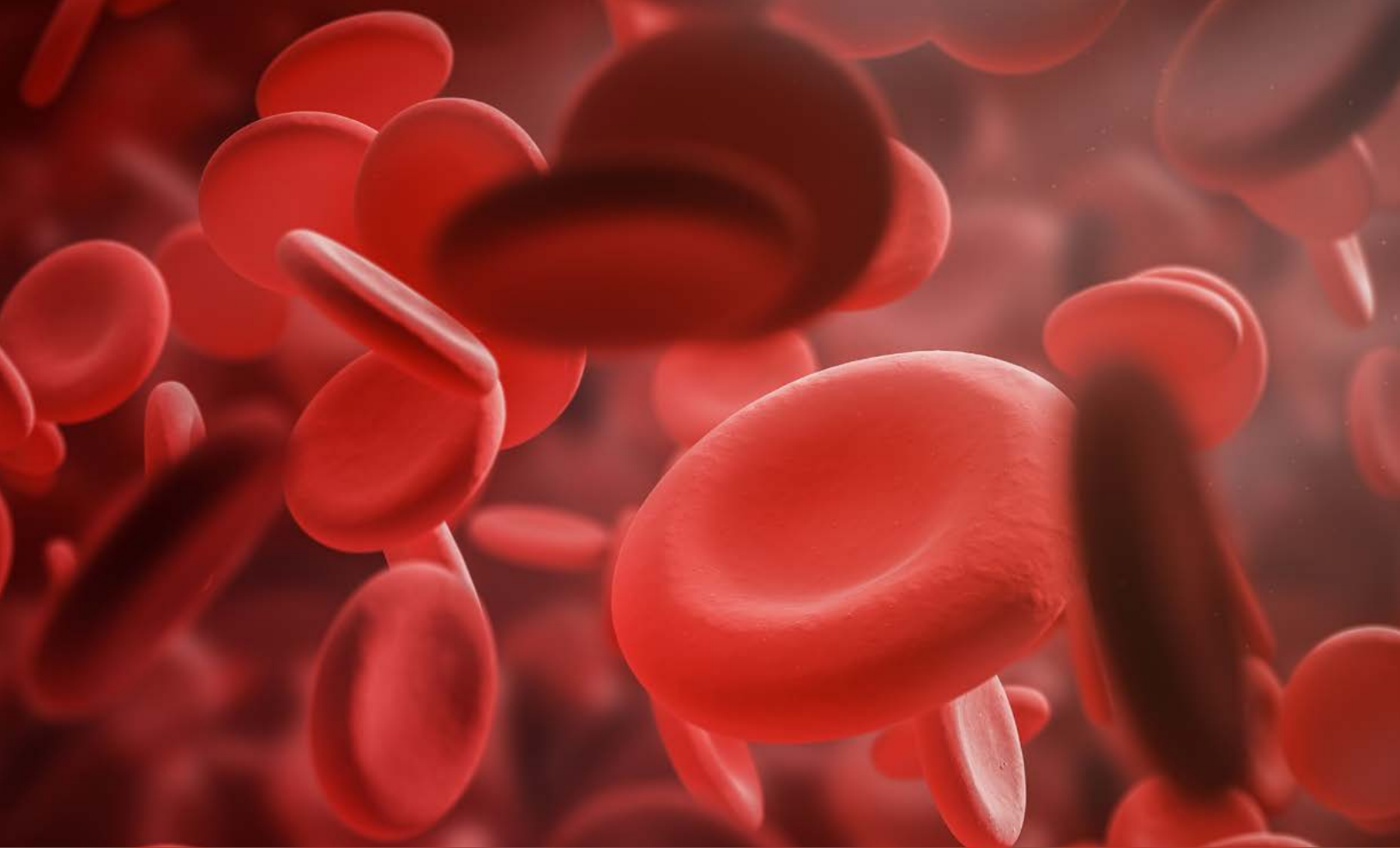
5. *National Cancer Database retrospective study reviewing the value of lymph node dissection during radical prostatectomy*

6. *SAM study – addressing the new guidelines in management of small adrenal incidental masses – Published*

7. *Retrospective study reviewing depression in the bladder cancer patient.*

8. *Multiple other retrospective studies current and upcoming*





# Hemophilia Treatment Center

The CAMC Hemophilia Treatment Center (HTC) is a comprehensive program funded in part through two federal grants for the diagnosis, treatment and prevention of bleeding disorders. People throughout the life span are seen who have a congenital bleeding disorder such as hemophilia, von Willebrand disease, and other bleeding disorders along with congenital clotting disorders such as factor V Leiden.

CAMC is part of the Mid-Atlantic/Region 3 federally funded hemophilia treatment centers. The comprehensive team includes an adult and pediatric hematologist, nurse, social worker and physical therapists. Collaboration between providers such as orthopedic surgeons, dental providers and the patient/family provides education of bleeding disorders, home infusion teaching and support. This collaboration begins at birth or with a new diagnosis of a bleeding or clotting disorder.

A 340B factor program through the CAMC HTC is available to patients who require factor at home.

An educational program is offered to schools, preschools, and daycares that have children that attend with a congenital bleeding disorder. A Point of Care muscular/skeletal ultrasound (MSKUS) evaluation is offered during clinic appointments. This allows us to enhance patient education, improve patient outcomes along with containing costs associated with unnecessary factor product and expensive imaging studies like MRIs. This is the gold standard for joint evaluations by providing better visualization of the joints through ultrasounds.

The annual Camp Hemovon is available for children ages 7-17 years old who have a congenital bleeding disorder.

Research studies are also available for eligible patients. Education and outreach for patients and their family members who have a bleeding disorder are focuses of the HTC.

In 2021, the Hemophilia Treatment Center moved into a new location at the Medical Staff Office Building at CAMC Memorial Hospital. This is dedicated space for the HTC, the patients and families for the treatment of bleeding and clotting disorders.



# Palliative care

Palliative care is an inpatient service at CAMC that helps cancer patients and their families cope with the multiple dimensions of their disease. Attention focuses on quality of life and relief from pain and symptoms that can interfere with daily life. Assistance is also provided with goal clarification, advance care planning and discharge options. As part of the cancer team, palliative care collaborates with the oncologists, supporting curative treatment or helping with options when cure no longer is the goal.

Psychosocial, emotional and spiritual needs are addressed through family meetings with patients and their loved ones. Hospice referrals can be made if appropriate.

The team consists of a social worker, pharmacist, physicians and nurse practitioners available week days from 8 a.m. to 5 p.m. for inpatient consultations.





# Cancer Registry

Cancer Registries have existed since 1913 to systematically collect diagnostic and treatment data on cancer patients. This data collection involves cancer occurrence type, extent, treatment, and outcomes as reported both nationally to the National Cancer Data Base (NCDB) and to the West Virginia state cancer registry. As an accredited cancer program with the Commission on Cancer (CoC), Charleston Area Medical Center is required to maintain a cancer data registry to collect information on all patients diagnosed and/or treated at a CAMC facility.

Since the NCDB was formed in 1989 physicians, researchers, facilities, and other interested parties have a means by which we can study the efficacy of cancer treatments for cancers diagnosed at varying stages of disease. A facility can compare performance with the other CoC accredited facilities to assist in evaluating and improving patient outcomes. A researcher can use this data to help identify when one treatment is more effective than another. Such as the case with the treatment of breast cancer when data showed that breast conserving therapies were as effective as the radical mastectomies performed in the past

and resulted in major changes in how breast cancer has been treated in recent years.

Throughout this annual report there are graphs of data collected by CAMC's cancer registry demonstrating how CAMC compares to other CoC accredited facilities. The following statistics may be of interest:

- CAMC has the highest volume for cancer care in West Virginia
- In 2021, CAMC accessioned 2,280 new cancer patients into the registry. CAMC has a total of 65,068 cancer cases in the cancer registry database. Of this total population 33,723 patients have been diagnosed and/or treated since Jan. 1, 2005.
- CAMC's follow-up rate of all patients in the registry is currently 93.83 % well above the CoC's required standard of 80%. Likewise, CAMC's follow-up rate for patients diagnosed within the past five years is at 93.78% above the required 90% rate.

- The annual Call for Data for the NCDB was performed on March 11, 2022 and resulted in zero quality problems and zero cases being rejected on the first submission.
- Some registrars attended the West Virginia State Cancer Registrar's Meeting Oct. 21-22, 2021, at Mon Health Medical Center.
- Some registrars attended the National Cancer Registrars Association Annual Conference April 7-9, 2022, virtually.
- CAMC staff also receives training through monthly webinars from the NCRA and the North American Association of Central Cancer Registries (NAACCR).

The CoC requires personnel working in the cancer registry to obtain the Certified Tumor Registrar (CTR) credential within three years. This standard was implemented on Jan. 1, 2015. CAMC recognized the importance of having educated staff in the registrar role and began enrolling all registry staff in training programs well before the CoC made this requirement on Jan. 1, 2015. All staff who abstract are credentialed. Staff members include:

- Melissa Roebuck, CTR
- Susan Thompson, CTR
- Jennifer Butcher, CTR

CAMC hired an additional employee to the cancer registry in November 2020 Tessa Kinder. She comes to the registry from the coding department. She will be performing AA responsibilities, follow-up, case finding and various other duties. Tessa has completed her pre-requisite studies and will begin her path to CTR in the fall.

Cancer registry data elements are nationally standardized and considered open source. Each of these measures were developed by the CoC with the exception that cancer registries would be used to collect the necessary data to assess and monitor concordance with the measures. Extensive assessment and validation of the measures were performed using cancer registry data reported to the National Cancer Database (NCDB).

All measures are designed to assess performance at the hospital or systems-level and are not intended for application to individual physician performance.

In the Commission on Cancer (CoC) Optimal Resources for Cancer Care (2020 Standards), Standard 7.1 requires CoC-accredited cancer programs to treat cancer patients according to nationally accepted measures indicated by the CoC and included in the Rapid Cancer Reporting System

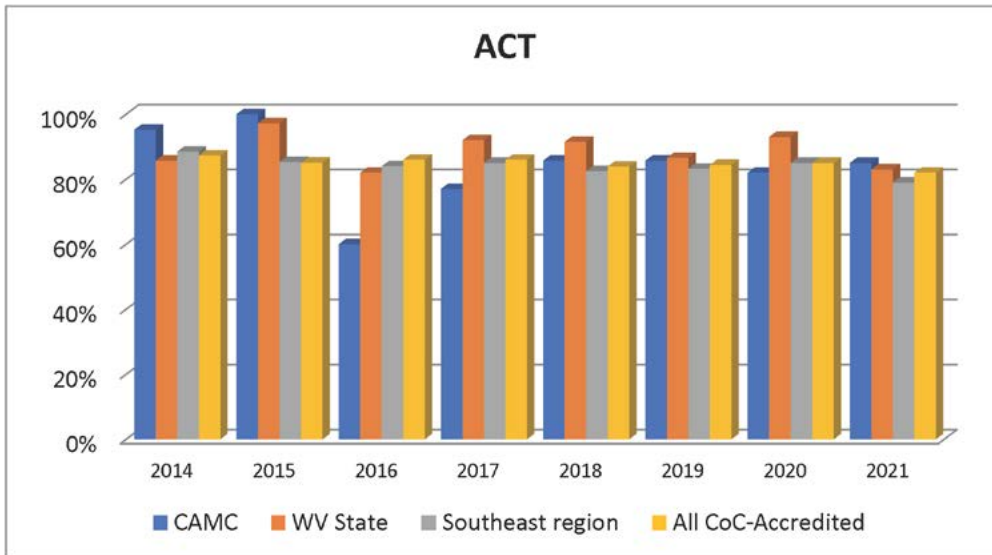
(RCRS) tool. Standard 7.1 states that each calendar year, the expected performance rate is met for each of the selected Standards measures as defined by the CoC, and the cancer committee of each accredited program monitors them.

### **New quality measures were added in 2022**

- New breast quality measure – BCSdx – First therapeutic breast surgery in a non-neoadjuvant setting is performed within 60 days of diagnosis for patients with AJCC Clinical Stage I-III breast cancer.
- New gastric quality measure – GCTR – Neoadjuvant chemotherapy and/or chemo-radiation is administered within 120 days preoperatively for patients with AJCC cT2+ or cN1, cM0 for gastric carcinoma: or (cT2 and poor differentiation) or cT3+ or cN1, cM0 for esophageal or gastroesophageal junction carcinoma, age 18-79.
- New head and neck measure – HadjRT – Time to initiation of postoperative radiation therapy less than 6 weeks for patients with surgically-managed head and neck squamous cell carcinoma.
- New melanoma quality measure – MadjRx – Melanoma adjuvant systemic therapy was administered within 6 months of surgery or recommended for eligible patients with Stage IIIB-D resected melanoma. New rectum quality measure – RCRM – Circumferential Margin is greater than 1 mm from the tumor to the inked, non-serosalized resection margin for Rectal Resections.

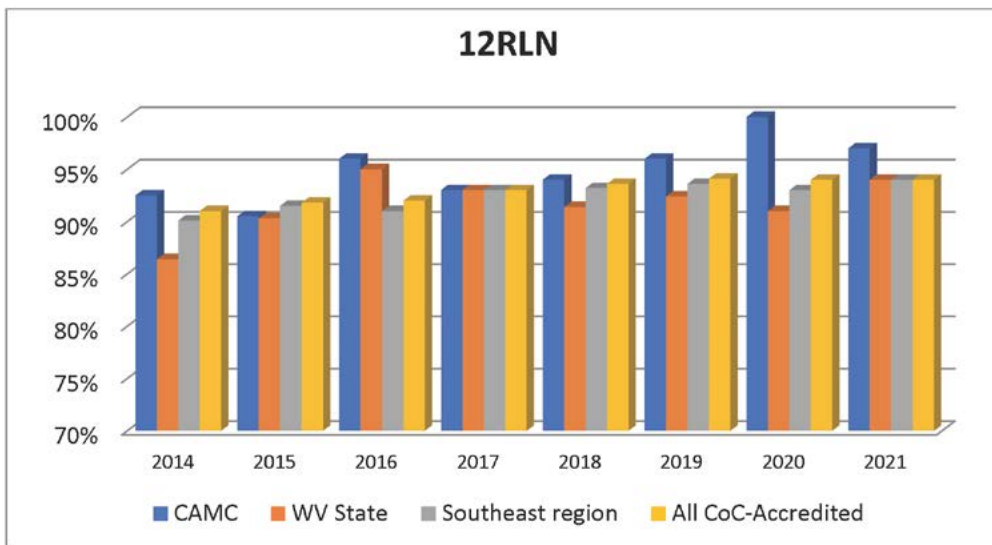
The Rapid Cancer Reporting System (RCRS) is a voluntary program of the National Cancer Data Base (NCDB) that allows facilities to review and track performance on a more concurrent basis. Charleston Area Medical Center (CAMC) chose to participate at the inception of RCRS because the Cancer Committee realized the potential value in being able to identify patients who may be nearing deadlines for evidence-based guidelines. The Cancer Registry submits data and monitors RCRS monthly to identify and alert providers to patients who are at risk for not receiving timely medical treatment.

Each of the current RCRS measure are displayed in graph format, comparing CAMC's performance to West Virginia (WV) facilities, facilities in the Southeast Region and to all facilities who are accredited by the Commission on Cancer (CoC).



ACT is the NCDB's designation for one of the colon quality measures. The definition states, "Adjuvant chemotherapy is considered or administered within 4-month (120 days) of diagnosis for patients under the age of 80 with AJCC Stage III (lymph node positive) colon cancer."

This result is an example of CAMC's continued journey toward excellence in cancer treatment.

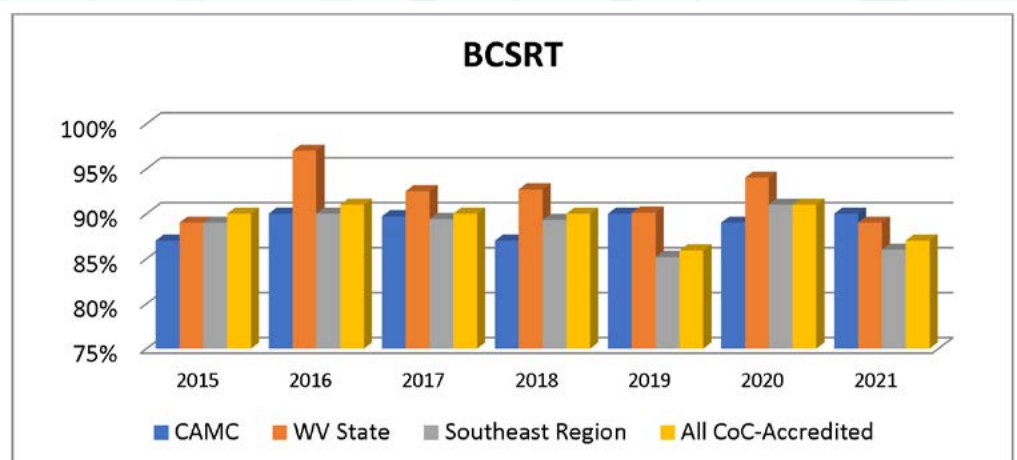


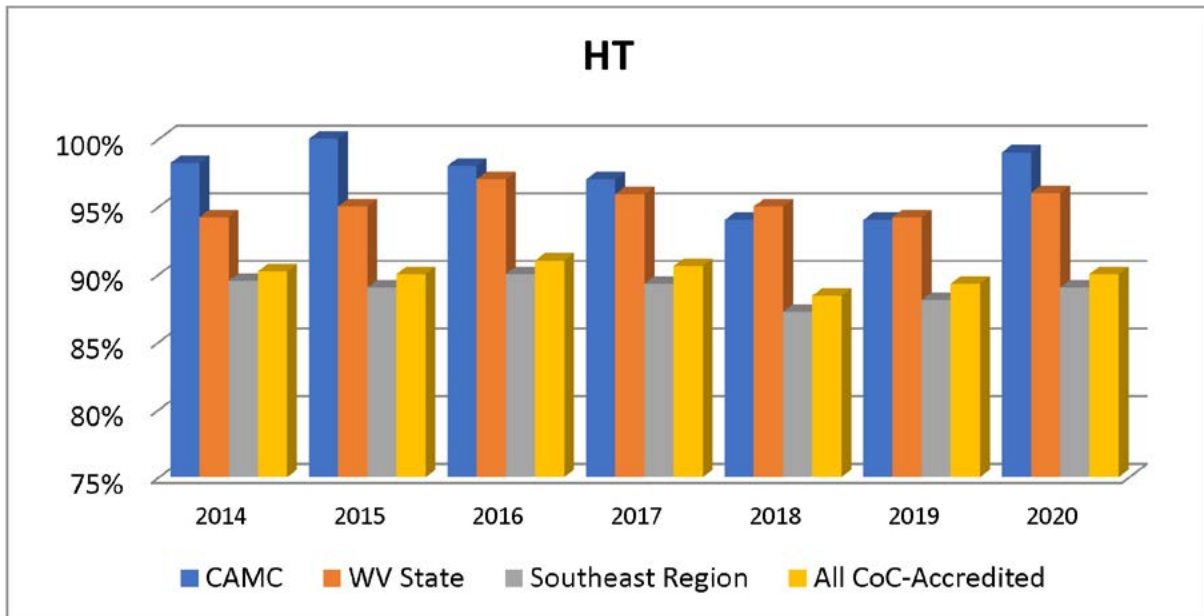
12RLN is the NCDB's designation for lymph node removal for colon cancers. This measure is defined as, "At least 12 regional lymph nodes are removed and pathologically examined for resected colon cancer."

This is a measure that CAMC continues to improve upon. Looking at the graph, CAMC has always led the state in performance on this measure. In 2021, CAMC continues to exceed performance in comparison to WV, the Southeast region, and all other CoC-accredited facilities.

BCS is the NCDB's designation for radiation therapy in breast cancer. The definition states, "Radiation therapy is administered within 1 year (365 days) of diagnosis for women under age 70 receiving breast conserving surgery for breast cancer."

Review of the data for this measure shows that CAMC had a several cases where the patients chose alternate forms of treatment, deviating from standard care. In 2021 CAMC improved on this measure. CAMC continues to monitor for improvement.

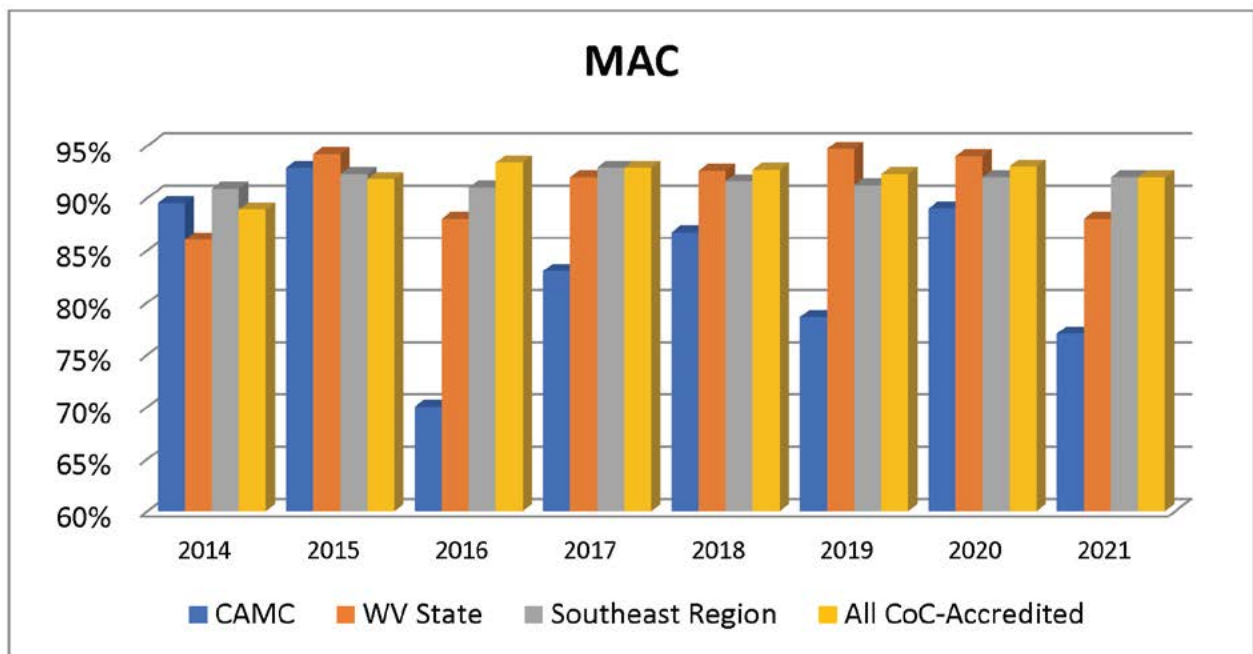




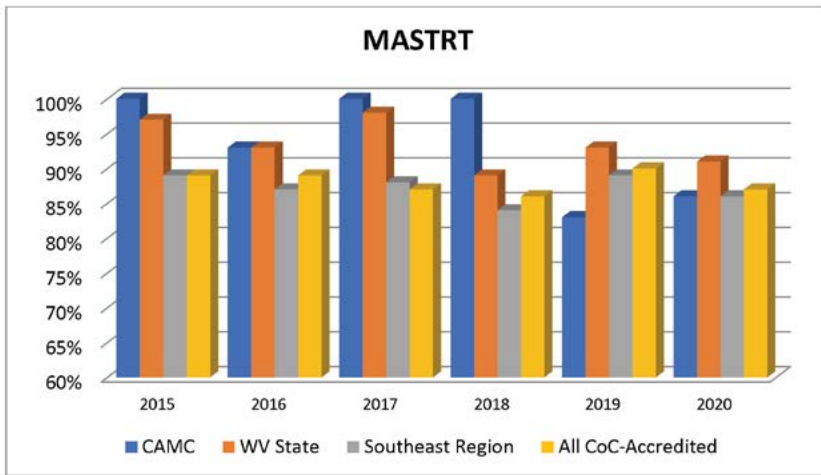
HT is the designation by the NCDB for the breast measure for hormone therapy. This measure is defined as, “Tamoxifen or third generation aromatase inhibitor is considered or administered within 1 year (365 days) of diagnosis for women with AJCC T1cN0M0, or stage IB-III hormone receptor positive breast cancer.

As noted in the graph for this breast cancer measure, CAMC has lead performance when compared to facilities in WV, the Southeastern United States, and all CoC-accredited facilities in the nation. This result is an example of CAMC’s continued journey toward excellence in cancer treatment.

Effective January 2023 this measure will be removed and no longer supported. This measure will continue to populate data and update nightly for cases submitted between 2017-2019. Data from 2020 forward will no longer be available as of June 27, 2022.

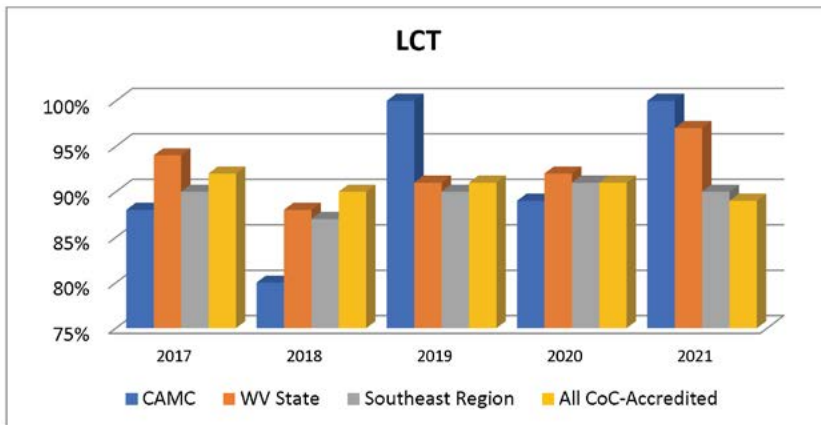


MAC is the NCDB designation for chemotherapy in breast cancer. The definition states, “Combination chemotherapy is considered or administered within 4 months (120 days) of diagnosis for women under 70 with AJCC T1cN0M0, or stage IB – III hormone receptor negative breast cancer.” This is a multifactorial issue, including cases which treatment was delayed due to significant co-morbidities or complications that impacted performance rates. CAMC continues to monitor for improvement.

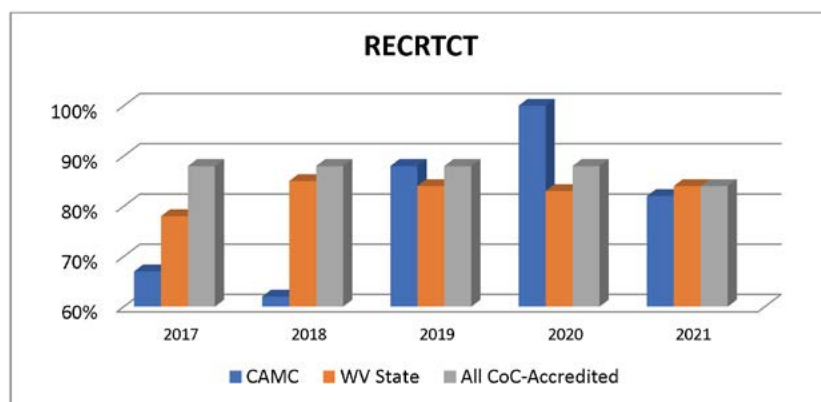


MASTRT - Radiation therapy is recommended or administered following any mastectomy within 1 year (365 days) of diagnosis of breast cancer for women with  $\geq 4$  positive regional lymph nodes.

Effective January 2023 this measure will be removed and no longer supported. This measure will continue to populate data and update nightly for cases submitted between 2017-2019. Data from 2020 forward will no longer be available as of June 27, 2022.

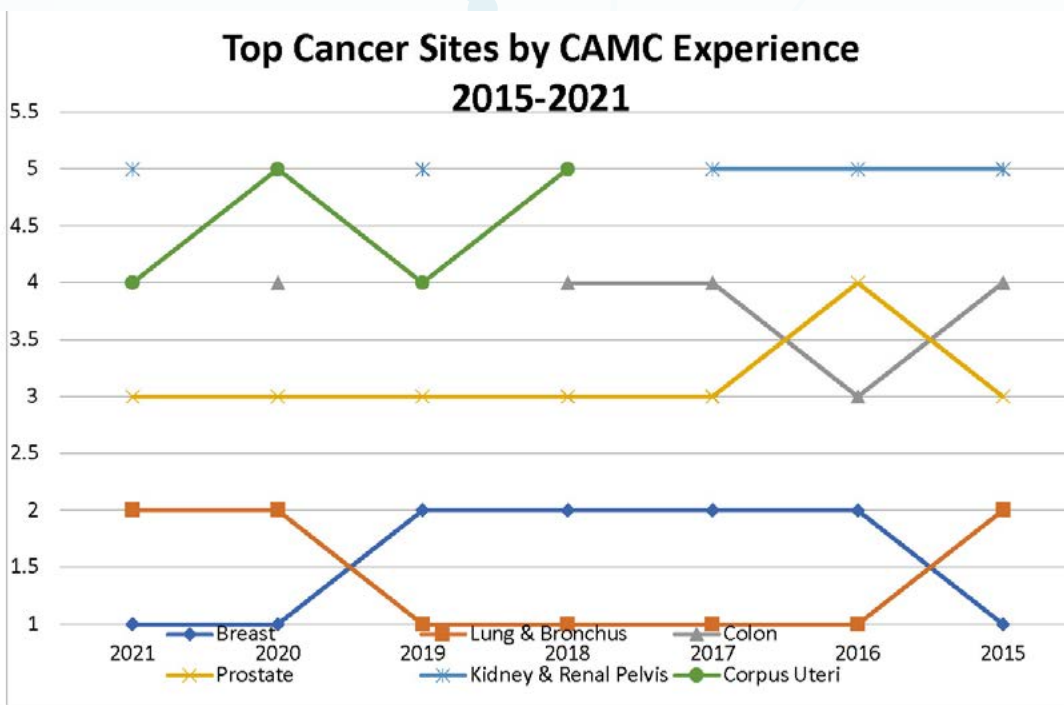
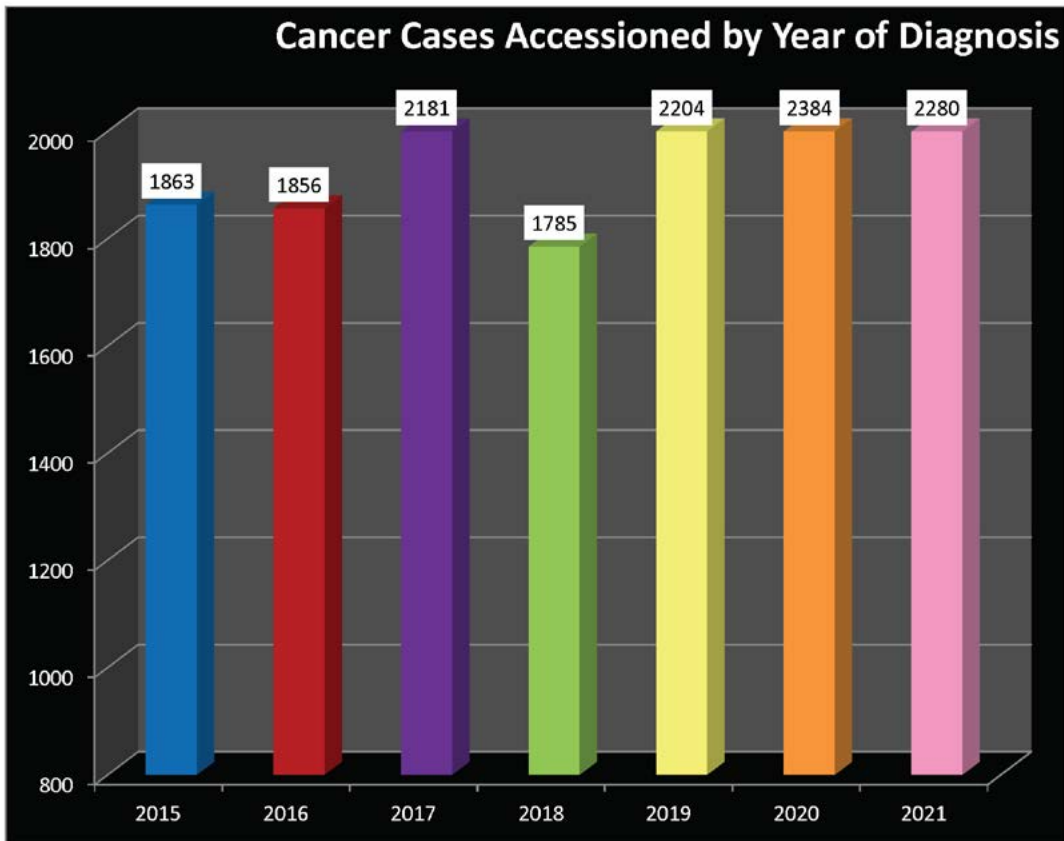


LCT - Systemic chemotherapy is administered within 4 months to day preoperatively or day of surgery to 6 months postoperatively, or it is recommended for surgically resected cases with pathologic, lymph node-positive (pN1) and (pN2) NSCLC. This result is an example of CAMC's continued journey toward excellence in cancer treatment.



RECRTCT - Preoperative chemo and radiation are administered for clinical AJCC T3N0, T4N0, or Stage III; or Postoperative chemo and radiation are administered within 180 days of diagnosis for clinical AJCC T1-2N0 with pathologic AJCC T3N0, T4N0, or Stage III; or treatment is recommended; for patients under the age of 80 receiving resection for rectal cancer. CAMC continues to monitor for improvement.





Reviewing the top cancer sites, regardless of gender, over the past seven years, definite patterns emerge. Breast cancer had consistently remained the top cancer site at CAMC based on volume since 2008, with lung cancer ranking second; until 2016 when they switched places. Lung being number one and breast number two. Lung remained in the number one position through 2019. In 2020 breast once again became the top cancer site at CAMC and remained there for 2021. Prostate has remained in the third position since 2017.

# Oncology Services

## 2021 Incidence of New Cancer Cases

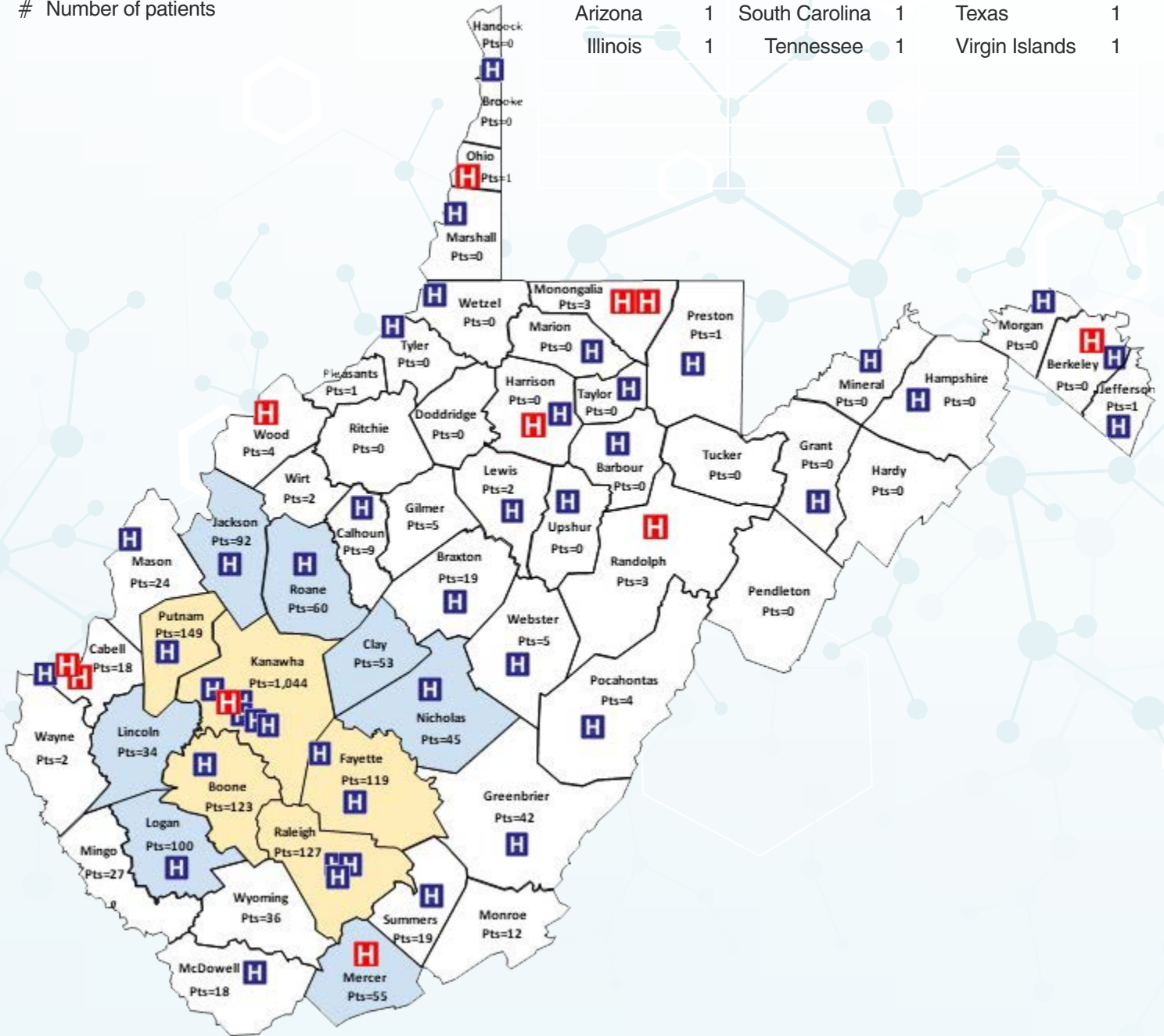
● **Primary Service Area**  
(75% of discharges)

● **Secondary Service Area**  
(additional 15% of discharges)

**H** Hospital

**H** Hospital– Accredited by the American College of Surgeon's Commission on Cancer

# Number of patients



Out of State Total		33			
<b>Kentucky</b>	<b>3</b>	<b>Ohio</b>	<b>5</b>	<b>Virginia</b>	<b>7</b>
Martin	2	Auglaize	1	Bland	1
Pike	1	Galia	2	Tazewell	5
		Meigs	2	Witthe	1

Arizona	1	South Carolina	1	Texas	1
Illinois	1	Tennessee	1	Virgin Islands	1

Source: CAMC Cancer Registry, American College of Surgeon website; CAMC Planning Department 8/2/22







# Charleston Area Medical Center

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