2019 CAMC Cancer Services Report

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Charlie Fowler is the first face many patients and visitors see when coming to the CAMC Cancer Center. He was recognized for the excellent care and compassion he provides every day.

Fowler works in valet parking.

“He is friendly, always smiling and greets people with warmth,” according to the person who nominated Fowler. “He often goes the extra mile to meet the needs of our patients and their families. Not only does he offer vehicle parking, he often assists with patient transport needs and information of the center’s amenities. He provides emotional support by sharing stories, actively listening to patient and family concerns and offering a friendly laugh and a warm handshake to everyone he sees. He is also proactive about pointing our patients to the right resources when they need assistance.”

A group of employees in the pre-certification and navigation areas of the Cancer Center were also recently recognized.

Kim Jones, Haley Ross, Ashley Shamblen and Lore Wilkes went above and beyond in providing care and compassion for a patient who needed some extra assistance.

The patient was pregnant and already had a 3-year-old child when she learned she had breast cancer. She needed chemotherapy, but had extreme difficulty with transportation and child care, so she wasn’t coming for treatments.

This put her at great risk. The breast navigator found out why the patient wasn’t keeping her appointments and approached co-workers. Staff paid out-of-pocket for Uber for her transportation and took turns during their lunches to provide care for the 3-year old because the patient did not have a sitter.

They provided snacks and entertainment for the toddler while the mother was able to receive treatment. Several staff members were involved, offering their time and money.

These are just two examples of the compassion of the oncology team, going beyond world-class care to prove you don’t have fight cancer alone at CAMC.
The Cancer Center is for adult medical oncology and hematology care.

A DNV (Det Norske Veritas) 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 April 2017. 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.

**Walk-In Clinic**

The Cancer Center’s walk-in clinic opened in 2018. It 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.
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.

Sickle Cell Clinic provides specialized, ongoing care for patients

Severe anemia, yellowing of the skin, eyes and mouth, crippling pain in the arms, chest and legs, and violent cough. These are just some of the symptoms of patients with sickle cell disease, an inherited, life-long and serious blood disorder.

CAMC recently opened an outpatient Sickle Cell Clinic dedicated to treatment and management of the disease in both adult and pediatric patients.

Sickle cell disease (SCD) causes the body to produce abnormal hemoglobin – the protein in red blood cells that carries oxygen to all parts of the body. Typically, red blood cells are round and move easily through blood vessels; however, in patients with SCD, the red blood cells are hard and sticky, and are shaped like the letter “C,” which causes the cells to clump together, blocking blood flow.

This diminished blood flow can cause pain, tissue and organ damage, and even stroke. It also causes the blood cells that get stuck to die sooner, and having fewer healthy red blood cells can cause serious conditions like anemia.

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.

“By treating both pediatric and adult patients at our clinic, we can ensure that patients have a smooth transition of care as they grow into adulthood and continue to successfully manage their condition,” said Mohamad Badawi, MD, pediatric hematology/oncology specialist.

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.

“We understand the life-long struggles facing patients with sickle cell disease, as well as the complex and specialized care required to treat the condition,” said Steven Jubelirer, MD, specializing in hematology/oncology. The clinic operates at the CAMC Cancer Center on designated Fridays throughout the year.

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.

SOURCE: The StayWell Company, LLC
Outpatient pharmacy earns national accreditation

The Center for Pharmacy Practice Accreditation (CPPA), a partnership of pharmacy-based organizations, has awarded specialty pharmacy practice accreditation to the outpatient pharmacy at the CAMC Cancer Center.

“The pharmacy and its staff are proud to have achieved this milestone for the benefit of our patients and our organization,” said John Petts, PharmD, Director of Ambulatory Services. “Accreditation as a specialty pharmacy not only highlights the commitment to in-depth patient care and monitoring that we provide daily to our patients on specialty medications, but it also provides us with opportunities to expand our service offerings in the future.”

CPPA provides a standardized method for recognizing exceptional pharmacy practices that promote practice innovation and empower pharmacists to practice at a higher level. CPPA recognizes pharmacy practices that are committed to fostering medication safety and effectiveness, ensuring continuous quality improvement, and facilitating desired patient health outcomes.

“The outpatient pharmacy at the CAMC Cancer Center has the unique advantage of providing services as a part of Charleston Area Medical Center,” said Heather Moles, PharmD, RPh, pharmacy manager. “The pharmacy is able to work closely with the hospital’s specialty providers to provide exceptional continuity of care. We work with insurance companies to secure medication coverage, and we facilitate copay assistance when it is needed. We also provide clinical monitoring of patient progress and facilitate interactions with other health care providers to provide the best possible outcomes. We accept prescriptions from outside providers in addition to CAMC physicians.”

Specialty medications are often expensive, require unique handling procedures and involve complex treatment regimens that require ongoing clinical monitoring and patient education.

The outpatient pharmacy at the CAMC Cancer Center is located on the first floor of the CAMC Cancer Center. For more information, visit camc.org/PharmacyServices.

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.

Nowhere is this problem more evident than in rural America, especially West Virginia.

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.

Future Project Echo sessions are being scheduled. Contact Josh Kent, CAMC continuing education, at (304) 388-9963 or by email Josh.Kent@camc.org for more information.
CAMC picked for national cancer initiative

Colorectal cancer is the third most common cancer diagnosed in both men and women in the United States. The American Cancer Society estimates that about 140,000 colorectal cancer cases and about 50,000 deaths from colorectal cancer occur each year.

With awareness, screenings and early detection, colorectal cancer is highly treatable. However, West Virginia has one of the highest rates of late diagnosis of colon cancer.

The American Cancer Society recently kicked off its Hospital Systems Capacity Building initiative to help hospital systems across the country facilitate community partnerships to better address cancer prevention and screenings.

CAMC is one of two hospitals nationwide chosen to target colon cancer screening rates. Other hospitals are concentrating on increasing HPV vaccination rates and breast health equity.

The COP project is intended to foster integration into the community to better serve a target population. The program is expected to be built during the next three to five years.

Cancer Center receives award

The CAMC Cancer Center received the “Spirit of Collaboration Award” from The Mountains of Hope Cancer Coalition for outstanding collaborations with the Lung Bridge Program that has significantly advanced comprehensive cancer control activities in West Virginia.

The Lung Bridge Program is designed to support lung cancer patients after they have completed active treatment. The program is set up to help patients and their family members identify unmet needs and ongoing concerns, assist with access to care and provide resources and support as they adapt to life after lung cancer.

The Lung Bridge Program consists of a health care team that includes a nurse practitioner, nurse, psychologist, psychosocial support coordinator, dietitian, social worker and occupational and physical therapist. This multidisciplinary approach ensures that patients receive comprehensive and individualized care plans that improve their quality of care as they continue along their continuum of care.

The program also includes education for tobacco cessation, proper nutrition and physical activity for cancer survivors, tips for family and friends and connects patients to additional support services. The program provides each patient and primary care provider with a written personalized cancer care plan.
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 can't 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, 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 is 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. Developed at Memorial Sloan Kettering by Dr. William Breitbart and his team, MCP is an intervention which helps those living with chronic illness to decrease feelings of sadness and increase hope by focusing on creating, experiencing, and keeping a sense of meaning in life. MCP typically runs from 7 to 8 sessions, and includes discussion and teaching tips on historical, attitudinal, creative and experiential sources of meaning.

In 2019, the cancer center established a monthly support group for men with cancer. The group helps participants to discover strategies to cope with common problems faced by men who have cancer, meet others who are facing similar circumstances, and explore what is ahead in their lives in the company of others who can understand and relate to the journey. Support groups also include monthly breast cancer support groups, as well as weekly breast cancer survivorship groups to aid members in finding their new normal after treatment ends. Plans are in the works to offer more support groups in the coming year, with an emphasis on specific modalities, including a mindfulness group for cancer patients as well as meaning-centered psychotherapy groups.

Support services include free exercise programs. Healthy Steps is a medically based exercise program with positive effects for cancer survivors, especially individuals who have or are at risk for lymphedema.

Preventing cancer and identifying cancer in the early stages encompass goals for the CARE Team. In 2019, the CAMC Cancer Center CARE Team participated in a Tobacco Free Day at the State Capitol, provided prevention education to the Mall Walkers Association at the Charleston Town Center, and provided colorectal cancer screening at the Kanawha County Health Fair. In 2019, a mini-medical school was held at the cancer center for community members, and the cancer center offered head and neck cancer screening, tobacco education, breast cancer education and oral exams. More than 500 community members have benefited from prevention and screening efforts.

In addition to providing support services for adults, the CAMC Cancer Center offers help for children as well. 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 304-388-8612.

For more information about Gigi’s Place, call 304-388-9690 or visit camc.org/CancerCenter.
LIFE AFTER CANCER, also called survivorship, may bring its own set of challenges. CAMC Cancer Center is here to help patients from diagnosis through survival and beyond, and the survivorship program ensures that survivors do not feel lost during this transition. All cancer patients who have received treatment with a curative intent are offered a survivorship visit. This visit provides a way for cancer survivors to discuss their health, well-being, diagnosis, treatment and follow-up care with a health professional to ease anxiety and increase their knowledge about next steps. A survivorship care plan is provided to patients and their primary care providers.

A survivorship care plan details your:

- Diagnosis
- Treatment plan
- Follow-up Care
- Possible long-term side effects
- Health Promotion suggestions

Support groups are also available for cancer survivors. For more information please stop by the Patient Resource Center or call (304) 388-8612.

Survivorship Weekly Group Topics:

**Session 1:** Finding a New Normal – Coping after treatment, Support members’ reactions, things people say about cancer

**Session 2:** Tasks of Survivorship – survivorship care plans, how to find information you can trust, information online, Fact-seeking

**Session 3:** Dealing with Uncertainty/Fear of Recurrence

**Session 4:** Health Habits/Nutrition/Exercise

**Session 5:** Coping with Fatigue and Getting Good Sleep (problem-solving for long-term side effects)

**Session 6:** Body Image

**Session 7:** Sex after treatment

**Session 8:** Achieving a New Normal – Goals for going Forward
Patient support and community outreach

Patient support services are offered through a variety of CAMC departments including education, palliative care, pastoral care and the cancer patient support program. Other resources including community agencies such as the American Cancer Society, hospice, WVDHHR and local, state and national patient and family support services also are utilized to meet psychological, social and economic challenges. Community outreach efforts are coordinated by all cancer services and include prevention and awareness education as well as early detection and screening programs.

Health information

Thousands of people visit the CAMC Health Information Center website – healthinfo.camc.org – annually. The site contains a variety of topics including cancer prevention, treatment and living with cancer.

Run For Your Life

More than 350 people participated in the 2019 Run For Your Life, June 22. The event, sponsored by the CAMC Foundation, raised $75,000 to support colorectal cancer screening and awareness in our community.
Boutique services

The boutique at the CAMC Cancer Center offers free haircuts and wigs to patients (who qualify) receiving chemotherapy. Caregivers and the general public can also receive haircuts (prices vary depending on service) if appointment times are available. Additionally, the boutique has a variety of new items in stock for patients including, but not limited to, wig care products, pre-tied scarves, turbans, cloche/sleep caps, fashion hats and skin and hair care products.

Community education

The CAMC Health Education and Research Institute (CAMC Institute), education division leads the oncology team in providing opportunities in professional education and research activities, patient and family health education and community information programs. The community may access information and education via the CAMC Institute’s website.

Patient and family education

The multidisciplinary patient and family education council promotes a process for providing patient education standards of care across the continuum. Patient and family education resources are identified, developed and reviewed by oncology experts and then processed via the council to promote consistency in education to all cancer patients and their families. The pediatric patient handbook and adult patient and family instructional handbooks were developed in-house to promote ownership and individualize facility information. Additional customized patient education resources are available online at: healthinfo.camc.org

Educational videos are available for patients and families during their inpatient stay at CAMC. Oncology “on demand” educational video topics include hospice, nutrition and cancer, pediatric video, stress and relaxation techniques, tobacco cessation and palliative care topics. In addition, serenity videos run 24/7, 365 days a year to provide imagery, music and relaxation images to enhance healing and relaxation.
Fashion for the Fight

The third annual CAMC Cancer Center Fashion Show was held Friday, Oct. 4, with Fashion for the Fight as the theme.

With all of the doctor appointments, treatments and well-wishes from friends and family, cancer becomes the main focus in the patient’s life. Changes due to treatments and surgeries can make one’s private illness extremely public. The fashion show will provide tips to attendees on how to dress to accommodate changes and provide education on where to find garments specifically designed for cancer patients and survivors.

A silent auction was held to raise funds to support CAMC Cancer Center survivorship programs. The fashion show is made possible by funding from many generous gifts to the CAMC Foundation.
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.

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:**

- NEW 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

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.
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, genetic counselor and your patient 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 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 2 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, FL.

Dr. Bush is the only Gynecologic Oncologist in the state 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 specimen extraction for large uteri.

Dr. Bush has over 20 co-authored manuscripts published in peer-reviewed medical journals as well as numerous presentations at national and international conferences. He was recently awarded the Gynecologic Oncology Group Foundation Young 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.

Krista Ellison, FNP is our newest addition. She graduated with her Nurse Practitioner degree in 2018. She has significant experience caring for gynecologic oncology patients. Prior to graduating from NP 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.

New clinical trial could improve treatment for ovarian cancer through personalized medicine

According to the American Cancer Society, approximately 22,000 women are diagnosed with ovarian cancer each year, and the disease will take the lives of almost 14,000.

Ovarian cancer is the fifth most common cause of cancer death among women. One reason for the high mortality rate is late diagnosis of the disease, which often isn’t confirmed until after the cancer has spread.

However, thanks to new advances in cutting-edge treatments and specialized care, these statistics are starting to change. In fact, it’s estimated that eight out of 10 women – even those with advanced disease – can extend their life expectancy and potentially achieve remission if treatment is sought early. These advances are due in large part to clinical trials that enable investigators to test new medications and regimens to treat the cancer most effectively.

Treatment options vary depending on the stage at which the cancer is detected. “The most common stage is Stage 3, and for those patients, usually it’s a combination of surgery and chemotherapy,” said Stephen Bush II, MD, gynecologic oncologist at CAMC.

Treatment of ovarian cancer is very different from treatment of many other types of cancer. Both chemotherapy and surgery play bigger roles in tackling the complexities of the disease. “It’s a very unique disease process, and that’s why it’s important to see someone who specializes in its treatment,” Bush said.
In this trial, we’re using standard chemotherapies that we typically have available, but instead of picking by chance, we can pick which one we think is most likely to work based off the testing and hopefully avoid any unnecessary toxicity with a drug that wouldn’t work otherwise,” Bush said.

“Instead of bombarding the patient with poisonous chemotherapy drugs, you can tailor [their treatment] to their specific type of cancer, which is known to be responsive to different antibodies or chemical signaling blockades,” said Augusta Kosowicz, cancer clinical research operations manager at CAMC.

“Cancer is a very complex disease and is always evolving,” Kosowicz said. “We talk to patients about how cancer cells work their way around treatment and become resistant, so the clinical trial process is important to continue to develop drugs and regimens that are smarter than the cancer cells.”

While this trial is ongoing, it’s already providing promising results for patients that are participating. “This new technology is giving people a lot of hope – investigators, treating clinicians and patients,” Kosowicz said. “CAMC has been involved in clinical trials for over 50 years and we have access to national clinical trials right here in our community, which is a huge benefit for patients. Thanks to ongoing and previous clinical trials conducted in the past, cancer patients are able to live longer with improved quality of life.”

Go to CAMC’s YouTube channel to see a video about ovarian cancer treatment at CAMC.

“When you look across the country, patients that have the best survival rates for ovarian cancer are treated at centers that are classified as a high volume center and by a high volume surgeon, and at CAMC, we are both of those,” Bush said. “With specialized gynecologic oncologists, advanced surgical techniques, state-of-the-art technology and access to the latest clinical trials, CAMC is helping lead the way in ovarian cancer treatment.”

“It’s important to have the option to participate in clinical trials for the potential benefit of the patient, to help advance science and to help the patients that come later,” Bush said. “The new drugs that we have available now are only available because of other patients that participated in clinical trials.”

A new clinical trial being conducted at CAMC, in partnership with Marshall University, is expanding the scope of personalized medicine for patients with recurrent ovarian cancer. Instead of treating all patients with ovarian cancer the same, “personalized medicine” focuses on identifying specific markers individual to each patient’s cancer.

Go to CAMC’s YouTube channel to see a video about the importance of clinical trials.

For this trial, surgeons take a biopsy of an ovarian tumor. Using cutting-edge technology at Marshall University, they isolate stem cells of the tumor, which can then allow investigators to determine which type of chemotherapy treatment will be most effective in treating the tumor.
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.

**New technology provides cutting-edge option for liver cancer**

In the fight against cancer, CAMC always strives to arm itself with the latest, most powerful weapons for our patients. That armory has grown with the addition of new technology called microwave ablation.

This new tool allows surgeons to use targeted microwave energy to kill tumors in the liver instead of physically removing large pieces of tissue.

“This is great because not only does it help the patient recover more quickly, it has great outcomes,” said Jesse Clanton, MD, a general surgeon specializing in the area of the liver, pancreas, gall bladder and bile ducts. “Sometimes patients might have a tumor on their liver and not be able to handle major surgery or resection. In the past we wouldn’t be able to offer them much; maybe chemotherapy. This expands the treatment options for patients that we previously wouldn’t have been able to treat, with treatments that are very effective.”

> Go to CAMC’s YouTube channel to see a video explaining microwave ablation for liver cancer.

For the procedure, the surgeon uses ultrasound to carefully guide a needle with an electrode tip to the tumor. The surgeon then turns on the microwave ablation machine to heat the needle to kill the cancer cells.

“Everybody knows a microwave heats your food,” said Michael Elmore, MD, surgical oncologist. “It’s a simple process. We insert the needle into the tumor and heat it to the point where it kills the cancerous tissue in the liver. This is actually improved technology that allows us to burn right up to blood vessels without damaging them. So it really allows us to provide cancer care for more patients.”

Microwave ablation is often recommended for patients who are unable to undergo surgical removal of a tumor for issues like advanced age, overall disease burden or cardiopulmonary problems. It can also be used as part of a multifaceted overall treatment plan for complex cases.

“Using the microwave probes is a way to do the ablation in a quicker way that allows more patients to potentially receive the treatment,” Clanton said. “This is a way for us to kill cancer cells and kill the tumor without having to remove a significant portion of the liver so it allows patients to have normal liver function afterward.”

“It’s a game changer,” Elmore said. “It’s hard to do liver surgery with small incisions if you’re cutting big pieces out. To be able to do this laparoscopically, to be able to send them home the same day or next day is a lot better than keeping them for a few days. The recovery is much quicker. The pain after surgery is much less. Their ability to return to work quicker is much approved. Overall, it’s better for them.”
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.

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 MRI of Prostate – most advanced imaging modality for localized prostate cancer detection
- MRI/US Fusion 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 decrease the number of visits necessary to receive radiation treatment
- SpaceOAR, a new 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

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, Valrucin
- 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 a new 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

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 and Keynote 905 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
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 – pending publication
7. Multiple other retrospective studies current and upcoming
The CAMC Children’s Cancer Center is accredited by the Children’s Oncology Group (COG), a worldwide cooperative children’s cancer research organization. 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.

**Ashley E. Meyer, DO,** completed a pediatric residency at Upstate Golisano Children’s Hospital and a pediatric hematology/oncology fellowship at Riley Children’s Hospital. Dr. Meyer is certified by the American Board of Pediatrics in Pediatrics and in the hematology oncology subspecialty.

**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.

**Pamela Smith, MSN, RN, FNP-C,** is the pediatric hematology/oncology nurse practitioner. She completed her undergraduate and graduate degrees at West Virginia University. She brings more than 20 years of experience to the CAMC Children’s Cancer 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.
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 play room for each child battling cancer or other diseases to have the experience of a home environment during their treatment. All of 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.

**Walk for hope**

Fighting cancer is hard; fighting childhood cancer is even harder! Imagine, as a parent, grandparent or family member hearing the news that your child or loved one, who can barely tie their own shoes, has been diagnosed with this life altering disease.

As a child, your world view is bright and full of endless possibilities. Your future has yet to be placed on track, and your life is insulated from the dangers of the world.

Pediatric cancer takes so much from our youngest and most precious patients. That small child or young adult is no longer naïve to the problems of the world. They face tough challenges that come along with being a young cancer patient. Friends, school and sports are often replaced by doctor visits, sick days and chemotherapy treatments.

Each September, the CAMC Foundation hosts a Walk for Hope in downtown Charleston. The Walk for Hope is a 2-mile walk to raise funds and awareness for pediatric cancer and the children being treated here in our community.

**Fight Like a Kid**

The imaging department at CAMC Women and Children's Hospital created a hand print station to engage patients and families in raising awareness for Childhood Cancer. Employees set it up at the beginning of September, Childhood Cancer Awareness Month, and encouraged patients and families to join in its awareness initiative upon entering or exiting for exams by putting their hand print on our blank Fight Like a Kid canvas.

The hand print station featured washable, hand stamp pads set up at the radiology front desk.

Staff handed out gold awareness bracelets, offered a gold sugar cookie and lemonade.

The imaging team also participated in the Walk for Hope and raised more than $1,000 to and raise awareness for pediatric cancer and the children being treated here in our community.
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 therapist. Collaboration between 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. Clinics are held at CAMC Memorial Hospital.

A 340B factor program is offered 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 will be offered during clinic appointments. This will allow us to enhance patient education, improve patient outcomes along with containing costs associated with unnecessary factor product and expensive imaging studies like MRIs.

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.
Inpatient Oncology Unit

The inpatient oncology unit has 29 private rooms and baths. A family resource room on the unit is stocked with the latest health information available.

The unit has a dedicated, highly skilled and efficient team of professionals available to meet the needs of our patients. More than 20 percent of the nurses have oncology certification that provides them advanced knowledge and a great resource for their peers.

An art and music therapy program allows patients to focus on something positive as well as giving them an outlet for creativity.

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.
Pathology

CAMC department of pathology laboratory medicine is accredited by the College of American Pathologists. The department’s 12 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.

Radiation Oncology Services

Radiation Oncology Services at Charleston Area Medical Center, a department of CAMC in partnership with 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
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:

- 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 is dedicated to providing 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 at CAMC’s 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 Health Education & Research Institute’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 protocol list that covers a broad range of malignancies. We have National Cancer Institute sponsored protocols available for most common types of malignancies in WV, Breast, Lung, Colon and Prostate as well as Melanoma, Multiple Myeloma, Ovarian, Pancreatic and Head and Neck. We can research and facilitate referrals to larger institutions when there is no protocol available for patients locally with rare or locally untreatable malignancies. We network with institutions such as the National Institute of Health/NCI, Johns Hopkins, Cleveland Clinic, Duke and Sloan Kettering Cancer Centers. We also manage numerous investigator initiated projects for our CAMC providers. Current projects are ongoing in urology, surgery, Quality of life, lung cancer survivorship and cancer literacy. Ongoing projects are in process to determine genomic effects of compounds found in Nigella seed oils in glioblastoma, a type of malignant brain tumor.

Dr. Steven Jubelirer has been working on projects involving Health Literacy in Patients with Early Stage Cancer as well as a study of different types of Heparin use in hospitalized patients.

Recently, we have embraced two newcomers to our group, having a joint appointment with the clinical department. Dr. Wei Du, an immunologist with extensive background and experience in basic sciences and bench research and her husband, Dr. Lin Mei. Dr. Mei is one of our new staff medical oncology physicians in the Cancer Center. We welcome Drs. Du and Mei to our Cancer Center and Charleston community, and look forward to working with them on upcoming projects. Enhancing our services and integrating our research program more deeply within the cancer center are goals with this collaboration between the research and clinical departments. Dr. Du can be reached at wei.du@camc.org.

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. This year we have worked with CHERI Clinical Trials Center on several projects, studies that involve blood and tissue collection for the development of new diagnostic assays for cancer patients. Additionally, we have a project with Marshall University utilizing a new tissue genetic assay to determine treatment for recurrent brain tumors and ovarian cancers.

With the Clinical Trials Center and Nancy DuVall RN, our relationship with the WVCTSI (West Virginia Clinical and Translational Science Institute) is now offering medical research community members access to a statewide biospecimen repository. This repository acquires and processes accurately timed and high quality tissue samples to facilitate clinical and translational research across West Virginia. Services available include assistance with protocol design of sample times, establishment of handling procedures, sample acquisition, as well as specimen stabilization, processing, storage and shipping.

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.

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Cristian Sirbu PhD
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Cancer Registries have existed since 1913 as a means 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 2018, CAMC accessioned 1,785 new cancer patients into the registry. CAMC has a total of 57,529 cancer cases in the cancer registry database. Of this total population 25,792 patients have been diagnosed and/or treated since January 1, 2005.
• CAMC’s follow-up rate of all patients in the registry is currently 91.65%, 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 91.93%, just above the required 90% rate.
• The annual Call for Data for the NCDB was performed on June 27, 2019, and resulted in zero quality problems and zero cases being rejected on the first submission. This awards CAMC a commendation from the CoC.
• CAMC underwent our 3 year accreditation survey on April 3, 2017 and passed with 3 year with contingency. The next survey will take place April 2020.
• Registrars attend the West Virginia State Cancer Registrar’s Meeting annually. 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 January 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 January 1, 2015. Four staff members have completed training and are now credentialed. Staff members include:

• Jennifer Butcher, CTR
• Marsha Crowder, CTR
• Melissa Roebuck, CTR
• Susan Thompson, CTR
• Susan Vessels, RHIT
# Top Cancer Diagnoses by Gender

<table>
<thead>
<tr>
<th>Primary Site</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Prostate</td>
<td>19.3%</td>
</tr>
<tr>
<td>Lung</td>
<td>16.1%</td>
</tr>
<tr>
<td>Colon and Rectum</td>
<td>6.7%</td>
</tr>
<tr>
<td>Bladder</td>
<td>6%</td>
</tr>
<tr>
<td>Kidney and Renal Pelvis</td>
<td>5.2%</td>
</tr>
<tr>
<td>Melanoma</td>
<td>4.6%</td>
</tr>
<tr>
<td>Non-Hodgkin Lymphoma</td>
<td>3.8%</td>
</tr>
<tr>
<td>Hodgkin Lymphoma</td>
<td>3.6%</td>
</tr>
<tr>
<td>Esophagus</td>
<td>2.1%</td>
</tr>
<tr>
<td>Pancreas</td>
<td>2.1%</td>
</tr>
<tr>
<td>Liver</td>
<td>2%</td>
</tr>
<tr>
<td>All other sites</td>
<td>13.4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary Site</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>25.4%</td>
</tr>
<tr>
<td>Lung</td>
<td>15.1%</td>
</tr>
<tr>
<td>Corpus Uteri</td>
<td>11.3%</td>
</tr>
<tr>
<td>Colon and Rectum</td>
<td>5.6%</td>
</tr>
<tr>
<td>Kidney and Renal Pelvis</td>
<td>4.4%</td>
</tr>
<tr>
<td>Non-Hodgkin Lymphoma</td>
<td>4%</td>
</tr>
<tr>
<td>Thyroid</td>
<td>3.3%</td>
</tr>
<tr>
<td>Pancreas</td>
<td>3.1%</td>
</tr>
<tr>
<td>Ovary</td>
<td>2.8%</td>
</tr>
<tr>
<td>Melanoma</td>
<td>2.5%</td>
</tr>
<tr>
<td>Cervix Uteri</td>
<td>2.3%</td>
</tr>
<tr>
<td>All other sites</td>
<td>12.9%</td>
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</table>
Looking at the top male cancer sites over the past five years, prostate cancer was ranked the top cancer site treated at CAMC, followed by lung cancer. In 2017 lung cancer moved into top position, dropping prostate into second. For 2018, prostate moved back into first and lung dropped to second. Colon cancer has been ranked third by volume since 2013 when it rose from fifth rank.

Kidney cancer ranked third 2012, dropping to fourth in 2013, and moving to fifth in 2014, having been outranked by urinary bladder cancers. Non-Hodgkin’s lymphoma, urinary bladder, kidney, and colon/rectum have remained in the same position since 2014.
Breast cancer has been consistently ranked the top cancer site in females at CAMC, followed by lung cancer. For 2018 Corpus Uteri and Colon primaries remained third and fourth consecutively. Kidney cancer moved up to fifth place and Non-Hodgkin’s lymphoma moved up to sixth.
Reviewing the top cancer sites, regardless of gender, over the past eight 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. Prostate and colon cancer have remained in the third and fourth rankings until 2013, when colon volume increased. Colon and Prostate have consistently switched places since. For 2017 Colon moved down to fourth and prostate up to third and continued that trend for 2018.

Kidney had remained in fifth rank since it took over uterine in 2011, until 2018 when it dropped back into sixth position. Uterine cancer has fluctuated between fifth and eighth place, resting at seventh in 2015. It continued to climb into sixth position for 2017 and rose again into fifth position for 2018.
Cancer Cases Accessioned by Year of Diagnosis
The Rapid Quality Reporting System (RQRS) 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 RQRS 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 RQRS monthly to identify and alert providers to patients who are at risk for not receiving timely medical treatment.

Each of the current RQRS 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.”
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. The difficulty with this measure is multifactorial. Looking at the graph, CAMC has always led the state in performance on this measure. However, during 2009 through 2012 CAMC fell behind both the Southeast region and all other CoC-accredited facilities. Since 2013, CAMC has improved on this measure and exceeded 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.”

CAMC remains in pace with the state performance on this quality measure, with the exception of 2010 and 2013. Review of the data for this measure shows that CAMC had a few cases where the patients chose alternate forms of treatment, deviating from standard care. This measure will continue to be monitored 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 with the exception of 2012. This result is an example of CAMC’s continued journey toward excellence in cancer treatment.
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.”

For this quality measure, CAMC has met or exceeded state, Southeastern region, and all CoC-accredited facility performance with the exceptions of 2016 and 2017. This is a multifactorial issue, including cases which treatment was delayed due to significant co-morbidities or complications that impacted performance rates.
Oncology Services

2018 Incidence of New Cancer Cases

- **Primary Service Area** (75% of discharges)
- **Secondary Service Area** (additional 15% of discharges)

Hospital

- Accredited by the American College of Surgeon’s Commission on Cancer

# Number of patients

<table>
<thead>
<tr>
<th>Out of State Total</th>
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</tr>
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<tbody>
<tr>
<td>Kentucky</td>
<td>4</td>
</tr>
<tr>
<td>Ohio</td>
<td>3</td>
</tr>
<tr>
<td>Other States</td>
<td>4</td>
</tr>
</tbody>
</table>

- Floyd 1
- Jefferson 1
- Knott 1
- Pike 1

Kentucky: Meigs 1, VA 1
Ohio: MI 1, NJ 1
Other States: Texas 2

Source: CAMC Cancer Registry, American College of Surgeon website; CAMC Planning Department 9/24/19