



2016
ANNUAL



RIVERSIDE

Cancer Care

REPORT



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Dear Friends,

Superman may be a fictional character, but his words ring true in the real world of cancer when he says, “You’re stronger than you think you are. Trust me.”

Every patient who faces a frightening diagnosis with courage, every caregiver at home who maintains bravery and relentless support, every health care provider who goes above and beyond to deliver effective, compassionate care—we all must summon our strength reserves to fight the cancer battle. When we do, we often discover that superheroes come in many forms. In the report that follows, you will meet some of them.

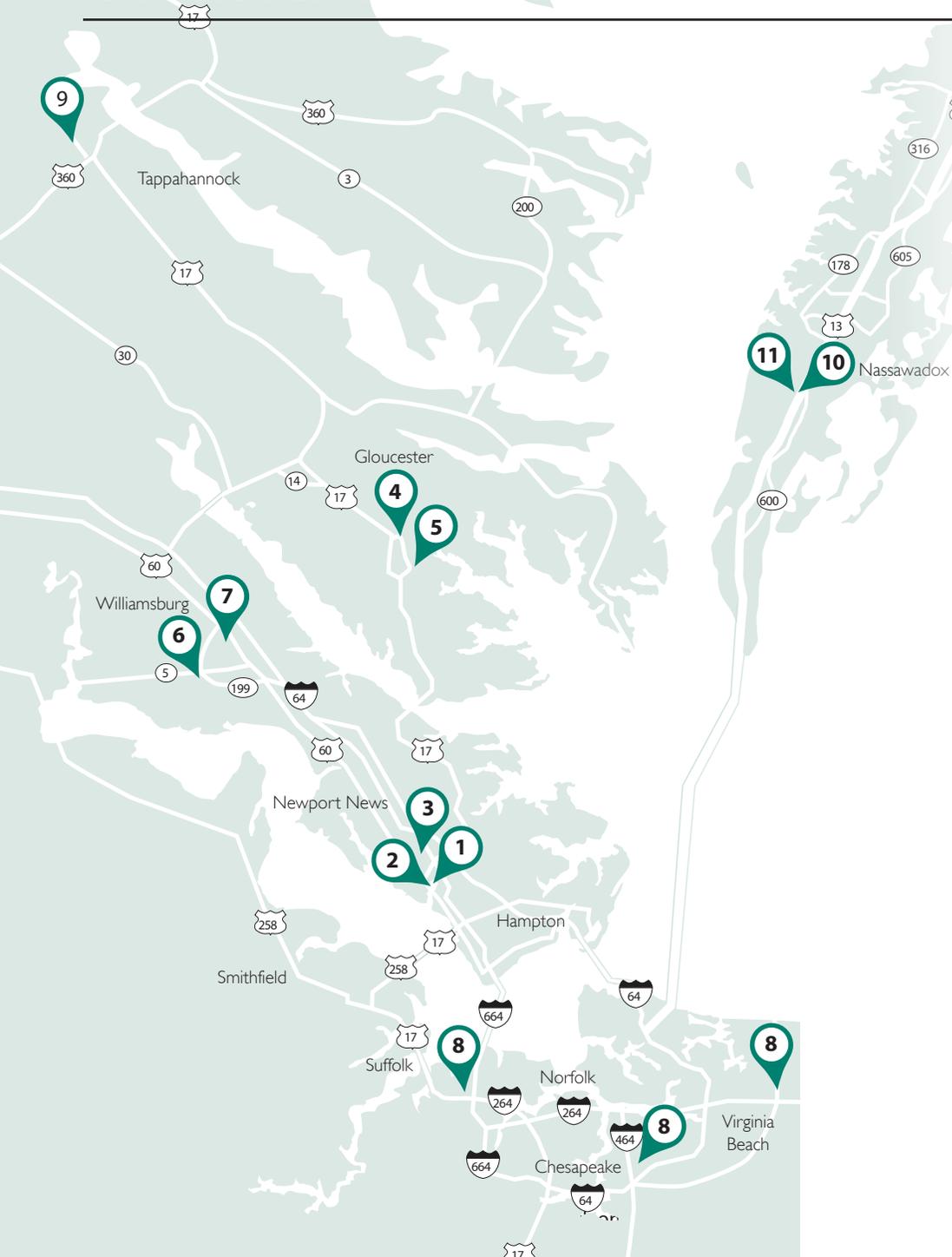
At Riverside, we are fortunate to have the powerful weapons of advanced medicine, cutting-edge technology, expert physicians, social support and dedicated medical staff on the front lines to care for patients as a whole. Perhaps our mightiest advantage is the Riverside Care Difference, which is a philosophy in which we promise to care for others as we would care for those we love.

This year, Riverside Cancer Care has again joined forces with our patients and their families with one goal in mind: to become stronger than cancer. Many times, we succeeded. Sometimes despite our best efforts, we did not. But every time, we discovered strength we didn’t know we had.

Sincerely,

Biral S. Amin, M.D.
Oncology Service Line Chief
Riverside Health System

Our Reach and Our Facilities

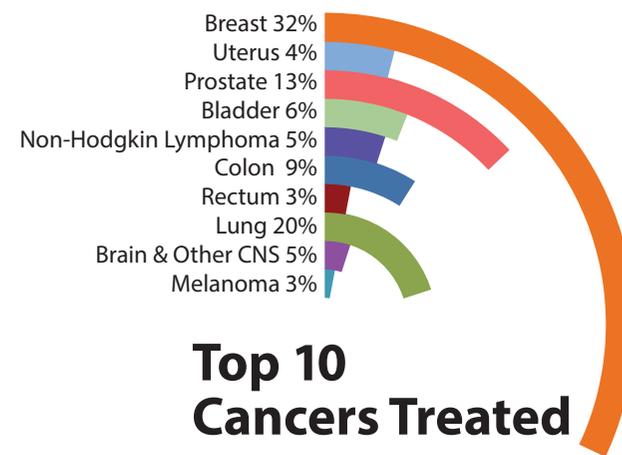


Riverside Cancer Care serves individuals and communities throughout southeastern Virginia through a wide range of inpatient and outpatient treatment and diagnostic locations. The broad geographic distribution of these healing environments, supported by skilled and experienced staff and state-of-the-art technology, helps assure that a growing number of patients have access to high quality cancer care closer to home.

- 1 Riverside Regional Medical Center 757-594-2000**
- 2 Riverside Cancer Care Center**
Newport News **757-594-2000**
- 3 Riverside Diagnostic and Breast Imaging Center**
Oyster Point **757-594-3900**
- 4 Riverside Walter Reed Hospital 804-693-8800**
- 5 Riverside Middle Peninsula Cancer Center 804-693-4900**
- 6 Peninsula Cancer Institute**
Williamsburg **757-345-5724**
- 7 Williamsburg Radiation Therapy Center**
Williamsburg **757-220-4900**
- 8 Cancer Specialists of Tidewater**
Suffolk **757-397-4200**
Virginia Beach **757-363-8212**
Chesapeake **757-436-2995**
- 9 Riverside Tappahannock Hospital 804-443-3311**
- 10 Riverside Shore Memorial Hospital 757-414-8000**
- 11 Shore Cancer Center 757-414-8355**

The Year in Review 2015-2016

- **On Sept. 29, 2015**, Riverside Regional Medical Center received full accreditation from the National Accreditation Program for Breast Centers. (There is currently no Outstanding Achievement Award (OAA) offered for this accreditation.)
- **On Nov. 17, 2015**, Riverside Regional Medical Center received full accreditation with commendation from the American College of Surgeons Commission on Cancer, along with the OAA.
- **On Sept. 15, 2016**, Riverside Shore Memorial Hospital received full reaccreditation with commendation from the American College of Surgeons Commission on Cancer, and is eligible for the OAA.
- In order to provide a multidisciplinary approach to cancer care, Riverside held weekly and monthly tumor boards to receive input from multiple angles surrounding patient treatment plans. A particular emphasis has been given to breast cancer patients at Riverside Regional Medical Center, so that every surgical breast cancer case is reviewed by the board.
- A focus group from Riverside Health System participated in an Association of Community Cancer Centers Molecular Testing Educational Interview: “ACCC Precision Medicine: Strategies for Improving Cancer Care Team Communication.”
- Nine events were held as part of the “Previvor” educational lecture series at the Riverside Cancer Care Center, with a total of 151 guests in attendance, 2,075 virtually (from live video launch in March).
- Nine survivor celebration events (one at each infusion center) were held in June of 2016.
- The Shirley Spain Healing Garden was dedicated at Riverside Walter Reed Hospital in Gloucester.
- Riverside received Quality Oncology Practice Initiative Certification.
- All four of Riverside’s radiation oncology centers were reaccredited by the American College of Radiology in 2016.



- The Centers for Medicare & Medicaid Services selected Riverside Cancer Care’s seven practices and 15 providers—more than any other health system of eight in Virginia—for its National Oncology Care Model program.
- A substantial medical oncology process improvement project was implemented across Riverside Health System to increase patient safety measures related to oral chemotherapy drugs.
- Riverside’s Gloucester radiation center added a new linear accelerator.
- \$8,700 was raised as part of this year’s Cancer Annual Day of Giving on May 18.



Total patients presented at 2015 tumor boards: 293
 Riverside Shore Memorial Hospital (meets monthly): **40**
 Riverside Walter Reed Hospital (meets monthly): **51**
 Riverside Regional Medical Center (meets weekly): **202**

A History of Leadership in Cancer Care

For decades of our 100-year history, celebrated in 2015, Riverside has led the way in the region's oncology expertise, shaping the quality and availability of specialized care for more than **55,522** cancer patients.

Riverside makes strides for the entire commonwealth of Virginia, installing the state's first full-body computerized axial tomography scanner (CT scanner).

Riverside receives accreditation by the American College of Surgeons Commission on Cancer.

Riverside introduces its continuum of cancer care as Riverside Cancer Services, becoming the first major health provider in the region to take this approach. Riverside's first array of cancer prevention and education services is established.

Riverside Regional Medical Center adds an oncology intensive care unit.

Construction is completed on the Williamsburg Radiation Therapy Center, a joint venture between Riverside Health System and Williamsburg Community Hospital.

1977

1979

1982

1984

1989

1991

1992

1994

1996

2000

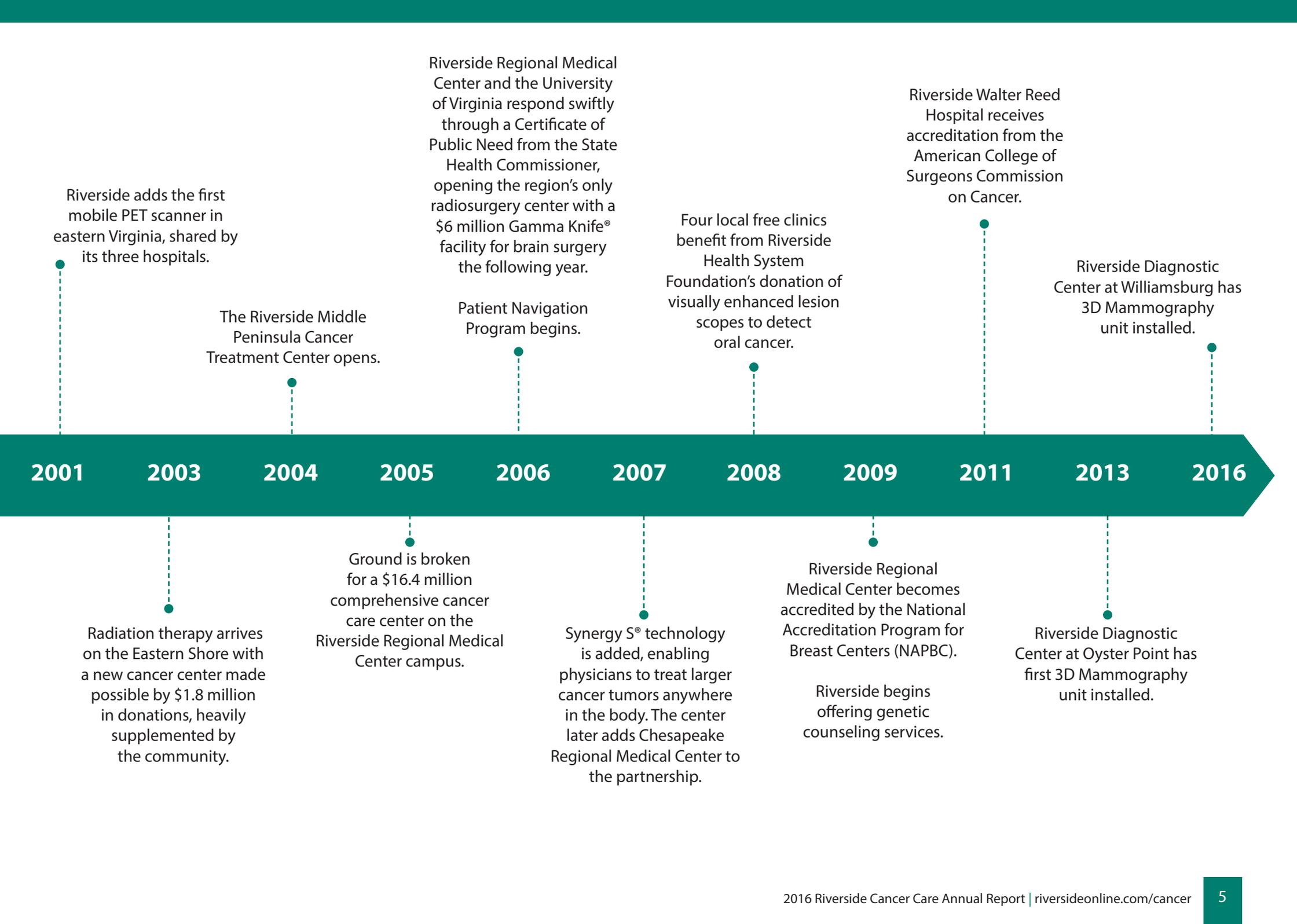
Riverside's tumor registry is established.

Riverside Hospital Cancer Treatment Center opens, serving as the only radiation therapy center between Richmond and Norfolk.

Riverside begins a mobile technology service: Cancer Awareness and Risk Education Services (C.A.R.E.S. Van) including mammography, along with a free telephone service called Cancer Helplink.

The Riverside Regional Medical Center oncology program is accredited by the American College of Surgeons as a Comprehensive Community Cancer Program.

Shore Memorial Hospital receives accreditation from the American College of Surgeons Commission on Cancer.



2001

Riverside adds the first mobile PET scanner in eastern Virginia, shared by its three hospitals.

2003

Radiation therapy arrives on the Eastern Shore with a new cancer center made possible by \$1.8 million in donations, heavily supplemented by the community.

The Riverside Middle Peninsula Cancer Treatment Center opens.

2004

Ground is broken for a \$16.4 million comprehensive cancer care center on the Riverside Regional Medical Center campus.

2005

Riverside Regional Medical Center and the University of Virginia respond swiftly through a Certificate of Public Need from the State Health Commissioner, opening the region's only radiosurgery center with a \$6 million Gamma Knife® facility for brain surgery the following year.

Patient Navigation Program begins.

2006

Synergy S® technology is added, enabling physicians to treat larger cancer tumors anywhere in the body. The center later adds Chesapeake Regional Medical Center to the partnership.

2007

Four local free clinics benefit from Riverside Health System Foundation's donation of visually enhanced lesion scopes to detect oral cancer.

2008

Riverside Regional Medical Center becomes accredited by the National Accreditation Program for Breast Centers (NAPBC).

Riverside begins offering genetic counseling services.

2009

Riverside Walter Reed Hospital receives accreditation from the American College of Surgeons Commission on Cancer.

2011

Riverside Diagnostic Center at Oyster Point has first 3D Mammography unit installed.

2013

Riverside Diagnostic Center at Williamsburg has 3D Mammography unit installed.

2016

Outreach & Detection

From prevention to survivorship, Riverside maintains cancer care leadership in Hampton Roads

Beyond superior care and support for cancer patients, Riverside’s comprehensive focus also encompasses caregivers, survivors and the greater community at every stage along the continuum. We accomplish this by offering more than 100 health events per year, implementing numerous education and support programs, obtaining beneficial grants to reach underserved populations, communicating consistent prevention and early detection messages, and facilitating and providing space for support groups.

56 outreach services benefiting 2,973 community members

Riverside’s Oncology Committee, comprised of providers, nurses and other health professionals, is instrumental in developing an annual cancer education and support plan that offers a wide variety

of outreach services. From skin analysis that alerts local farmer’s market patrons to invisible sun damage and encourages sunscreen use, to a monthly women’s clinic that offers Pap smears, breast exams and eligibility screening for free mammograms, we are fiercely committed to increasing awareness of cancer prevention and early detection, and supporting those who may be affected by cancer in any way.

Riverside has been leading these efforts locally for years, according to cancer education and outreach nurse Fran Holcomb, “not just for indigent patients, but for everyone,” she says. And she should know, after serving in the same position with Riverside since 1989, originally called a “resource nurse” until the mid-90s. “Riverside was one of the first in the community to do cancer prevention and early detection,” she explains. “At first, we had a telephone line and then that evolved into more as cancer evolved. Early detection and prevention

messaging became more important over the years. I’m proud to say that Riverside supported that from the very beginning.”

So has Fran. Five years as a hospice nurse early in her nursing career of 34 years motivated Fran to make a difference in the oncology field. “When you see a young person die of cervical cancer at age 28 and you know that’s preventable...that’s kind of where it started for me.” Today, Fran represents Riverside on the board of the Cancer Action Coalition of Virginia.

“You actually talk about cancer,” Fran says. “In the old days, it was ‘the C-word’ in whispers.”

What’s changed over the years? “You actually talk about cancer,” Fran says. “In the old days, it was ‘the C-word’ in whispers. When I started nursing, people were just starting to talk more—I could barely talk about it with a patient. It was a taboo subject. In fact, we used to do an annual breast cancer outreach at the malls, to teach people how to do a self-breast exam, including men. This was the early 90s. We had people that did not like the breast displays out on the table or the cards containing images of breasts. We had to almost hide things. We couldn’t even talk about the colon. People would not talk about bowel movements—maybe as a patient, but

Year-End Outcomes

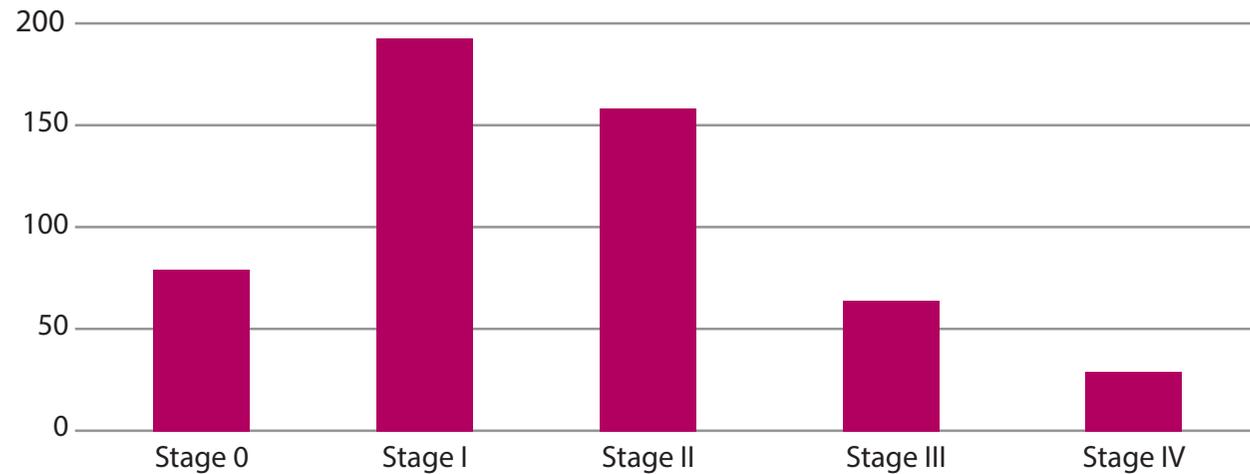
	Every Woman’s Life Federal Grant	Every Woman’s Life State Grant	Central Virginia Komen® Affiliate Grant	Tidewater Komen® Affiliate Grant
Patients Seen	435	76	56	273
Diagnosed With Breast Cancer	12	4	0	6

not out in the community. If we say, ‘when was your last colonoscopy?’ today people will say ‘yes, I’ve had mine!’ but not then. People are much more aware now and have a better comfort level in discussing it—things have changed very much for the better.”

There is so much awareness today, in fact, that Fran says sometimes the sheer amount of information can lead to ambiguity. “Now that there are so many studies and opinions, especially around guidelines, patients are confused,” she says. “That’s why Riverside has taken the position of helping patients determine, what is right for you according to your history and your family history? Here are some guidelines that we go by, but let’s personalize that so you know how to talk with your provider.

“For example, there is controversy about when to have a mammogram. The American Cancer Society says one thing—the American College of Radiology says another. It’s the same thing with prostate exams. For a man in their early 40s whose father had prostate cancer in his 50s or 60s, he really should be checked. And sometimes treating prostate cancer too early can cause more harm. So, the patient doesn’t know what to do. Our job is to help them see that these are questions they need to ask their doctor and get a straight answer about what is right for them. Guidelines are just what they are—guidelines. But personalized medicine is important, and that message needs to be heard as well.”

Breast Cancer Stage at Diagnosis in 2015



Outreach & Detection



Partner Highlight

The Central Virginia Affiliate of Susan G. Komen® is one of over 100 affiliates nationwide dedicated to ending breast cancer. It awards community grants to support breast health education and breast cancer screening and treatment programs in its service area, which covers approximately 60 cities and counties. The Komen Central Virginia Affiliate's local fundraising efforts have enabled it to fund projects with several organizations selected as having the greatest impact in serving uninsured or underinsured women in our area.

As one of those chosen organizations, Riverside Health System provides screening mammograms and diagnostic services as needed to 100 African American women who are financially ineligible for the Every Woman's Life program and living in the counties of Essex, King and Queen, King William, Richmond and Westmoreland. Through community partnerships, Riverside

also provides education about the importance of breast health and breast cancer screening.

This year, Riverside became one of the first grant recipients of the Central Virginia Affiliate of Susan G. Komen® for part of the Northern Neck/Tappahannock area, traditionally not covered by any grant. This means that women who could not be enrolled into the EWL program may now be eligible for breast cancer screening in areas where they could not previously obtain services. In the health district of Three Rivers, because grant coverage is split between the Tidewater Komen® Affiliate and the Central Virginia Komen® Affiliate, Riverside did not have full coverage there. As of this year, Riverside is now able to offer breast screening services in the western counties listed above for all indigent or uninsured women ages 40 to 64.

80% by 2018: A Colorectal Health Initiative Update

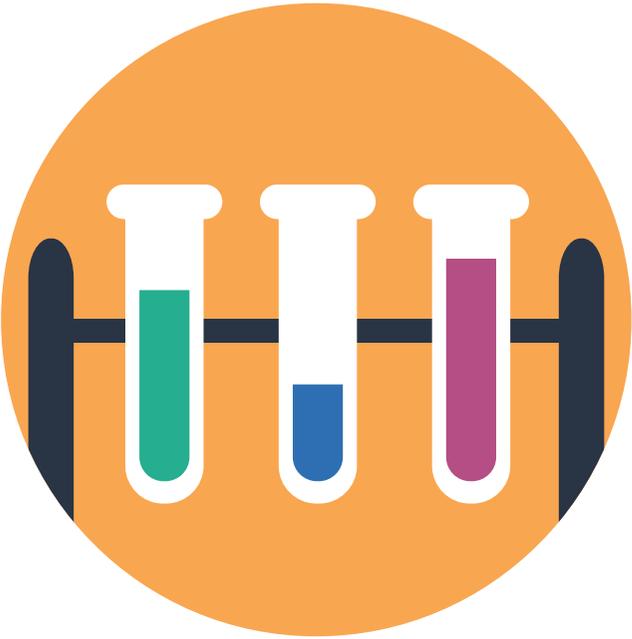
- All outreach programs, with the exception of support groups and Komen® race activities, contained colorectal prevention and early detection messaging and/or teaching.
- The Colorectal Cancer Shared Solutions Team met this year to address: barriers to screening, how to increase educational efforts, and how providers are discussing and documenting colorectal teaching, testing and recommendations. Areas of assistance we could offer to increase colorectal cancer screenings across our health system and community include solutions for patients without transportation and/or a post-procedure support person. Educational materials are also being discussed to increase awareness.
- Riverside participated in the state's colorectal roundtable meeting in March.
- Riverside is a participating member in the regional effort among health systems to send a unified message to the public about colorectal cancer prevention and early detection. Development of messaging and projects is in the beginning stages.
- As of January: Among age-appropriate patients with a Riverside Medical Group physician, 79 percent have completed a colonoscopy.
- Riverside Gastroenterology Specialists developed birthday cards, that are automatically sent to patients on their 50th birthday to remind them it is time to begin colorectal screenings.
- A Bonner Scholar through Christopher Newport University will be working with Riverside Cancer Services to develop new sustainable outreach for the community in 2017.



EIGHTYBY2018

Outreach & Detection - Continued

Genetic counseling provides lifesaving insight to patients, families and physicians



We know that everyone inherits genetic information called DNA from his or her parents. But it takes more than a biology class to decipher this crucial information, which sometimes proves to be the key to health, as many patients and families have discovered through genetic counseling, an important service added to Riverside's cancer care program in recent years.

DNA contains genes that each have a specific function, including protecting the body against cancer. When an individual is born with a gene that does not work properly, hereditary cancer can occur. Common indicators include diagnoses

before age 50 of cancers such as breast or colon; a rare diagnosis including sarcomas, ovarian cancer, or male breast cancer; and multiple individuals or generations of a family affected by cancer.

Deena Wahba, Riverside's genetic counselor, sees individuals with new cancer diagnoses, a history of cancer, and/or a family history of cancer. After collecting and evaluating a patient's medical and family history, she defines sporadic versus hereditary cancer and educates individuals about genes associated with hereditary cancer, cancer risks associated with non-working cancer genes, available medical management options, and benefits and limitations of available genetic testing options.

Genetic tests analyze the DNA in an individual's blood or saliva to determine if their genes are working correctly. While some tests are targeted and evaluate well-studied genes such as BRCA1 and BRCA2, some more comprehensive tests evaluate a greater number of genes whose association with cancer may be more recently discovered. A positive test result means that a gene is not working properly and is associated with an increased cancer risk. A negative result means that the test was normal and did not identify a problem in a gene associated with an increased cancer risk.

Even if a person has a normal genetic test, they can still benefit from Deena's services. "I think what is really important with genetic counseling is that

even if results are normal, it certainly doesn't mean there is not something in the family contributing to the cancer diagnosis," said Deena. "As a genetic counselor, I still need to evaluate an individual's personal and family history of cancer and ensure that proper medical management and screening guidelines are followed based on their history.

"For example, if a 42-year-old woman is referred for genetic counseling due to a recent diagnosis of breast cancer, even if genetic test results are normal, I would review management guidelines which recommend that her female relatives begin breast screening at age 32, 10 years earlier than the youngest diagnosis of breast cancer in the family.

"With an unaffected person, I run risk models to determine age-related lifetime risk for developing breast cancer, 10-year risk, and then I use those numbers to see if they meet criteria for breast MRIs, bi-annual breast screenings, etc. So even if genetic test results are normal, an individual may be at an increased risk for cancer and qualify for additional screening," she says. Deena will discuss this with the patient and collaborate with health care providers to make a plan to reduce the chance of developing cancer.

If genetic testing identifies a hereditary cause of a cancer diagnosis and/or family history of cancer, Deena reviews how the results will impact patient care. For example, because a patient with newly

diagnosed breast cancer may be at an increased risk to develop a new primary cancer, she and the patient's surgeon might discuss a more aggressive surgery such as a mastectomy. For family members who might be affected, Deena provides patients with a letter stating that a non-working gene was identified in a family member, explaining the personal and/or family history of cancer. It also outlines associated cancer risks, altered medical management and cancer screening for individuals who have this non-working gene, and instructions on how relatives can pursue genetic testing. Recipients are encouraged to contact Deena with questions or concerns.

A variety of physicians refer patients to Deena for genetic testing including but not limited to surgeons, medical oncologists, primary care providers, obstetrics and gynecology physicians, gastroenterologists and others. Although she is in Newport News three to four days a week, she also travels to Gloucester, Williamsburg and the Eastern Shore, and sees Southside patients virtually through telemedicine.

Clearly, the benefits of genetic counseling are multifaceted and can impact lives in a critical way. "Alerting women or men with cancer that they are at increased risk for other cancers, determining appropriate treatment, and therefore minimizing their risk to develop a second cancer—that's very important, and potentially lifesaving," says Deena. "Even more so, cancer is a disease that affects the whole family. There are not only

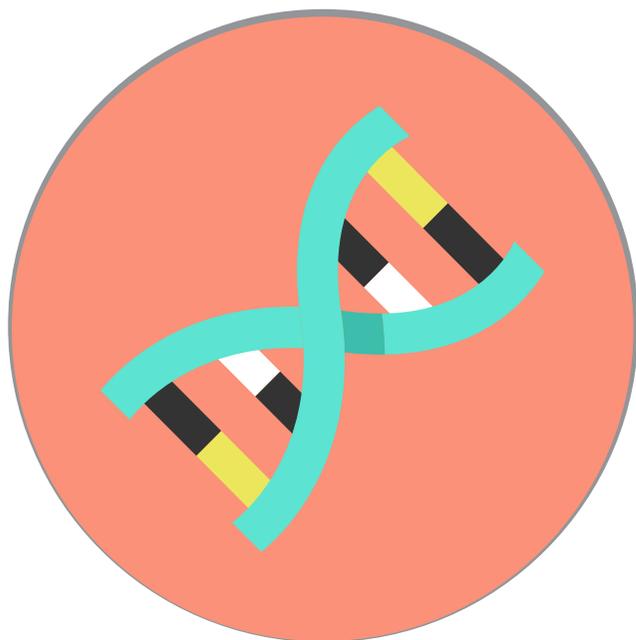
medical implications, but also social and familial implications. Genetic counseling allows me to pay acute attention to the psychological impact cancer has on the patient and their family members, especially when a hereditary component is identified."

Deena says genetic counseling is part of a larger team effort to help promote increased quality care for patients at Riverside. When testing is complete, she records all results, along with recommendations for screening and medical management based on published guidelines. That information goes into a clinical note in each patient's electronic medical record for review by the referring physician. Deena says, "Truly by integrating the genetic counseling component, Riverside health care professionals can come together and promote more jointed and comprehensive care for our cancer patients and their families."



Outreach & Detection - Continued

Patient Story: Jana King



When ongoing and serious health problems became too much for her son Victor to bear at age 49, Jana King traveled from Florida to Hampton, Virginia to help. That was almost two years ago, and she is still here as Victor continues to battle disease. Although there aren't clear answers for some of life's questions, her family has at least been provided with a few big answers, thanks to genetic counseling services at Riverside.

Jana took her son to the emergency room where a brain tumor was discovered and then removed surgically the next day. Doctors later determined that the brain cancer originated from colorectal

cancer, so six months later, Victor underwent colostomy surgery, removing the entire colon and rectum. When genetic testing showed that he possessed a genetic defect passed down from not just one parent, but both his mother and his father, it explained a lot. The family, who has been plagued with cancer throughout the past several years, realized they needed to be tested on a larger scale.

Victor's father, a prostate cancer survivor, has 11 siblings, many of whom have fought breast and other various types of cancer. While serving as caretaker for her ill son, Jana was diagnosed with endometrial cancer, which led to chemotherapy, radiation, a total hysterectomy—and thankfully, a total recovery.

Although genetic testing showed that Victor's sister Terri did not receive his particular genetic defect, she did encounter early signs of breast cancer several years prior to his diagnosis. So, in her early 40s, she elected to have a double mastectomy as a preventative measure. Tests at that time showed that her breast cancer was not hereditary. Then, when her mother Jana had a hysterectomy due to endometrial cancer, Terri chose to prevent this with a hysterectomy of her own, after having two children. Victor, who has no children, is currently undergoing radiation to treat another brain tumor recently revealed by MRI.

After Victor's diagnosis and genetic testing, Jana

and her former husband notified both sides of their family and encouraged testing, especially in case relatives married spouses who also had genetic indicators for cancer. Practically everyone in the family has now had a colonoscopy. They are grateful for the awareness that genetic counseling has provided.

"You don't know what you don't know," says Jana. "So you don't know you should be looking into these things. There should be more advertising about genetics." She finds it frustrating that cancer advocacy groups many times seem to say, "send money" in their messaging with no mention of what can be done through genetic testing. "I think everybody who has any kind of health problem should find out if it's genetic so that they can help people in their family get ahead of the game or gain awareness," said Jana. "It's all about gathering information."

And the process is simple, according to Jana, whose genetic testing simply included blood work, a swab of the mouth and several meetings with Riverside's medical genetic counselor, Deena Wahba. "Deena sat down with us and spent a long time going over everything in detail so that it made sense. She was very informative and very helpful," said Jana.

Jana and Victor were connected with Deena at his oncologist's office, but Jana feels that genetic testing should come into play even earlier, before a cancer

diagnosis. “For instance, if a patient has colon polyps like my son did, I think testing should at least be suggested just to make sure that this isn’t a symptom of a bigger problem,” she said.

Since Victor was under age 50, when colonoscopy screening typically begins, Jana says his doctor attributed rectal bleeding to hemorrhoids. His headaches were treated with sinus medication, and his blood pressure problems treated separately. “The doctors weren’t thinking cancer because of his age,” Jana explains. “Now he is under the care of Dr. McAllister, Dr. Kannarkat and Dr. Billings—and all of them are excellent.”

Although symptoms can unfortunately be misinterpreted by both patients and physicians, Jana says the bottom line is that genetic testing can eliminate a lot of things and provide important answers. “For me, it’s precautionary. Now I know what symptoms to look for. Now I know what to do.”

Genetic Counseling

Number of patients seen

8/1/2015-9/30/2016: **441**

Negative Results: **209**

Positive Results: **51**

Other: **169**



Surgical Specialists - Oncology

Uncommon surgical care leads to uncommon recoveries for Riverside patients



While many general surgeons routinely and effectively treat cancer patients, Riverside Cancer Care's surgery team also boasts a dedicated surgical oncologist—a physician with a rare specialty in cancer surgeries. John Donohue, M.D., the health system's only surgical oncologist, came to Riverside in 2013 following a 25-year practice at the Mayo Clinic.

More than 30 years ago, as a Harvard Medical School graduate and surgical resident at the University of California San Francisco, Dr. Donohue became intrigued by the burgeoning

field of oncology. "I was interested in the growing number of cancer diagnoses per year, the complexity of the problem and the research opportunities," he said. So he pursued additional training including a research fellowship with the surgery branch of the National Cancer Institute, as well as a clinical fellowship at Memorial Sloan Kettering Cancer Center.

Dr. Donohue became board certified in general surgery by the American Board of Surgery, long before surgical oncology evolved as its own subspecialty. It wasn't until 2011 that the ABS established a subspecialty certificate in complex general surgical oncology "to assess qualifications for the treatment of complex cases typically seen in cancer centers and specialized institutions." Although the board does not allow the grandfathering of physicians like Dr. Donohue for the new certificate, due to the impossibility of establishing fair standards, he says there will now be an increasing number of surgeons with the new board certification. Currently, online searches bring up less than 100 results for "surgical oncologists in Virginia," and that group includes varying degrees of focus.

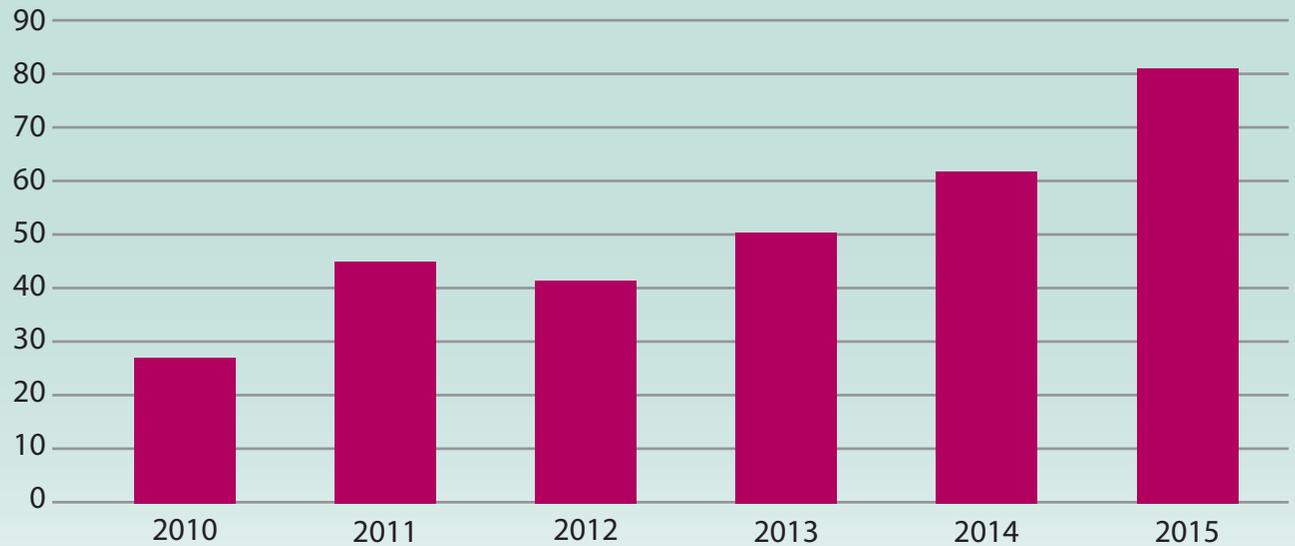
Surgery plays a key role in cancer treatment for many patients, the majority of whom undergo surgery as a first step. However, Dr. Donohue points to increasing indications for neoadjuvant treatment, which is given as a first step to shrink a tumor

prior to surgery. Neoadjuvant therapy typically involves chemotherapy and/or radiation and is commonly recommended for patients with more complex diseases, such as pancreatic, esophageal, and aggressive breast cancer. "This combination of treatments has been one of the largest areas of advancement in oncology over the last 40 years," said Dr. Donohue.

A notable recent success demonstrated by this type of treatment is the total recovery of a Riverside patient diagnosed with pancreatic cancer—a disease known for its grim prognosis. Following preoperative chemotherapy by George Kannarkat M.D. and surgery by Dr. Donohue, the cancer disappeared completely and the patient is doing very well after one year—a rare outcome for pancreatic cancer. "It doesn't get any better than that," says Dr. Donohue.

"This combination of treatments has been one of the largest areas of advancement in oncology over the last 40 years ..."

Breast Cancer Patients Receiving Neoadjuvant Therapy



PREVIVOR Cancer Education and Screening Events with Surgical Specialists

Dr. Donohue has participated in several of Riverside’s “Previvor” lecture series events, a patient education effort that focuses on a specific cancer type each month. Heavily focused on early detection, the event usually includes presentations from both a surgeon and a patient with related experience. In

addition to Dr. Donohue’s presentations on breast screening mammography, hereditary breast cancer and melanoma/skin exams, events have also addressed colonoscopy screening, digital rectal exams for prostate screening and other topics.

TOTAL: 151 in-person attendees; 2,075 Facebook video viewers

★★★★★ 4.57 average. star rating

Topics Included: cervical cancer, lung cancer, colon cancer, head and neck cancer, melanoma, prostate cancer, breast cancer & genetics and colon cancer and genetics

RIVERSIDE **PREVIVOR** SERIES

pre-viv-or/ noun **1.** People who want to decrease their risk of cancer.

Radiation Oncology

Successful radiation therapy relies on medical scientists behind the curtain



Radiation therapy described in simplest terms by radiation oncologist Biral Amin, M.D., is “the use of high-energy X-rays to treat rather than to see.” Dr. Amin, also Riverside’s oncology service line chief, says that scenarios in which it is chosen for treatment vary widely based on the cancer site, stage, patient age, and other factors, but it remains a common treatment component received by more than half of cancer patients. The therapy typically lasts 15-to-20-minutes and is administered daily (Monday through Friday) over a period of two to nine weeks, depending on the type of cancer.

But well before the patient arrives for the first treatment, an important collaborative process takes place—one that includes careful preparation not only by the physician, but also by some lesser-known contributors called dosimetrists and medical physicists.

After a patient’s initial CT scan, the radiation oncology team outlines the areas that need treatment as well as areas to avoid. The case then goes into the planning phase, in which a highly customized formulation of treatment is determined. Dosimetrists work with computerized CT scan slices to manipulate the beams that will be administered, and “mix the concoction,” says Ruth Van Davelaar, director of radiation oncology. Dr. Amin says it this way: “they get the radiation where we want it to go, using the right combination of angles and intensities to treat and avoid the appropriate areas.” As for the role of The physics department performs vital quality assurance to ensure that the dosimetry calculations are accurate and that the equipment will deliver the correct treatment.

Like superheroes that the public never sees, these behind-the-scenes members of the radiation oncology team usually fly under the radar. “The physicists and dosimetrists are like Oz,” jokes Dr. Amin. “Patients see the doctors, nurses and radiation therapists, but they aren’t aware of these other roles even though they are just as important.

There is a tremendous amount of technology, physics and planning that goes into the treatments.”

“That planning keeps patient safety in focus,” says Ruth, “making sure that all dose constraints are met for the correct target.” After planning is complete, the patient comes in to confirm accurate configurations and begin treatment with a therapist. Some may receive a freckle-sized permanent tattoo dot to serve as an external marker for guiding accurate administration. Ruth and the therapists have their own tattoo dots to show patients what to expect.

Radiation is not a standard across-the-board treatment in any way, but instead is characterized by a high degree of individualization. According to Ruth, the planning process can take one to seven days, depending on how much customization is needed. Dr. Amin adamantly insists on the necessity of tailored treatment. “Every tumor is different, and every patient’s anatomy is different, so the calculations are going to be different for every single patient,” he says. Both in calculations and in care, each Riverside cancer patient’s unique health challenges are met with unique solutions.

“The physicists and dosimetrists are like Oz ...”



Riverside's radiation oncology services include four main locations in Newport News, Williamsburg, Gloucester and the Eastern Shore. A second location in Newport News also includes a stereotactic radiosurgery unit.

In 2015, the Gloucester location added a new linear accelerator. When the Eastern Shore's cancer facility moves to its new campus in early 2017, it will be equipped with the same top-of-the-line radiation technology Riverside patients count on, including image guided radiation therapy for precise accuracy.

Efficient weapon against skin cancer emerges with new brachytherapy

Riverside's Cancer Care Center in Newport News has the capability to offer brachytherapy, an advanced treatment in which a radioactive source is placed inside or near the tumor itself. This delivers a high radiation dose to the tumor while reducing the radiation exposure in the surrounding healthy tissues. The Greek term for short distance, "brachy," indicates this therapy's contrast to external beam radiation therapy, which involves high-energy X-ray beams generated by a machine directed at the tumor from outside the body.

This localized brachytherapy treatment can be beneficial for prostate, endometrial, cervical and skin cancers, according to Dr. Amin. Within the last two years, the cancer care center has begun offering a new type of brachytherapy specifically for certain types of skin cancer. Achieving positive results, it also significantly reduces treatment times from the typical five days a week for four to six weeks to only six to 10 treatments over the course of two to three weeks. Dr. Amin says this appeals to many of his elderly patients, who often find it difficult to come in for treatments continuously for six weeks.

The flexible applicator used specifically for skin brachytherapy is called the Freiburg Flap, which is placed on large areas of the patient's skin. Mainly used for scalp and face areas, it is beneficial when conformity to the body is necessary. An alternate applicator, the Valencia, is best for small, flat areas.



Radiation Oncology - Continued

Patient Story: Rudy Stegmann



For Rudolph “Rudy” Stegmann, skin brachytherapy at the Riverside Cancer Care Center finally put an end to a skin condition on his scalp that plagued him for most of his life.

Since his teenage years, Rudy dealt with scales and scabs that covered a significant portion of his head, from above his eyes to the back of his neck. He saw dermatologist after dermatologist, who all administered the same treatment—freezing the affected area with liquid nitrogen. Since it was only a temporary solution, this painful process had to be repeated about every two months for many years. It became a nuisance of a routine that Rudy managed as best he could. “I usually scheduled it in the morning and then treated myself to lunch afterwards,” he recalls.

It wasn’t until Rudy reached his eighties that he saw a dermatologist in Williamsburg who told him that this continuous cryotherapy was ineffective and unnecessary. Rudy was pleased to hear that there was a newly accepted treatment that would get rid of the lesions, now identified as cancerous, once and for all. Radiation was the answer he had been waiting for.

Brachytherapy was administered over the course of a few weeks via the Freiburg Flap applicator, which Rudy likens to rubber tires or doormat material. “It was a stiff, white material with diamond-shaped holes...probably about nine inches wide by 10 inches long,” he describes. “It was heated to become flexible enough to fit over my whole head, with 18 tubes to attach to different places.” Though he said the treatment at times consisted of loud noises and

vibrating sensations, “it didn’t hurt at all,” he said. “It was easy, the people were friendly, and they let me listen to cowboy music.”

Even better, despite some redness, minor irritation and temporary hair loss, it worked. “It’s all gone—my head is perfectly clear,” he says for the first time in years. He explains that the brachytherapy treatment effectively killed his cancerous cells and stopped them from growing any more. When the successful process was complete, the radiation oncology team was incredibly pleased to show Rudy’s skin to him in the mirror. “They said, ‘doesn’t that look nice? It’s soft and pink, just like a baby’s bottom.’ I said, ‘great, now they’ll be saying all sorts of stuff about me!’” he says with a hearty laugh.

Chesapeake Regional, Riverside & University of Virginia Radiosurgery Center Celebrates 10th Anniversary

In 2003, Riverside radiation oncologist C. Ronald Kersh M.D. was sending as many as 30 patients to the University of Virginia for radiosurgical intervention each year, with that number growing annually. He had studied at UVA under Ladislau Steiner M.D., a colleague of Lars Leksell M.D., the Swedish physician who introduced the concept of stereotactic radiosurgery in 1951.

From his work with Dr. Steiner, Dr. Kersh knew that Gamma Knife® radiosurgery was then the best treatment for brain tumors, vascular abnormalities and other functional disorders of the brain. He introduced the idea of partnering with the university, which had been doing radiosurgical procedures since 1989 and seen the transformation of care available to neurological and oncology patients.

In February 2004, Riverside representatives met with the neurosurgery team at UVA to discuss opportunities that would help them better serve the Riverside community, not just in neuro-oncology but in other neurosciences as well. A partnership was formed under the medical direction of Jason Sheehan M.D., a neurosurgeon from UVA, and James Lesnick M.D., a Riverside Medical Group neurosurgeon.

On June 5, 2006, the first Gamma Knife® procedure was performed at the Radiosurgery Center, located on the campus of Riverside Regional Medical Center, and observed by partners from UVA, a neurosurgeon from the Czech Republic, and a physicist from London. By March of 2012, Chesapeake Regional Medical Center affiliated with the partnership, expanding the Center's reach to Virginia's Southside region.

Synergy S®

For cancers of the spine, neck, chest, lung, prostate, pancreas and liver—and for tumors in areas of the brain too large for the Gamma Knife®—the Synergy S® was chosen. A highly accurate non-invasive delivery system for stereotactic radiation, the Synergy S® combined a linear accelerator with the ability to visualize internal structure, including soft tissues, in three dimensions at the time of treatment. The radiation dose was precisely targeted at the tumor or lesion, resulting in less damage to surrounding healthy tissue. As with the Gamma Knife®, the benefits include no risk of blood loss, fewer complications, faster recovery and the ability to effectively treat patients who could no longer be treated by other methods of care.

Remaining Ahead of the Curve

For nearly a decade, the two original modalities served patients well. Then in July 2015, after the makers of the Gamma Knife refined its technology, particularly improving capabilities to treat multiple areas of the head at once, the Radiosurgery Center at Riverside installed the next iteration: the Leksell Gamma Knife® Perfexion™.

The Radiosurgery Center has also continued to maximize the assets of Synergy S®. It provides greater protection for the spinal cord, allowing re-treatment of areas that have already received standard radiation. The Center recently re-treated a series of carefully selected patients, many of whom

The Gamma Knife®

The first Gamma Knife® purchased for the Radiosurgery Center was the Leksell 4C, the state-of-the-art option at that time. It was used for patients with brain tumors and other conditions, such as arteriovenous malformations, trigeminal neuralgias or vestibular schwannomas. Its high-intensity cobalt radiation therapy concentrated the radiation over a small volume, while risks associated with open surgery were eliminated. Further benefits included faster treatment planning and programming, decreased treatment time, and a prompt return to normal activity for patients.

CHESAPEAKE REGIONAL,
RIVERSIDE & UNIVERSITY of VIRGINIA

**RADIOSURGERY
CENTER**

Celebrating **10** years
2006-2016

Radiation Oncology - Continued

were Stage 4. At a meeting of the Radiosurgery Society, it was reported that these patients were experiencing an 87 percent response rate with minimal side effects—and patients with third line chemotherapy with a 10 percent response rate were realizing 70 and 80 percent with the Synergy S®.

With the emergence of newer, more efficient extracranial radiosurgery equipment, the Radiosurgery Center is once again determined to acquire the most effective treatment for its patients and is evaluating installation plans for 2017.

Thanks to powerful medical advances and a dynamic 10-year partnership, Riverside neurosurgeons and radiation oncologists are often able to control patients' tumors without having to do open procedures—thereby relieving pain, arresting tumor growth and causing tumor regression. Rather than merely a solid radiosurgical program with a regional presence—in itself a remarkable accomplishment—the Chesapeake Regional, Riverside & University of Virginia Radiosurgery Center has grown into a respected member of the international radiosurgical community, and has quite simply changed the way complex neuroscience and cancer care is delivered.

As of June 2016, the Radiosurgery Center has provided 1,294 Gamma Knife® treatments and 6,500 Synergy S® treatments, with outstanding results.

The center has contributed significantly to national and international research literature through:

- The American Society of Radiation Oncology
- The Radiosurgery Society
- The American Radium Society
- The International Multicenter Database for Radiation Oncology
- The International Journal of Radiation Oncology
- The Radiation Oncology Journal
- Oncology



Patient Story:

Synergy S® Image-Guided Radiosurgery: For Christine, it's the gift of more time and more hope



For Christine Young, a longtime resident of Williamsburg, 2004 wasn't the best of times. It was the year she was diagnosed with breast cancer and then underwent a bilateral mastectomy along with chemotherapy and radiation therapy. Four years later, she learned that the cancer had spread to other parts of her body.

To combat the disease, Christine is now receiving Synergy S® radiotherapy treatment at the Radiosurgery Center on the Riverside Regional Medical Center campus. Integrating the precision of the linear accelerator with real-time 3D imaging capabilities, along with a way to accurately accommodate natural movement of the tumor, makes it possible for Synergy S® to serve as a beneficial alternative to the potential risks and recovery time of both surgery and conventional radiation therapy.

“For the past 12 years, the challenge has been carrying on with my life and being able to get as much out of it as possible,” Christine says. “My family has been wonderful and for most of the time, I've been able to continue working. Throughout all of it, the bottom line is that the care I'm receiving is what has kept me alive.

“When I first had conventional radiation therapy the sessions were every day over a period of time. I had a lot of fatigue. I had some bad reactions on my skin, too, which isn't all that uncommon. So far with the Synergy S®, I've felt tired after treatment but the ability to deliver more radiation at a single session with more accuracy means that the therapy isn't on a daily schedule as before. So I'm able to get my energy back in between sessions. That's done a lot for my quality of life. I also haven't had any of the kind of skin problems I experienced before.

“The cancer that began in my breasts is in my lymph system now so the Synergy S® radiotherapy is treating those specific tumors. They've shrunk or gone away though I know they could come back. I have to go through chemotherapy again, too. But I'm thinking research and new medical developments are going on all the time, so who knows what that could mean for me. In the meantime, what I'm getting is more time and more hope. And that means a lot to me and my family.”

Medical Oncology

Oncology nurses conquer oral chemotherapy safety concerns with improved patient education process

Riverside's oncology service line has seen a substantial shift from intravenous to oral chemotherapy. With approximately 62 oral chemotherapy agents on the market currently and approximately 364 in the research process, "it's becoming the new gold standard," says Pat Emerson, Riverside's clinical practice director for medical oncology. "There's an oral chemotherapy for almost every disease state now, while intravenous chemotherapies being developed are few and far between."

Patients benefit from the ability to take this medication in the comfort of their own homes rather than spending time in the traditional supervised infusion suite. However, with this advantage comes an increased risk of incorrect dosing that is a growing concern in regard to health, financial and waste issues, according to recent studies. Complex dosing regimens and lack of proper education can present a daunting opportunity for health care providers, insurance carriers and specialty pharmacies to ensure safe and compliant care.

In the midst of Riverside's increasing attention to this issue, Pat decided to undertake process improvement for oral chemotherapy as her capstone project for her Doctorate degree in Nursing Practice. Through patient surveys, she confirmed the need to better identify, track and educate Riverside's oral chemotherapy patients.

The solution? "Our goal was to build a nurse-based education program to make sure patients receive information about safe handling of these drugs," she said. That effort has been successful, as is the larger endeavor implemented by Pat and the rest of the team at the Peninsula Cancer Institute and Riverside Cancer Infusion Center in Newport News. They've established a manual process in which a nurse is assigned to serve as the ongoing primary contact for each oral chemotherapy patient and family. "Patients know exactly who to call if they have any issues, side effects or questions," says Pat. "They have their nurse's direct line." While IV chemotherapy patients have had a primary nurse in the past, oral chemotherapy patients did not until now. This process is currently being implemented in multiple oncology practices across the health system wherever a registered nurse is available.

Initially, the primary nurse meets with the patient at least twice, before and after beginning the medication. "During the first appointment, the nurse answers any remaining diagnosis questions and provides specific oral chemotherapy education, including discussion and literature, plus a dashboard for recording and classifying symptoms as 'urgent,' 'concerning' or 'expected,'" said Pat. "They follow up by contacting the patient, making sure the prescription gets to the correct specialty pharmacy, and that it is received. They basically serve as internal navigators for our patients."

At the next visit, the nurse asks the patient to bring the medication in (usually delivered by mail) to verify that it is correct. "They go over everything again to make sure the patient knows when to take the medicine and all of the precautions involved," Pat says. Additional components include education for family members, personalized calendars for complex drug regimens, extra time aside from regular appointments if needed, and even new system-wide templates for electronic medical record documentation specifically designed to ensure consistent and effective communication for the process. "Our primary focus is to make sure that we are providing oral chemotherapy in the safest possible manner that we can," says Pat.

That focus has been well received and is now serving as a model for others to follow. In addition to receiving the Riverside Medical Group Practice Excellence Award last year, the project was presented by Pat at this year's Oncology Nursing Conference in San Antonio. She has also been invited by the Association of Community Cancer Centers to host in a series of webinars on oral chemotherapy this fall.



Cancer Team



* Not pictured: Karen Rob

Riverside Cancer Care Goes Beyond Medicine

“We receive so many ‘thank-yous’ for the comprehensive care we provide,” says medical oncology clinical practice director Pat Emerson, “especially integrative medicine services like music therapy, massage therapy, pet therapy, and dietary counseling. Although there is no direct financial return on investment, this is a commitment that Riverside Health System made when they first developed this program, knowing that these were going to be expenses. They have been so supportive of it for as long we’ve been in existence. They see the value to the patient, and you can’t put a dollar figure on that.”

That intangible value goes both ways, according to Pat, who says she wouldn’t trade her 26 years in

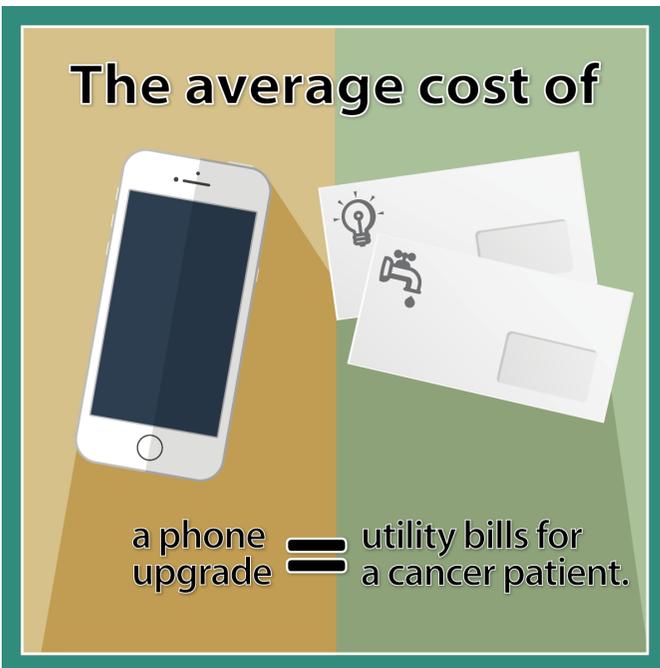
oncology nursing with Riverside for anything. “I love what I do. I feel honored to be able to take care of these patients. They are just the best and it’s so rewarding. I always say, if I could only give them a third of what they give me, we’re good.”

Giving generously is a value that spans the organization. It’s demonstrated repeatedly by the Riverside Foundation and its donors, who are instrumental in supplemental support for cancer patients, even beyond integrative medicine.

“It is not uncommon for me to sign a request for a patient that can’t afford to pay their electric bill in the winter because they’re going through chemotherapy,” Pat said. “Our staff and cancer

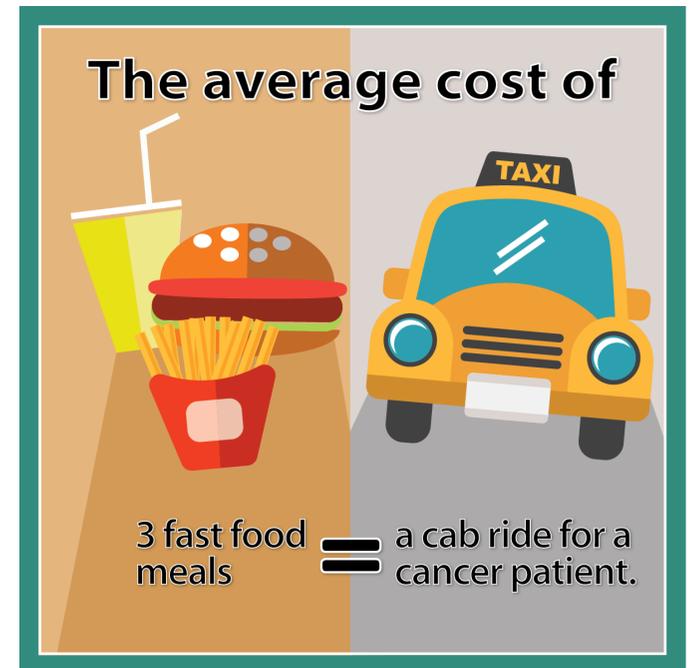
care navigators are so active, I think they have antennas for these patients. They identify those in need, they fill out the paperwork, we send it to the Foundation, and the Foundation cuts a check to help. Transportation, utility bills – you name it.

“I think the hardest thing is that those of us who are gainfully employed and not fighting cancer...we don’t really know the challenges that some of these folks have just trying to get the care they need. But I have to say at Riverside, anything identified as a need for these patients is submitted and we help them. If there is something they need to get through their treatment when they just don’t have the resources, we make sure we get it done.”



Be a hero
Your investment in Riverside enables us to provide the level of care our mission requires and our communities deserve.

riversideonline.com/beahero



Welcoming New Physicians

Riverside proudly welcomed several exceptional additions to our cancer care team this year, each bringing unique expertise to further enhance the care delivered to our oncology patients.



Ilene F. Stephan, M.D.
Internal Medicine
Riverside Radiation Oncology Specialists - Newport News/Williamsburg/Gloucester

Dr. Ilene Stephan graduated from the University of Virginia School of Medicine, where she also completed residency training. She is board certified by the American Board of Internal Medicine.

Dr. Stephan joined the radiation oncology group from a Riverside internal medicine practice. More comprehensive follow-up care may be provided for patients after radiation treatment, a unique differentiator for an oncology practice. Also improving continuity of care, Dr. Stephan sees patients six weeks after their final treatment and at regular intervals afterwards if needed.



Laura D. Kerbin, M.D.
Medical Oncology, Riverside Cancer Infusion Centers
Riverside Shore Cancer Center - Eastern Shore

Dr. Kerbin earned her medical degree from Eastern Virginia Medical School, where she also completed residency training. She completed a fellowship at the Medical College of Virginia. Dr. Kerbin is board certified by the American Board of Internal Medicine in the specialties of internal medicine, hospice and palliative medicine, and medical oncology.



Lauren E. Salmon, D.O.
Medical Oncology, Hematology
Cancer Specialists of Tidewater - Suffolk, Chesapeake, Virginia Beach

After earning her medical degree from the Virginia College of Osteopathic Medicine in Blacksburg, Dr. Salmon completed an internal medicine residency at Christiana Care Hospital in Newark, Delaware. She also completed fellowship training in hematology and oncology at East Carolina University in Greenville, North Carolina. Dr. Salmon is board certified in internal medicine and board eligible in hematology and medical oncology.

With special interests in breast and gastrointestinal cancers, she strives to incorporate symptom management, mental well-being, and spiritual support into a holistic treatment plan for every patient.



Angela R. Cochran, M.D.
Medical Oncology, Hematology
Peninsula Cancer Institute - Newport News, Gloucester, Williamsburg

Dr. Cochran received her medical degree from the University of Texas Medical School at Houston. She completed her residency in internal medicine at the University of Louisville, followed by a fellowship in medical oncology and hematology at the Medical College of Virginia.

Prior to her fellowship, Dr. Cochran worked as a hospitalist at St. Elizabeth Hospital in Edgewood, Kentucky. She served at a relief clinic for Hurricane Katrina victims and has volunteered with the Special Olympics and Operation Enduring Warrior. Dr. Cochran is board certified in internal medicine.



Rozales A. Swanson, M.D.
Cardiothoracic Surgery
Riverside Thoracic & Cardiovascular Surgery - Newport News

After earning his medical degree from the Howard University College of Medicine, Dr. Swanson completed surgical internships at Greenville Memorial Hospital and a surgical residency at the University of South Florida, Bay Pines and VA Hospital Systems. He completed fellowships in thoracic surgery at Carolinas Medical Center and advanced heart failure, transplant and transcatheter aortic valve replacement at Tampa General Hospital. He is board certified by the American Board of Thoracic Surgery.

A highly skilled surgeon with expertise in lung and heart transplantation, Dr. Swanson has extensive experience with ventricular assist device implantation, mitral valve repair and replacement and thoracic endovascular aortic repair. He has previously served as a surgeon in the U.S. Navy as well as in private practice.



Karl L. Pete, M.D.
Urology
Riverside Urology Specialists - Williamsburg

Dr. Pete earned his medical degree from Duke University. He completed an internship and residency in general surgery at the University of California, Davis, followed by a residency in urology at the Medical College of Wisconsin. Dr. Pete is board certified by the American Board of Urology.

Dr. Pete specializes in the treatment of bladder cancer, prostate cancer, kidney stone disease/endourology, benign prostatic hyperplasia and hypogonadism. Before joining Riverside, Dr. Pete practiced for nearly 10 years in Raleigh, North Carolina. He has served as a clinical assistant professor of surgery at the University of North Carolina at Chapel Hill and is a two-year member of the North Carolina State Health Coordinating Council.

Cancer Wellness Pathway provides continuity of care, guidance for recovery



“I’ve just completed treatment for cancer. What now?” It’s a challenge that many patients face while struggling to return to the normal routine of life. Pat Emerson, Riverside’s medical oncology clinical practice director says, “Patients are so focused on getting the treatment they need that sometimes they don’t think about the wellness components. So we’re really working hard to make sure they know about all of the resources out there.”

One of those resources, the Riverside Cancer Wellness Pathway, is a program aimed at bridging the gap between oncology services and rehabilitation therapy for patients, aiding in survivorship and recovery following cancer treatment. By fostering the relationship between the two service lines, patients are more likely to be referred by their oncology providers to physical, occupational or speech therapy beneficial for regaining strength and resuming normalcy.

The effort, now solely implemented within Riverside, began approximately two years ago as a partnership with an external program called STAR (Survivorship Training and Rehabilitation). One of its goals is for every patient to be screened by an oncology nurse or physician following treatment to determine if he or she has returned to the activities of daily living, such as driving, working and exercising—without pain or fatigue. “Any red flags indicating that the person is not where they used to be would result in a referral to therapy,” explains cancer wellness pathway coordinator Julie Scott.

The other side of the coin is that “some folks may benefit from physical therapy prior to treatment,” Julie says. For example, an individual diagnosed with breast cancer may be trained on exercises to have on hand immediately after surgery and during radiation in order to maintain range of motion.

“The head and neck cancer population should be referred to a speech therapist before surgery or radiation for training on exercises to keep swallowing strong. This may prevent the need for a feeding tube or other interventions,” Julie says. An additional benefit of a referral before treatment is the establishment of a rapport so that patients know there is someone they can call or return to with questions and concerns about their recovery.

As a result of the effort, Julie reports success in the form of rising referral rates and increased internal collaboration, including the formation of several steering committees. Comprised of core members of outpatient rehabilitation and oncology, the committees meet quarterly to discuss referral rates, events and awareness efforts. “Then we go back and share that information with our teams so that the Riverside Cancer Wellness Pathway is something that everyone is familiar with,” says Julie. “We’re keeping the conversation going.”

Patient Story: Wanda Slade



When the nurse walked out of the room during Wanda Slade's yearly mammogram and returned with another nurse, she knew something was wrong, especially from her own work as a certified nursing assistant. An additional mammogram soon confirmed the appearance of changes since her previous screening a year earlier, and Wanda found herself at the beginning of a long road ahead.

Because she was uninsured, the Virginia Department of Health's Every Woman's Life program made it possible for her to obtain both that prior screening and the current one—something for which she was especially thankful.

"We wouldn't have known anything without the previous imaging to compare it to," Wanda says. "I tell women, 'please get this done every year.'"

Due to her screening results in the early summer of 2015, 47-year-old Wanda underwent a biopsy that revealed cancer cells in one of her lymph nodes. The diagnosis was stage 2 breast cancer.

"After the biopsy, I met Elizabeth, who was my navigator," Wanda says. "I would call her my doorway to all of this. She was really my eyes and my understanding. Whatever the doctors were saying, she put it at a level that I could understand.

"I needed her. It was so good to have her there at the beginning. She took care of getting me approved for Medicaid, and she connected me with everyone I needed to know."

One of the people Wanda needed was Dr. Kannarkat. "We met with him and he had a plan," she says with appreciation. "He was very kind. He shared that everyone was working together for me." Wanda elected to receive chemotherapy followed by surgery to remove 14 lymph nodes, and finally radiation.

Another key connection on Wanda's path was her primary nurse, who she saw at every chemotherapy treatment. Wanda said "she asked me questions that I would look for my friends to answer. I would say, Well, she knows so I don't need to know. Then my nurse said, 'Wanda, do you know? You have your sister here with you but this is your body. You have to know what's going on.' I really needed to hear that because I was walking very blindly. I didn't know what I had, what stage, or anything. She really took the time to talk to me one-on-one. She said, 'Look at your paperwork. Some cancers are not curable, but yours is!' She made it okay for me to know what was going on. She made sure I was accountable. I would call it tough love in a sense because I didn't want to walk through it. I didn't want to carry it. But I had to know what I had. I had to understand what kind of drugs I was taking. That was great. I loved that. She made me face it."

Chemotherapy, or as Wanda calls it "kick my butt," was perhaps her toughest challenge. "It wasn't fun. I went through a lot with that. I had to stop working because I was sick a lot. So I lost my job, and my house. Elizabeth really helped me make sure that I at least kept my car payments. That's the toughest thing when you can't work. There are people who can work and go through this. But the ones that can't...what happens to them? What if they don't have family members to help? It brings up a lot of questions."

Wanda and her son Christian, a college student, made the difficult choice to move into her mom's one-bedroom apartment. "That wasn't good, but that's what we did," Wanda says. "I have older kids but my daughter was in Virginia Beach, and my other son didn't have room for me...they just couldn't do it. Other people would have only taken me but not my son."

As she approached the next step of surgery, Wanda says her surgeon helped to put her and her family at ease. "What was so great about Dr. Donohue was that he took the time over and over and over during the same appointment to make sure that my son and I understood. Even if we asked the same questions, he was very patient and he repeated himself until we really got it. As you deal with cancer, you hear what the doctor is saying but you don't really hear it."

During the final stages of her treatments, Wanda was referred to Riverside Physical Therapy in Newport News to see a lymphedema therapist named Shantel. Through stretches, movements, massage and a fitted sleeve designed specifically to reduce swelling, Wanda says the goal was to get moving after surgery and radiation. "At first I didn't understand why I wasn't seeing a doctor for that, so it was a little scary. But Shantel helped me move my arms after surgery. She gave me exercises with pictures to take home and practice." Not only was the therapy effective, but Wanda admits, "it really helped by giving me accountability. I might not have done it otherwise."

Furthermore, Wanda says she never would have known to seek out or stick with physical therapy if it weren't for her oncology doctors—all three in medical oncology, radiation oncology and surgical oncology spoke to her about it. "No one said anything different," she said. "They all knew that it would be part of my process."

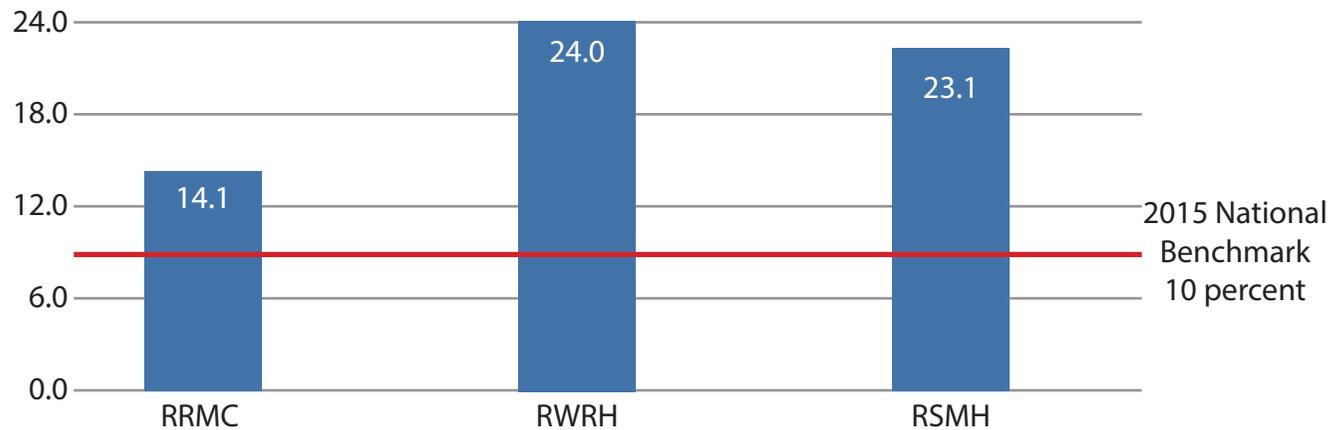
Today, after a year of fighting cancer, she has been able to return to her job and rent another place to live from her previous landlord. At the end of one pathway and the beginning of another, Wanda is officially cancer free and back to living her life.

Survivorship

Supporting Champions

End-of-treatment survivorship care plans required by the American College of Surgeons are provided to our cancer patients to serve as a helpful guide on what to expect, next steps and recommendations for follow-up care. But beyond that, Riverside provided **53** support and survivorship programs impacting **1,207** patients, caregivers or community members this year. This includes support for the Lost Chord Support Group and the Leukemia, Lymphoma and Myeloma Support Group, with 24 meetings total.

Percentage of Cancer Patients Receiving Care Plans in 2015



Support Groups, Outreach and Lecture Events (1/1/2016 – 9/30/16)

Total Participants	Number of Pap smears	Number of prostate screenings	Number of support group services	Number of outreach other than testing
3976	341	89	20	47



A Day to Celebrate Super Survivors

National Cancer Survivors Day® is an annual, treasured celebration of life that is held in hundreds of communities nationwide, and around the world, on the first Sunday in June. It is a **celebration** for those who have survived, an **inspiration** for those recently diagnosed, a gathering of **support** for families, and an **outreach** to the community.

On National Cancer Survivors Day®, thousands gather across the globe to honor cancer survivors and to show the world that life after a cancer diagnosis can be fruitful, rewarding and even inspiring. It is a day for everyone, whether you're a cancer survivor, a family member, friend or medical professional.

This day provides an opportunity for all people living with a history of cancer – including America's more than 14.5 million cancer survivors – to connect with each other, celebrate milestones, and recognize those who have supported them along the way. It is also a day to draw attention to the ongoing challenges of cancer survivorship in order to promote more resources, research and survivor-friendly legislation to improve quality of life for cancer survivors.

Riverside: Working Together to Celebrate Life

To take part in the national celebration, and to support and honor our cancer patients (also known as survivors) and caregivers, Riverside held nine survivor days during the month of June at all of our cancer treatment/infusion centers. Making the most of this year's superhero theme, staff members and guests dressed as their favorite Marvel or other comic characters. Participants enjoyed games, food and survivorship resources, including discussion and literature about cancer-fighting “super” foods by an oncology-certified dietitian.

Riverside Cancer Services teamed with the following to provide survivorship celebrations:

- Riverside Cancer Care center in Newport News
- Riverside Shore Cancer Center
- Riverside Middle Peninsula Cancer Center
- Riverside Williamsburg Radiation Oncology
- Riverside Cancer Infusion Centers: Williamsburg, Chesapeake, Virginia Beach, Suffolk and Tappahannock
- Riverside Peninsula Cancer Institute: Williamsburg
- Riverside Cancer Specialists Of Tidewater: Chesapeake, Virginia Beach, Suffolk

**For information about joining a support group, please contact:
Fran Holcomb, RN, BSN, OCN, cancer education and outreach Nurse
800-520-7006, Fran.Holcomb@rivhs.com**



Clinical Research

Medical oncologist helps keep Riverside cancer treatments on the cutting edge with clinical research



William MacLaughlin, M.D.

Medical School: New York Medical College

Residency: Eastern Virginia Graduate School of Medicine - Internal Medicine

Fellowship: Columbia-Presbyterian Medical Center - Hematology and Oncology

Board Certification: American Board of Internal Medicine - Internal Medicine, Hematology, Medical Oncology

With 35 years of experience as an oncologist and hematologist, Dr. William MacLaughlin has also devoted much of his medical career to clinical research, an early interest sparked during his undergraduate work in biology and physiological psychology. He believes clinical studies are useful for maintaining awareness of new treatments coming along and also for offering patients access to them earlier, with hopes for better outcomes.

The bulk of Dr. MacLaughlin's research as a clinical investigator has involved cancer studies, primarily focused on lung and breast disease. He has developed clinical trials at Riverside that deal with early and advanced stages of triple-negative breast cancer, a type that does not respond to hormonal therapy. His studies have helped our physicians determine which treatments are better tolerated by these patients, leading to more uniformity of best practices.

Dr. MacLaughlin's trials have also discovered improved treatments for lung cancer by determining that continuing treatment past the point of response and providing longer periods of maintenance therapy resulted in better disease control and survival rates. Another trial measures patients' preferences regarding newer oral targeted therapy versus intravenous therapies.

Explaining that a clinical trial is an analysis of new and/or existing therapies to determine which is better or to learn more about the impact of a

treatment itself, Dr. MacLaughlin says trials can be performed in almost any setting with almost any disease type, from simple to complex. The only way to scientifically prove that one treatment is better or safer than another, or has fewer or more side effects, is through a formal clinical trial that controls the other variables and evaluates patients in a specific manner. Otherwise, it is difficult to know if a positive outcome is actually the result of a superior treatment. This is the way medicine progresses in terms of quality, which leads to more successful treatment approaches, says Dr. MacLaughlin.

Before a study begins, participants are educated thoroughly, in part through a detailed informed consent document that outlines the trial, its purpose, treatments and why they were chosen, expected side effects and potential benefits. Laypeople are often involved to make sure the consent form is readable and understandable. By this point, even new, truly investigational treatments have been through preliminary testing beforehand, in which small doses are gradually increased to determine safety.

A formalized follow-up method analyzes laboratory tests or X-rays and monitors certain symptoms to determine the impact of treatment. This process, often repeated at more frequent intervals than standard practice allows, is developed by experts in the field—for example, lung cancer experts design a lung cancer study.

While it is impossible to guarantee that a clinical trial will be directly beneficial to a particular patient, at the very least it contributes to the overall understanding of a disease process that may help others in the future. But even for an individual patient, there are two big advantages.

First, it is sometimes the only way to obtain access to a cutting-edge or investigational treatment not yet commercially available. This is particularly advantageous for people with tumors that are difficult to treat or when the current treatment has room for improvement.

Secondly, even in a clinical trial comparing the current standard treatment with something new, where there is a 50 percent chance that a patient receives the traditional therapy available outside of the study, he or she still receives state-of-the-art treatment in addition to closer monitoring and potentially better management.

In the event of side effects or adverse events, clinical trial protocols usually have specific recommendations for management. Beyond that, in the case of unusual side effects, even unrelated to the treatment, Riverside physicians have access to input from national experts who designed the trial and have even more familiarity with the therapies. All clinical trials go through multiple layers of analysis as to their scientific merit and safety before ever being offered to patients, to ensure the provision of adequate protections.



Appendix

Primary Site	RRMC*		RWRH*		RSMH*		RTH*		RDHW*	
	Total	Analytic								
Oral Cavity & Pharynx	42	38	8	7	2	2	0	0	4	3
Lip	1	1	0	0	0	0	0	0	0	0
Tongue	8	6	3	2	1	1	0	0	0	0
Salivary Glands	6	6	1	1	0	0	0	0	0	0
Floor of Mouth	1	1	0	0	0	0	0	0	0	0
Gum & Other Mouth	3	2	0	0	0	0	0	0	0	0
Nasopharynx	4	3	0	0	0	0	0	0	1	0
Tonsil	16	16	3	3	1	1	0	0	2	2
Oropharynx	1	1	0	0	0	0	0	0	0	0
Hypopharynx	2	2	0	0	0	0	0	0	0	0
Digestive System	292	267	39	36	39	36	25	25	34	32
Esophagus	30	29	3	3	0	0	0	0	4	3
Stomach	26	24	6	6	2	2	3	3	6	5
Small Intestine	3	3	2	2	3	2	1	1	0	0
Colon Excluding Rectum	101	93	13	13	16	15	11	11	16	16
Rectum & Rectosigmoid	43	40	9	7	7	7	4	4	5	5
Anus, Anal Canal & Anorectum	13	13	0	0	2	2	1	1	0	0
Liver & Intrahepatic Bile Duct	19	14	4	3	2	2	1	1	1	1
Gallbladder	9	9	1	1	0	0	0	0	0	0
Other Biliary	4	4	0	0	1	1	0	0	0	0
Pancreas	38	33	0	0	6	5	4	4	1	1
Retroperitoneum	2	1	0	0	0	0	0	0	1	1
Peritoneum, Omentum & Mesentery	2	2	1	1	0	0	0	0	0	0
Other Digestive Organs	2	2	0	0	0	0	0	0	0	0
Respiratory System	321	290	50	42	25	22	16	12	9	8
Nose, Nasal Cavity & Middle Ear	2	2	0	0	0	0	0	0	0	0
Larynx	13	12	2	1	3	3	0	0	3	2

Primary Site	RRMC*		RWRH*		RSMH*		RTH*		RDHW*	
	Total	Analytic								
Lung & Bronchus	305	275	48	41	22	19	16	12	6	6
Trachea, Mediastinum & Other Respiratory Organs	1	1	0	0	0	0	0	0	0	0
Bones & Joints	1	1	0	0	0	0	0	0	0	0
Soft Tissue (including Heart)	9	7	1	1	1	1	0	0	0	0
Skin Excluding Basal & Squamous	57	35	7	6	11	9	2	2	2	1
Melanoma -- Skin	53	32	7	6	9	7	2	2	2	1
Other Non-Epithelial Skin	4	3	0	0	2	2	0	0	0	0
Breast	441	419	61	61	49	47	12	11	18	17
Female Genital System	110	99	13	11	9	9	1	1	4	3
Cervix Uteri	16	13	0	0	1	1	0	0	2	2
Corpus & Uterus, NOS	61	58	7	6	5	5	0	0	0	0
Ovary	20	18	5	4	0	0	1	1	2	1
Vagina	3	2	0	0	1	1	0	0	0	0
Vulva	10	8	1	1	2	2	0	0	0	0
Male Genital System	241	151	23	13	22	19	18	17	27	22
Prostate	231	142	22	12	21	18	17	16	26	21
Testis	7	7	1	1	1	1	1	1	1	1
Penis	1	1	0	0	0	0	0	0	0	0
Other Male Genital Organs	2	1	0	0	0	0	0	0	0	0
URINARY SYSTEM	120	110	10	9	6	6	8	8	42	38
Urinary Bladder	59	55	5	5	4	4	6	6	35	32
Kidney & Renal Pelvis	56	50	5	4	2	2	2	2	4	3
Ureter	3	3	0	0	0	0	0	0	3	3
Other Urinary Organs	2	2	0	0	0	0	0	0	0	0
Eye & Orbit	1	1	0	0	0	0	0	0	0	0
Brain & Other Nervous System	88	77	1	1	4	4	0	0	1	1
Brain	42	39	0	0	2	2	0	0	1	1
Cranial Nerves Other Nervous System	46	38	1	1	2	2	0	0	0	0

Primary Site	RRMC*		RWRH*		RSMH*		RTH*		RDHW*	
	Total	Analytic								
Endocrine System	44	37	1	1	0	0	3	3	4	4
Thyroid	34	32	1	1	0	0	3	3	4	4
Other Endocrine including Thymus	10	5	0	0	0	0	0	0	0	0
Lymphoma	71	64	8	7	7	6	8	8	8	6
Hodgkin Lymphoma	7	7	8	7	1	1	8	8	8	6
Non-Hodgkin Lymphoma	64	57	0	0	6	5	0	0	0	0
Myeloma	35	32	1	0	5	4	1	1	3	3
Leukemia	30	14	2	1	6	5	2	1	0	0
Lymphocytic Leukemia	16	5	2	1	3	2	2	1	0	0
Myeloid & Monocytic Leukemia	12	7	0	0	3	3	0	0	0	0
Other Leukemia	2	2	0	0	0	0	0	0	0	0
Mesothelioma	7	6	1	1	0	0	0	0	1	0
Miscellaneous	44	40	5	5	10	9	2	2	3	3
Total	1,954	1,688	231	202	196	179	98	91	160	141

* Hospital is accredited by the American College of Surgeons Commission on Cancer
Analytic = Patient who were diagnosed and /or received initial cancer care at Riverside facility.
RRMC = Riverside Regional Medical Center
RWRH = Riverside Walter Reed Hospital
RSMH = Riverside Shore Memorial Hospital
RTH = Riverside Tappahannock Hospital
RDHW = Riverside Doctors Hospital Williamsburg



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Every member of our team commits to the Riverside Care Difference when they join Riverside. Our Riverside Care Difference is the way in which we deliver care and services, as a team, by putting our patients and customers at the heart of all we do. The Riverside Care Difference represents our ongoing commitment to provide you with the best care possible:

- To keep you safe • To help you heal
- To treat you with kindness • To respect your wishes



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