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Photographs may include models or actors and may not represent actual patients. Physicians provide clinical services as employees or agents of those medical centers, Baylor Health Care System, Scott & White Healthcare or Baylor Scott & White Health. ©2016 Baylor Scott & White Health. BID BHCSONC_89 9.16
There are several definitions of partners, including a legal definition of a business arrangement. The definition that applies for this annual report, however, is the archaic definition, “one that shares.” In the pages that follow we discuss activities with several partners, all having in common a sharing that benefit knowledge and care for our patients.

We have formed a research collaboration with the Translational Genomics Institute (TGen) to advance the understanding of the mechanisms of cancer and to find better ways to detect, follow, treat and prevent malignancy. Teams of researchers and clinicians will come together and focus on women’s, abdominal and hematologic malignancies. A research retreat in October laid the groundwork for several research projects to begin in the next months.

In the realm of cancer treatment, Baylor Scott & White has collaborated with McKesson Specialty Health and Texas Oncology to build North Texas’s only proton center. Texas Oncology uses the new Center to provide proton therapy services to its patients. The first patients entered treatment in November of 2015.

As the past year progressed, so did the relationships with our colleagues in Central Texas as part of the new Baylor Scott & White. Our oncology teams have met regularly to begin to grow our sharing in research, education and quality.

In the past year we have also worked with exceptional partners to bring awareness and philanthropy to the fight against cancer. In these pages you will read about Cancer Blows and how a patient and world-renowned trumpet player fought multiple myeloma and then teamed up with some of his fellow luminaries to raise funds for research to improve outcomes for that disease. We are also excited that we will be working with the American Cancer Society over the next few years to raise the necessary funds and construct North Texas first Hope Lodge.

As I reflect on the approaching five-year anniversary of our beautiful outpatient Cancer Center, I think of the great partners that we have worked with in making this a reality, and Partnering for Hope for patients with cancer. Sharing and caring; that is what partners do.

Alan M. Miller, MD, PhD
Chief of Oncology, Baylor Scott & White Health – North Texas
Medical Director, Baylor Charles A. Sammons Cancer Center at Dallas

BAYLOR CHARLES A. SAMMONS CANCER CENTER AT DALLAS

FOR NEARLY FOUR DECADES, BAYLOR CHARLES A. SAMMONS CANCER CENTER AT DALLAS, AN INTEGRAL PART OF BAYLOR UNIVERSITY MEDICAL CENTER AT DALLAS, HAS PROVIDED QUALITY CLINICAL CARE, ADVANCED TECHNOLOGY, AND CLINICAL RESEARCH TO PATIENTS, ALONG WITH COMPREHENSIVE SUPPORT SERVICES AND PROGRAMS FOR PATIENTS AND THEIR FAMILIES. WITH THE 2011 OPENING OF THE 10-STORY OUTPATIENT TREATMENT FACILITY AND INTEGRATION WITH BAYLOR T. BOONE PICKENS CANCER HOSPITAL, BAYLOR NOW OFFERS THE LARGEST OUTPATIENT CANCER CENTER IN NORTH TEXAS. ANNUALLY, MORE THAN 90,000 CANCER VISITS OCCUR AT BAYLOR SAMMONS CANCER CENTER AT DALLAS, AND MORE THAN 800 PEOPLE PARTICIPATE IN RESEARCH TRIALS.

We offer treatment for all forms of cancer, with particular emphasis on lung, pancreas, colon, breast, prostate and gynecologic cancers. Physicians on the medical staff of Baylor Sammons Cancer Center at Dallas also have special expertise in treating blood and bone marrow cancers, such as leukemia, lymphoma and myeloma. We pride ourselves on offering a full spectrum of oncology services, from education to advanced treatment options and rehabilitation programs. Specialists and staff work diligently to treat patients in an environment filled with compassionate, quality care by using effective methods in prevention, diagnostic, and treatment.

Depending on the type of cancer and the needs of each individual patient, both standard and innovative treatment options are available. Therapies include blood and marrow transplantation, surgery, chemotherapy, targeted therapies, immunotherapy and radiation, through a collaboration with Texas Oncology and The US Oncology Network/McKesson Health. Proton therapy is available to patients across North Texas.

Scientists at Baylor Sammons Cancer Center at Dallas perform extensive cancer research, and support services like the Cvedio Patient Education Center, Erma’s Appearance Center, and the Healing Environment Program help Sammons treat the whole patient.

Learn more about us at BSWHealth.com/DallasCancer.
INTEGRAL TO THE DELIVERY OF EXCELLENT CARE IS THE STRONG CLINICAL FOCUS ON DELIVERING TO EACH PATIENT A CONSISTENT GUIDELINE AND PROTOCOL-DRIVEN CARE PLAN.

- **Dr. John Preskitt**, CHIEF OF SURGICAL ONCOLOGY

**Embedded in the construct of these centers are the following:**

- Multidisciplinary team of clinical experts
- Tumor conferences with prospective presentation of patient care
- Focus on key quality indicators
- Advanced research database
- Active clinical trials

Every patient will receive a personalized plan of care, which is discussed with a team of multidisciplinary experts at our cancer conferences where we collaboratively evaluate and recommend the most appropriate treatment plan for each unique patient. “In one piece, we’ve assembled expertise across multiple medical disciplines to come up with a treatment plan that is specific for the individual patient and the characteristics of their tumor,” says Dr. Thomas Hudson, medical director of the Genitourinary Research and Treatment Center. In addition to physician and nursing experts, the care team at our research and treatment centers includes specialists in support, areas such as nutrition, genetic counseling, psychosocial support and spiritual care.

To date, the following centers are actively accepting patients and moving cancer care forward:

- Pancreatic Cancer Research and Treatment Center
- Breast Cancer Research and Treatment Center
- Chest Cancer Research and Treatment Center
- Genitourinary Cancer Research and Treatment Center
- Neuroendocrine Cancer Research and Treatment Center
- Skin Malignancies Research and Treatment Center

To learn more about these centers, please visit BSWHealth.com/DallasCancer, or call 214.820.3535.

"In the past 30 years, we have made tremendous progress against many forms of cancer. But nationally, there's still much work to be done," says Alan M. Miller, MD, PhD, medical director of Baylor University Medical Center at Dallas, research and treatment center and chief of oncology for Baylor Scott & White Health — North Texas.

In addition, the overall number of deaths from pancreatic cancer will increase more than any other major cancer type in the next 15 years. For the vast majority of people, the only way to cure it today is through surgery. But not all cancer cells can be removed through surgery. In addition, these cells are very resistant to chemotherapy and radiation therapy.

"We already have quality in surgery for pancreatic cancer, which is a very important component for our patient care, but we need more targeted tools to improve survival," says Carlos Becerra, MD, medical director of the Surgical Oncology Center at Baylor University Medical Center at Dallas. "With continued advances in new drugs and clinical trials, we believe that the future is bright and we have an opportunity to provide hope for our patients in areas where there may not be much hope today."

"We're working on developing new drugs to target this cancer at the molecular level," Dr. Becerra says. "We're focusing on the cells that cause cancer, and finding drugs that affect those cells—either killing them or keeping them from dividing and spreading—while leaving healthy cells alone.

This type of treatment, called “targeted” therapy, is often more effective than other types of treatment and may be less harmful to normal cells, according to the National Cancer Institute.

"We have the specialists, the research and the experience to focus on cures for pancreatic cancer," says Scott Celinski, MD, medical director of the Pancreatic Cancer Research and Treatment Center at Baylor University Medical Center at Dallas. "Research into new drugs offers the best hope for a cure for our patients."
COLLABORATION SEEN AS ESSENTIAL TO PERFECTIONING PRECISION MEDICINE MODEL FOR PATIENT CARE

A remarkable precision medicine collaboration announced on May 21, 2015, matches the world-class genomics, proteomics, data analysis, and new therapies expertise at the Translational Genomics Research Institute (TGen) with renowned clinical investigators and immunological specialists and the large patient population at Baylor Scott & White Health – North Texas. These combined qualities are the necessary ingredients for pursuing and perfecting precision medicine: matching the optimal treatment to the specific patient.

Alan M. Miller, MD, PhD, medical director of Baylor Sammons Cancer Center and chief of oncology, sees the strengths of Baylor and TGen forging a significant next step in the evolution of cancer care, enabled by tremendous strides in technology. “The reason we can do this now is because of the rapidly changing dynamics of cancer treatment and the growth of both targeted therapy and immune therapy. When we can bring together the strengths of TGen and Baylor—TGen’s strength in targets and Baylor’s strength in immunity—we move into being at the forefront of what is called immunogenomics and really being able to leverage these two revolutionary changes in cancer care.”

“You have to go back 40 years and look at when chemotherapy and radiation therapy were both emerging and when we began to look at the power of combining chemotherapy and radiation therapy,” Dr. Miller said. “We’re now, I think, seeing another revolution of that type, bringing together genomic-based targeted therapy with immune-based approaches to cancer treatment.”

The Baylor-TGen collaboration had its origins in what is widely hailed as a dramatic proof-of-concept collaboration inspired by TGen Physician-in-Chief Daniel Von Hoff, MD, whose professional roots trace back to his years as a professor at the University of Texas Health Science Center at San Antonio, where he initiated a new therapeutics unit and collaborated with doctors to help patients across the Lone Star State. That included dozens of opportunities to interact with physicians at Baylor University Medical Center at Dallas, home to the Baylor Charles A. Sammons Cancer Center.

Dr. Von Hoff drew on his knowledge of the Texas medical landscape to help match the phenomenal talents of a Texas oncologist like Baylor’s Joyce O’Shaughnessy, MD, with a proven Arizona translational scientist like TGen’s John Carpten, PhD.

Dr. O’Shaughnessy and Carpten’s clinical trial of 14 patients with triple-negative breast cancer produced such groundbreaking genomic and clinical research that their study paper—published in Molecular Cancer Therapeutics—became the most cited article published in that journal in 2013. “That is probably one of the more exciting clinical trials of the last 5 years,” said Dr. Miller. “That was the first major collaboration between Baylor and TGen.”

Dr. Carpten, TGen’s deputy director for basic science—who with Dr. Miller will codirect the new Baylor-TGen collaboration—agreed: “TGen had the opportunity to do our first precision medicine study using next-generation sequencing as the genomic technology for selecting patients for therapies,” Dr. Carpten recalled. “Learning from Dr. Von Hoff’s wisdom, after selecting triple-negative breast cancer as the model disease, we began to see how much each could add. I already could see it would be a project that we would work on together.”

Building on that success, and also at the urging of Dr. Von Hoff, Baylor has since joined with TGen in other projects, including a massive nationwide clinical trial of melanoma patients started this year by the Stand Up To Cancer Melanoma Dream Team and the Melanoma Research Alliance. That project is led by Jeffrey Trent, PhD, TGen president and research director.
COLLABORATION’S INITIAL FOCUS: THREE AREAS OF STUDY

The newly formed Baylor-TGen collaboration will initially focus on three major areas of study: breast cancer and other women’s cancers; blood cancers, especially multiple myeloma; and abdominal cancers, such as pancreatic and colon cancers, with a special emphasis on new ways of detecting cancer.

ABDOMINAL MALIGNANCIES STUDY GROUP

Baylor’s Ajay Goel, PhD, and Carlos Becerra, MD, are joined with TGen’s Mohammed Muratlica, MD, PhD, in this group that will look at pancreatic cancer, colon cancer, as well as new methods of detecting cancers early when there is a greater chance of success.

“Here comes the great synergy of the Baylor-TGen collaboration, because now you’re bringing together Dr. Muratlica’s expertise in circulating tumor DNA and Dr. Goel’s expertise in microRNA,” Dr. Miller said. “And maybe it’s the first time that these two groups are going to come together, with the biomarker test panel that’s going to be the solution to all this.”

LIQUID BIOPSY, IMMUNOLOGY, AND “PERSONALIZED VACCINES”

Coursing through all of the Baylor-TGen studies will be the use of genomic, proteomic and epigenetic information and immune profiling to match patients to new targeted therapies and the pursuit of clinical trials to test new treatments. Dr. Miller said. And there will be an emphasis on using new technologic breakthroughs to pursue better cancer treatments by employing new immunologic techniques and detecting cancers earlier, including the use of liquid biopsies.

Baylor has a rich history of using a particular type of immune cell—the dendritic cell—in immunotherapy. At the most basic level, these cells are extracted from a patient, programmed in the lab to identify specific antigens, and then reintroduced to the patient to help attack the cancer.

“It’s a very specific approach,” Dr. Miller said. “I think it’s going to be evolving and we will still continue that path. But there is also going to be a path using a slightly different technology, and rather than take the dendritic cells out and train them in the lab, to be able to train them in this individual’s own body to attack the individual’s cancer.”

Unlike flu or polio vaccines designed to prevent disease, Dr. Miller said these “personalized vaccines” would be designed to treat an existing disease, hopefully from it ever coming back.”

Besides the goal of detecting cancer early, another challenge is to monitor patients after treatment so if the cancer returns, intervention could start immediately. Liquid biopsies are emerging as a new cancer early warning system. They detect circulating tumor DNA, microRNA, and even tumor cells in the blood. “If you can detect them, even in very small quantities in the bloodstream, that’s your liquid biopsy,” Dr. Miller said. Such tests, when perfected, should be safer, less intrusive, less costly, and produce quicker results than scans or traditional surgical biopsies.

BAYLOR AND TGEN WORKING TOGETHER: A TWO-WAY STREET

“It’s finally becoming evident that precision medicine is likely going to improve outcomes for cancer patients. It’s the wave of the future for clinical management,” said Dr. Carpten. “In order to do this effectively, one would want to have a translational institute, we must have strong clinical facilities and medical institutes, and that’s where TGen and Baylor bring as a collaboration.”

Baylor, as a cancer center and become a National Cancer Institute-designated center, needs the expertise of TGen to bolster its research. Dr. Carpten said. “Instead of trying to build Baylor-TGen, a decade-long study sponsored by the Multiple Myeloma Research Foundation.”

“From the TGen standpoint, Baylor brings one of the largest oncology programs in the country,” Dr. Miller said. “It’s a medical system that is really dedicated to delivering the best, most compassionate care, which is where it all starts.”

Dr. Miller added, “It’s a group of people who are really working with the underprivileged, the least, most compassionate care, which is where it all starts.”

Dr. Carpten said. “For TGen to be effective as a translational institute, we must have strong clinical relationships.”

Dr. Von Hoff said Baylor is a tremendous fit for TGen. He likes to refer to the relationship as “a two-way street.” He considers it a privilege to work with the staff at Baylor, and admires the institute’s commitment to its community and the less fortunate. “It’s a group of people who are really working with the least, most compassionate care, which is where it all starts.”

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Dr. Miller foresees additional opportunities for collaboration and a time when personnel will be specifically recruited to work on Baylor’s and TGen’s combined efforts. “There will be a cohort of people coming along in the next few years who will be TGen or Baylor, but they will be people who are ‘collaboration people,’ Dr. Miller said. “It will be a potential model for the rest of the nation.”

“Instead of trying to build Baylor-TGen, a decade-long study sponsored by the Multiple Myeloma Research Foundation.”

As a result, he hopes to be able to continue to do our part to make cancer much more of a chronic disease, instead of a lethal disease— and eventually a historic disease.”
TEXAS CENTER FOR PROTON THERAPY

THREE OF THE LEADING NAMES IN HEALTH CARE IN NORTH TEXAS JOINED FORCES TO BUILD TEXAS CENTER FOR PROTON THERAPY IN LAS COLINAS, WHICH OPENED IN NOVEMBER 2015. BAYLOR SCOTT & WHITE HEALTH, THE US ONCOLOGY NETWORK, SUPPORTED BY McKESSON SPECIALTY HEALTH, AND TEXAS ONCOLOGY FORMED THE COLLABORATION THAT BROUGHT THE 63,000-SQUARE-FOOT FACILITY TO THE AREA. TEXAS ONCOLOGY USES THE NEW CENTER TO PROVIDE PROTON THERAPY SERVICES TO ITS PATIENTS.

Baylor Health Care System, now Baylor Scott & White Health, has collaborated with Texas Oncology and The US Oncology Network in the field of cancer care for many years,” explains Texas Oncology physician Alex Miller. Miller also is chief of oncology, Baylor Scott & White Health – North Texas and medical director, Baylor Charles A. Sammons Cancer Center at Dallas. “We serve many patients in the state of Texas and pride ourselves on offering advanced treatment options and quality care. Expanding upon the strength and expertise of the Baylor, Texas Oncology and The US Oncology Network cancer programs to bring proton therapy to North Texas was an important way to continue providing quality care to our patients.”

Proton therapy is an advanced form of radiation treatment that uses a beam of the positively charged particle of an atom—the proton—to damage the DNA of cancer cells. Because the beam targets a tumor’s three-dimensional shape, proton therapy provides an extremely precise method to deliver radiation. The technology is used to treat a wide variety of cancers, including brain and spine; breast; esophageal and upper GI; head, neck and skull base; lymphomas; liver; lung and thora; prostate; pediatric; sarcoma; and recurrent tumors.

The Las Colinas center features advanced technology including a 220-ton magnet-packed cyclotron that accelerates protons to two-thirds the speed of light. Electromagnets also guide the protons through a beam-line to a treatment room. Using images of the patient from a variety of imaging sources—CT, MRI and PET—a customized treatment plan is devised.

Before each proton treatment, on-board imaging allows the therapy team to precisely target the tumor. The patient is carefully positioned using a robotic treatment couch. A gigantic gantry, weighing 110 tons, rotates around the patient and precisely delivers radiation to the shape, size and depth of the tumor target. The protons then destroy the cancerous cells, and the protons’ unique physical properties minimize exposure and subsequent damage to the surrounding tissue.

Proton beams are designed to deposit their highest radiation dose at the tumor, and unlike x-ray therapy, proton therapy delivers less radiation as it extends outside the body and little to no radiation after it reaches the tumor. This reduces exposure to surrounding healthy tissue and the subsequent possible short-term and long-term side effects.

Texas Center for Proton Therapy is the only treatment center in Texas, and one of only a few centers in the nation, to offer pencil-beam scanning with on-board cone beam CT imaging to carefully guide treatment. Pencil-beam, or spot-scanning proton therapy, delivers proton beams measuring only millimeters wide that yield an even greater level of radiation dose conformity and precision. Cone beam CT is a three-dimensional volumetric imaging technology.

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“The Center teams advanced technology with nationally-recognized physicians, physicists and other support staff that have extensive experience in proton therapy,” says Gary Barlow, the Center’s director. “Combined, our clinical staff has more than 70 years of experience. We also have a patient support team that is committed to treating the whole patient, not just the tumor. That means helping with logistical needs like lodging and transportation. Patient support also addresses personal and emotional needs for patients and their families.”

Since opening in late 2015, the Center has seen an excellent early response and interest from patients, physicians and the entire community. In fact, to date, the Center has treated more patients than originally projected. Patients with a variety of cancers have benefited from proton therapy treatment, including adults and children with complex tumors.

“The physician team at Texas Center for Proton Therapy is committed to research,” says Andrew Lee, MD, MPh, medical director. “Our physician and physicist team consists of accomplished researchers in proton therapy. The promise of this extraordinarily precise radiation treatment is significant. It’s an important priority for us to help discover new ways to take full advantage of the power of protons in effectively treating cancer while minimizing side effects. Clinical trials and research will be conducted at this Center in the near future.”

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LIQUID BIOPSIES

BAYLOR RESEARCHERS LEADING THE DEVELOPMENT OF LIQUID BIOPSYES, THE NEXT GENERATION OF CANCER DIAGNOSIS AND TREATMENT GUIDANCE

“You have cancer.” For most people those words unleash a multitude of emotions: Fear. Anger. Despair. Often what follows are multiple rounds of invasive biopsies to retrieve small samples of the tumor tissue. The samples are analyzed during diagnosis and treatment to pinpoint the scope of the cancer and the effect treatment is having on the tumor. For the patient, these procedures are often painful and generally uncomfortable and, in many cases, require that he or she be anesthetized when the biopsy is taken.

For several years, researchers have been pursuing a better way to diagnose and monitor a cancer patient’s condition. Their vision is a non-invasive, more patient-friendly, less expensive approach. Baylor University Medical Center researchers have been leading efforts to perfect this approach—liquid biopsies.

“Liquid biopsy is a relatively young field, but it’s evolving at a fast pace,” says Ajay Goel, PhD, Investigator and Director, Center for Epigenetics, Cancer Prevention and Cancer Genomics at the Baylor Research Institute. "Our research efforts at Baylor University Medical Center have been fueled by several grants from the National Cancer Institute (NCI) totaling several million dollars, as well as funding from the Baylor Health Care System Foundation and others. The NCI has funded us to focus specifically on developing biomarkers for colon cancer.”

Dr. Goel explains that the theory behind liquid biopsies is that DNA or RNA from tumor cells is continuously being shed into bodily fluids, including their blood, saliva, urine and fecal waste. By collecting samples of these fluids, researchers can obtain a much more unbiased evaluation of the patient’s condition compared to traditional ‘invasive’ tissue biopsies.

“Cancer is a heterogeneous disease,” Dr. Goel explains. “So, if you take ten tissue biopsies of a 10 centimeter tumor, it’s likely that you’ll find different genetic fingerprints in each sample. We may not always be fortunate enough to obtain a tissue specimen that will give us the complete picture of the patient’s cancer. Hence, invasive tissue biopsies are not always conclusive indicators that can guide the best diagnosis and the course of treatment.”

Dr. Goel points to five primary benefits of liquid biopsies compared to traditional tissue biopsies— they are non-invasive, don’t require anesthesia, are easy to collect, are far less expensive, and have a much higher rate of patient compliance since most patients have no problem giving a sample of their blood, saliva or stool. This has especially significant indications for colon cancer, since the screening method of choice is colonoscopy, a highly invasive and costly procedure that requires anesthesia and involves preparation for the procedure that most patients find unpleasant at best. Because of these barriers, around 50% of the population does not follow recommended colon cancer screening guidelines.

“Because liquid biopsies offer all of these benefits, everyone from the medical community to patients to insurance companies and regulators are keenly interested in their development and eventual availability to the general population,” says Dr. Goel.

As an early pioneer in developing biomarkers for specific types of cancer, Baylor University Medical Center researchers have developed a close collaboration with other research centers around the world as work accelerates on developing a variety of liquid biopsies.

“We are hopeful that we will eventually find clinically meaningful biomarkers for virtually all types of cancers,” says Dr. Goel. “This is important because it will give cancer specialists the ability to monitor and adjust an individual cancer patient’s treatment based on regular monitoring of liquid biopsy results. For example, for some types of cancer such as Stage 4 colon cancer, there are no clear guidelines for treatment. If you do too much chemotherapy it can hurt patients more than help them. Based on the genomic fingerprints found in liquid biopsies, these markers will help guide oncologists as they develop a patient’s treatment plan. This technology will also help us identify patients that are at high risk for developing tumor recurrences or relapses, and it will alert oncologists to the presence of and nature of small cancers that a CT scan or MRI may miss. As a large medical center with a thriving research arm, Baylor University Medical Center has positioned itself as a leader in the development of liquid biopsies. “There are lots of people around the world working on this,” says Dr. Goel.

“We have been able to get thousands of clinical specimens from different populations, and this has helped us propel our research efforts. We have all the tools and technologies to do all of the sequencing, so now it’s a matter of utilizing our resources wisely and effectively. We are confident that we will find meaningful biomarkers for each cancer, that will lead to liquid biopsy becoming a widely available diagnostic tool.”

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“We are hopeful that we will eventually find clinically meaningful biomarkers for virtually all types of cancers,” says Dr. Goel. “This is important because it will give cancer specialists the ability to monitor and adjust an individual cancer patient’s treatment based on regular monitoring of liquid biopsy results. For example, for some types of cancer such as Stage 4 colon cancer, there are no clear guidelines for treatment. If you do too much chemotherapy it can hurt patients more than help them. Based on the genomic fingerprints found in liquid biopsies, these markers will help guide oncologists as they develop a patient’s treatment plan. This technology will also help us identify patients that are at high risk for developing tumor recurrences or relapses, and it will alert oncologists to the presence of and nature of small cancers that a CT scan or MRI may miss. As a large medical center with a thriving research arm, Baylor University Medical Center has positioned itself as a leader in the development of liquid biopsies. “There are lots of people around the world working on this,” says Dr. Goel.

“We have been able to get thousands of clinical specimens from different populations, and this has helped us propel our research efforts. We have all the tools and technologies to do all of the sequencing, so now it’s a matter of utilizing our resources wisely and effectively. We are confident that we will find meaningful biomarkers for each cancer, that will lead to liquid biopsy becoming a widely available diagnostic tool.”

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“AJAY GOEL, PHD
SPOTLIGHT ON VIRGINIA R. CVETKO CENTER
PATIENT EDUCATION AND SUPPORT CENTER
FISCAL YEAR 2015 RECAP

SERVICE

Our outpatient social worker saw 462 patients/families in our office for concerns involving coping with their diagnosis, psychosocial evaluations, financial issues, housing, transportation, home health and hospice needs, distress screen interventions, and educational questions.

Our trained Cancer Survivor Network Volunteers made 545 patient visits in the hospital to newly diagnosed patients for support.

Our two part-time music practitioners played therapeutic music at the bedside for 2440 patient visits.

Our FitSteps® exercise program had 4062 patient visits (M-Th). They have added group classes to offer more options.

Our clinical psychologist (started seeing patients in April), available by physician referral for help with adjustment to illness issues, has seen 114 patients through June.

Our part-time Leukemia & Lymphoma Society Patient Advocate has assisted 814 patients & families.

SATISFACTION rating was 98% based upon program evaluations.

PROGRAMS

The Cvetko Center offered a total of 435 programs in FY 2015, with 6222 patients/family members attending. This included 13 cancer-specific support groups: Amyloid, Bladder-Kidney, Breast, Caregiver, General Cancer, GVHD, Lung, Myeloma, Ovarian, Prostate, Oral Head and Neck, Survivors, and Waldenstrom’s.

A total of 744 patients/family members attended our weekly chemo classes.

Our very popular Healthy Cooking Demonstration classes drew in 405 participants.

Annually, we offer a diverse variety of educational classes and programs including our Barrett Lectureship; Prostate, Ovarian and Breast cancer survivor luncheons; Young Adult Cancer Survivor conference; Complementary Therapies workshop; Cancer Survivor’s Week celebration in June; Nutrition classes; Relaxation and Journaling classes and Look-Good-Feel-Better® classes, to name a few.

Our Deborah Rodriquez Patient Resource Library has nearly 800 books on topics such as coping, disease specifics, healthy cooking, in addition to Bibles, and even novels for patients to check out. Additionally, there are numerous brochures from the American Cancer Society, Leukemia & Lymphoma Society, NCI, etc., available. We have three computers and a printer for patients and families to use for research, with suggested websites.

Our Integrative Medicine clinic is held on Tuesdays and Thursdays and had 418 patients in clinic for integrative medicine consults or acupuncture.
HEMATOLOGY ONCOLOGY FELLOWSHIP PROGRAM CELEBRATES 40TH ANNIVERSARY IN 2016

It promises to be a landmark year for the oncology program at Baylor University Medical Center at Dallas in 2016, as it celebrates the 40th anniversary of the Hematology Oncology Fellowship program. Begun as a two-year medical oncology training program, today it is a three-year medical oncology and hematology fellowship program with six fellows participating. In 2015, there were seven fellows in the program. Over the years, more than 20 internal medicine physicians have completed the Oncology Fellowship program and have gone on to work in various cancer specialty areas. “We are proud of the Oncology Fellowship program’s history and the respect it has gained throughout the medical community,” says Micah Burch, MD, associate director of the Hematology Oncology Fellowship program and a physician on the medical staff of Baylor Dallas. “Since moving from a two-year to a three-year multi-specialty program, we have been pleased to see an increase in interest and the enhanced caliber of the applicants seeking admission to the program.”

Jointly sponsored by Texas Oncology and Baylor Dallas, the Hematology Oncology Fellowship program accepts two physicians each year from a pool of 100 applicants, 20 of whom have been interviewed by the selection committee. “The selection and matching process is similar to that followed by medical school graduates when they apply for a residency program,” explains Dr. Burch. “This may involve breast, lung and other types of cancers. We focus on involving every Fellow in a quality improvement project that generally involves some type of research. By the time they complete the three-year program, the Fellows have learned every aspect of oncology and hematology, including radiation oncology, gynecologic oncology and hematology, just to name a few. They are also given the chance to teach and give didactic lectures. Graduates of the program are board eligible for both hematology and oncology.”

“Within the first six months of their first year, we try to expose them to research opportunities that are available in their special areas of interest,” says Dr. Burch. “This may involve breast, lung and other types of cancers. We focus on involving every Fellow in a quality improvement project that generally involves some type of research. By the time they complete the three-year program, the Fellows have learned every aspect of oncology and hematology, including radiation oncology, gynecologic oncology and hematology, just to name a few. They are also given the chance to teach and give didactic lectures. Graduates of the program are board eligible for both hematology and oncology.”

One experience from my fellowship that stands out is a patient I cared for and his wife,” recalls Dr. Mardones. “He was admitted with recurrent symptomatic pleural effusion in setting of lung cancer. During his hospitalization I had a brief, yet deeply spiritual conversation with them one afternoon. The conversation centered on our purpose in life as individuals. Six months later, I received a letter from the patient’s wife, telling me about the course of her husband’s illness. She wrote his story in a very celebratory tone and described in detail what her husband’s last seven days in hospice were like for them. She explained how they enjoyed their last remaining moments together. She also shared with me that my interaction with them had meant so much to them and she wanted me to have a picture of her husband to encourage me and remind me that I was living out my purpose. It was such a simple gesture, yet it was very meaningful to me because it reminded me of the power of connecting with our patients and what a difference we can make in each other’s lives. I am extremely grateful to all of my patients I have taken care of at Baylor over the past three years. They deserve a considerable amount of credit for teaching me how to become a truly compassionate oncologist.”

“I WANTED A BROAD RANGE OF EXPERIENCE IN MULTIPLE AREAS OF ONCOLOGY WITH AN EMPHASIS ON PATIENT CARE,” SAYS MABEL MARDONES, MD, A 3RD YEAR HEMATOLOGY ONCOLOGY FELLOWS. “IN ORDER TO ACHIEVE THAT GOAL EFFECTIVELY, I FELT IT WAS IMPORTANT TO LEARN FROM ONCOLOGISTS THAT WERE DOING CLINICAL WORK EVERY DAY. IT WAS EVIDENT THAT THE BAYLOR HEMATOLOGY ONCOLOGY FELLOWSHIP PROGRAM OFFERED THAT AND MUCH MORE.”

“I wanted a broad range of experience in multiple areas of oncology with an emphasis on patient care,” says Mabel Mardones, MD, a 3rd year Hematology Oncology fellow. “In order to achieve that goal effectively, I felt it was important to learn from oncologists that were doing clinical work every day. It was evident that the Baylor Hematology Oncology Fellowship program offered that and much more.”

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2015 HEMATOLOGY ONCOLOGY FELLOWS:

3RD YEAR
Ahmed Al-Hader, MD
Mabel Mardones, MD
Anju Nair, MD

2ND YEAR
Andrew Whiteley, MD
Edward Pearson, MD
Raghad Al-Kareem, MD

1ST YEAR
Leah Zhrebker, MD
Anju Nair, MD
DONOR SUPPORT OF OUR ONCOLOGY PROGRAMS FUELS OUR MISSION TO PROVIDE THE MOST PERSONALIZED, COMPREHENSIVE AND COMPASSIONATE CARE TO THE PATIENTS WHO ENTRUST US WITH THEIR LIVES.

Thanks to the generosity of philanthropic leaders in our community, we are now able to achieve more and dream bigger than ever before. This past year saw our program make significant progress in maintaining and advancing our reputation as one of the top cancer programs in the country.

Over the last five years, Baylor Health Care System Foundation has raised more than $38 million in support of cancer initiatives at Baylor. These funds have gone to support cancer programs in the country.

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On March 4, 2015, nearly 20 legendary trumpet players from across the world came together to perform at Cancer Blows, a unique musical event at the Morton H. Meyerson Symphony Center to benefit awareness and research for blood cancers, including multiple myeloma. The event resulted in $150,000 in proceeds to Baylor Health Care System Foundation.

The passion that fueled Cancer Blows is Ryan Anthony, a world-renowned trumpet musician and principal trumpet at the Dallas Symphony Orchestra, who was diagnosed in 2012 with multiple myeloma.

While undergoing intensive treatment at Baylor Charles A. Sammons Cancer Center in Dallas, including chemotherapy and a stem cell transplant, Ryan was overlaid with phone calls from fellow trumpet players from around the world, offering to do whatever they could to help. Ryan jokingly started saying, “I’ll play a concert when I am healthy again and we’ll call it Cancer Blows.”

Now in remission and steadfastly committed to finding a cure, Ryan has taken these world-recognized brass musicians up on their offer with the launch of Cancer Blows.

Just ten years ago, multiple myeloma was a death sentence with a life span of 3-5 years. While the cancer is still considered incurable and terminal, recent rapid advances in research have greatly extended the life span of newly diagnosed patients, and hope for a cure is a real possibility.

When Ryan was diagnosed, his goal was to survive long enough to see his children, then just six and 11-years-old, graduate from high school. But, because he has responded so well to his treatment and remains in complete remission, Ryan daims to hope for more.

“Baylor fights daily to advance diagnosis, treatment and care of patients suffering with various types of blood cancers, such as multiple myeloma,” says Rowland K. Robinson, Foundation president. “It’s truly inspiring to see our own patients in full remission and unite an entire community together with such tremendous enthusiasm for this cause.”

ONCOLOGY

PHILANTHROPY

‘CANCER BLOWS’ CONCERT CELEBRATED TRUMPETER’S PERSONAL VICTORY, BENEFITS RESEARCH

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RYAN ANTHONY HAS HAD A PROFESSIONAL LIFE THAT MANY MUSICIANS CAN ONLY DREAM OF: PLAYING WITH INTERNATIONALLY KNOWN GROUPS, INCLUDING THE CANADIAN BRASS, BEFORE COMING TO DALLAS AS PRINCIPAL TRUMPET FOR THE DALLAS SYMPHONY ORCHESTRA. BUT NONE OF THIS PREPARED HIM FOR THE JOURNEY HE BEGAN IN 2012, WHEN HE WAS DIAGNOSED WITH MULTIPLE MYELOMA.

“Trumpet playing is what brought me to the doctor,” said Ryan. “I was getting chest and back pain, while I was playing, and just not feeling well. Although some of his symptoms suggested myeloma, every test came back negative, and he was told not to worry because he was too young for this type of cancer. But then came more testing and the bad news: not only did he have multiple myeloma, he also had a very severe form, with a poor prognosis. He started treatment that day at Baylor Sammons Cancer Center in Dallas, and was recommended for an autologous stem cell transplant.

While undergoing induction therapy, he continued to work full-time, playing with the Dallas Symphony Orchestra. But none of this was easy.

“Trumpet players all over the world called me and asked, ‘What can we do?’ It occurred to me that musicians, performing in a concert that I wanted to call ‘Cancer Blows’, Major names in the industry have chosen to participate and to stand with me to make a statement about multiple myeloma. We celebrated where we are now compared with 20 years ago and look at what still needs to be done.”

Ryan and his wife Niki talked with six different cancer centers, touring for the one where they felt they could get the best treatment. Ultimately, they chose to stay at Baylor Sammons. “It was far for the best option for us,” said Ryan. “We knew in the doctors, the infrastructure, how they treated my disease. And it made a huge difference that I could be at home with my family and friends during the treatment.”

One of the things that sustained Ryan is that he didn’t have to put his life on hold because of his treatment. During induction therapy, he continued to work full-time, playing with the Dallas Symphony Orchestra. But none of this was easy.

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HOPE AND HEALING THROUGH ARTS IN MEDICINE

Certain experiences in life are too difficult to put into words. Coming to terms with a cancer diagnosis or recovering from chemotherapy, for instance, can leave even the strongest among us searching for words to describe what we’re feeling.

A number of studies provide empirical evidence of the power of creative arts to support healing. When patients become overwhelmed with medical treatments, engaging in the arts can foster their creativity, renew their spirits, reduce stress and enhance their lives, through active or passive expression.

Baylor Charles A. Sammons Cancer Center has offered significant arts and healing programs for many years. Specifically, the Virginia R. Cvetko Patient Education Center has provided music practitioners for patients at the bedside, and performing and visual arts in common areas at both the Baylor Sammons Cancer Center and Baylor T. Boone Pickens Cancer Hospital. The Baylor Sammons Cancer Center and Baylor Pickens Cancer Hospital treated some 8,000 patients through 80,000 visits in 2014. More than half of those patients benefited from one of the art programs offered through the Cvetko Center. These numbers, fueled by patient feedback and new research on the benefits of the arts in healing, drove our vision to create a more comprehensive Arts in Medicine Institute.

In April 2015, the Foundation received a transformational three-year grant for $1,053,000 from the Paula S. Walker Donor Advised Fund at The Dallas Foundation, to support salaries of an Arts in Medicine Coordinator, two music practitioners and an art therapist, in addition to funding an Artist in Residence program and staff training. This grant focuses on the initial phase of our vision to create the infrastructure necessary to undergird core patient services. The comprehensive vision of our Arts in Medicine Institute is to:

• Integrate the visual, music and performing arts to promote healing
• Enhance the lives of our patients, their families, visitors and our caregivers
• Build community partnerships around the arts, health and medicine
• Create a broad system of delivery through technology

Creating an Arts in Medicine Institute is good not only for our patients, but also for Baylor and our community.

On October 15, Baylor Health Care System Foundation celebrated the 11th annual Celebrating Women luncheon. The 2015 luncheon, presented by Tom Thumb for the 11th consecutive year, raised more than $2.4 million to benefit Baylor Health Care System’s fight against breast cancer.

Since the first Celebrating Women luncheon in 2000, more than $28 million has been raised to support Baylor’s fight against breast cancer. Donations to Celebrating Women have supported advanced diagnostic equipment, innovative clinical research, and most importantly, safe, quality, compassionate care for Baylor’s patients and families.

This year’s event was chaired by Nancy Carter, with Vicky Lattner and Beth Layton serving as this year’s underwriting chairman. Lisa and Kenny Troutt served as honorary chairman. The keynote address, delivered by breast cancer survivor and former host of Good Morning America, Joan Lunden, was heard by the approximately 1,300 men and women in attendance.

“I had an aggressive, fast-growing tumor inside my right breast. I approached my battle against breast cancer with the same attitude that has served me throughout my life and my career: a positive attitude, seeking out my best options, fighting like a warrior and expecting to win,” said Lunden.

“I’m happy to tell you that after nine months of treatment, 16 rounds of chemo, six weeks of radiation and surgery, I’m now officially a survivor. Nice try, cancer, but I’m still here.”

2015 CELEBRATING WOMEN LUNCHEON RAISED $2.4 MILLION FOR BAYLOR’S FIGHT AGAINST BREAST CANCER

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OLYMPIANS AND CANCER SURVIVORS TEAM UP TO FIGHT CANCER, MAKE WAVES AT SWIM ACROSS AMERICA – DALLAS

Earlier in 2015, scores of swimmers helped make waves in the fight against cancer by participating in the fifth annual Swim Across America (SAA) event at Lake Ray Hubbard. The event raised more than $415,000, and all proceeds will support the Swim Across America Innovative Clinical Trials Center (ICTC) at the Baylor Charles A. Sammons Cancer Center at Dallas. Brought to North Texas in 2011 by Olympian swimmers, SAA – Dallas has contributed nearly $2 million to Baylor Health Care System Foundation.

“As both a participant in and beneficiary of Swim Across America – Dallas, I am inspired by everyone who has made these events so successful in supporting our mission to find a cure for cancer,” said Dr. Alan Miller, medical director, Baylor Charles A. Sammons Cancer Center at Dallas and chief of oncology. “The event has played such an important role in helping establish our Phase I clinical trials center that we named it the Swim Across America Innovative Clinical Trials Center. With these increased resources and capabilities, we are bringing hope to more patients with difficult-to-treat cancers who have not responded to standard treatments, which also enables us to continuously develop new and better treatments that can benefit all patients.”

AN INNOVATIVE CLINICAL TRIAL FOR ONE OF THE DEADLIEST CANCERS

Pancreatic cancer is currently the fourth-leading cause of cancer-related death in the U.S., with a five-year survival rate of just seven percent. An estimated 72 percent of patients die within the first year of diagnosis. For these reasons, it is vital not only to develop more effective treatments for pancreas cancer, but also to find biomarkers that will alert physicians to the presence of the disease before it progresses.

A generous contribution this past June from Jeanne Shelby Fund for Cancer Research at Communities Foundation of Texas is funding an initiative that promises to provide the sickest patients with a new, more effective clinical trial option; make inoperable pancreas cancer operable; and significantly improve patients’ quality of life. This contribution also includes funds to collect samples from the patients in the clinical trial to discover reliable biomarkers, that are vital for early detection, and for tracking pancreas cancer during surgery or chemotherapy.

Under the direction of research investigators Dr. Carlos Becerra (medical oncologist) and Dr. Scott Colombo (surgical oncologist), this clinical trial will combine the inflammation-reducing drug anakinra, which has recently shown great promise in a breast cancer clinical trial at Baylor, with a three-drug chemotherapy regimen that was recently proven very effective in a clinical trial under the direction of Dr. Daniel Von Hoff at TGen (a research collaborator of Baylor). Because all the drugs to be used in this trial already are FDA approved (anakinra has been used to reduce inflammation in juvenile rheumatoid arthritis patients), it is expected to get underway before the end of the year.

As additional funding becomes available, the samples collected from patients in the clinical trial will be analyzed by Ajay Goel, PhD, at Baylor Research Institute, for microRNA and Muhammed Murtaza, PhD, at TGen, for circulating tumor-specific DNA. The aim of these analyses is to help identify reliable biomarkers that can be used as a screening test for early detection or monitoring of the disease.

For more information on how you can support oncology initiatives at Baylor, contact the Foundation at 214.880.3136.
DISPARITIES IN THE MANAGEMENT OF ELDERLY BREAST CANCER PATIENTS

Mabel Mardones, MD; Janet Reynolds, CTR; Andrew Lupo, MS-IV; Cynthia Osborne, MD

Breast cancer is the most widespread cause of cancer among women in the United States1,2. In 2015, estimates of 231,840 new cases of invasive breast cancer will be diagnosed in women in the US, as well as an added 60,290 cases of in situ breast cancer.3 Over 40,000 women are estimated to die from breast cancer in 2015, making it the second leading cause of death in women.4 Worldwide, breast cancer was the leading cause of death in women in 2012.5 The US population is aging; from 2003 to 2013 the population of people 60 and above increased from 41.1 million to 62.8 million people, a rise of over 30%.6 These numbers are expected to double by 2020. Analysis of the current data shows that older women outnumber older men with a ratio of 126.1 women for every 100 men.7 By age 65 and over, this ratio increases to 185.9 women for every 100 men.8 As a result, women age 80 years and older are one of the fastest growing segments of the US population. Breast cancer is a disease of aging. Fifty-seven percent of all new breast cancer diagnoses occur in women 60 years of age and older and roughly 70% of all breast cancer deaths occur in this population. Despite the increased prevalence of breast cancer in older women, little is known about the characteristics of their cancer, treatment choices, or survival among this cohort. Historically there are few randomized controlled trials evaluating breast cancer treatments which have included women over the age of 70. In addition, increasing age is often accompanied by increasing comorbidities with associated reduction in physical conditioning, organ reserve, cognitive and social functioning resulting in an inherent uncertainty as to the optimal approach in treating elderly women with breast cancer. This may negatively impact treatment options.

Data obtained from a recently published large observational study including almost 50,000 women over the age of 67 and a randomized clinical trial comparing endocrine options in postmenopausal woman with hormone receptor positive breast cancer, the TEAM trial which did not exclude women from participation based on age, have both demonstrated several trends in older women with breast cancer. At presentation their tumor stage tended to be higher. Fewer older women received breast conserving surgery with radiation while more older women were treated with mastectomy, breast conserving surgery without radiation, or no surgery in comparison to their younger counterparts. Additionally, while older women were observed to die more frequently from all other causes, the risk of dying from breast cancer also was observed to increase with age.9

Currently there are no specific guidelines for treating older women with breast cancer. The NCCN (National Comprehensive Cancer Network) publishes breast cancer treatment guidelines that are widely utilized as treatment recommendations in the United States but they make no specific recommendations by age.10 In order to better address the treatment conundrums of this rapidly growing population, we have evaluated patterns of care of older breast cancer patients as compared to younger patients treated in the Baylor Health Care System facilities from 2009-2013.
METHODS

Using Baylor Health Care System Cancer Registry data, we identified all breast cancer cases seen through the system from 2009-2013. Accessing the Texas Oncology Eponymous EMR, we then determined the type of surgery used in the breast cancer population by age. Specifically we documented the frequency of breast conserving surgery with adjuvant radiation (BCS with XRT) versus BCS without radiation therapy versus mastectomy versus no surgery in patients with early stage breast cancer by age. In addition, we assessed for rates of receipt of endocrine therapy given to women with hormone receptor positive breast cancer by age. We compared our findings with the 2013 NCCN guideline recommendations for breast cancer.

RESULTS

Breast Cancer Surgery

We identified a total of 4,933 breast cancer surgeries of which 2,943 (59.7%) patients were treated by mastectomy and 1,000 (40.3%) with breast conserving surgery. Women with all stages of breast cancer across the age group had a similar trend was observed through breast conserving surgery rates exceeded mastectomy rates over the age of 60 (Figure 2).

Radiation therapy post Breast Conserving Surgery (BCS)

The majority of women of all ages up to the age of 80 who received breast conserving surgery were treated with radiation therapy. Rates of radiation following conservative surgery fell for older women. Whereas 91% of women conserving surgery were treated with radiation therapy. Rates of radiation therapy post Breast Conserving Surgery (Figure 1).

Endocrine therapy for hormone positive breast cancer

Most women 89 and under with hormone receptor positive disease were offered endocrine therapy. In contrast only forty percent of women 90 and above were offered endocrine therapy (Figure 4).

Figure 1. Type of surgery, mastectomy or breast conservation surgery (BCS) in women with all stages of breast cancer across the Baylor Health Care System (BHCS) from 2009 to 2013.

Figure 2. Type of surgery, mastectomy or breast conservation surgery (BCS) in women with Stage I breast cancer across the Baylor Health Care System (BHCS) from 2009 to 2013.

Figure 3. The treatment of women after BCS with radiation by age group. Listed is the percentage of women by age who were treated with radiation (XRT) according to NCCN guidelines after BCS (Dark blue). The rest of the groups are as follows: the percentage of women in who treatment was not recommended (Red), women in whom treatment was contraindicated (Green), women who expired before planned treatment (Purple), women in whom treatment was recommended but it was unknown if given (Turquoise), who refused XRT (Orange), women in whom it was unknown if administered (Light Blue), or women who were treated outside the recommended time frame (Pink).

Figure 4. Patients receiving endocrine therapy for ER and/or PR positive breast cancer by age group. Listed is the percentage of women by age who were treated with endocrine therapy according to NCCN guidelines for hormone positive patients (Blue). The rest of the groups are as follows: the percentage of women in who treatment was contraindicated (Green), women who expired before planned treatment (Purple), women in whom treatment was recommended but it was unknown if given (Turquoise), who refused XRT (Orange), women in whom it was unknown if recommended (Light Blue), or women who were treated outside the recommended time frame (Pink).
The data from the Baylor Health Care System shows that women 60 years of age and over undergo relatively similar rates of breast conserving surgery and mastectomy for treatment of that breast cancer. In contrast to older women, women younger than 60 had higher rates of mastectomy in comparison to breast conserving surgery. Data from a number of clinical trials demonstrate no particular survival advantage for mastectomy over breast conserving surgery with radiation therapy15,16. These trends are not unique to the Baylor Health Care System and have been documented by other facilities throughout the United States17,18,19. Some factors which have been considered to influence mastectomy rates have included increased use of preoperative MRI, patient choice based on perceptions of radiation therapy, and subsequent mastectomy rates were higher, there was no difference in overall or breast cancer survival18,19. Endocrine therapy is the mainstay treatment for women with hormone receptor positive breast cancer. The majority of women with early stage hormone receptor positive disease under the age of 90 did receive endocrine therapy in the Baylor Health Care System. Fewer women over 90, however, were treated with endocrine therapy.

Aging is a heterogeneous process. In the breast cancer setting there are some data indicating worse outcomes when women receive less than standard of care therapy20. However, other data have also noted that women under treatment in regards to guidelines or standard therapies given to younger women may not necessarily result in worse outcomes in an elderly population21. Distinctive which older patients may benefit from standard therapies versus a reduced treatment plan which would hopefully mitigate cancers negative impact on health while maintaining quality of life will be key to treating elderly women with breast cancer. Increasingly, healthcare is moving towards more individualized care, hopefully targeting the particular needs of each patient. As our population ages, healthcare systems will need to become versed in the needs of this growing population.

REFERENCES

4. Schonberg MA, Marcantonio ER, Li D, Silliman RA, Ngo L, McCarthy EP. Breast cancer:
9. Theriault RL, Carlson RW, Allred C, Anderson BO, Burstein HJ, Edge SB, Farrar WB, Forero MT, Gazelle GS, Greer BE, Horning SJ, Hurdle J, Jochim D, Jones AL, Kavanagh BD, Kennecke HE, Krag D, Little JV, Lomax J, Ma J, Marks LB, Marotti PM, Mayer R, McCormick B, Perou CM, Reid JD, Schadohoffer EJ, Schork MA, Shen Y, Sklar C, Smith D, Smith MA, Smith ML, Soliman H, Somlo G, Ward J, Wolff AC, Zellars R, Shead DA, Kumar R, National Comprehensive Cancer Network, Inc. A comparison of endocrine therapy and radiation therapy, and subsequent mastectomy rates were higher, there was no difference in overall or breast cancer survival18,19. Endocrine therapy is the mainstay treatment for women with hormone receptor positive breast cancer. The majority of women with early stage hormone receptor positive disease under the age of 90 did receive endocrine therapy in the Baylor Health Care System. Fewer women over 90, however, were treated with endocrine therapy.

Aging is a heterogeneous process. In the breast cancer setting there are some data indicating worse outcomes when women receive less than standard of care therapy20. However, other data have also noted that women under treatment in regards to guidelines or standard therapies given to younger women may not necessarily result in worse outcomes in an elderly population21. Distinctive which older patients may benefit from standard therapies versus a reduced treatment plan which would hopefully mitigate cancers negative impact on health while maintaining quality of life will be key to treating elderly women with breast cancer. Increasingly, healthcare is moving towards more individualized care, hopefully targeting the particular needs of each patient. As our population ages, healthcare systems will need to become versed in the needs of this growing population.

REFERENCES

4. Schonberg MA, Marcantonio ER, Li D, Silliman RA, Ngo L, McCarthy EP. Breast cancer:
BMT UPDATE

The Baylor University Medical Center Blood and Marrow Transplant Program (BMT) had strong years in 2014 and 2015. In terms of volume, the program grew by over 33% in 2014, reaching over 270 total transplants. Much of this growth was fueled by the implementation of new outreach clinics which, in addition to the already existing outreach clinic in Ft. Worth, expanded access to BMT services in Longview, Waco and Midland. Transplant opportunities were also increased through the use of allogeneic transplants for haploidentical patients, a technique that had been used in previous years —and was employed for use more broadly based on positive national research and clinical studies. Continued enhancement of program quality was an ongoing priority during this period, with the most notable achievement being the implementation of a formal multidisciplinary patient selection committee. Other program highlights during this period included annual patient reunion events, as well as the continued enhancement of the program’s clinical and support team via a new transplant physical, outpatient clinical nurse manager, quality manager, data manager, and financial services manager.

PUBLICATIONS FROM BAYLOR DALLAS SAMMONS CANCER CENTER


<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>NCDB Target</th>
<th>CoC Census Rate</th>
<th>CoC Census Region (West) Rate</th>
<th>NCDB Census Region (West) Rate</th>
<th>Baylor Sanoma Cancer Center at Dallas Performance Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCS: Breast Conservation surgery rate for women with AJCC clinical stage 0, I, or II breast cancer (Surveillance Measure)</td>
<td>NA</td>
<td>54.3%</td>
<td>57.0%</td>
<td>63.9%</td>
<td>40.1%</td>
</tr>
<tr>
<td>NBl: Image or palpation-guided needle biopsy (core or FNA) or performed for the treatment of breast cancer (Quality Improvement)</td>
<td>80.0%</td>
<td>73.2%</td>
<td>74.0%</td>
<td>76.4%</td>
<td>96.3%</td>
</tr>
<tr>
<td>HT: Adjuvant Hormonal Therapy: Tamoxifen or third generation aromatase inhibitor is considered or administered within 1 year (365 days) of diagnosis for women under age 80 with AJCC III (lymph node positive) colon cancer (Accountability Measure)</td>
<td>90.0%</td>
<td>86.1%</td>
<td>87.1%</td>
<td>90.3%</td>
<td>96.0%</td>
</tr>
<tr>
<td>IAST: Radiation therapy is considered or administered following any metastasis detected after 1 year (365 days) of diagnosis for women under 4 with pN+ lymph nodes (Quality Improvement)</td>
<td>90.0%</td>
<td>56.6%</td>
<td>61.4%</td>
<td>71.7%</td>
<td>96.0%</td>
</tr>
<tr>
<td>BCRT: Post Breast Conserving Surgery Irradiation: Radiation therapy is administered within 1 year (365 days) of diagnosis for women aged 70 and receiving breast conserving surgery for breast cancer (Accountability Measure)</td>
<td>90.0%</td>
<td>86.0%</td>
<td>86.6%</td>
<td>91.8%</td>
<td>97.1%</td>
</tr>
<tr>
<td>RACT: Adjacent Chemotherapy: Combination chemotherapy is considered or administered within 1 year (365 days) of diagnosis for women under age 70 and receiving breast conserving surgery for breast cancer (Accountability Measure)</td>
<td>90.0%</td>
<td>90.3%</td>
<td>93.0%</td>
<td>95.0%</td>
<td>94.8%</td>
</tr>
<tr>
<td>12 RLN: Surgical Resection Includes at Least 12 Lymph Nodes: At least 12 regional lymph nodes are removed and pathologically examined for resected colon cancer (Accountability Measure)</td>
<td>NA</td>
<td>88.8%</td>
<td>89.4%</td>
<td>90.6%</td>
<td>100.0%</td>
</tr>
<tr>
<td>RECRT: Pre-operative chemoradiotherapy or surgery followed by adjuvant radiation and/or chemotherapy for clinical AJCC T1a, T1b, or T1c, regional lymph node positive (cN2, M0) NSCLC (Quality Improvement)</td>
<td>80.0%</td>
<td>90.5%</td>
<td>89.0%</td>
<td>87.8%</td>
<td>90.0%</td>
</tr>
</tbody>
</table>

*Source: Data is pending results by the Rapid Quality Reporting Process via the National Cancer Data Base.
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