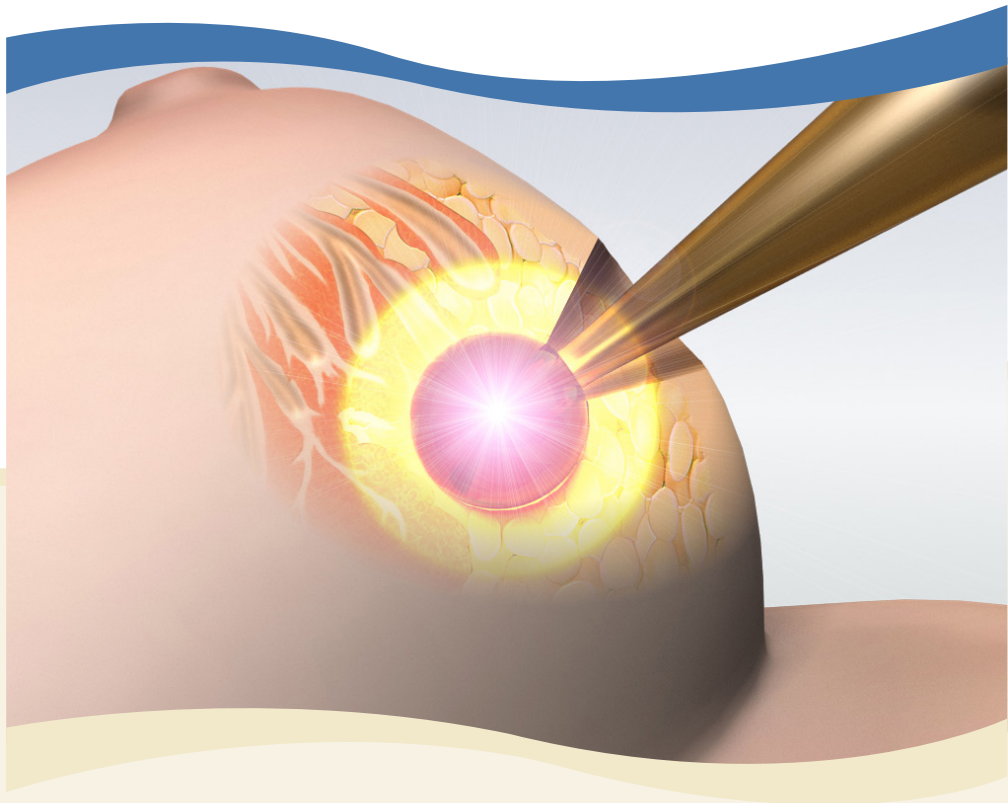


# Legacy Cancer Institute Annual Report 2019

## Breast Cancer Detection and Treatment



Legacy Cancer Institute



## Contents

Winds of Change: Where Breast Management Meets a Pandemic and A Call to Social Justice . . . . .	1
Comprehensive cancer services. . . . .	2
Legacy Cancer Institute Overview: Highlights from 2019. . . . .	3
Legacy Cancer Institute Breast Site Analysis: 2019 . . . . .	4
Advances in Breast Imaging . . . . .	6
Estrogen and Progesterone Receptor Testing in Breast Cancer: New Updates for 2020 . . . . .	7
Beyond Wires: Making Breast Conserving Surgery Easier for Women. . . . .	8
Putting the Freeze on Breast Cancer . . . . .	9
Lymphedema Prevention with Lymphatic Microsurgical Preventing Healing Approach . . . . .	10
Medical Oncology . . . . .	11
Intraoperative Radiation Therapy (IORT) . . . . .	12
Managing Risk: Who, How and Why . . . . .	13
Genetics in Breast Cancer. . . . .	14
Legacy Oncology Research . . . . .	15
Legacy Research Institute Tumor Bank . . . . .	16
Legacy Cancer Data Management: 2019 Highlights. . . . .	17
Legacy Breast Cancer Program Continuous Quality Improvement . . . . .	18
Legacy Cancer Healing Center. . . . .	20
Integrative Care for Patients with Cancer. . . . .	22
Oncology Social Work . . . . .	24
Oncology Nurse Navigation . . . . .	25
Physical Therapy Support to Optimize Well-being, and to Prevent and Treat Deconditioning . . . . .	26
Oncology Nutrition. . . . .	27
Increase Awareness. Improve Access. Inspire Action. . . . .	28
The Role of Palliative Care in Metastatic Breast Cancer . . . . .	30
Community involvement 2019. . . . .	31
Professional education activities 2019 . . . . .	32
Groups, Classes and Events for Cancer Patients Offered in 2019. . . . .	32
Legacy Cancer Institute Integrative Network Cancer Committee members 2019 . . . . .	34
Honors and accreditations 2019. . . . .	35

*Legacy Cancer Institute benefits from the generous participation of individuals and organizations that are also dedicated to finding cures for cancer, helping the less fortunate receive care and improving treatment, equipment and facilities at each of our medical centers. To learn how you can support Legacy Cancer Institute, please contact the Office of Philanthropy at **503-415-4700** or visit [legacyhealth.org/giving](https://legacyhealth.org/giving).*

## Winds of Change: Where Breast Management Meets a Pandemic and A Call to Social Justice

By Nathalie Johnson, M.D., FACS, medical director, Legacy Cancer Institute and Legacy Breast Health Centers

In keeping with tradition, Legacy Cancer Institute (LCI) is proud to highlight some of our accomplishments and new programs that were added for



2019. Last year, we enhanced our psychosocial support with the onboarding of a clinical psychologist into our Legacy Cancer Healing Center. We added new therapies, such as intraoperative radiation, with the plans for opening a study around

more aggressive tumors and looking at immune stimulation from this approach. We also began offering offering cryoablation, or freezing breast tumors, which may offer an immune stimulatory enhancement for breast cancer. We will still report the highlights of 2019 throughout this review. But we also feel compelled to address the huge impact that COVID-19 has had on the way we care for patients. This year, 2020, has roared in like a lion and brought attention to systemic racism, which needs to be explored in the same discussion as social justice. At Legacy Cancer Institute, all the changes around us have caused us to be flexible and pivot in the way we provide care. It has also caused us to be reflective in looking more critically at disparities.

We have a strong comprehensive breast center and have led the way in technology around breast imaging. This takes us back to having been the leaders in stereotactic, or image-guided, breast biopsy, to 3-D mammography and automated breast ultrasound. With precautions surrounding coronavirus, we had to halt routine screening mammograms until we had a system in place to proceed safely in this new environment. During the lockdown we continued to care for women with active cancer diagnoses. We kept an eye focused on saving lives from both COVID-19 and our constant enemy, breast cancer.

Now that we have settled into the pandemic and realize that we will be in this for the long haul, we have to encourage our public to return for routine and preventive care. Breast cancer is the No. 1 cancer found in women. We have made huge strides by screening and have saved lives through early detection. Many women have missed their routine screening this year and we are trying to make sure

the message to return for screening is heard. Cancer hasn't stopped occurring. For many it will be a bigger "C" than COVID-19. Finding a small tumor prior to it becoming palpable or visible remains a crucial component in successful, less-morbid treatments and cure. We are focused on strong community messaging, alerting women that screening is safe and necessary. With the loss of jobs and layoffs, we are also joining with our community partners to support and care for uninsured or underinsured women in our communities.

Disparities in health outcomes for African Americans (AA) and Latinas have been documented for many years. Recently, a look at more than 200 studies showed worse outcomes for these groups. Stage-for-stage, the outcomes are worse even when AA women are being screened. This translates to early detection improving outcomes, but they still will fare worse than their white counterparts. We postulated that the biology of the cancers seen in AA women are more aggressive, and they often have triple-negative breast cancers. But when controlling for this, it doesn't correct the outcomes measure. The TAILORx study on estrogen-positive women assigns a tumor biology score. AA women had an average score of 17 as did white women and Latinas, but again the overall survival rate was worse. Why is this? We have all become aware of the undercurrent of racial differences and social injustice in our country. This factors into the differences we see in outcomes in every health measure or disease outcome.

The equitable treatment of every patient is a top priority at LCI. So how can we have such disparate outcomes? The theory of implicit bias may offer some explanation and an opportunity to correct these differences. That is, we are all products of our environment and we send subconscious messages and make nuanced decisions based on these influences. Later in the report, you will see that at Legacy Cancer Institute we are not immune to these differences in outcomes. As we go forward, we are committed to investing in awareness and giving our staff and providers the tools to change and grow. We hope to make substantive change to bend the curve toward equity in outcomes.

We keep our eyes on the prize...

## Comprehensive cancer services

For more information about our services, please visit [legacyhealth.org/cancer](http://legacyhealth.org/cancer).

### Cancer care and treatment

- Cancer care conferences/tumor boards
- Cancer Care Inpatient Unit
- Cancer data management/cancer registry
- Cancer Rehabilitation Services
- Cancer screening and prevention
- Interventional radiology
- Legacy Breast Health Centers
- Legacy Cancer Healing Center
- Legacy Genetics Services
- Legacy Hospice
- Legacy Medical Group–Colon and Rectal Surgery
- Legacy Medical Group–Gynecologic Oncology
- Legacy Medical Group–Pulmonary
- Legacy Medical Group–Radiation Oncology
- Legacy Medical Group–Reconstructive Surgery
- Legacy Medical Group–Surgical Oncology
- Legacy Pain Management Centers
- Legacy Palliative Care Services
- OHSU Knight-Legacy Health Cancer Collaborative
- Pathology
- Wound and ostomy care

### Cancer programs and specialty areas

- Autologous stem cell transplant program
- Bladder cancer
- Blood cancers
- Brain and spinal tumors
- Breast cancer services
- Children’s Cancer and Blood Disorders Program
- Colorectal cancer
- Esophageal cancer
- Gynecologic cancers
- Oral, head and neck cancer
- Hepatobiliary and pancreatic cancer
- Kidney cancer
- Lung cancer
- Melanoma
- Prostate cancer
- Stomach cancer

### Clinical trials and research

- Oncology clinical research
- Tumor bank

### Support services — Adult

- American Cancer Society gift closet
- Cancer support groups and classes
- Cancer survivorship
- Expressive arts therapy
- Green Gables Guest House
- Integrative care and symptom management
- Lymphedema management
- Massage therapy
- Nutrition
- Oncology nurse navigators
- Pharmacy navigator
- Oncology psychology services
- Oncology social work
- Stress management
- Volunteer program

### Support services — Pediatric

- Child Life Therapy
- Family Lantern Lounge
- Family Wellness Center
- Music Rx® Program
- Pediatric development and rehabilitation
- Ronald McDonald House
- School program
- Survivorship services and KITE Clinic
- Volunteer program

## Legacy Cancer Institute Overview: Highlights from 2019

By Paul Tseng, M.D., MBA, FACS, gynecology oncologist, chair, Integrated Network Cancer Committee, Legacy Cancer Institute, medical director, Cancer Service Line

It was my honor to serve as the 2019 Legacy Cancer Institute (LCI) Integrated Network Cancer Committee (INCC) Chair. The INCC ensures that required



leadership, structure, processes and personnel are in place to deliver high quality cancer care. Just as quality cancer care requires a multidisciplinary approach, the LCI INCC membership includes physician and non-physician members across

the full scope of cancer treatment and support services.

Significant work was completed by LCI and the INCC in 2019. For example, a cancer-related psycho-social therapy program for adults was implemented at Legacy Good Samaritan Medical Center. This dynamic program offers much-needed counseling and therapy to support patients and their families/caregivers. It helps reduce the high level of depression, anxiety and fear generated by a cancer diagnosis for both patients and families.

Intraoperative Radiation Therapy (IORT) treatment was also implemented at Legacy Good Samaritan. Historically, lumpectomy followed by external beam radiation or brachytherapy treatment has been the standard of breast cancer care. IORT is a next step in care where radiation is delivered at the same time as the lumpectomy surgery versus after surgery.

In addition, oncology related simulation (SIM) labs for adult IV chemotherapy competency validation was implemented as part of the initial and annual competency for clinical staff across Legacy Health. The new SIM lab provides clinical staff with hands-on learning and simulation experiences to continually assess and build upon the latest in IV chemotherapy administration and safety. The SIM also allows for opportunities for discussion and rationale on handling difficult and emergent situations.

In 2019, the Legacy Meridian Park Breast Health Center implemented quality improvements to

decrease the average patient wait times from the time of diagnostic mammogram to the time of biopsy. Prompt diagnostic evaluation is important to minimize the high anxiety patients feel when having an abnormal mammogram. Through their strong work, the team reduced the average turnaround time from 12.3 calendar days to four business days for the time from screening mammogram to diagnostic mammogram/ultrasound, and three business days for the time from diagnostic imaging to breast biopsy. The national best practice (ideal benchmark) is seven calendar days or less (per Advisory Board/Oncology Roundtable, Breast Cancer Clinical Quality Dashboard).

LCI was a recipient of the 2019 American College of Surgeons (ACoS) Commission on Cancer (CoC) Outstanding Achievement Award (OAA) for the fourth accreditation survey cycle in a row. The OAA recognizes cancer programs that strive for excellence in providing quality care to cancer patients. The award requires commendation-level ratings of compliance with seven accreditation standards and compliance for the remaining 27 standards.

LCI also received National Accreditation Program for Breast Centers (NAPBC) re-accreditation at Legacy Breast Health Centers at Good Samaritan, Meridian Park, Mount Hood and Salmon Creek medical centers. NAPBC accreditation requires a multidisciplinary team approach to coordinate the best care and treatment options available. This includes patient access to breast-specific information, education and support; breast center data collection on quality indicators for subspecialties involved in breast cancer diagnosis and treatment; ongoing monitoring and improvement of breast care; and participation in breast cancer clinical trials and new treatment options.

I am incredibly proud of the 2019 LCI INCC accomplishments, and continually impressed by the commitment and dedication of the LCI multidisciplinary team to provide the best in patient-centered quality cancer care.

## Legacy Cancer Institute Breast Site Analysis: 2019

By Nathalie Johnson, M.D., FACS, medical director, Legacy Cancer Institute and Legacy Breast Health Centers

Breast cancer continues to be the most commonly diagnosed cancer in women and is now a close second to cardiac disease as a cause of death in



women. For AA and Latina women age 45–60, it is the leading cause of death. Amazing strides have been made in the management of breast cancer with the addition of an ever-growing number of targeted therapies to the arma-

mentarium of weapons we can use to control or eradicate cancer.

Legacy Cancer Institute (LCI) has a rich history of leading the way in our communities in the management of breast cancer. It started in 1992 with the first stereotactic breast biopsy unit for image-guided biopsy in Portland at Legacy Good Samaritan. This was followed in 1995 by the first Comprehensive Genetic Risk Assessment Program. We led the way by opening the first sentinel lymph node trials and hosting training courses for surgeons all around Oregon. The tradition of leading the way has continued with offering partial breast radiation and nipple sparing mastectomies. With the support of the Legacy Foundations and LCI, we have kept pace with ever-evolving imaging, including Breast Specific Gamma Imaging, Automated Breast Ultra-

sound and top-notch breast magnetic resonance imaging (MRI) with skilled breast radiologists. Our breast surgeons approach the care of our patients in a holistic fashion, planning the course of treatment with care. This means many of our patients start with systemic therapy, chemo or endocrine therapy, prior to surgical intervention, which is now showing to be the preferred options for both triple-negative and HER2 NEU positive breast cancers. Caring for breast cancer patients takes a whole team. As you will see from our site analysis, our overall outcomes are outstanding and at the top of the charts for cancer programs nationally. Table 1, includes the most current data available from the Commission on Cancer (CoC) Cancer Program Practice Profile Report (CP3R) breast-specific measures and LCI's performance. Legacy Cancer Institute's clinical performance far exceeds the minimum benchmarks required by the Commission on Cancer.

We are very proud of the work that we do with one exception. This year has shined a light on the disparities in outcomes for African American patients across the United States. While we hoped to report that our data at Legacy did not show a difference in outcome for our African American population, that is sadly not the case. In Table 2, we share our most recent data by race and the stage at

**Table 1, CoC NCDB CP3R Cancer Program Practice Profile Report 2016**

Breast Measures	Minimum Benchmark	Legacy Cancer Institute 2016
Radiation is administered within 1 year (365 days) of diagnosis for women under the age of 70 receiving breast conservation surgery for breast cancer	90%	96.6%
Tamoxifen or third generation aromatase inhibitor is recommended or administered within 1 year (365 days) of diagnosis for women with AJCC T1c or stage IB-III hormone receptor positive breast cancer	90%	97.0%
Radiation therapy is recommended or administered following any mastectomy within 1 year (365 days) of diagnosis of breast cancer for women with $\geq 4$ positive regional lymph nodes	90%	94.7%
Image or palpation-guided needle biopsy to the primary site is performed to establish diagnosis of breast cancer	80%	87.8%
Combination chemotherapy is recommended or administered within 4 months (120 days) of diagnosis for women under 70 with AJCC T1cN0, or stage IB - III hormone receptor negative breast cancer	NA	96.4%

**Table 2, CoC National Cancer Database-Legacy Health Diagnosed 2013-2017, by Race & Stage**

Race/Ethnicity	Stage at Diagnosis, All Cancer Sites							
	0	I	II	III	IV	OC	NA	UNK
<b>White</b>	8.6%	29.8%	19.8%	13.3%	15.1%	0.0%	8.8%	4.6%
<b>African American</b>	6.6%	24.9%	18.5%	11.7%	20.6%	0.0%	11.4%	6.3%

diagnosis, with the challenge to be proactive in not only reporting it, but in resolving to change it for the better. The percentage of patients diagnosed with advanced, Stage IV cancer at Legacy Cancer Institute is highest among African Americans — 20.6% compared to 15.1% for White patients. The underlying etiologies are multifactorial. Some of the social inequalities that exist are beyond our immediate control, but being aware and using community resources to level the playing field is an area we can more fully explore and invest in.

In the national data, when controlling for socioeconomic, education, insurance and access, African Americans still have diminished outcomes. There is emerging data on the psychology of unconscious bias. As a group we will grow and learn as our society is undergoing its own growing pains. We don't have the answers, but we are committed to searching for them in earnest. We are hopeful that when we report in the future and drill down on outcomes by race and stage, the difference in outcomes will no longer be magnified.

## Advances in Breast Imaging

By Kari Thomas, M.D., radiologist, Diagnostic Imaging NW



Legacy Breast Health Centers offer comprehensive state-of-the-art breast imaging, including mammography, ultrasound, magnetic resonance imaging (MRI) and breast-specific gamma imaging (BSGI, also known as molecular breast imaging or MBI). With these tools in our repertoire, we provide excellent care for screening asymptomatic patients, evaluating patients with symptoms and for the diagnosis and treatment-planning of patients with breast cancer.

Tomosynthesis, or 3-D mammography, has been in place at Legacy Health since 2012, making Legacy the first in the region to adopt this specialized technology. Benefits of tomosynthesis include enhanced image detail and less overlap of breast tissue compared to conventional mammography, reducing callbacks on screening mammograms and improving cancer detection. Annual screening mammograms are recommended for all women beginning at age 40, and even earlier depending on additional risk factors.

Breast MRI is the most sensitive imaging modality and is currently recommended, in addition to annual mammography, for screening patients with a high lifetime risk of breast carcinoma. Breast MRI is used in staging known breast cancers and to evaluate tumor response to neoadjuvant therapy. As a screening tool, MRI is unfortunately underutilized as only about 1.5% of women with a high lifetime risk of breast cancer ever have a breast MRI.

Recently, gadolinium deposition has been observed in some tissues with the use of MRI, although this carries no known adverse effects. We reassure patients that in our practice we use a macrocyclic gadolinium contrast agent, which is considered least likely to deposit gadolinium in the body, as the chelate between the gadolinium and the rest of the contrast molecule in this type of contrast is more stable and less prone to dissociate.

For patients with known breast cancer who are unable to undergo MRI for staging, BSGI is an al-

ternative. BSGI is not used for screening due to its associated whole-body radiation dose. Future enhancements in BSGI could potentially enable breast biopsy imaging guidance.

For patients with dense breasts, there have been many recent developments regarding density as an independent risk factor for carcinoma and optimal screening regimens. Because women with dense breast tissue are at about twice the relative risk for breast cancer than the general population, supplemental screening is recommended in addition to mammography. Automated Breast Ultrasound System (ABUS) is one option for supplemental screening and has the advantage of reduced operator dependence compared to traditional handheld ultrasound.

There is emerging data that screening MRI may not only be the purview of very high-risk patients. Patients with dense breast tissue alone, and otherwise average risk, may also warrant screening with MRI. Screening breast MRI for a broader patient population immediately raises concern regarding access given the small number of MRI machines available per capita and the large number of women this recommendation would apply to. Shortening the exam length offers a potential solution to this problem. Abbreviated screening MRI would allow for more patients to be examined per day improving overall population access to MRI screening. This recommendation is supported by initial findings from the first prospective multicenter trial comparing abbreviated screening MRI and 3-D mammography released earlier this year. Initial findings are promising but will need to be validated by other studies before adopting this practice. Contrast-enhanced mammography is another potential new form of supplemental screening in patients with dense tissue and we await the results of a new nationwide multicenter trial (CMIST) on this topic. Options for additional screening in patients with dense breasts will most certainly evolve in the near future and Legacy will continue to be at the forefront of clinical implementation.



## Estrogen and Progesterone Receptor Testing in Breast Cancer: New Updates for 2020

By Daniel Davis, D.O., pathologist, Aurora Diagnostics Pathology Services

Estrogen receptor (ER) and progesterone receptor (PR) status have been shown to have prognostic and therapeutic significance in breast cancer



patients. ER and PR protein expression in tumor cells is currently assessed by pathologists utilizing immunohistochemical stains. Standards for estrogen and progesterone receptor analysis in breast cancer were first published in 2010. This was

a joint effort involving the College of American Pathologists (CAP) and the American Society of Clinical Oncology (ASCO). Before this publication, no single national/international guideline existed and only a handful of countries possessed quality assurance/proficiency testing (QA/PT) systems that tracked data. As expected, many issues existed, including: variable fixation methods, long ischemic times, variability in thresholds used for positive results, labs without sufficient expertise in immunohistochemical methods/QA or validation, etc.

The first 2010 ER/PR testing guidelines addressed these larger questions and attempted to establish initial standards for all cases. Future updates were intended more for fine-tuning based on new data and pathologist feedback and with an increased focus on less-common scenarios. The new 2020 systematic review-based guideline update is being developed by a multidisciplinary expert panel and an extensive literature search/review of randomized controlled trials, systematic reviews, meta-analysis and clinical practice guidelines from the time period January 1, 2008 to April 30, 2019.

The 2010 standards established 1% of tumor nuclei staining positively for ER/PR to be considered positive and thus the patient to be considered for endocrine therapy. The 2020 update will specifically

address handling of cases with low ER expression (defined as 1%–10% tumor nuclei staining positively). Although ER low expression tumors are uncommon (2%–3% of all ER positive cancers), they pose particular clinical challenges. There is limited data on endocrine therapy benefit for cancers with 1%–10% of cells staining ER positive. But they currently suggest possible benefit, so patients are considered eligible for endocrine treatment. Conversely, should a high-grade cancer with low ER expression, PR and NEU2 negativity be considered for treatments designed for triple-negative cancers? The 2020 guidelines address this low ER expression issue with a variety of recommendations including reporting low ER expression cancers using a new category, “ER low positive,” with a recommended comment. This should aid clinicians in discussing with patients the limited data on ER low positive cases and what treatment course is best for them.

The 2010 guidelines did not make a formal recommendation regarding ER and PR testing of newly diagnosed ductal carcinoma in-situ (DCIS) cases because of limited data at the time. Based on current evidence, the 2020 guideline update expert panel will recommend ER testing in DCIS to guide discussions about adjuvant endocrine therapy. Thus, the ER status of newly diagnosed DCIS should be reported when no invasive cancer is present. Data on whether PR testing in DCIS adds predictive or prognostic value is currently lacking, which is contrary to prognostic value seen in PR testing for invasive cancers.

These are just two of the many new updated guidelines that will be included in the 2020 update for ER/PR testing in breast cancers. As medicine continues to strive to improve cancer treatments and have the best possible patient outcomes, Legacy Cancer Institute aims to be at the forefront of cancer treatment recommendations.

## Beyond Wires: Making Breast Conserving Surgery Easier for Women

By Ashley Crowell, M.S., PA-C, Legacy Medical Group—Surgical Oncology



Screening mammography, automated breast ultrasound and magnetic resonance imaging (MRI) have increased early detection of breast cancer. Our goal is to detect breast cancer before it can be palpated. This is fantastic for patients, but presents a challenge for the breast surgical team. Breast conserving surgery is the treatment of choice for early breast cancer and over 50% of women elect to have lumpectomy versus mastectomy.

Successful breast conservation requires multidisciplinary collaboration between surgeons, radiologists and other specialties. Historically, breast surgeons relied on wires for locating nonpalpable breast lesions. In a standard wire localization procedure, a radiologist places a thin hook-shaped wire into the breast that extends out of the skin, marking the location of the previously placed biopsy clip. This requires a mammogram to confirm accurate positioning. The surgeon uses the wire to locate and remove the breast lesion. There are many disadvantages to wire localization, including discomfort to the patient, coordinating same-day wire placement on the morning of surgery, workflow inefficiencies, limits to incision placement and risk of wire displacement. If the wire moves out of position, this can increase the chance of needing additional surgery, such as a margin revision. It can also result in larger tissue resection which may diminish the cosmetic outcome.

Thankfully, wire-free non-radioactive radar localization systems have been developed for breast tumor and lymph node localization. This cutting-edge technology has reduced re-excision rates, improved cosmetic results and overall patient experience, streamlined radiology workflows and

significantly reduced operating room delays. Legacy Cancer Institute started using the SAVI SCOUT system to replace wire localization in 2018 and has changed how our patients experience breast cancer surgery.

The SAVI SCOUT is a small 1 cm reflector that is placed into the breast lesion or lymph nodes under ultrasound guidance and can be performed days to months prior to surgery. The SAVI SCOUT system uses radioactive wave technology similar to radar and provides real time measurements to help surgeons precisely find the best path to the tumor. This technology has no interference with imaging, such as MRI or computed tomography (CT) scans, is scheduled at the patient's convenience and avoids coordinating wire placement on the day of surgery. In some cases, if the radiologist is certain the lesion is cancer, the reflector can be placed during the initial biopsy and this can save the patient from requiring an additional procedure in the breast center. Compared to wire localization, the SAVI SCOUT allows better incision site placement and eliminates the need to take excess breast tissue, resulting in superior cosmetic outcome. Additionally, multiple SAVI SCOUT reflectors can be placed in the breast to bracket larger breast lesions, when there is more than one breast lesion and in previously biopsied axillary lymph nodes. This is critical for patients who will undergo chemotherapy prior to surgery. In many cases the node will become cancer-free after chemotherapy. But at the time of surgery, having a SAVI SCOUT present in the previously cancerous node improves the accuracy of axillary staging and pathologic evaluation.

Overall, the SAVI SCOUT resolves many difficult aspects of breast cancer care. We are dedicated to providing excellent care and the latest technology for our patients and the SAVI SCOUT is one example of how we are meeting these goals.

## Putting the Freeze on Breast Cancer

By Cynthia Aks, D.O., FACOS, breast surgeon, Legacy Medical Group—Surgical Oncology

Surgical treatments for breast cancer have come a long way — from radical mastectomy, to modified mastectomy, to lumpectomy — and now mini-



minally invasive percutaneous ablation therapy. Cryoablation is just that — an ablative therapy performed via a small puncture site in the skin, destroying cancer cells by freezing them.

Though cryotherapy is a relatively new management approach for the treatment of breast cancer, the ultracold technique has been utilized for decades for the treatment of multiple other cancers such as prostate, bone, lung, liver, cervix, kidney and skin. Under directed visualization and in real time, the cryoprobe is guided into the center of the targeted lesion. Using liquid nitrogen, an ice ball is created that engulfs the tumor. These temperatures can reach -180 Celsius. This technique causes three treatment-related zones — necrosis, injury and inflammation — as well as a cascade of cellular events. Within the zone of necrosis, when the coldest temperatures are used, the rapid freezing causes the formation of ice crystals that results in lethal disruption of plasma membranes and intracellular structures. Within the zone of injury, where the temperature is slightly less cold, there is extracellular ice crystal formation with resultant rupture of plasma members, cellular dehydration, osmotic shifts with cellular swelling and, ultimately, cell lysis. There are two freeze cycles followed by a thaw in between. After thawing, cytokines and other signaling molecules recruit lymphocytes and macrophages. Over time, macrophages remove the necrotic tissue, which is ultimately replaced by scar tissue.

Legacy Health is the first in Oregon to offer this treatment as an option for select breast cancer patients. The first procedure was performed in October 2019. It can be performed under local anesthesia in an office-based setting or in an operating room, particularly if nodal surgery is planned.

Cryoablation offers patients limited downtime, as recovery from the procedure is immediate. This treatment option is cosmetically optimal with minimal discomfort due to the analgesic effect from the cold and contributes to overall enhanced patient satisfaction.

The initial studies using cryoablation for breast cancer were performed in select women with Stage I breast cancer. However, there is evolving interest in offering this option to women with metastatic disease, due to the benefit of immunomodulation capabilities. Several investigators have demonstrated the ability of cryoablation to enhance immunogenicity, in essence creating an autovaccine, or development of antibodies to tumor antigens. These immune cells then seek out and destroy cancer cells that have spread to other areas and potentially may destroy cancer cells that begin to recur.

The use of cryoablation has the potential to assist in the effectiveness of concomitant therapies. On the horizon, investigators are studying the use of cryoablation as an alternative to lumpectomy for the treatment of ductal carcinoma in situ, a non-obligate precursor to invasive breast cancer. Legacy Cancer Institute is proud to be in the forefront of these new, emerging treatments.

## Lymphedema Prevention with Lymphatic Microsurgical Preventing Healing Approach

By Mark Gelfand, M.D., reconstruction surgeon, Legacy Medical Group

Lymphedema is a chronic disease characterized by arm swelling, feeling of heaviness, frequent infections and disability. It can occur after an axillary lymph node dissection for breast cancer, and rarely even after sentinel lymph node biopsy. Currently, there is no cure for lymphedema.



The Lymphatic Microsurgical Preventing Healing Approach (LYMPHA) technique was devel-

oped to prevent lymphedema and is done at the time of mastectomy and axillary lymph node dissection. The breast surgeon performs the removal of lymph nodes using the double mapping technique. This involves injecting dye to into the breast and arm to map out only those lymph nodes that drain the breast to preserve the lymph nodes that drain the extremity.

Once the axillary lymph node dissection is complete, the reconstructive surgeon performs the LYMPHA procedure. A previously cut lymphatic duct from the arm is identified, which is usually stained blue. A local vein is isolated and an anastomosis between the lymphatic duct and vein is performed (lymphatico-venous anastomosis). At the end of the procedure, a SPY laser angiography can be performed to confirm flow.

Legacy began performing LYMPHA in 2017. So far, 13 patients have undergone surgery. On two occasions the lymphatic duct could not be found; both of these patients had previously undergone surgery in the axilla. One patient had preexisting lymphedema and did not improve after surgery. To date, the other patients have not developed clinical lymphedema.

At present, our cohort of patients is too small to draw any conclusions on the efficacy of the LYMPHA procedure. However, the review of literature suggests there are benefits to LYMPHA. Tolga Ozmen, et al., compared the incidence of lymphedema in 380 patients undergoing axillary lymph node dissection with or without the LYMPHA procedure. Patients who underwent the LYMPHA procedure experienced a decrease in the development of lymphedema from 19%, to 3%, at two years follow-up. Francesco Boccardo, et al., published data on 74 patients with a four-year follow-up: 71 out of 74 patients had no evidence of lymphedema as judged by volumetric measurements.

In conclusion, the LYMPHA procedure in conjunction with double mapping technique can reduce lymphedema occurrence after an axillary lymph node dissection. The procedure is safe, adds approximately one hour to the time of surgery and does not carry any additional significant risk. Legacy continues to offer eligible patients LYMPHA at no charge.

## Medical Oncology

By Apruva Pandey M.D., medical oncologist, OHSU Knight-Legacy Health Cancer Collaborative

Breast cancer is the most common type of cancer found in women. As part of the OHSU Knight-Legacy Health Cancer Collaborative, medical oncologists from Knight Cancer



Institute are working closely with our Legacy breast surgical oncologists and radiation oncologists to offer cutting-edge breast cancer treatments that are also sensitive to individual patient preferences, needs and

values.

Our patient-centered approach to care includes weekly cancer conference meetings where our multidisciplinary team of breast cancer specialists discuss patient cases and make informed decisions about treatment recommendations. At Legacy, our treatment recommendations follow the latest national treatment guidelines for each specific breast cancer type. These guidelines, along with individual patient needs and values, provide the foundation to deliver holistic, personalized care.

There are many different types of breast cancer and each type is differentiated by specific prognostic factors expressed within cancer cells. These prognostic factors include the presence or absence of estrogen, progesterone and the HER2 NEU protein. Patients are affected differently by each type of breast cancer, and different combinations of the prognostic factors help drive discussions at cancer conferences and treatment recommendations. Treatment recommendation considerations include endocrine therapy, targeted therapy and/or

immunotherapy, in addition to surgery and radiation treatment. Immunotherapy uses the patient's own immune system to fight cancer and is typically less toxic than traditional chemotherapy. One such type of immunotherapy, checkpoint inhibitors, includes drugs such as atezolizumab and paclitaxel which can be used to treat triple-negative breast cancers. Endocrine therapy (or hormonal therapy) slows or stops the growth of hormone-sensitive tumors by blocking the body's ability to produce hormones or by interfering with effects of hormones on breast cancer cells. Hormone-insensitive tumors (ER/PR negative) do not have hormone receptors and therefore do not respond to hormone therapy. Targeted cancer therapies are treatments that target specific characteristics of cancer cells, such as a protein that allows the cancer cells to grow in a rapid or abnormal way. Targeted therapies are generally less likely than chemotherapy to harm normal, healthy cells. Some targeted therapies are antibodies that work like the antibodies made naturally by our immune systems. These types of targeted therapies are sometimes called immune targeted therapies.

Legacy's joint collaboration with the Knight Cancer Institute allows us to provide patients with multiple research opportunities. Legacy Cancer Institute (LCI) provides the best in breast cancer care through our multidisciplinary approach, a variety of clinical trials and social support services. LCI provides our community with the most up-to-date, personalized care.

## Intraoperative Radiation Therapy (IORT)

By Misa Lee, M.D., radiation oncologist, Legacy Radiation Oncology

Approximately 200,000 new cases of invasive breast cancer are detected annually with 50% of patients diagnosed at Stage I. Fortunately, 65% to 75% of



these patients have what is considered a more-favorable type of disease called the Luminal type, which is hormone receptor positive. However, these patients have significant risk of local recurrence post-lumpectomy without adjuvant radiation

therapy. The SWEBORG91 trial showed an in-breast recurrence rate of 19% to 24% at median follow-up of 15 years, even for patients with the favorable type without adjuvant radiation therapy. For several decades, cancer specialists have recommended whole breast radiation therapy post-lumpectomy for patients seeking breast conservation therapy regardless of their disease type. Approximately four weeks post-surgery, patients receive four to six weeks of daily radiation therapy, five days per week.

We have learned that most patients with the Luminal type often face recurrence of the cancer in the vicinity of their original disease post-lumpectomy. As we looked to tailor our treatments to target the tumor bed in hopes of minimizing side effects while accelerating their treatment time, we started the Accelerated Partial Breast Irradiation (APBI) program at Legacy Good Samaritan Medical Center in March 2003. Using the American Society of Radiation Oncology recommended guideline, we selected patients with the Luminal type, whose disease primarily consisted of lesions less than three cm to undergo APBI. In addition, their disease was hormone receptor positive and had negative margins with no nodal involvement. Upon confirmation of eligibility, the treatment device which consisted initially of multi-catheter interstitial implants, and later changed primarily to an intracavitary device, was placed in the tumor bed. Patients then received two treatments per day, six hours apart, for four to five days. Thus far, approximately 500 patients have been treated with excellent outcomes. Our early analysis published in 2014 included approxi-

mately 300 patients with minimum follow-up of 59 months. It showed an ipsilateral breast cancer recurrence rate of 3% with 1% of cases occurring in the tumor bed with minimum side effects.

With the success of our APBI program, we adopted another form of accelerated partial breast irradiation treatment called Intra-Operative Radiotherapy (IORT) in February 2019. Originally pioneered and investigated at University College London, IORT allows the patient to receive all required radiation in one fraction to the tumor bed before awaking from surgery. This is done using the Intra-beam device, which delivers point source of 50kV energy X-ray at the center of a spherical applicator. At the time of surgery, an appropriate-sized applicator is placed in the tumor bed. Subsequently, radiation is administered to the tumor bed for 20 to 45 minutes. The physical property of its radiation allows 20 Gy to be delivered to the surface of the tumor bed while only 5–7 Gy reaches to 1 cm depth, thus reducing radiation exposure to nearby organs. The efficacy of the treatment has been validated in a randomized trial, which compared it to the standard whole breast irradiation treatment. At five years post treatment, the local recurrence in the IORT treatment group was 3.3%, versus 1.3% for the standard treatment group, with demonstrably less complications. About 15% of patients in the IORT treatment group required additional whole breast irradiation following post-surgery pathology, which showed more extensive disease, including positive lymph node and margin.

At Legacy Good Samaritan Medical Center, we have thus far treated 69 patients with IORT. A majority of these patients are 70 years and older with clinical Stage I disease. As expected, most of these patients are choosing this option in lieu of whole breast irradiation treatment for the sake of convenience. Driving daily or relying on family members to provide transportation is not ideal for them. Furthermore, those with left breast cancer and heart disease prefer IORT for the likelihood of affecting their heart far less than standard whole breast irradiation.

The popularity of IORT continues and is especially appealing for patients who are eager to complete their cancer treatment in a short period of time. It relieves their concerns of completing their treatment, as well as fears of contracting infections during their cancer treatment plan. Although one may question the short-term follow-up and limited experience of IORT compared to the standard

six-week course of whole breast irradiation, IORT is a reasonable choice for those with early favorable disease, limited access to radiotherapy, and/or other comorbid conditions. We at Legacy Good Samaritan feel privileged to have this option to serve our patients, especially during this unprecedented time.

## Managing Risk: Who, How and Why

By Amie Bates, M.S., PA-C, Legacy High-Risk and Genetic Services

An estimated one-in-eight women will develop breast cancer in their lifetime. Thankfully, the prognosis of breast cancer is favorable when detected early and treated properly. According to the National Cancer Institute, 63% of breast cancers are caught at an early localized stage. These cancer cases have an excellent five-year relative survival rate of 99%. However, when a breast cancer is found in a more advanced stage, the five-year relative survival rate can be as low as 28%. Early detection is crucial in the successful outcome of breast cancer. The Legacy High Risk Clinic was established to help identify and monitor those with an elevated risk of developing breast cancer with the goal of early detection and risk reduction.



There are multiple factors that paint the picture of risk for each individual. The American Society of Breast Surgeons recommends that all women older than 25 receive a formal breast cancer risk assessment. Family history of breast and other cancers such as colon, ovarian, thyroid and pancreatic cancer can all be clues to inherited risk. The density of a woman's breast tissue is another factor, and in some cases can equate to a similar risk as having a first degree relative with breast cancer. Risk can also be increased by having a history of atypical breast cells or breast biopsies. A woman's lifestyle and number of children can also play a role. Using vari-

ous models, these risk factors, along with several other factors, are used to calculate an individual's lifetime and five-year risk of developing breast cancer. For some individuals, genetic testing is another important step in identifying cancer risks. Genetic counseling and testing is also provided at the Legacy High Risk Clinic.

According to the American Institute of Cancer Research, studies show up to 40% of cancers are preventable through lifestyle modifications. Counseling on specific lifestyle modifications for risk reduction is a main component of providing high-risk patient care. Patients are provided with numerous resources to help decrease risks through modifiable lifestyle choices. In addition to lifestyle modifications, some individuals qualify for a risk reducing strategy called chemoprevention based on their five-year risk percentage. This option takes a pharmaceutical approach to further reduce risks. Along with risk reducing guidance, patients are provided with ongoing clinical surveillance and breast imaging. Each patient can build a personalized program tailored to their needs and preferences.

As part of the Legacy Cancer Institute, the High Risk Clinic strives to empower the patient through a multidisciplinary team that is focused on providing information, tools and resources to reduce the risks of developing breast cancer and to catch cancer as early as possible. For information about the Legacy High Risk Clinic, contact 503-413-6534.

## Genetics in Breast Cancer

By *Thérèse Tuohy, Ph.D., certified genetics counselor, Legacy Cancer Institute*



a total of 1.7 million new cases of cancer in the US. While the five-year survival rate for breast cancer exceeds 91% and continues to improve, race and socioeconomic barriers to care also persist.

Between 5%–10% of breast cancers emerge in the context of inherited predisposition due to pathogenic mutations in more than 15 known genes. In these cases, dominantly inherited mutations are associated with significantly increased risks for breast cancer compared to the population, most notably in BRCA1/2 where the risk may approach ~80% lifetime risk of breast cancer along with associated risks for cancers in other tissues where normal expression of BRCA1/2 is needed for tumor suppression, for example, ovarian/fallopian tubes/peritoneal, prostate and pancreatic organs. This is a fast-moving field, and mutations in some genes (for example RAD50) which, although initially believed to be associated with high risk, are now believed not to be independent predictors of risk. Between these “bookends,” there are several moderate-risk genes, where the penetrance of the mutations is generally between slightly more than 12% (background populations risk, in the US), to ~30%–40%. These are often more challenging risks to recognize, identify and manage in families, as family size has decreased and demographic mobility (and consequent loss of familiarity with family history) has increased in recent years. Although it continues to be debated, it seems that some genes previously believed to be associated with risks for other organs, are now believed to have some mild to moderate increased risk for breast cancer too, for example two of the Lynch syndrome genes, MSH6 and PMS2.

Standard-of-care clinical germline genetic testing technology addresses mutations in exons. Rarely, mutations in introns, not detected by this technol-

ogy, may explain inherited predisposition to breast and/or other cancers. This is due to cryptic mutations that affect correct exon-intron splicing, resulting in a mature mRNA transcript that lacks an essential exon, or has incorporated an alternative exon. Either of these events can compromise the encoded protein product, leading to a loss of normal tumor suppression activity.

Polygenic analysis has emerged as an exciting development that promises to explain inherited risk that comes not from high-risk mutations in single genes, but from the unfortunate combination of independently inherited normal or mild-risk mutations that segregate unnoticed in the general population. Several clinical testing laboratories now include platforms that address this type of risk. Our understanding of how similar and distinct minority populations may be in their profiles of these mutations continues to advance rapidly, but is not quite ready for comprehensive and accurate risk assessment in all ethnic groups, or in patients of mixed ancestral origin.

RNA sequencing technology now allows these types of rare mutations to be identified, facilitating identification of previously undetected mutations, and predictive (“cascade”) testing in other family members. Patients in high-risk families in which germline mutations are strongly suspected, but not previously found, may consider retesting with the new emerging platforms that allow this type of testing.

High Risk and Genetic Services at Legacy Cancer Institute continue to work with patients to provide relevant detailed discussion of multiple issues: the breadth of gene choices in current panels; the clinical implications of results that are negative, positive or of unknown significance, in the context of personal and family history; federal and state laws that govern genetic privacy and the law; the potential for additional autosomal recessive risks for some of these genes for conditions like Fanconi anemia and constitutional mismatch repair deficiency; insurance coverage of these tests, out-of-pocket expenses, DNA banking, and patient-friendly resources, studies and clinical trials.



## Legacy Oncology Research

By Leslie Sorenson, CCRP, oncology clinical research manager, Legacy Cancer Institute

Legacy's Oncology Research Department had a very successful 2019, acknowledging the hard work and dedication of our coordinators, lead principal



investigators and physicians. There is a substantial amount of work and effort involved in participating in the National Cancer Institute (NCI) cooperative group studies. Legacy Cancer Institute (LCI) was rewarded for that hard work with the

designation of NCI High Performing Site. LCI was also the recipient of the Outstanding Achievement Award through the Commission on Cancer. Legacy Oncology Research met the necessary requirements and received one of LCI's seven commendations required for the Outstanding Achievement Award.

In 2019, support from the Good Samaritan Foundation gave us the opportunity to develop two cancer control studies for our breast cancer patients. Our integrative nurse practitioner, in collaboration with the oncology research team, designed a trial of the natural supplement Pycnogenol, which has been shown to reduce hot flashes associated with menopause and to see if it could also reduce hot flashes caused by anti-hormone cancer treatments in women with breast cancer.

A second study was developed under the guidance of Enoch Huang, M.D., and the Legacy Hyperbaric Medicine Center at Legacy Emanuel. This protocol compared six weeks of hyperbaric oxygen therapy to six months of daily Trental and Vitamin E immediately following radiation in patients with breast reconstruction. The hypothesis of this study is that acute hyperbaric oxygen therapy will reduce the incidence of capsular contracture and radiation-induced fibrosis and improve cosmetic outcomes for these patients.

TARGIT-B, an international study, started recruitment for additional U.S. sites and LCI began the process to participate in 2019. The trial compares targeted intra-operative radiotherapy boost with conventional external beam radiotherapy boost after lumpectomy for breast cancer in women with a high risk of local recurrence. Active recruitment for this study was planned for early summer of 2020.

Legacy Oncology Research continues to collaborate with cooperative groups, NCI and industry sponsors to provide the most advanced treatment options to our patients and our community and look forward to more exciting opportunities in the coming year.

## Legacy Research Institute Tumor Bank

*By Carmen Rusinaru, M.D., PhD, senior scientist, Legacy Research Institute*

The National Dialogue on Cancer identified limited access to “appropriately collected, consented and annotated tissue” as a critical barrier to developing new cancer therapies. The Legacy Tumor Bank was founded in 2006 to address this resource gap by storing frozen and paraffin-embedded tumor tissue.



Due to the outstanding support we have received from surgeons, pathologists and team members at the Legacy Cancer

Institute (LCI), our collection has now grown to greater than 1,800 cases, including more than 150 samples from outside the Portland metropolitan area.

The Legacy Research Institute Tumor Bank continues to fulfill a significant proportion of the clinical research enrollment requirements for the Legacy Cancer Institute’s Commission on Cancer

Accreditation and National Accreditation Program for Breast Centers. In 2019, the Tumor Bank’s contributions provided significant patient enrollment and helped LCI earn the Commission on Cancer’s Outstanding Achievement Award for Accrual Percentages to Clinical Research Studies.

The use of biological samples is essential to study relevant biomarkers and biologic pathways for therapeutic drug and molecular genetic testing. Our robust collection of superior quality tumor samples allows researchers to determine the factors that lead to cancer in solid tumors, thus expanding Legacy’s presence in the health care and research communities. Notably, in 2019, the tumor bank joined a consortium of tissue repositories in the Pacific Northwest headed by the Fred Hutchinson Cancer Research Center (Specimen Acquisition Network) and has been providing samples for their research studies.

## Legacy Cancer Data Management: 2019 Highlights

By Susan Malone, B.S., CDM Tech II, Legacy Cancer Data Management

At the Legacy Cancer Institute (LCI), the Cancer Data Management (CDM) department collects, analyzes, manages and reports data on all cancer patients newly diagnosed and/or receiving their first course treatment at all seven Legacy Health medical centers. This collective data allows both state and national public health services to monitor the cancer burden in the U.S. population, as well as provide statistical information that influence ongoing research of cancer prevention, diagnosis, treatment and survival.



patients newly diagnosed and/or receiving their first course treatment at all seven Legacy Health medical centers. This collective data allows both state and national public health services to monitor the cancer burden in the U.S. population, as

well as provide statistical information that influence ongoing research of cancer prevention, diagnosis, treatment and survival.

We also use this data within Legacy to strategize by department, hospital, and Legacy as a whole (programmatically) and even locally within our communities. Are you interested in what counties Legacy-treated patients come from? Perhaps you want to know who is your treated population. Do you want to analyze the number of surgical cases, type of breast cancer (ER, PR, HER2 status), or stage groups treated at Legacy? Or perhaps you have interest in calculated fields, such as length to first treatment (days), length to date chemo, XRT, hormone, and immunotherapy (days), survival (in months), months from diagnosis to first recurrence, etc. The CDM department collects hundreds of data fields to compare with national best evidence-based practices.

A few examples of data requests in 2019 came from administration, clinicians and the Office of Philanthropy. The CDM department analyzed the most recent Oregon State Cancer Registry (OSCaR) county data (2012–2016) to analyze the top cancer site incidence and death rates for Legacy Silverton Medical Center, most recently acquired by Legacy Health. Silverton is in Marion County which showed lung, prostate and uterine cancers as the top three sites for both incidence and death. Marion county showed a lower incidence and death rate for breast cancer when compared to the State of Oregon. Clackamas County, the neighboring county to

Silverton, had the highest incidence rate for breast cancer in the entire State of Oregon, as well as a higher death rate for breast cancer when compared to the State of Oregon overall. Second, through IRB approval, clinicians requested a retrospective review of Stage 0–3 breast cancer patients from January 2002-to-December 2011, looking at whether breast conservation offers a survival benefit over mastectomy. They found in a subgroup analysis of Stage II triple-negative breast cancer, that breast conservation had significantly lower rates of distant recurrence and significantly higher survival than mastectomy.

Legacy's CDM team is comprised of CDM techs, CTRs and management. The CDM techs support the CTR role by performing duties that do not require the CTR certification. For example, the CDM tech position coordinates 33 monthly cancer conferences across all seven Legacy medical centers, where 2,095 cases were discussed in 2019. They also perform patient follow-up duties on CoC reportable cases, which included — 27,000 patients in 2019. CDM techs also review and enter all reportable cases diagnosed and/or treated at Legacy into the cancer registry software. They perform quality control functions on at least 10% of the eligible yearly analytic case volume as well as extract data from the cancer registry software for quality improvement dashboards and data requests, which exceeded 150 in 2019. The CTRs are the true authors and capturers of data coding and texting, using several references and manuals to ensure the highest accuracy and quality. They abstract several hundred cases per CTR per year. CTRs review imaging, pathology reports, operation notes, office visits, treatments, etc., and translate that information into the cancer registry software. They enter hundreds of data fields along with supporting text documentation. It truly is a team effort in the fight against cancer.

## Legacy Breast Cancer Program Continuous Quality Improvement

By Mindy Ansteth, B.S., CTR; manager cancer data management & quality improvement consultant, Legacy Cancer Institute

Health care is changing rapidly, so it's essential to focus on continuous quality improvement as part of providing care every day. Legacy Health is com-



mitted to continuous quality improvement for the care of our patients and improved patient outcomes. The framework of the Legacy Cancer Institute (LCI) Breast Cancer Program includes a multidisciplinary breast program leadership team, national

accreditations, and multifactorial quality improvement tools and studies.

LCI is accredited by the American College of Surgeons (ACoS) Commission on Cancer (CoC) as a five hospital Integrative Network Cancer Program (INCP). In fact, LCI was the first INCP in the country and remains the only INCP in the State of Oregon today. In 2019, LCI proudly received the ACoS CoC Outstanding Achievement Award (OAA) for the fourth consecutive survey cycle. The OAA recognizes cancer programs that strive for excellence in demonstrating compliance with the CoC standards and are committed to ensuring high quality cancer care. Legacy Breast Health Centers are also accredited by the ACoS National Accreditation Program for Breast Centers (NAPBC) at Legacy Good Samaritan, Meridian Park, Mount Hood and Salmon Creek medical centers. NAPBC accreditation demonstrates a dedication to the improvement of quality outcomes of patients with diseases of the breast through evidence-based standards and patient and professional education.

Legacy Imaging Departments and Breast Health Centers are accredited by the American College of Radiology (ACR) to provide the highest level of image quality and safety by meeting the requirements for equipment, medical personnel and quality assurance. Additional participation in the ACR National Mammography Database (NMD), provides

comparative mammography data for national, regional and internal benchmarking. Performance reports include benchmark data such as cancer detection rates, positive predictive value rates and recall rates. Preliminary data is also available for exams with fewer than 365 days of follow-up to facilitate timely corrections and modifications. Fellowship-trained radiologists specialized in breast imaging, are actively involved with the Legacy breast program leadership team and continuous quality improvement efforts.

Specialized and fellowship-trained breast surgeons at Legacy Good Samaritan, Meridian Park, Mount Hood and Salmon Creek medical centers participate in the American Society of Breast Surgeons (ASBrS) Mastery of Breast Surgery Program. The program database is a tool to document and benchmark clinical performance of breast procedures, as well as the care of breast cancer patients and patients at risk for breast cancer. Performance data is reviewed regularly by a multidisciplinary team to benchmark performance, discuss barriers and implement quality improvements.

Radiation oncology at Legacy Good Samaritan, Mount Hood and Salmon Creek medical centers is accredited by the American College of Radiology Radiation Oncology Practice Accreditation (ACR-ROPA). ACR accreditation demonstrates compliance with staff, equipment, treatment-planning/treatment records, patient-safety policies and quality control/quality assessment activities. ROPA provides a valuable third-party, impartial peer review and evaluation of patient care. Radiation oncologists participate in the Maintenance of Certification (MOC) program through the American Board of Radiology (ABR), demonstrating a further commitment to continuous quality improvement, professional development and quality patient care.

Legacy Laboratory Services is accredited by the College of American Pathologists (CAP), Clinical

Laboratory Improvement Amendments (CLIA), International Organization for Standardization (ISO), and American Association of Blood Banks (AABB). Legacy is among just one other hospital system and two national reference labs in the United States to receive an international quality certification (across the entire lab organization) from the College of American Pathologists (CAP). Specialized and fellowship-trained pathologists with expertise in breast cancer and diseases of the breast, are essential to the patient-centered multidisciplinary breast care team.

A breast cancer quality improvement dashboard includes additional multidisciplinary quality performance metrics to improve patient care and reduce any variation in performance across LCI facilities. The LCI breast cancer program leadership team, along with our medical oncology partners with Oregon Health Science University (OHSU), meet regularly to review the dashboard. Multidisciplinary review and discussion provides a forum for the clinical team, support services and administration to discuss performance, barriers, and the latest in evidence-based treatment guidelines and benchmarking. Performance outliers are identified, root cause analysis is performed, and quality improvements are implemented and monitored.

Quality improvement studies to analyze LCI data are completed and published yearly to measure the quality of cancer care and outcomes. Quality

study topics are generated from various sources, such as our quality improvement tools, patient experience feedback, or new treatment guideline recommendations. An LCI study completed by Nathalie Johnson, M.D., FACS; Jennifer Garreau, M.D.; Maryam Farinola, M.D.; and Thomas Sutton, M.D., was published in the American Journal of Surgery in 2019. The study was initiated from the National Comprehensive Cancer Network (NCCN) guidelines recommending excisional biopsy for atypical ductal hyperplasia (ADH) diagnosed on core needle biopsy (CNB) due to the possibility of pathologic upgrade to breast cancer upon excisional biopsy. The LCI study aimed to quantify the current rate of upgrade at LCI and identify risk factors. The LCI study found that the principal clinicopathologic factor associated with upgrade is increasing patient age. However, this was not sufficiently predictive. It was recommended that excisional biopsy in patients diagnosed with ADH on CNB should continue and further study may provide an avenue for selective excisional biopsy in patients with ADH.

LCI is proud to demonstrate an investment and commitment to ensuring that all cancer patients receive high-quality, coordinated care across the full continuum of diagnosis, treatment and support services. With multidisciplinary team involvement, meaningful quality improvement tools and transparent data, LCI continues to drive our ongoing quality improvement efforts forward.

## Legacy Cancer Healing Center

By Niani Dunner, MPH, coordinator, Legacy Cancer Healing Center

The Legacy Cancer Healing Center is the umbrella under which support services reside for breast cancer patients and their families. A diagnosis of cancer



can affect many aspects of one's life. At the Legacy Cancer Healing Center, we bring a whole-person approach to improve quality of life, both during and after treatment.

Legacy Cancer Healing Center staff members work closely with the patient, their family and all members of the patient's cancer treatment team, offering assistance along the entire continuum of cancer care. We aim to assist patients with the physical, emotional and practical issues that arise from a cancer diagnosis and treatment. The Healing Center provides a comprehensive menu of group-based offerings, as well as individualized services provided by experienced, cancer-trained practitioners.

### Individualized support services

- The Integrative Medicine Clinic offers individual consultation with a nurse practitioner. For more information, see "Integrative care and symptom management" on page 22.
- Our licensed clinical social workers address the emotional, social and financial concerns of the individual and family, as well as coordinate community services and resources. For more information, see "Oncology Social Work" on page 24.
- A licensed psychologist providing individual, couples and family therapy.
- A Legacy dietitian, certified in oncology nutrition, offers individual consultations in nutritional counseling before, during and after cancer treatment. For more information, see "Oncology Nutrition" on page 27.
- Art therapy uses various artistic mediums to allow patients to express themselves, and offers individual and group sessions for adults with cancer and their children.
- Massage therapy, by an oncology certified massage therapist, is offered free of charge at Legacy Good Samaritan Medical Center, both within Radiation Oncology and on the Cancer Care Unit. Fee-for-service and insurance-covered appointments are also available.
- Stress management provides support and comfort during difficult procedures, including brachytherapy radiation treatment for breast cancer.
- Green Gables Guest House, on the campus of Legacy Good Samaritan Medical Center, provides lodging for cancer patients and families from out of the area receiving treatment at Legacy. Out-of-town patients and their families can utilize this convenient home away from home, located directly across the street from the Legacy Cancer Institute.

### Cancer groups, classes and events

The Legacy Cancer Healing Center offers an array of groups, classes and events that support patients socially, emotionally and physically as they adapt to their cancer diagnosis, treatment and survivorship.

- *Starting 2019 Anew: A Self-Care Workshop for Recent Cancer Survivors* kicked off the year with three one-day workshops for cancer survivors up to five years post-completion of active treatment. Using self-reflection activities and group discussion, survivors focus on their personal wellness goals for the coming year.
- An ongoing support group for breast cancer patients is held once a month at Legacy Good Samaritan Medical Center. It offers peer-to-peer support, as well as professional guest speakers on topics relevant to those with a breast cancer diagnosis and their families.
- Our Women's Metastatic and Advanced Cancer Support Group also meets monthly at Legacy Salmon Creek Medical Center. It provides tools for coping with advanced cancer (Stage IV or incurable), or cancer that has metastasized, from guest speakers, facilitators and other women.

- Art therapy groups, such as *Finding Center* and *Expressions of Healing*, are held regularly at all four of Legacy's medical center campuses — thanks to the addition of a second art therapist in 2019. These classes provide cancer patients and survivors the opportunity to create a community and explore their cancer journey through art.
- *Pop-Up Open Art Studio* was added in 2019 as a weekly offering for patients, family and caregivers to drop by any time during Pop-Up hours to make art in a creative, calming environment.
- *Gong Bath Meditation* events also became available in 2019, in partnership with Beneficial Sound. Patients and their caregivers enjoy a musical experience of sound and vibration that promotes stress reduction and deep relaxation.
- *Step Into Fitness* is a series focusing on safe exercise and anti-cancer nutrition, post-treatment, taught by a physical therapist and oncology dietician.
- *Cancer Superfoods* introduces the cancer fighting powers of a variety of foods, and allows participants to taste simple, delicious recipes using these foods.
- Offered for the 15th year in a row, *Meals That Heal* is a popular event co-taught by a professional chef and oncology dietitian, is another way to explore an anti-cancer diet.
- Other ongoing offerings include monthly gardening workshops and nature walks, mindfulness meditation and weekly movement classes in Pilates, Tai Chi/Qigong and yoga. A comprehensive list of cancer support groups and classes offered is on page 31.

## Integrative Care for Patients with Cancer

By Reza Antoszewski, NP-C, integrative care, Legacy Cancer Healing Center

Legacy Cancer Institute's Integrative Medicine Clinic provides holistic, individualized care to help our patients with symptom prevention and management during treatment and beyond.



For more than 11 years, we have provided this model of care for our patients. These services are now available at Legacy Good Samaritan, Meridian Park and Mount Hood medical

centers.

Patients are seen for assessment and treatment of symptoms. We develop a plan that includes lifestyle, functional and mind/body medicine to provide integrative, individualized care to our patients to help with symptom prevention and reduction during and after treatment.

Information and education regarding cancer risk reduction through lifestyle modification is an important part of post-treatment care. Issues such as memory, sleep, pain, fatigue, poor appetite, stress and anxiety are managed in a holistic manner, with consideration for the many aspects of patients' lives that may impact their health and symptoms. Management is often accomplished in collaboration with other providers, within and outside of Legacy Health, to provide truly integrative care. A plan may include features of diet, exercise, sleep improvement, referrals to physical therapy or acupuncture, as well as ways to calm the mind and body.

Patients appreciate the ability to have their symptoms holistically addressed and to participate in improving their health and well-being. Providers greatly appreciate the extra layer of support given to their patients and the relief they obtain.

Keeping current, and contributing to strides in the fields of lifestyle, functional, mind/body and integrative medicine, allows for continuous development of evidence-informed care for the benefit of our population.

Many patients participate in alternative therapies outside of the traditional health care system along

with their cancer treatment. Some of these non-traditional treatments may be helpful; others may be harmful. The clinic provides a resource for patients and providers where alternative treatments, herbs and supplements are assessed for safety and efficacy.

The clinic works closely with our pharmacy in providing quality supplements to our patients through the Legacy Good Samaritan, Apothecary. With the generous support of the Legacy Foundations, we have a grant to provide those supplements to patients who otherwise could not afford them.

Diet, exercise, restorative sleep, emotional resilience, social support and the patient's environment are all taken into consideration in developing a plan. Any recommended plans are in shared agreement with the patient. Supplements, mindfulness training and modifications in lifestyle become part of the plan to improve the patient's well-being. Our clinic works with patients to assist and motivate them to take the steps needed to make healthy lifestyle changes.

Mind/body medicine and mindfulness are useful in our patients' coping and symptom management, as well as in helping our providers maintain resilience and compassion. Classes in mindfulness are available for patients and their loved ones at multiple Legacy locations. Mindfulness training is also available several times per year to all staff and providers throughout Legacy Health with the support of Employee Health, Nursing Services and the Legacy Provider Wellness Committee.

As part of their clinic visits, patients may also be assisted using one-on-one training in mindfulness and other mind/body skills such as heart-rate variability biofeedback. Referrals to our clinic are predominantly from physicians and allied health care providers. Patients are also able to self-refer. Visits to the integration clinic are billable to most insurance, including Medicare and Medicaid.

We presented strategies developed in our clinic, for symptom-management during breast cancer



and its treatment, through lifestyle and integrative medicine, at the American College of Breast Surgeons national conference, and continues to provide education on a number of integrative topics to our providers, allied health and patient populations.

Our clinic, in collaboration with Legacy Research and Legacy Pharmacy, developed and participated in a study to evaluate a benign, non-estrogenic, plant-based supplement for care of patients experiencing menopausal symptoms related to anti-hormone therapy or oophorectomy. These types of symptoms are often difficult to manage. We hope

this supplement will add another useful tool to allow patients to experience fewer side effects and maintain needed therapies.

In collaboration with OHSU, our clinic developed a protocol for cryotherapy during chemotherapy to help prevent peripheral neuropathy in our patients. This protocol is now available to patients during treatment.

We continue to develop multifaceted protocols that are individualized to each patient to help ease their way through treatment and beyond.

## Oncology Social Work

By Sara Butler, MSW, LCSW, OSW-C, oncology social worker, Legacy Cancer Institute

Oncology social workers help patients, their families and caregivers manage the emotional, financial and social impact of having cancer and living as a



cancer survivor. Social workers work to enhance human well-being, help meet basic human needs and “seek to enhance the capacity of people to address their own needs” (NASW Code of Ethics).

Legacy Cancer Institute (LCI) has oncology social work support available on site at Legacy Good Samaritan, Salmon Creek, Mount Hood and Meridian Park medical centers. For patients with breast cancer, referrals come from oncology nurse navigators, providers and staff in radiation oncology, medical oncology, surgical oncology, the Legacy Cancer Healing Center and outpatient rehabilitation. Social workers see patients, their families and caregivers in clinics and can provide support and information over the phone, as well. All three of our LCI social workers have their clinical social work license and two have an oncology social work certification.

The National Comprehensive Cancer Network (NCCN) defines distress in cancer as “a multifactorial unpleasant experience of a psychological (i.e. cognitive, behavioral, emotional), social, spiritual and/or physical nature that may interfere with the ability to cope effectively with cancer, its physical symptoms and its treatment.” Distress screening is done at LCI at key points during and after cancer treatment by administering the NCCN Distress Thermometer and Problem List. In completing the distress screening, patients rate their overall distress on a scale of 0–10, while also identifying areas of concern, including basic needs, emotional and mental health, family stress and spiritual/religious distress. Oncology social workers respond to distress screening by providing individualized assessments, support and resource information and make referrals to providers, specialists and community resources, as indicated.

People who are diagnosed with breast cancer, from early stages to metastatic disease, can face stressors that range from financial strain (due to income or job loss and increased medical bills), increased pressures at home (parenting, child care and/or providing care for an elderly family member during cancer treatment), to managing the impact breast cancer and the treatment has on relationships, body image and sexuality, and distress related to hormone changes. A breast cancer diagnosis also impacts our patients’ family members, friends, support persons and caregivers. Oncology social workers work with patients, families and caregivers to provide emotional support and practical resource information regarding adjustment to illness, disability, medical decision making, managing stress, home care needs, financial assistance and transportation. Our social workers refer patients and their families to support groups (at Legacy Health and in the community), mental health providers, organizations in the community that provide peer support and events that gather breast cancer survivors together. Our Legacy Cancer Institute social work team manages four site-specific patient assistance funds, funded by Legacy Health Foundations. These funds provide our patients with financial assistance for needs such as food and nutritional supplements, gas costs for daily radiation, or assistance with over-the-counter medication and medication co-pays. In addition to this fund, our oncology social workers regularly work with our breast cancer patients to access local and national programs for financial assistance.

Oncology social workers work closely with medical providers, oncology nurse navigators, dietitians, the oncology psychologist and art therapist to address the psychosocial needs of our patients, families and caregivers. Our oncology social workers regularly collaborate with oncology social work colleagues in other institutions, in coordination of care. Our goal is to provide support throughout the continuum of care for our patients, their families and caregivers at Legacy Cancer Institute.

## Oncology Nurse Navigation

By Marla Matlock, MSN, R.N., OCN, day treatment infusion unit nurse manager, Legacy Cancer Institute

Care for the oncology patient is complicated, even when localized and found early. When a patient is diagnosed with breast cancer, they face a life-threatening malignancy as well as a complex treatment protocol that may affect their appearance and ability to function normally. Successful treatment requires pretreatment evaluation and consultation by a myriad of specialists. The treatment regime is rigorous, and recovery can be prolonged. The impact on patients' overall quality of life can be significant.



The Oncology Nurse Navigator (ONN) provides education, support, guidance and reassurance to patients and their loved ones during the cancer treatment process. Disruptions to daily life for both patient and caregivers, disease and treatment-related side effects and the financial and emotional strain of treatment are often significant. The ONN serves as a patient advocate, facilitating communication between the patient and the surgical, medical and radiation oncology providers, as well as plastic surgeons, primary care physicians, imaging departments, dietitians, physical therapists, social workers, mental health providers and community agencies required to ensure timely and coordinated care. Often, barriers are encountered that can delay or impact appropriate care. The ONN is uniquely positioned and suited to preemptively remove barriers to care and help manage those issues that arise during care.

Legacy Cancer Institute (LCI) offers oncology nurse navigation services at each of our cancer program treatment sites. Our ONNs are licensed in both Oregon and Washington, and all nurses are Oncology Nurse Certified. Although all the ONNs are "generalists," meaning they support patients with all types of cancer. Each of our ONNs focus on a specific site/type of cancer. As such, they serve as subject matter experts and clinical resources for patients, family caregivers and the cancer care team. Navigators attend weekly care conferences (tumor boards) in which all cancer diagnoses are reviewed and discussed amongst a group of treatment experts, facilitating the most appropriate care recommendations. Nurse navigators monitor their patients' progress with chart review, phone calls and in-person clinic/hospital visits throughout the treatment course. Finally, after patients have finished their course of treatment, the ONN helps develop and deliver a Survivorship Care Plan. This document provides a summary of the patient's diagnosis and cancer treatment(s), with recommendations for future surveillance and resources for post-treatment issues.

Breast cancer is complex, and the treatment journey can be long and multifaceted. LCI offers these patients expert, compassionate care, provided by a network of specialists, facilitated and supported by experienced and knowledgeable nurse navigators.

## Physical Therapy Support to Optimize Well-being, and to Prevent and Treat Deconditioning

By David Therrattil P.T., DPT, CLT, oncology physical therapist, certified lymphedema therapist, Legacy Health

Physical therapists (PTs) play an important role on the interdisciplinary medical team for patients with breast cancer. Breast cancers can both directly (from the tumor site itself) or indirectly (through its treatments) cause physical and psychosocial impairments that PTs can treat. The tumors themselves can cause difficulties with circulation, leading to edema or lymphedema, and the most common treatments for breast cancers — surgery, radiation, targeted therapy and systemic therapy (including chemotherapy, hormone therapy and immunotherapy) — have numerous sequelae that PTs are trained to help with.



Patients who undergo surgery can face post-surgical pain and complications, as well as secondary complications due to decreased activity or too much movement of the post-surgical site. PTs in the hospital setting work to improve overall strength, mobility, activity tolerance, and ensure a safe discharge home or to the next care facility. Physical therapists in the outpatient clinic setting guide patients in safe mobility of affected tissues, continuing to build strength and endurance, and improving patients' overall quality of life as they return to work, school and/or recreational activities.

The most common side effects of radiation therapy include fatigue, skin and scalp changes, hair loss, nausea/vomiting and headaches. One of the fundamental parts of any physical therapy cancer program is fatigue management and energy conservation. Therapists teach patients how to prioritize and conserve energy to achieve what can and needs to be done throughout a patient's day and can slowly build up activity tolerance through aerobic exercise, relaxation and meditation exercises, strength training and flexibility exercises in a progressive program that increases in challenge as patients' tolerances improve.

Patients who receive systemic therapies can experience side effects similar to radiation (fatigue, hair loss, nausea and vomiting), as well as other common side effects that PTs can treat. This includes nerve problems, such as numbness, tingling and pain; cancer treatment-induced cognitive impairment (CICI — sometimes known as "chemo brain"); weight gain; muscle loss; pain in muscles and joints and bone loss. Modalities such as electrical stimulation, low-level laser therapy (LLLT) and desensitization interventions can address nerve problems which have the potential to limit overall activity. Aerobic and resistance exercise regimens have been shown to produce cognitive benefits and are augmented by mindfulness-based stress reduction, medicinal Qigong, Tai Chi and breathing/progressive relaxation exercises. These same regimens can help with managing weight, develop and build muscle and create physiological conditions that protect against and prevent bone loss.

Physical therapy, while traditionally thought of in the orthopedic and sports worlds, is making great strides in cancer care, sometimes preventing the onset of some of the side effects mentioned above. Deconditioning can be caused by any of the treatments for breast cancers, and physical therapists can address it from its onset to its conclusion, and hopefully prevent deconditioning in the future. The interdisciplinary team tailors interventions and support to more personally and precisely address patients' and their families' needs and goals throughout the cancer journey. This approach allows for an optimal functional and physical recovery, improves overall quality of life and fosters independence of both the patients and their families. Ideally, a patient is seen at or around diagnosis to take functional and objective measures as a baseline for activity, strength and mobility and a determination is made regarding future therapy needs.

## Oncology Nutrition

By Marci Reed, R.D., CSO, L.D., registered dietitian, certified specialist in oncology nutrition, Legacy Cancer Institute

Oncology dietitians provide nutritional consultation to cancer patients across the continuum of the cancer including primary prevention, cancer treatment,



secondary prevention, cancer recurrence and palliative care.

Cancer and its treatments often lead to complex side effects that develop rapidly and change in character and intensity throughout treatment. Barriers to eating, drinking, digesting

and absorbing nutrients lead to negative clinical outcomes for patients with cancer, including malnutrition. Prompt assessment and interventions are key to helping patients avoid treatment holidays and dose reductions while also promoting the best possible quality of life during their cancer journey.

The oncology dietitian is the expert in providing medical nutrition therapy. At Legacy Cancer Institute (LCI), nutrition therapy is included in our comprehensive cancer services. Patients are routinely screened and assessed for nutrition issues and referred to our oncology dietitians. At the nutrition consultation visit, patients are provided with individualized nutrition assessments, counseling and nutrition recommendations based on their specific therapy and nutrition needs.

Regardless of the course of treatment, nutrition should be a vital component. In addition to providing nutrition therapy during cancer treatment, oncology dietitians can be instrumental in creating a comprehensive care plan for patients after treatment, one that emphasizes achieving a healthy lifestyle through appropriate diet and exercise strategies. For example, with breast cancer, research indicates that maintaining a healthy lifestyle and good nutritional status can be key factors in overall outcomes, making it vital that patients follow a smart nutrition plan. The exact components of nutrition therapy for patients with breast cancer will depend on the type of cancer, the treatment regimen and patient's level of interest in nutrition and lifestyle therapy.

Because healthy lifestyle choices may help lower the risk of different types of cancers and other health conditions, oncology dietitians frequently are asked about special diets. Currently the ketogenic and mediterranean diets are among the most popular. The ketogenic diet, while there are different variations, is generally low in carbohydrate, adequate in protein and high in fat. The goal of the diet is to lower your blood glucose (sugar) level and stimulate your body to make ketones. One theory of this diet is if we can maintain constant low blood sugars, while making ketones, we may be able to restrict the cancer tumor energy source, or glucose supply. In addition to this theory, most people lose weight on this diet. Research into the ketogenic diet specifically for cancer is somewhat preliminary.

In addition to potentially being high in unhealthy fats, the ketogenic diet typically removes many of the foods we know have major health benefits — fruit, whole grains, legumes, etc. In regard to the ketogenic diet and weight loss, research shows that a year out people generally do not lose any more weight than on a balanced, calorie-restricted diet. In addition, the ketogenic diet seems to have mixed effects on LDL cholesterol levels. Some current studies show LDL levels go up significantly, which in turn may increase cardiovascular disease risk. There are also unanswered questions about the long-term effects on bone health due to the acidic nature of the diet. Overall, more well-conducted research needs to be done to determine the safety and efficacy of the ketogenic diet.

The Mediterranean diet, on the other hand, is considered one of the most worldwide healthy dietary patterns, thanks to a combination of foods rich in antioxidants and anti-inflammatory nutrients. Many studies have demonstrated a strong relationship between a high level of Mediterranean diet adherence and cancer. It is characterized by a high intake of vegetables, legumes, fresh fruit, non-refined cereals, nuts and olive oil. It has moderate consumption of fish and dairy and a low intake of red meat. Given its protective effects in reducing

oxidative and inflammatory processes of cells and avoiding DNA damage, inflammation and metastasis, the Mediterranean diet is considered to be a potentially powerful and manageable method to fight cancer incidence.

Ultimately, nutrition therapy is an integral component in comprehensive cancer care. Oncology dietitians at LCI work closely with the multidisciplinary team to help identify patients with nutrition needs. In turn, this improves outcomes by providing appropriate interventions, evidence-based education and ongoing support for patients.

## Increase Awareness. Improve Access. Inspire Action.

*By Christine Brown, M.S., BSN, R.N., R.D., OCN, program coordinator and nurse navigation supervisor, Legacy Cancer Institute*

In 2019, there were an estimated 271,270 new cases of breast cancer diagnosed in the United States. Of those diagnosed, 2,670 were diagnosed in men.



Approximately 42,260 individuals in the U.S. were expected to die from breast cancer in 2019.

In addition to the number of lives impacted by breast cancer, the complexity of the disease is put into greater perspective when racial, ethnic and access-to-care issues are taken into consideration. Health disparities experienced by underserved racial, ethnic and geographic communities across the U.S., including Oregon and Washington, help to explain the inequalities found in breast cancer screening, incidence (new cases) and mortality (death) rates. The following table and data provide contextual comparisons.

Percentage of U.S. women who had a mammogram with the past 2 years	
African American Women	69%
White Women	65%
Hispanic/Latina Women	61%
American Indian/Alaska Native Women	60%
Asian-American Women	59%

• Only 30% of uninsured women were up to date with breast cancer screening in 2018, compared to 64% of insured women.

- In 2018, both Oregon and Washington failed to meet the Healthy People 2020 breast cancer screening goal of 81.1%. Oregon ranked 27th out of 52 and Washington 37th out of 52 for lowest screening rates in the country.
- In women under 45, breast cancer is more common in African American (AA) women than white women.
- AA and white women have similar breast cancer incidence rates, but Black women are 40 percent more likely to die of the disease.

Despite the staggering breast cancer statistics, the preventative power of breast cancer screening remains. If diagnosed early and treated before it spreads, the five-year survival rate for breast cancer is 99%.

Legacy Cancer Institute (LCI) is committed to providing and supporting community outreach and breast health education programs in our communities. To accomplish this goal, a variety of programs and resources have been developed and implemented to educate providers and employees, as well as community members about breast health, breast cancer, risk factors, and prevention and early detection and screening. These activities include but are not limited to:

- bi-annual breast cancer health events that feature convenient on-site mammogram scheduling
- communications to increase understanding about the availability and coverage of breast cancer screening services

- targeted mailings and reminders to increase mammogram screening rates
- self-scheduling and extended hours for mammogram screening to improve access
- presentations by LCI physicians and health professionals to audiences ranging from healthcare professionals to the general public including the Latina community health workers

When it comes to successful community-based breast cancer risk reduction programs, partnerships matter. LCI is dedicated to fostering community relationships and building on existing outreach and education services to reach larger segments of the population, especially at-risk communities. This year marks the 10th anniversary of the collaboration between LCI and Susan G. Komen of Oregon & SW Washington to bring the annual Worship in Pink Program to our community.

Komen's Worship in Pink is a unique breast cancer prevention program designed for congregations and community organizations of all faiths, as well as hair salons and barber shops in the Portland metro and Southwest Washington areas. Program goals are to offer messages of inspiration, provide breast health education and promote early detection and mammogram scheduling. In addition to providing

logistical support and resources, multiple Legacy physicians and LCI professionals volunteer to speak each year to faith-based organizations hosting Worship in Pink events. Since its inception in 2011, more than 420 local organizations; 31,000 community members have participated in the Worship in Pink program.

Beginning in late 2018, Susan G. Komen built upon the education and outreach of the locally successful Worship in Pink program by embarking upon a multi-year project that focuses on reducing the breast cancer disparities between African American and white women. LCI will continue to serve as a community partner and collaborate with Komen to help address the issues pertinent to health disparities, access and breast cancer care.

One in eight women in the U.S. will be diagnosed with breast cancer. There may be barriers to overcome, knowledge gaps to close, and health disparities to address. But we can make a difference. Through community partnerships and innovative approaches to prevention, early detection, treatment and wellness LCI will continue to stand strong against breast cancer.

## The Role of Palliative Care in Metastatic Breast Cancer

By Emily Huber, M.D., Legacy Medical Group—Palliative Care

Palliative care is a team-based model of medicine that addresses not only physical symptoms, but the psychological, social and spiritual challenges that



come with a cancer diagnosis. The National Comprehensive Cancer Network (NCCN) says “the goal of palliative care is to anticipate, prevent and reduce suffering and to support the best possible quality of life for patients, families and caregivers.”

Palliative care plays an important role in metastatic breast cancer care. The survival of patients with metastatic breast cancer can often be measured in years, and palliative care can support patients and families over the full trajectory of illness. Palliative care is based on the needs of the patient, not on the patient’s prognosis, and can be provided alongside cancer-directed treatment.

Patients with metastatic breast cancer often have physical symptoms that are caused either by cancer treatment or cancer itself. Common symptoms in patients with metastatic breast cancer include pain, nausea, shortness of breath and fatigue. Cancer pain can be treated with a multi-modal approach that extends much further than medication. For example, pain from bone metastases can be lessened with radiation therapy and pain from liver and other abdominal metastases can be alleviated with nerve blocks. Treatment-related pain such as neuropathy and joint pain can be addressed as well.

Palliative care providers can address chemotherapy-induced nausea with well-established medications regimens. Shortness of breath can be managed by treating underlying causes, such as malignant pleural effusions from lung metastases. Fatigue may be addressed in multiple ways — treating anemia, teaching energy-conservation techniques and with medications. In all symptom management, patient preferences and goals guide treatment to best improve quality of life.

Clinical social workers and spiritual care providers are integral members of an interdisciplinary pallia-

tive care team. The NCCN further defines palliative care as patient-centered care “incorporating psychosocial and spiritual care according to patient needs, values, beliefs and cultures.” Patients with metastatic breast cancer often have psychological and existential suffering; this can stem from changes in personal identity, disruption to family and work life and anxiety about the future. Palliative care can help patients manage difficult emotions and find coping strategies. This can include psychotherapy, art or music therapy and spiritual and religious practice.

Palliative care helps patients explore their goals and values so that their treatment choices align with who they are as individuals. These choices can shift as their cancer progresses. Because metastatic breast cancer is a chronic-yet-incurable disease, palliative care supports patients and their loved ones as they plan for end-of-life care. This can include naming a surrogate decisionmaker, completing an advanced directive and transition to hospice care when cancer-directed treatment no longer meets a patient’s goals.

Cancer research continues to demonstrate the benefits of early referral to palliative care. In fact, NCCN guidelines now recommend that patients be screened for palliative care needs at the time of diagnosis. Numerous organizations recommend concurrent palliative care for all patients with metastatic cancer. Patients with metastatic breast cancer will benefit from continued efforts to integrate palliative care into oncology care, including raising awareness and understanding of palliative care, and providing resources for health care providers to develop palliative care knowledge, skills and attitudes.

Legacy Palliative Care Services is committed to providing an additional layer of support for patients living with metastatic breast cancer. Palliative care is available at all of Legacy’s medical centers, except Legacy Silverton Medical Center. For more information about palliative care services, call Legacy Medical Group—Palliative Care directly at 503-413-6862.



## Community involvement 2019

### Community Events

#### March 2019

Breast Issues Conference

#### September 2019

Komen Latina Health Symposium

#### October 2019

Worship in Pink — Komen

### Prevention and screening education and activities

#### March

Colorectal cancer awareness and screening promotion activities for employees/visitors at Legacy Good Samaritan, Legacy Mount Hood and Legacy Salmon Creek medical centers

#### August

Oregon HPV Awareness Week, LMG Mt. Anel Primary Care Clinic

#### October

Women's Cancers (Breast and Gynecology Oncology) awareness activities and education for employees and visitors at Legacy Meridian Park, Legacy Good Samaritan, Legacy Mount Hood and Legacy Salmon Creek medical centers

#### Ongoing

Lung cancer screening program for high-risk individuals

Tobacco cessation counseling for those in lung screening program

"Meals that Heal" and "Cancer Superfoods" nutrition classes for patients and caregivers

Free screening mammograms for uninsured or underinsured low-income women, through Oregon's Screenwise program (previously BCCP), at Legacy Good Samaritan, Legacy Emanuel, Legacy Meridian Park and Legacy Mount Hood medical centers

### Groups, classes and events for cancer patients offered in 2019

#### Support groups

Brain Tumor Support Group

Women's Metastatic and Advanced Cancer Support Group

Men's Cancer Support Group

Breast Cancer Support Groups

Gynecological Cancer Support Group

Head and Neck Cancer Support Group

Prostate Cancer Support Group

#### Movement classes

Yoga for Adults with Cancer

Yoga for Healing from Cancer

Pilates for Adults with Cancer

T'ai Chi and Qi Gong for Individuals with Cancer

Step into Fitness

#### Art therapy programs

Expressions of Healing: Art and Community

Finding Center: Art Making for Mindfulness and Stress Reduction

Felting Workshop: Fiber Arts for Adults with Cancer

Words and Poetry for Healing

Artist in Residence Program

Pop-Up Open Art Studio

#### Mind-body classes and special events

Mindfulness Meditation

Mini-Mindfulness Sessions

Gong Bath Meditation

Gardening Workshop for Individuals with Cancer

Garden Tours and Guided Nature Walks

Meals That Heal

Cancer Superfoods

Starting 2019 Anew: A Self-Care Workshop for Recent Cancer Survivors

### Outreach via social media

The Legacy Community Relations and Marketing Department is an important partner with the cancer program in reaching the community through social media messaging, website content and banners, and targeted direct mail. Facebook posts, often related to cancer awareness months, aim to engage and motivate readers toward healthy behaviors.

## Professional education activities 2019

### Conference and courses

#### January

- "Spermatocectomy/Colostomy reversal with nephrectomy and Rectal Cancer"
- "The Alphabet Soup of Cervical Cancer Screening - Hail, ASCUS, USPSTF, ACOG, SCCP"
- "Hematology Oncology – Cases for Discussion"

#### February

- "Orthopedic Oncology/Systemic Disease"
- "High-risk Breast Cancers"

#### April

- "High-risk Breast Cancers"

#### May

- "Surgical Prophylaxis for Ovarian Cancer – Low and High Risk Patients"
- "High-risk Breast Cancers"

#### June

- "Lung Cancer Screening"

#### July

- "Hematology Oncology – Cases for Discussion"

#### August

- "Diagnosis and Outcomes of Benign and Malignant Tumors in Infants"

#### September

- "Opportunistic Distal Salpingectomy for Prevention of Ovarian Cancer – A Better Approach to Tubal Sterilization"
- "Genetic/Molecular Classification of Brain Tumors"

#### October

- 15th Annual Pacific NW Excellence in Breast and Gynecologic Care Conference
- "It is a matter of differentiation"
- "GI Cancer Symposium"

### Cancer patient care conferences (tumor boards)

- Brain/CNS Tumors (Legacy Good Samaritan)
- Breast Care (Legacy Good Samaritan, Legacy Meridian Park, Legacy Mount Hood, Legacy Salmon Creek)
- Breast Cancer Radiology/Pathology Correlation (Legacy Good Samaritan)
- GastroIntestinal Tumors (Legacy Good Samaritan, Legacy Meridian Park)
- General Cancer Conference (Legacy Meridian Park, Legacy Mount Hood, Legacy Salmon Creek)
- Gynecologic Cancers (Legacy Good Samaritan)
- Head and Neck Tumors (Legacy Good Samaritan)
- Metastatic Breast Care (Legacy Good Samaritan)
- Pediatric Oncology (Randall Children's Hospital)
- Thoracic Tumors (Legacy Good Samaritan)
- Urologic/Prostate Tumors (Legacy Good Samaritan)

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## Publications 2020

Sutton T, Farinola M, Johnson N, Garreau JR. Atypical ductal hyperplasia: Clinicopathologic factors are not predictive of upgrade after excisional biopsy. *The American Journal of Surgery*, 2019; 217 (5): 848-850.

Walcott-Sapp S, Garreau J, Johnson N, Thomas KA. Pathology results of architectural distortion on detected with digital breast tomosynthesis without definite sonographic correlate. *The American Journal of Surgery*, 2019; 217(5): 857-861.

Labrie M, Fang Y, Kendsersky ND, Li J, Liang H, Westin SN, Mitri Z; Mills GB. Using Reverse Phase Protein Array (RPPA) to Identify and Target Adaptive Resistance. *Advances in Experimental Medicine & Biology*, 2019;1188:251-266.

## Legacy Cancer Institute Integrated Network Cancer Committee members 2019

Mindy Ansteth, B.S., CTR, manager, Cancer Data Management, and quality improvement consultant, Legacy Cancer Institute

Jonathan Avery, president, Legacy Good Samaritan Medical Center

Sallie Bowman, director, Legacy Spiritual Care—Legacy Good Samaritan Medical Center

Christine Brown, R.N., community outreach and activity coordinator, Legacy Cancer Institute

Sara Butler, MSW, LCSW, OSW-C, oncology social worker, Legacy Cancer Institute

Valerie Correa, Pys.D, clinical psychologist, Legacy Cancer Institute

Andrew Cox, M.D., interventional and diagnostic radiologist, Diagnostic Imaging NW, Legacy Good Samaritan Medical Center

Dawn Cox, CTR, supervisor, Cancer Data Management, Legacy Cancer Institute

Cory Donovan, M.D., breast surgical oncologist, cancer conference coordinator, LMG Surgical Oncology

Emily Huber, M.D., palliative care physician, Legacy Medical Group- Palliative Care

Lisa Justice, RN, BSN, OCN, nurse manager, Legacy Cancer Institute, Medical Oncology and Day Treatment

Pam Kilmurray, director, Legacy cancer service line, Legacy Good Samaritan Medical Center Rehabilitation Services, Legacy Breast Health Center and Legacy Hospice

Jutta Kress, BSN, RN, OCN, nurse education and practice specialist, Legacy Cancer Institute

Nathalie Johnson, M.D., FACS, breast surgical oncologist, medical director, Legacy Cancer Institute and Legacy Breast Health Centers

Marci Reed, RD, CSO, L.D., dietitian, Legacy Cancer Healing Center

Kelly Rice, Pharm.D., oncology pharmacy navigator, Legacy Cancer Institute

Alizah Rotramel, M.D., FACS, colorectal surgeon, cancer liaison physician, LMG Colon and Rectal Surgery

Mark Schray, M.D., radiation oncologist, medical director, Legacy Medical Group—Radiation Oncology

Ann Smith-Sehdev, M.D., anatomic and clinical pathologist, medical director, Anatomic Pathology, Cascade Pathology, Legacy Health

Leslie Sorenson, CCRP, manager, oncology clinical research and genetics, Legacy Cancer Institute

Paul Tseng, M.D., MBA, gynecologic oncologist, chair, Integrated Network Cancer Committee, LMG Gynecologic Oncology

Therese Tuohy, Ph.D., CGC, genetics counselor, Legacy Healing Center

Gail Weisgerber, P.T., manager, acute care and outpatient rehabilitation, Legacy Good Samaritan Medical Center

### Subcommittees of the Integrated Network Cancer Committee

Cancer Data Management Quality Committee

Cancer Quality Advisory Council

Cancer/Public Professional Education and Marketing Council

### Cancer Program and Quality Committees

Brain and Spinal Tumor Program Committee

Breast Program Leadership Committees at Legacy Good Samaritan, Legacy Meridian Park, Legacy Mount Hood and Legacy Salmon Creek medical centers

Cancer Support Services Quality Committee

Center for Colorectal Cancer at Legacy Good Samaritan Medical Center

Colorectal Cancer System-wide Quality and Operations Meeting

Gynecologic Oncology Program Development

Oral, Head and Neck Program Planning

Hospice Quality (QAPI)

Lung Cancer Screening

Radiation Oncology Quality Committee

Thoracic Program Development

## Honors and accreditations 2019



Legacy Health ranks among the nation's best cancer programs, according to the American College of Surgeons' (ACS) Commission on Cancer, a respected authority on cancer care. The Commission also awarded Legacy's cancer program its Outstanding Achievement Award in the last three accreditation surveys.



Legacy Cancer Institute was the first in the United States to receive Network Cancer Program accreditation from the ACS, and we are still Oregon's only accredited network cancer program. Patients can receive the same award-winning care at any of our campuses, closer to home.

The Legacy Breast Health Centers at Legacy Good Samaritan, Legacy Meridian Park, Legacy Mount Hood and Legacy Salmon Creek medical centers have earned the prestigious accreditation for excellence in the care of patients with breast cancer and benign breast disease from the American College of Surgeons' National Accreditation Program for Breast Centers (NAPBC).



In addition, the Legacy Breast Health Centers at Legacy Good Samaritan, Meridian Park, Mount Hood and Salmon Creek medical centers are designated Breast Imaging Centers of Excellence by the American College of Radiology. To achieve this distinction, a facility's imaging services must be fully ACR-accredited in mammography, stereotactic breast biopsy, breast ultrasound and ultrasound-guided breast biopsy.



Legacy Cancer Institute is one of only three nationally accredited blood and bone marrow transplant providers in Oregon. Learn more about FACT, the Foundation for the Accreditation of Cellular Therapy, which evaluates programs nationwide.



Legacy Medical Group—Radiation Oncology at Legacy Good Samaritan, Legacy Mount Hood and Legacy Salmon Creek medical centers is accredited by the American College of Radiology (ACR) Radiation Oncology Practice Accreditation (ROPA) program. Legacy Health's radiation oncology staff, equipment, treatment planning and treatment records, as well as patient-safety policies and quality control/quality assessment activities are assessed to maintain ROPA accreditation. ACR accreditation provides Legacy's radiation oncologists with valuable third-party, impartial peer review and evaluation of patient care.



The Legacy Lung Cancer Screening Program at Legacy Good Samaritan Medical Center is accredited by the American College of Radiology (ACR) as an ACR Designated Lung Cancer Screening Center. To achieve this designation, the Legacy Lung Cancer Screening Program must maintain active ACR CT Accreditation in the ACR Chest Module and meet very specific requirements related to the screening population, staff qualifications, the ACR Lung Reporting and Data System (Lung-RADS), patient smoking cessation, CT equipment, quality control and imaging protocol.



Legacy Laboratory Services and Legacy Tumor Bank have achieved College of American Pathologists (CAP) accreditation, which ensures high standards for quality and consistency in collecting, processing and storing tumor specimens.



Legacy Oncology Clinical Research received approval for NRG Oncology research group main membership.



Legacy Oncology Clinical Research is recognized by National Cancer Institute leadership in 2019 as a high-performing site based on accrual.

## Legacy Cancer Institute

503-413-8050

[legacyhealth.org/cancer](http://legacyhealth.org/cancer)

