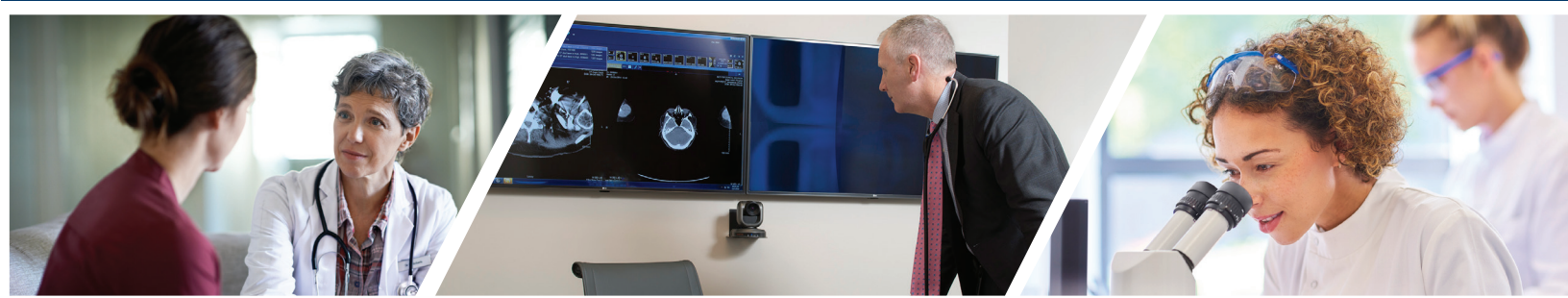




# SAINT LUKE'S CANCER INSTITUTE 2018 ANNUAL REPORT

*Incorporating the 2017 Cancer Registry Statistical Review*



 **Saint Luke's**<sup>™</sup>  
CANCER INSTITUTE



Dear Colleague,

Our work at Saint Luke's Cancer Institute is driven by a vision to improve outcomes and quality of life for patients throughout the Kansas City region.

We believe it is our duty to provide easy access to top-quality care in the communities we serve. Saint Luke's Cancer Institute's comprehensive care network offers screening and treatment locations across the Kansas City region. From Trenton to Butler, Warrensburg to Leavenworth, and everywhere in between, we bring cancer care to people where they work and live.

- Ten Saint Luke's Cancer Institute locations, with full medical oncology/hematology services and chemotherapy-infusion
- Nine breast screening centers, offering 3D mammography with results read by fellowship-trained breast radiologists
- Twelve locations offering low-dose lung CT screening
- Four radiation therapy clinics, covering all four quadrants of the Kansas City metro

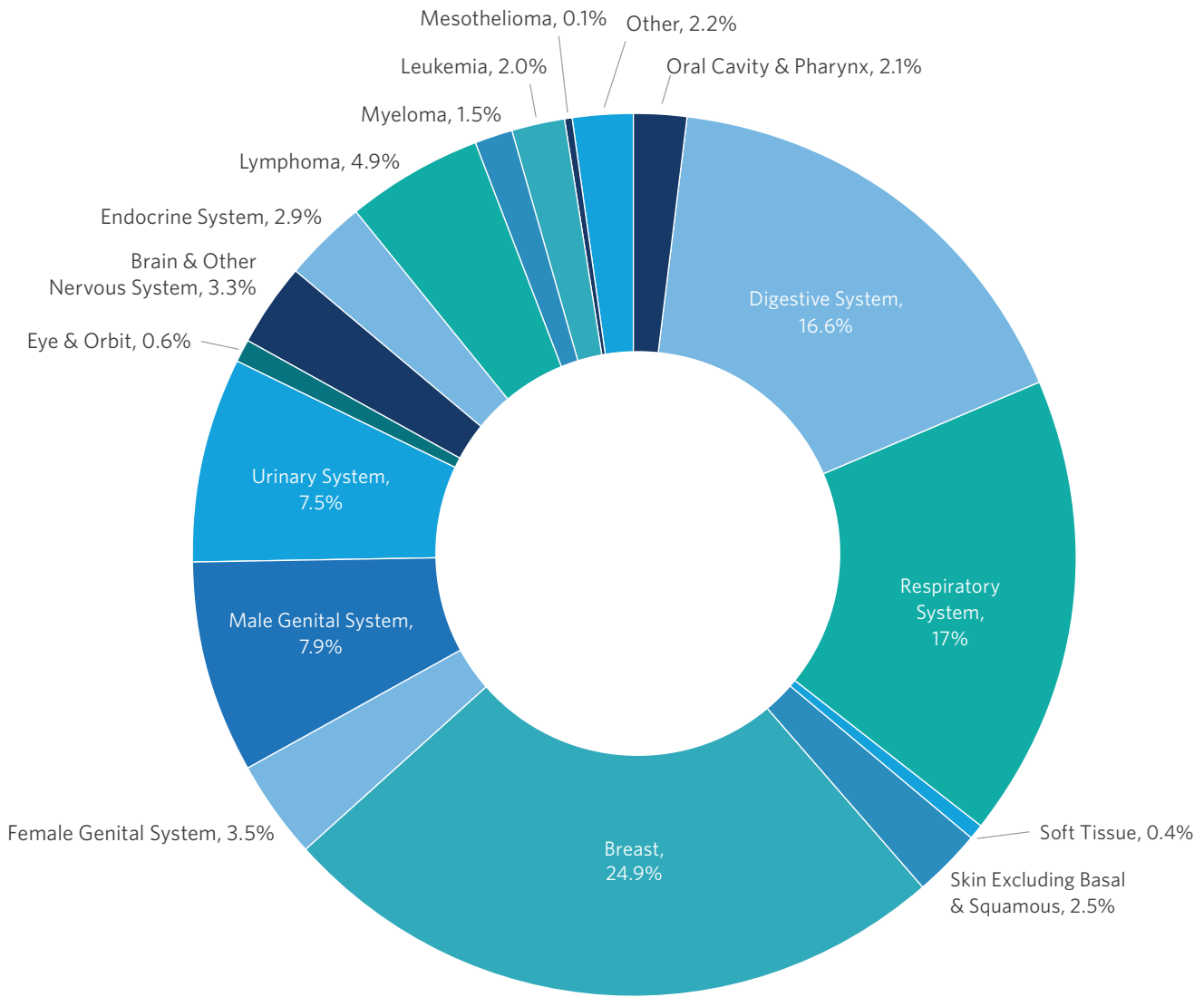
Our experts have extensive experience in the diagnosis and treatment of virtually every kind of cancer and the resources to provide excellent care tailored to the unique needs of each patient. Our multidisciplinary team utilizes the latest clinical trials and treatments coupled with tailored integrative therapies to treat the whole person.

Top-quality care, available everywhere. That's the Saint Luke's difference.

Regards,

Timothy J. Pluard, MD  
*Medical Director*

# 2017 Summary of Body System, Saint Luke's Health System Analytic Cases



Primary Site	2017
Oral Cavity & Pharynx	48
Digestive System	373
Respiratory System	382
Bones & Joints	1
Soft Tissue	8
Skin Excluding Basal & Squamous	57
Breast	561
Female Genital System	78
Male Genital System	177
Urinary System	169
Eye & Orbit	13
Brain & Other Nervous System	75
Endocrine System	66
Lymphoma	111
Myeloma	34
Leukemia	44
Mesothelioma	3
Other	50
<b>All Sites</b>	<b>2,251</b>

## Saint Luke's Multidisciplinary Cancer Conferences

Experts from multiple specialties form our Saint Luke's Cancer Conferences. Together they review patient cases and make treatment recommendations. Conference members vary by cancer site and include medical and radiation oncologists, surgeons, radiologists, pathologists, and ancillary support services.

In 2017, Saint Luke's offered site-specific cancer conferences for brain and spine, breast, lung, gynecologic, and gastrointestinal cancers.

### Summary of 2017 Site-specific Conferences

Site-specific Conference	Interval	Number of Conferences	Number of Analytic Cases Presented
Breast	Weekly	38	217
Head & Neck	Monthly	11	61
Gastrointestinal	Weekly	42	301
Gynecologic	Bimonthly	21	92
Neuro-oncology	Weekly	44	261
Thoracic	Weekly	49	280
<b>Totals</b>		<b>205</b>	<b>1,212</b>

## Saint Luke's Cancer Committee

A multidisciplinary team provides oversight of the oncology program. Committee members hail from each of the Saint Luke's Cancer Institute locations and include physicians from diagnostic and treatment specialties and non-physicians from administrative and supportive services. The committee convened in January of 2018 and met six times throughout the year.

### 2018 COMMITTEE MEMBERS

#### Required Physician Members

**Timothy J. Pluard, MD**

Medical Director, Saint Luke's Cancer Institute  
Medical Oncologist/Hematologist, Saint Luke's Cancer Institute

**Clay Anderson, MD**

Palliative Care Physician, Saint Luke's Hospital

**Susan Herzberg, MD**

Radiation Oncologist, Saint Luke's Cancer Institute

**Aimee Kohn, MD**

Medical Oncologist/Hematologist, Saint Luke's Cancer Institute

**Megan McNally, MD**

General Surgeon, Saint Luke's Health System

**Megan Saettele, MD**

Breast Radiologist, Saint Luke's Cancer Institute

**Ashley Schneider, MD**

MAWD Pathologist

**Janakiraman Subramanian, MD**

Medical Oncologist/Hematologist, Saint Luke's Cancer Institute

#### Required Non-Physician Members

**Elizabeth Anderson, MS, RD, LD**

Registered Dietician Specialist, Saint Luke's Hospital

**Marlena Barmann, BS, RHIT, CTR**

Senior Cancer Registrar, Saint Luke's Health System

**Kim Day, RT (R)(M)**

Breast Center Manager, Saint Luke's Health System

**Jake Eyer, M Div**

Chaplain, Saint Luke's Hospital

**Carrie Lavin, RN, BSN, OCN**

Director, Oncology Services, Saint Luke's Cancer Institute

**Sheila Luektemeyer, BS, PT**

Physical Therapist, Saint Luke's Hospital

**Monty Miller, LCSW**

Manager, Support Care Services, Saint Luke's Cancer Institute

**Mark Monn**

Quality Resource Analyst, Saint Luke's Cancer Institute

**Patty Moore, RHIT, CTR**

Senior Cancer Registrar, Saint Luke's Health System

**Kitty Muehlbach, LMSW**

Social Worker, Saint Luke's Hospital

**Jane Peck, RN, BHA, MA**

Vice President Clinical Service Lines, Saint Luke's Health System

**Carol Quiring, BSN, MHA**

President and CEO, Saint Luke's Home Care and Hospice

**Andrea Watson, RN, BSN**

Lead Clinical Research Nurse, Saint Luke's Cancer Institute

**Meredith Wills, PharmD**

Pharmacy Supervisor, Saint Luke's Hospital

**Kallie Woods, MS, CGC**

Genetic Counselor, Saint Luke's Cancer Institute

**Other Members**

**Clara Anderson-Sainte, LCSW**

Social Worker, Gilda's Club Kansas City

**Heather Edwards, BSN, RN, OCN**

Clinical Education Specialist, Saint Luke's Health System

**Lee Cummings, MD**

Transplant Surgeon, Saint Luke's Hospital

**J. Russell Davis, MD**

Cardiothoracic Surgeon, Saint Luke's Hospital

**Lisa Fielder, RN, MSN**

Nurse, Saint Luke's North Hospital

**Jameson Forster, MD**

Abdominal Transplantation and HEP Surgery Director, Saint Luke's Hospital

**Gary Johnson, MD**

Gynecologic Oncology Surgeon, Saint Luke's Cancer Institute

**Emily Kayrish**

Director of Marketing, Saint Luke's Health System

**Susie Krug, BSN, RN**

Chief Nursing Officer, Saint Luke's East Hospital

**Nikki Leake**

American Cancer Society

**Trina Lee, MS, RHIA, CCS**

Cancer Registry Manager, Saint Luke's

**Ashiq Masood, MD**

Medical Oncologist, Saint Luke's Cancer Institute

**Susan Melton**

Senior Director of Development, Saint Luke's Hospital Foundation

**Michelle Pepkowitz, RN, BSN**

Nurse Manager, Saint Luke's Hospital

**John Shook, MD**

Breast Program Director, Saint Luke's Health System

## **CANCER COMMITTEE**

**Elizabeth Vincent, RN, MSN, MBA, VA-BC, OCN**

Outpatient Services, Saint Luke's Cushing Hospital

**Jan Watkins, RN, MS, OCN, CHPN**

Director, Cancer Services, Liberty Hospital

**Julia Woods, RN, MSN, OCN**

Chief Nursing Officer, Saint Luke's South Hospital

## Saint Luke's Cancer Prevention and Early Detection Outcomes

Saint Luke's provides cancer prevention programs targeted to meet the needs of the community and designed to reduce the incidence of a specific cancer type. Each prevention program is consistent with evidence-based national guidelines for cancer prevention.

### High-Risk Breast Clinic

#### Program details

- Led by advanced nurse practitioners
- Locations at Saint Luke's Hospital of Kansas City, Saint Luke's East Hospital, Saint Luke's North Hospital, and Saint Luke's South Hospital
- Offers individuals at high risk for developing breast cancer:
  - Early detection
  - Surveillance
  - Education
  - Preventive therapies
  - Research
- Incorporates hands-on clinical assessment and technology following National Comprehensive Cancer Network guidelines
- Collaboration with genetic counselors

#### Program offerings

- Consultation about personal risk factors as related to breast cancer and possible preventive strategies
- Clinical breast exam by a MammaCare®-certified nurse practitioner
- Instructions for breast self-exam using the MammaCare® method
- Imaging studies
- Referral for cancer risk assessment by a certified genetic counselor and genetic testing when applicable
- Referral to medical oncologist if pharmacologic risk reduction options are necessary
- Referral to surgeons who specialize in breast surgery if indicated
- Referral for ovarian cancer screening when applicable
- Research opportunities

High-Risk Breast Cancer Clinic screening	Patients	Patients requiring breast MRI	Cancer diagnosed related to screening
Jan. - Dec. 2016	746	188	4
Jan. - Dec. 2017	1,503	377	8
Jan. - July 2018	506	262	4

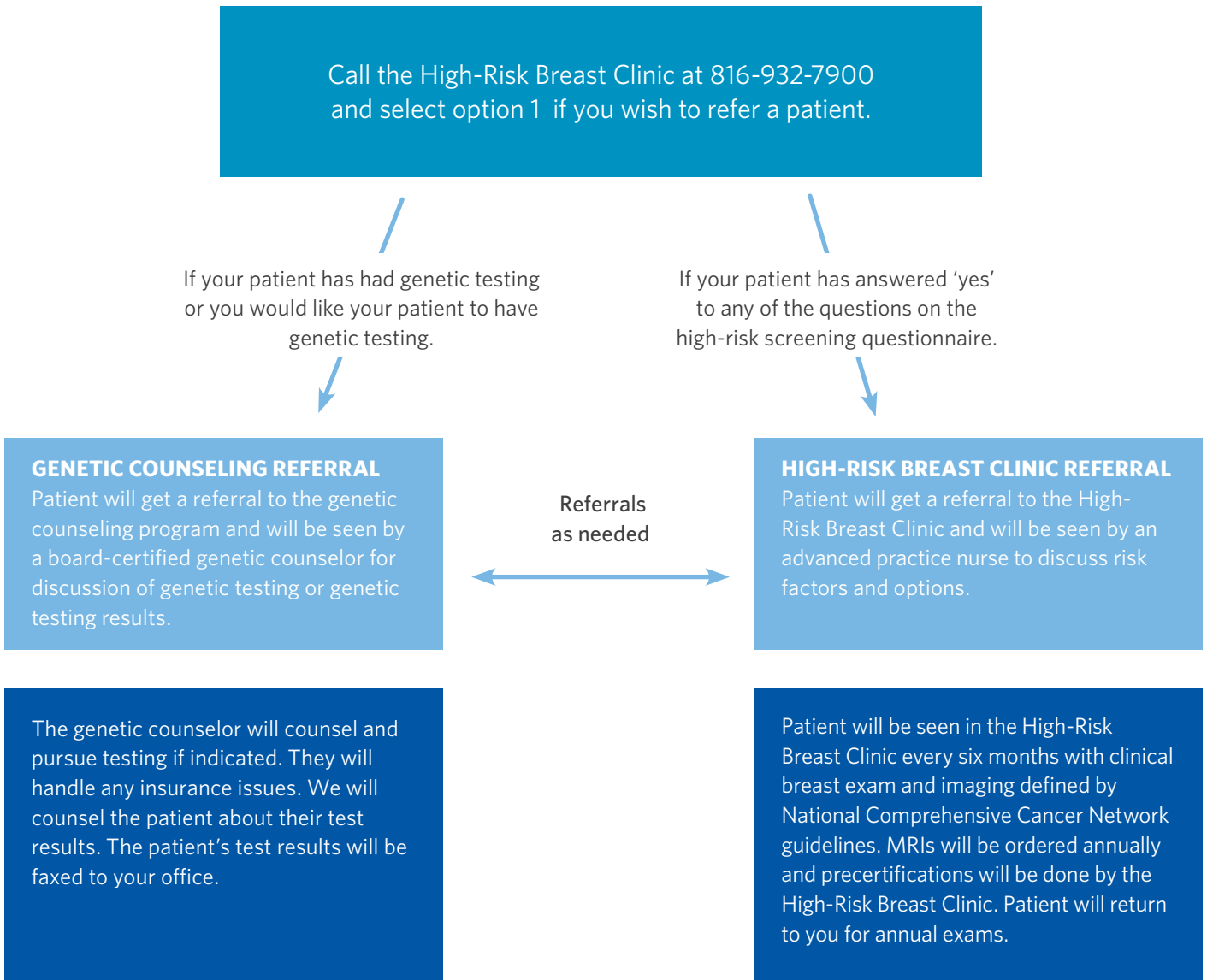
#### › Learn more

816-932-7900, option 3  
[saintlukeskc.org/high-risk](http://saintlukeskc.org/high-risk)



**Referring protocol for outside providers**

Cancer screening options and recommendations evolve quickly with each new study or discovery, making it difficult for primary care providers to stay up-to-date. The team at Saint Luke’s High-Risk Breast Clinic specializes in knowing the latest recommendations and options. An integrated group of nurse practitioners, genetic counselors, and physicians created this algorithm to help providers navigate the complexities of the referral process. In 2018, we expanded our high-risk program to encompass all types of cancer, offering a higher level of early detection to patients.



➤ **Refer a patient**

816-932-7900, option 1  
saintlukeskc.org/high-risk

## Low-Dose Computed Tomography Lung Cancer Screening Program

### Program details

- Led by Melissa Rosado de Christenson, MD, radiologist, and Trent West, patient navigator
- Patients meet high-risk criteria
- Low-dose lung CT performed
- Radiologist meets with patients who have a positive LDCT scan (Lung RAD 3 and 4) to review screening findings
- Patient navigator calls patient within 24 hours when scan is negative (Lung RAD 1 and 2)
- Lung cancer screening counseling and shared decision-making visit conducted by a physician or physician assistant, nurse practitioner, or clinical nurse specialist
- Specific criteria to be covered in shared decision-making visit

### Eligibility criteria

- 55 - 77 years old (Medicare) or 55 - 80 years old (private insurance)
- Asymptomatic
- Tobacco smoking history of at least 30 pack years (one pack year = smoking an average of one pack a day for one year; one pack = 20 cigarettes)
- Current smoker or someone who has quit smoking within the last 15 years
- Receives a written order for low-dose CT lung cancer screening

### Expansion

Saint Luke's offers lung cancer screening at 12 locations in the Kansas City metro area.

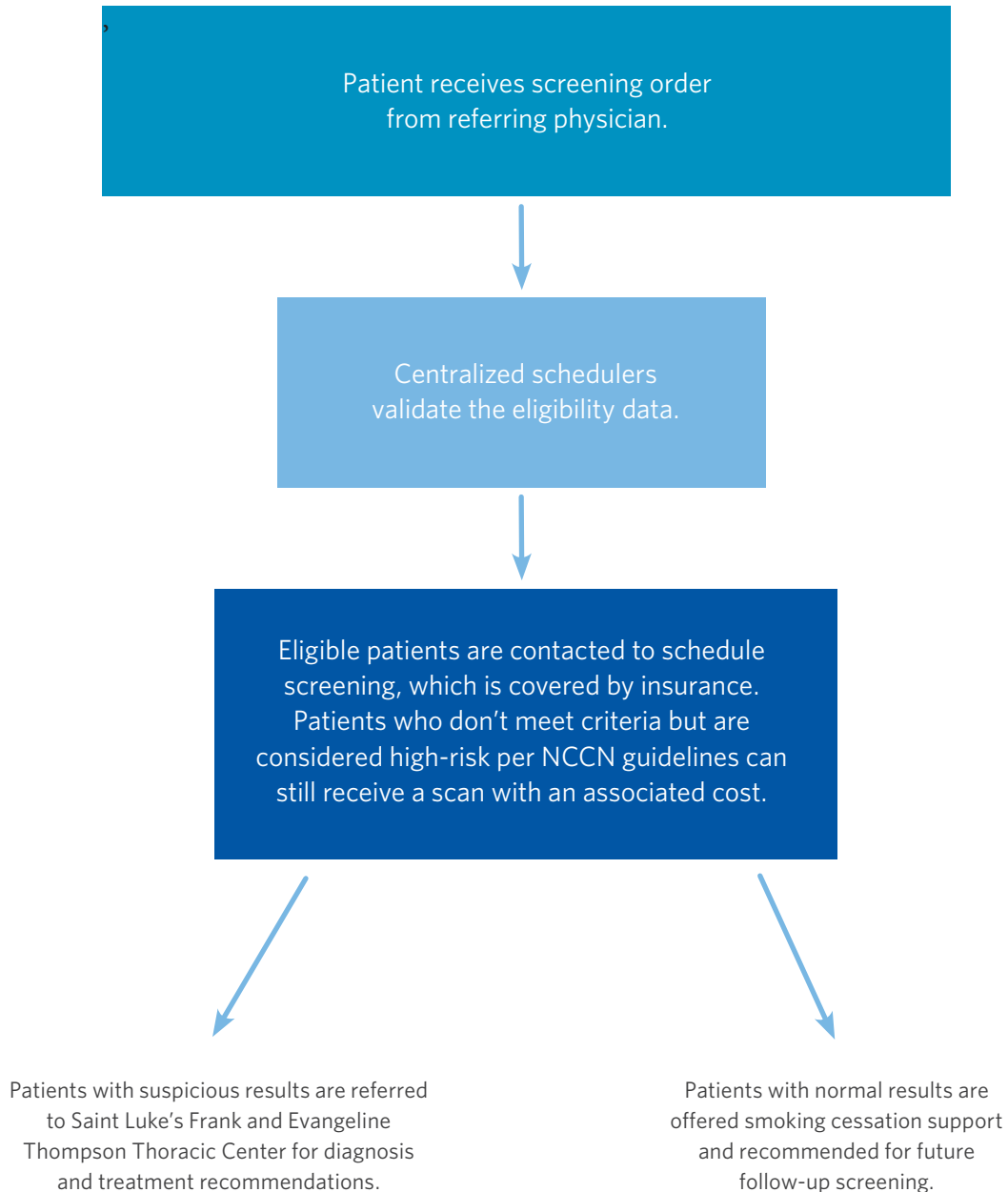
- Saint Luke's Hospital, Kansas City, Missouri
- Saint Luke's Medical Imaging Center, Kansas City, Missouri
- Saint Luke's East Hospital, Lee's Summit, Missouri
- Saint Luke's South Hospital, Overland Park, Kansas
- Saint Luke's North Hospital-Barry Road, Kansas City, Missouri
- Saint Luke's North Hospital-Smithville, Smithville, Missouri
- Saint Luke's Cushing Hospital, Leavenworth, Kansas
- Hedrick Medical Center, Chillicothe, Missouri
- Saint Luke's Multispecialty Clinic-Blue Springs, Blue Springs, Missouri
- Saint Luke's Multispecialty Clinic-Burlington Creek, Kansas City, Missouri
- Saint Luke's Multispecialty Clinic-Mission Farms, Overland Park, Kansas
- Saint Luke's Multispecialty Clinic-Shoal Creek, Kansas City, Missouri

### › Learn more

816-932-6800  
[saintlukeskc.org/lung-screening](http://saintlukeskc.org/lung-screening)

Lung cancer screening with low-dose CT	Patients screened	Patients requiring active surveillance or follow-up	Patients needing surgical or treatment intervention	Cancer diagnosed related to screening
Jan. - Dec. 2015	70	6	0	0
Jan. - Dec. 2016	510	69	7	7
Jan. - Dec. 2017	866	138	10	9
Jan. - Sept. 2018	824	149	11	10

## Referring protocol for the Low-Dose Computed Tomography Lung Cancer Screening Program



### › Refer a patient

816-932-6800

[saintlukeskc.org/lung-screening](http://saintlukeskc.org/lung-screening)

## Supportive Oncology and Rehabilitation Services

The care at Saint Luke’s Cancer Institute goes beyond surgery, chemotherapy, and radiation. We evaluate the psychological, social, financial, spiritual, and physical effects a cancer diagnosis may have on patients and their families, then work as a team to address those issues.

A growing base of research shows supportive care interventions complement medical care, enhance quality of life, and extend life. Comprehensive and integrated supportive care adds value in both cost and quality to evidence-based and patient-driven treatment.

### We evaluate

At every visit with a Saint Luke’s Cancer Institute provider, patients fill out a questionnaire that assesses their distress. Based on responses, we can make appropriate referrals to our specially trained support professionals. We continue that support from the time of diagnosis through treatment and beyond.

### We extend

Our team is dedicated to bringing these care services to our patients where they live. We offer in-person appointments at our four Kansas City metropolitan locations, plus telehealth appointments at three regional hospitals. Supportive services experts attend patient care conferences to add input about the specific needs for each patient and family.

### We educate

We always look for innovative ways to educate ourselves and our patients. This year we offered lectures featuring experts in cancer prevention and control, discussing cancer genetics, movement, cancer screening, and nutrition.

We have partnered with Gilda’s Club Kansas City to provide education and support to our patients. Anyone touched by cancer can participate in educational workshops, social activities, networking groups, and more.

### Support care services

One in three patients are referred to the following Supportive Oncology and Rehabilitation Services:

- Psychology
- Social work
- Nutrition
- Genetic counseling
- Nurse navigation
- Survivorship
- Image renewal
- Spiritual health
- Physical and occupational rehabilitation
- Patient education classes and guest speakers
- Exercise, yoga, massage

### › Learn more

816-932-4576

[saintlukeskc.org/supportiveoncology](http://saintlukeskc.org/supportiveoncology)

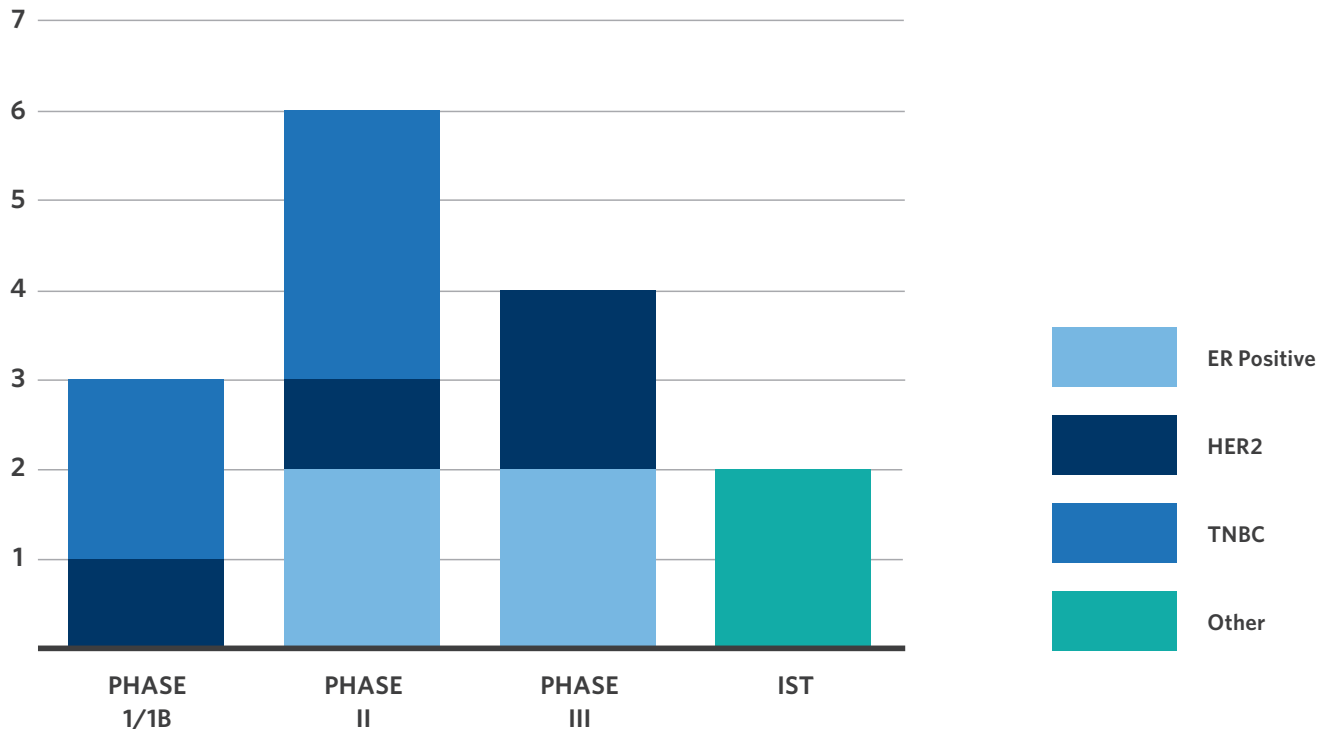
## Saint Luke's Koontz Center for Advanced Breast Cancer

As a national leader in the treatment of Stage 4 breast cancer, Saint Luke's Hospital Koontz Center for Advanced Breast Cancer is continuing to change the way women and men live with metastatic breast cancer.

### Treatment Part 1: The Most Stage 4 Clinical Trials and Leading-Edge Medical Treatments

Saint Luke's Cancer Institute has the widest portfolio of clinical trials available for Stage 4 breast cancer in the Kansas City area. We believe that every patient at every therapeutic change should have a clinical trial option, and screen all patients to find a trial that might work for them. Twenty-two percent of Koontz Center patients participate in a clinical trial, while nationally only five percent of Stage 4 patients participate in a clinical trial.

#### Koontz Center Clinical Trials



### Treatment Part 2: Genomic Sequencing and Personalized Treatment

All patients of the Koontz Center have their tumor sequenced to find the exact mutation causing the spread of the disease. While most other centers only test 600 cancer genes, Saint Luke's is the only center in a 450 mile radius of Kansas City to test all 20,000 genes. This gives patients a much higher likelihood of finding the best treatment possible.

### Treatment Part 3: Integrative, Holistic Therapies

By combining advanced medicine with integrative therapies, our doctors can ease many of the symptoms associated with treatment and enhance quality of life. Our practitioners have expertise in working specifically with patients diagnosed with metastatic breast cancer, and their work can play a role in slowing the growth of Stage 4 breast cancer.

### **Our integrative therapies include:**

- Genetic counseling
- Nutrition planning
- Exercise physiology
- Palliative care
- Emotional support
- Advanced breast cancer support groups
- Spiritual counseling
- Yoga
- Massage
- Acupuncture

### **New patient consultation with our multidisciplinary team**

Prior to the first visit, patients complete a series of pre-screening assessments in a variety of areas:

- PROMIS (Patient-Reported Outcome Measurement Information System) measures
- Sleep
- Physician function
- Fatigue
- Pain interference
- Daily Spiritual Experience Scale (DSES)
- DSM-5 Self-Related Level 1 Cross-Cutting Symptom Measure-Adult
- Koontz Center forms to assess social work issues, nutritional concerns, and genetic testing

During the first consultation, a patient will meet separately with members of our team of breast cancer providers in a comprehensive, half-day assessment. Our specialists include:

- Medical oncologist
- Nurse navigator
- Registered dietitian
- Psychologist
- Oncology social worker
- Genetic counselor
- Spiritual wellness chaplain
- Exercise physiologist

The team will analyze the patient's treatment history and do a complete assessment of their current needs. At the end of the day, the patient will receive a customized treatment plan, which will incorporate the recommendations of the entire team.

We encourage patients to bring a loved one to their consultation. We believe it is essential that patients and their family members have the opportunity to ask questions and understand treatment recommendations. Patients also receive a video recording of the consultation that they can review later and share with family.

### **› Learn more**

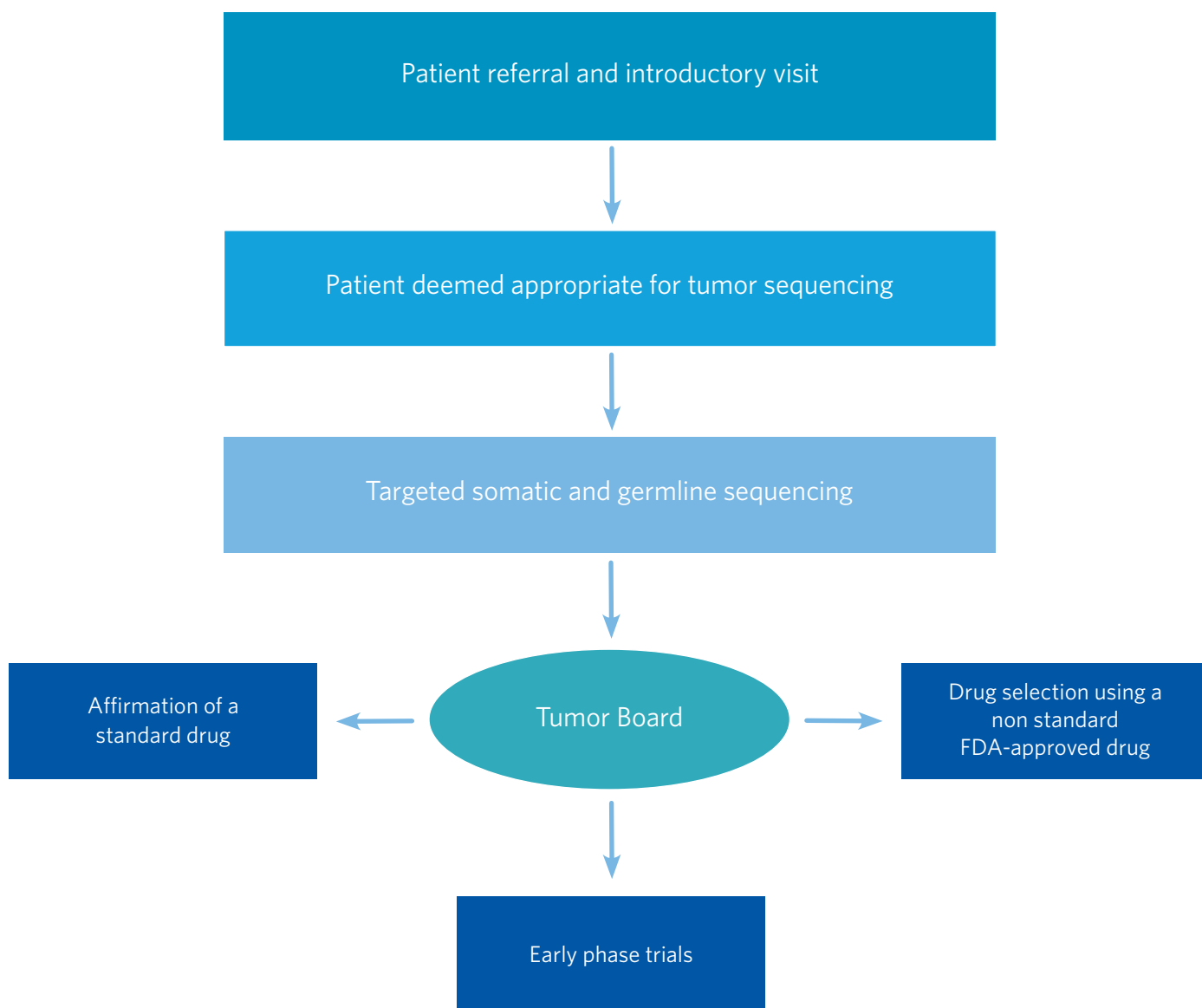
844-522-2201  
[saintlukeskc.org/nextstep](http://saintlukeskc.org/nextstep)

## Saint Luke's Center for Precision Oncology

Saint Luke's Cancer Institute launched its Center for Precision Oncology in 2016 with the goal of offering personalized cancer therapies based on a patient's individual genomic profile. It is the only center within 450 miles of Kansas City to offer whole genome sequencing, and while most treatment centers test 600 genes, we test all 20,000.

Our multidisciplinary team of experts in the fields of medical oncology, cancer genomics, and computational biology meet in a molecular tumor board to discuss the patient's testing results and determine the best course of treatment.

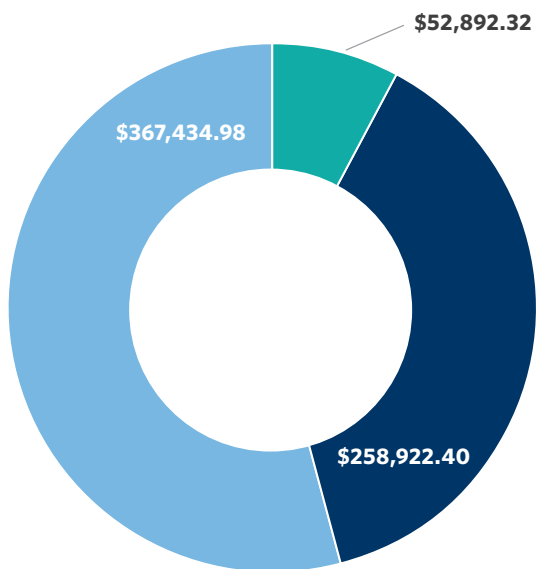
### Model for Precision Oncology Clinic and Molecular Tumor Board



## Outcomes

Acceptance of Recommendations by Type (n=63 patients)			
	Times recommended	Times accepted	Frequency
On-label drug recommended	11	9	<b>81%</b>
Off-label drug recommended	35	16	<b>45%</b>
Clinical trial recommended	22	2 (both SLH clinical trials)	<b>9.5%</b>

## Outcomes: Off-label Drug Procurement Dollars to Date



- Free drug to date
- Off-label insurance approved drug to date
- SLACP off-label drugs approved to date

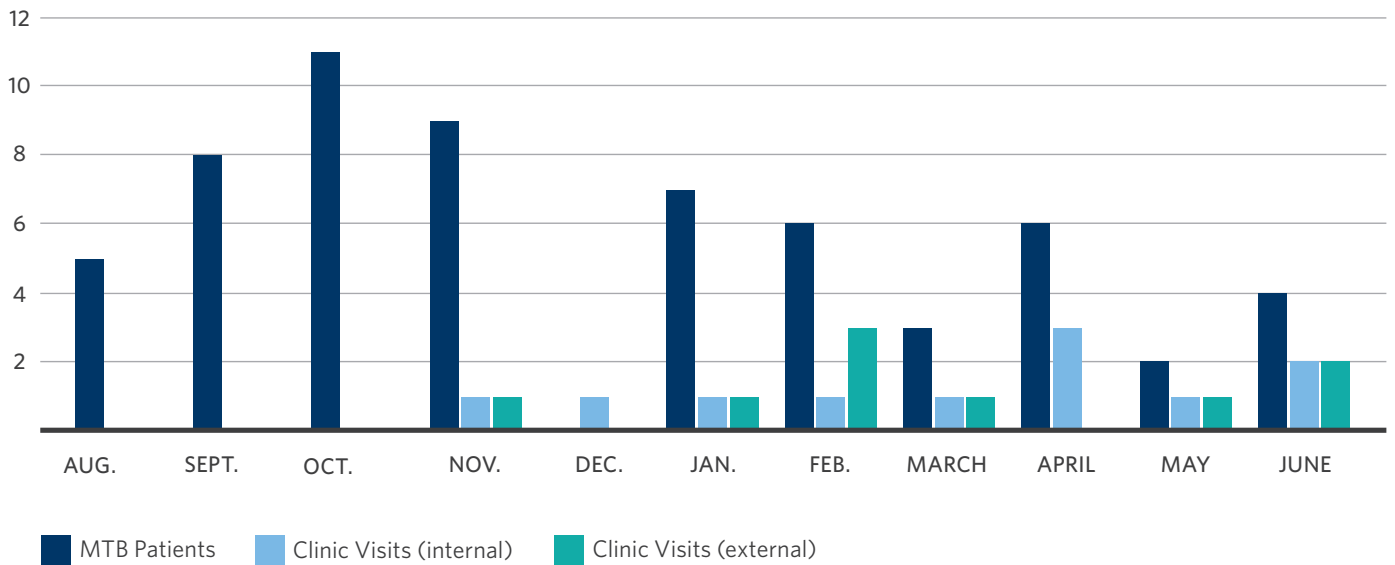
16 patients required pharmacist assistance to procure off-label drug.

- 8 patients received off-label drug after successful insurance appeal, 2 of which filled oral prescriptions at Saint Luke's Advanced Care Pharmacy (SLACP).
- 8 patients received free drug with assistance from social work.
- **100% rate of medication procurement**

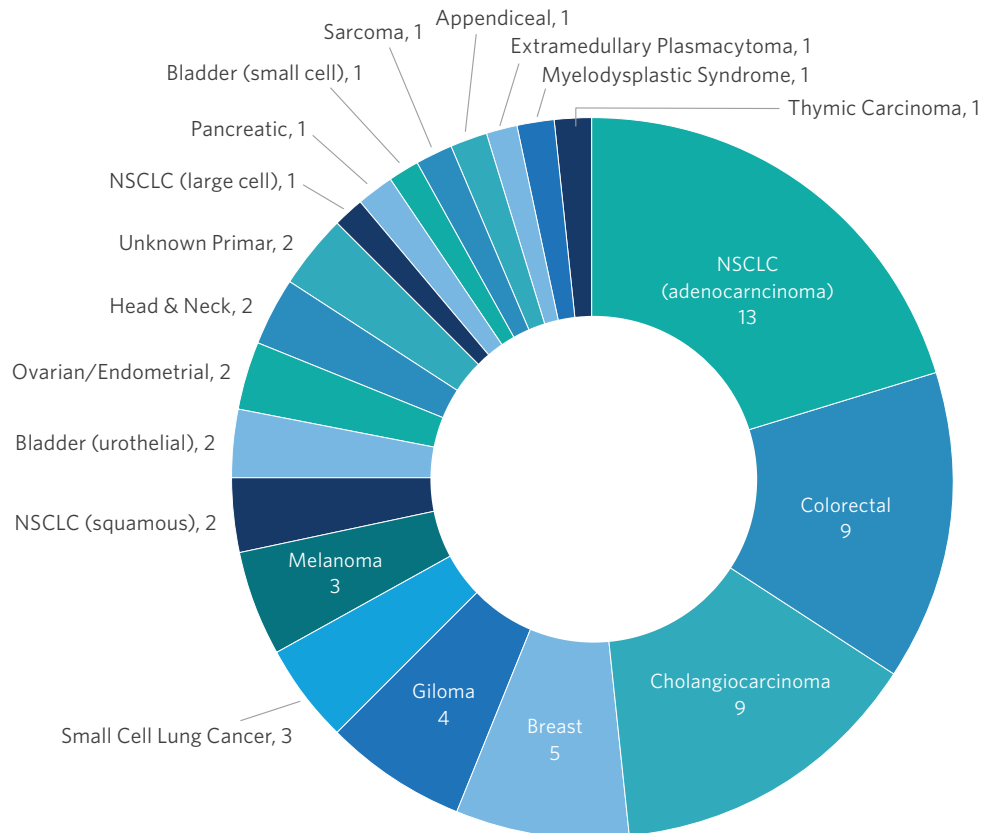


## Precision Oncology Patients by Tumor Board Date and Clinic Visits

8/2017-6/2018



## Precision Oncology Patients by Tumor Type



**Learn more**  
 816-932-2950  
[saintlukeskc.org/precision](http://saintlukeskc.org/precision)

## Saint Luke's Gastrointestinal Cancer Program

Saint Luke's Gastrointestinal Cancer Program offers a level of expertise that can't be found anywhere in the region. As the only cancer program in Kansas City to be nationally recognized as an NPF Center by the National Pancreas Foundation, patients can be sure they are receiving the best care available.

Our dedicated nurse navigator acts as a guide to patients throughout their treatment journey, answering questions and connecting them to the appropriate Saint Luke's specialists based on their unique needs.

### **Our experts specialize in a wide range of gastrointestinal diseases, including:**

- Pancreatic cancer
- Colorectal cancer
- Esophageal cancer
- Liver cancer
- Neuroendocrine tumors
- Bile duct cancer
- Stomach cancer
- Carcinoid tumors
- Appendix cancer
- Cancer of unknown primary

### **Our multidisciplinary care team includes:**

- Medical oncologists
- Radiation oncologists
- Hepatobiliary experts
- Imaging studies
- Surgeons
- Radiologists
- Pathologists
- Genetic counselors

These practitioners meet in a weekly cancer conference to discuss each patient's case and work together to create an individualized treatment plan.



### **› Learn more**

816-932-22878  
[saintlukeskc.org/cancer](http://saintlukeskc.org/cancer)

# Accelerated Partial Breast Irradiation—The Saint Luke’s Experience

## Herzberg, S.

### Introduction

It is well understood that lumpectomy and radiation is a safe and effective treatment option for early stage breast cancer in eligible women. Traditional radiation courses through the past few decades, however, required daily external beam radiation treatments five days a week for 5 - 6 weeks thereby limiting access for some women. Though in 1990s newer techniques were developed and reported, describing similar outcomes with shorter courses. Instead of radiating the whole breast as was traditional, the area at highest risk was targeted, either internally or externally. With this smaller target, the course of radiation could be accelerated, and shortened to fewer days, thereby allowing more women access to breast conservation. In 2002, the FDA approved a brachytherapy catheter called Mammosite® for internal use, with temporary implantation into the breast lumpectomy bed. With this catheter in place, a high dose rate radioactive source could be loaded into the lumpectomy cavity in repeated or fractionated format, targeting a 1 cm ring of breast tissue around the lumpectomy cavity with treatments delivered in 10 sessions, two times per day with a six hour interval over five working days. Treatment times with this technique averaged only a few minutes, and reduced the amount of normal tissue irradiated, with the additional potential for fewer side effects. In 2005, the Saint Luke’s team travelled to Chicago and trained to perform this procedure for Saint Luke’s Hospital of Kansas City’s location. Additionally, we credential for and participated in a national protocol (NSABP B-39) offering patients a randomization to traditional external beam fractionated radiation versus the newer accelerated partial breast irradiation technique (APBI). Our first patients were treated in 2005 and the program has continued offering this therapy for eligible patients since that time. Our study request was to formally analyze the outcomes over a ten year span.

### Study Methods

The Saint Luke’s Institutional Review Board (SLH 17-068) approved the retrospective chart review of patients treated using accelerated partial breast irradiation via brachytherapy intracavitary catheter at Saint Luke’s Hospital of Kansas City from the year 2006 to 2016. Chart review data was collected and put into a spreadsheet for final analysis.

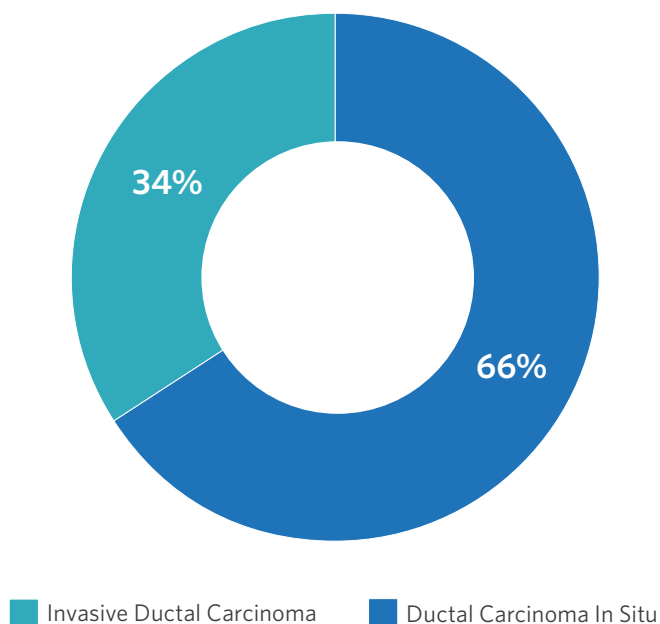
### Outcomes

Two hundred sixty patients were identified as having the above therapy during the time specified. The first 86 patients were treated with a single channel balloon based catheter called Mammosite® from January 2006 through December 2010. The second 174 patients treated from January 2011 through December 2016 were treated utilizing a multi-channel strut based catheter called Savi®. Median follow-up was 5.98 years.

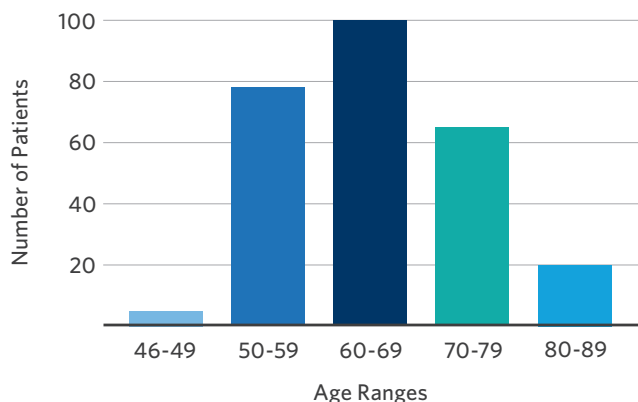
### Methodology

- IRD approved [SLHG 17-068] retrospective study of women treated with accelerated partial breast irradiation from 2006 to 2017 at Saint Luke’s Hospital of Kansas City
- 260 consecutive patients analyzed

### Population by Histology



## Population by Age



## Modalities

### MammoSite®

- Single lumen balloon device utilized from January 2006 to December 2010
- 86 patients treated (33 percent of total)

### SAVI®

- Multicatheter device utilized from January 2010 onward
- 174 patients treated (67 percent of total)

## Results

- Median follow-up 5.98 years, maximum 11.45 years
- Recurrence rate: 3.8 percent (n=10)
  - Six recurrences in ipsilateral breast
  - Two recurrences in ipsilateral axillary nodes
  - Two distant recurrences
- Median time to recurrence: 3.5 years, range 0.75 to 7.1 years
- 50 percent of recurrences were in patients with DCIS, 50 percent in IDC
  - Of DCIS patients who recurred, 83% recurred as DCIS, while n = one recurred as IDC
- 96.5 percent of patients treated are alive without evidence of disease
- Overall mastectomy rate was 2.3 percent [n=six], with [n = two] being for de novo tumors in the contralateral breast

- Adverse effects:
  - Fat necrosis in [n=12] patients
  - Symptomatic seroma requiring aspiration in [n=6] patients

## References

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# Using the Distress Thermometer to Guide Electronic Referrals to Psychosocial Services

**Geske, S. J. and Johnson, R.**

## Background

It is estimated that within the United States 1,735,350 individuals will be diagnosed with cancer in 2018 [1]. Additionally, in 2016, about 15.5 million cancer survivors were estimated to be living in the United States and that number is anticipated to increase to 20.3 million by the year 2026 [1]. Given the high rates of individuals undergoing treatment, and living beyond cancer, the psychosocial impact of cancer has been examined at length [2]. In oncology patients, 77.5 percent experience syndromal rates of depression, 58 percent major depressive disorder, 29.3 percent experience mild anxiety and 16.7 percent symptomatic anxiety [2-4]. Additionally, 29 percent of patients delay filling prescription due to financial pressures, 22 percent have skipped doses of medication due to finances, 40 percent have depleted their savings and 30 percent were dealing with bill collectors [5]. There are also a variety of other issues that those who undergo cancer treatment experience including lymphedema, chronic pain, neuropathy, menopause, weight changes, sexual issues, chemo-related cognitive changes, body image concerns, fatigue and sleep disturbances, all of which can impact quality of life and impede successful recovery.

To assess and address oncology related distress, the distress thermometer (DT) was created by the National Comprehensive Cancer Network (NCCN) and is now required by several accreditation bodies [6-8]. The NCCN states that the ideal method for implementation of the DT would be at every medical visit. However, at a minimum, it is recommended that the DT be at the initial visit and at appropriate intervals throughout treatment. These guidelines also strongly urged that patients receive the DT at "pivotal events" that might include disease remission, disease recurrence, disease progression and when treatment related complications occur. Those who score 4 or above are to receive further assessment and possibly a referral to supportive services.

In accordance with NCCN guidelines, Saint Luke's Cancer Institute has utilized the DT to further assess patients for distress and make referrals for appropriate services. In 2016, however, Saint Luke's Cancer Institute committed to

follow the ideological goal of the NCCN and administer the DT at every medical visit. It also built a model for the DT results to be included in the patient's chart, i.e. electronic medical record (EPIC), which also then allowed electronic and immediate referrals when indicated by patient response to the DT. Little research has been done on the outcomes of such implementation.

## Methods and Materials

DT includes two sections. First, patients are presented with the image of a thermometer. The thermometer is accompanied by a scale with 0 representing "No Distress" and 10 representing "Extreme Distress." After rating their distress, patients then select yes or no to a variety of concerns under the headings of practical problems, family problems, emotional problems, spiritual/religious concerns and physical problems. In March of 2016, the DT began to be administered to patients during initial appointments and at pivotal points in the patient's treatment. In January of 2017, the DT was entered into EPIC and electronic referrals for supportive services were created. Also, at this time, the administration schedule of the DT was altered. Patients began receiving the DT at every appointment with surgery and oncology. Patients also received the DT on Mondays while completing radiation treatment.

Scores of four or more are considered to be indicative of significant stress and a referral to the appropriate supportive services is recommended. The RN or MA is encouraged to initiate a conversation about the patient's overall distress scores as well as the areas of concern they indicated. Once further information is obtained, the RN and MA inform the patient of the supportive services that the patient would benefit from. The supportive services available to patients include social work, genetic counseling, nutrition, psychology, physical therapy, lymphedema therapy, occupational therapy, wound care, massage, pelvic floor rehab, exercise physiology, physical medicine and rehab, and speech therapy. Collectively, these disciplines fall under Supportive Oncology and Rehabilitation Services (SOARS). Patients are able to decline the referral, decline the referral but accept written information about the

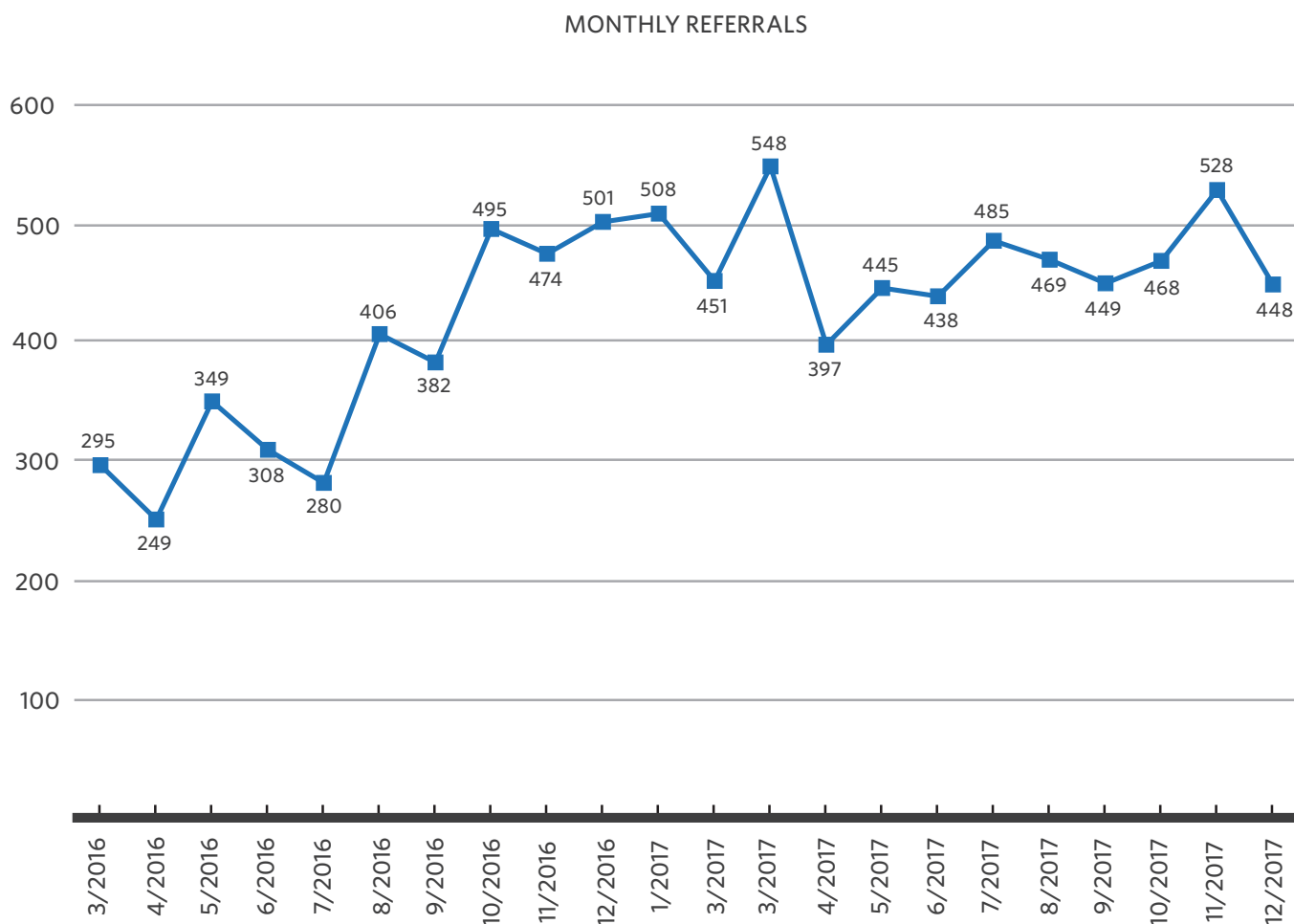
supportive services available or accept the referral. These responses are respectively documented as “I do not want to do anything about my distress at this time”, “Provide me with written information”, and “Refer me to a specialist in my area of distress.” If patient is amenable to a referral, it is submitted within the patient’s medical record. The following is the referral and refusal data that has been gathered since March of 2016.

448 for a 52 percent increase. Referrals increased and decreased from March of 2016 through December of 2017 but the general trend was upwards. The lowest monthly total was in April of 2016 and the highest was in March of 2017 at 249 and 548 respectively (see figure 1). The supportive services that received the most referrals were social work, genetic counseling, nutrition and psychology at 3912, 1593, 1180 and 965 (see figure 2).

## Results

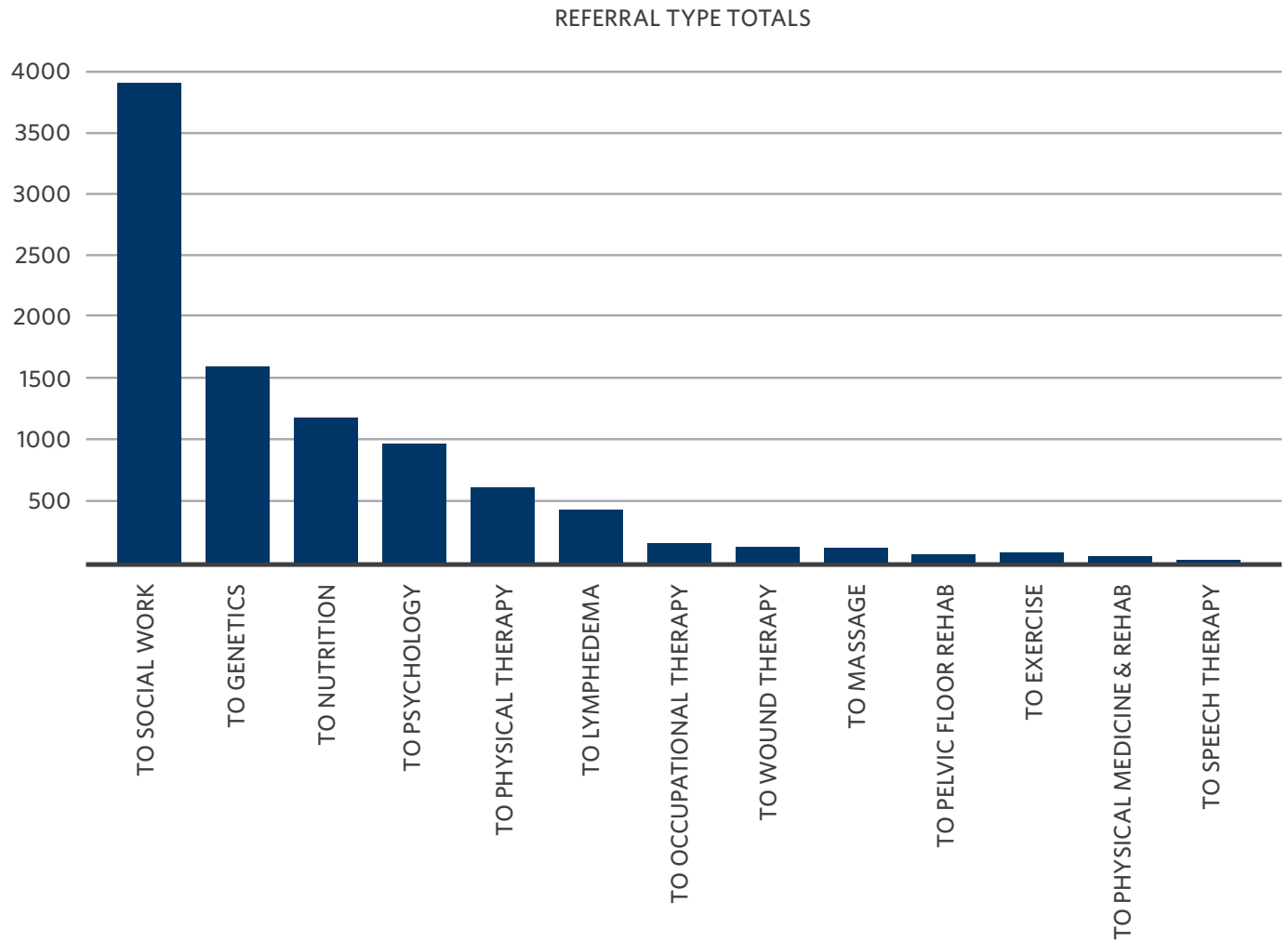
In March of 2016 a total of 295 referrals were made for supportive services. By December of 2017 referrals totaled

**Figure 1. Monthly Total Referrals to Soars From March of 2016 to December of 2017**



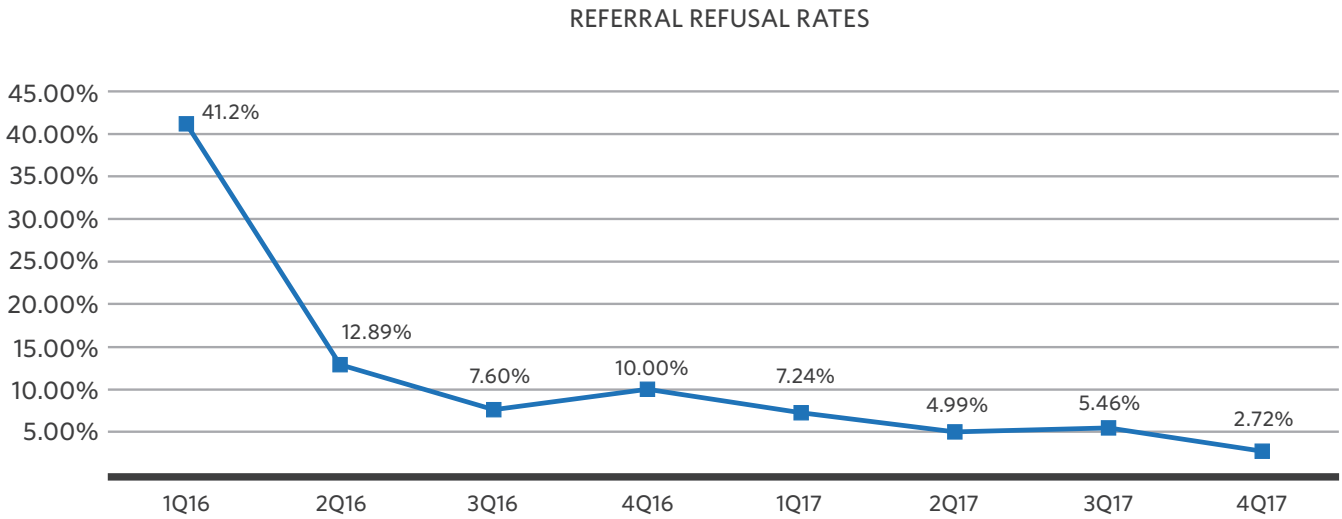
**Figure 2. Total Referrals to SOARS Disciplines From March of 2016 to December of 2017**

When the DT first began to be administered at every oncology and surgery appointment and on Mondays in radiation, refusal rates for SOARS were tracked as staff questioned whether patients might begin to feel overwhelmed by completing the distress screen so often and refuse referrals to supportive services. In the first quarter of 2016, 41.20 percent of the Saint Luke’s Cancer Institute patients refused a referral to SOARS. By the 4th quarter of 2017, only 2.72 percent of Saint Luke’s Cancer Institute patients refused a referral to SOARS (see figure 3).

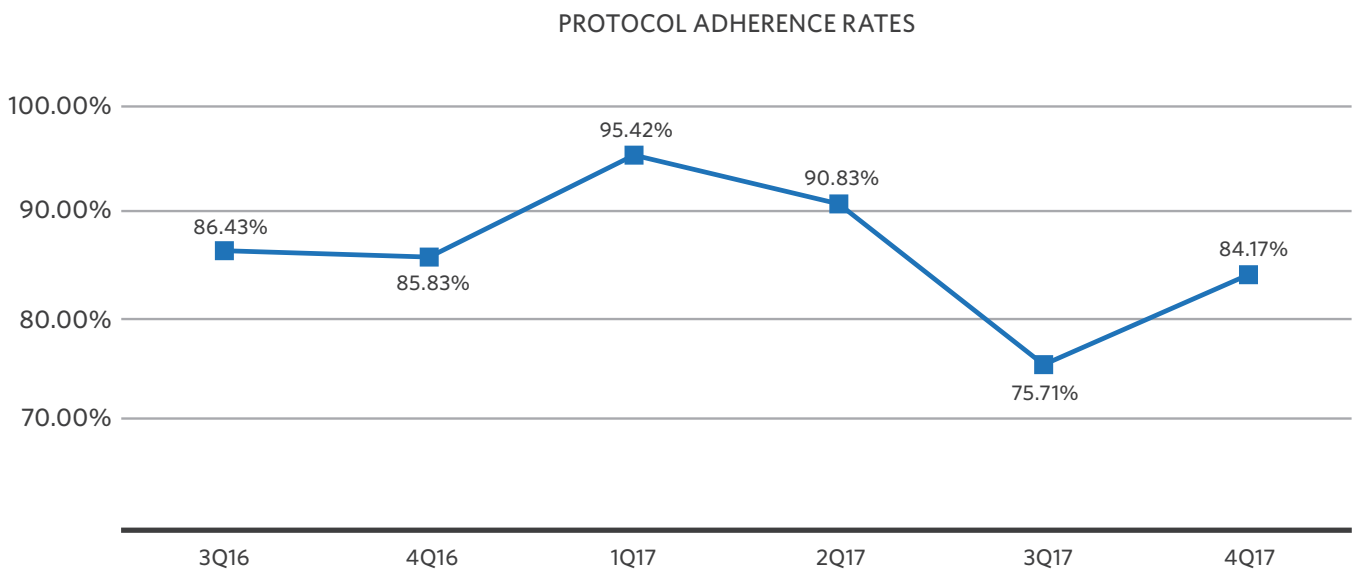


**Figure 3. Referral Refusal Rates by Quarter From the 1st Quarter of 2016 to the 4th Quarter of 2017**

In regards to administration of the DT, Saint Luke’s Cancer Institute guidelines state that it should be administered at every clinic visit and every Monday of radiation. When monitoring staff adherence to this, it was discovered that the screen was administered 86.43 percent of the time that it should have been in the third quarter of 2016. It then jumped to 95.42 percent in the first quarter of 2017. However, it then dropped to 84.17 percent by the fourth quarter of 2017.



**Figure 4. Adherence Rates to the Protocol From the 3rd Quarter of 2016 to the 4th Quarter of 2017**





## Conclusion

A multitude of previous studies have determined that cancer-related stress and mood symptoms are high throughout oncology diagnosis and treatment. To address these symptoms, several accrediting bodies have encouraged the use of distress screening. However, no studies have examined how the DT may guide referrals to supportive services. This study shows that making the distress screening tool a part of the medical record and increasing the administration schedule to include every oncology and surgery appointment as well as weekly in radiation can be accomplished in existing clinical algorithms. Our experience indicates that routine assessment of distress is accepted by patients and that referrals for further treatment of distress through supportive services can be part of routine care as refusal rates decreased, adherence rates fluctuated but remain high and referrals to supportive services dramatically increased. Including the assessment of distress as part of their visit with their provider allows for seamless and immediate referral for supportive services with little burden on clinical staff. Further, it allows the patient a forum to report other life distress that, while not directly related to their treatment, is impacting their ability to cope with the stress of cancer and its treatment. This more stringent administration, and its use within the electronic medical record, can also help cancer administrators manage resources. Assessment of patient distress can be used to justify the need for increased supportive service providers or the allocation of supportive services at different locations or different times of the year.

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