



SAINT LUKE'S CANCER INSTITUTE 2017 ANNUAL REPORT

Incorporating the 2016 Cancer Registry Statistical Review



 **Saint Luke's**
CANCER INSTITUTE



Dear Colleague,

We have always believed in customized treatment plans. We don't take a cookie-cutter approach to caring for our patients. No two people are identical; nor are their tumors.

In 2017, we launched the Saint Luke's Hospital of Kansas City's Center for Precision Oncology. Saint Luke's is uniquely positioned to offer exceptional precision oncology services that can't be found in 450 miles. Ashiq Masood, MD, is one of only a handful of practicing oncologists in the country trained in the field of bioinformatics and cancer genomics. Janakiraman Subramanian, MD, was involved in one of the first whole genome sequencing projects in lung cancer and served as the project manager for the multi-center Tissue Source Site network. Together we've built a program that goes beyond simply treating a cancer's location.

Just as each tumor is unique, each person who receives a cancer diagnosis will embark on a uniquely personal journey. That is why Saint Luke's Cancer Institute ensures the care we provide is equally personal and unique.

Our patients are much more than a cancer diagnosis, and they deserve care that extends past chemotherapy or radiation treatments. We take time to get to know each patient's mental and spiritual needs as well as the immediate physical needs. We've built a team of dedicated caregivers who've devoted their careers to caring for the cancer patient, including:

- Physicians with a range of specialties and sub-specialties
- Advanced nurse practitioners focused on specialized cancer areas
- Multidisciplinary teams based on tumor type who jointly consult and manage each unique case
- A survivorship program dedicated to ensuring the highest possible quality of life from diagnosis through treatment and beyond
- A sustained commitment to ongoing clinical research and providing patients access to emerging new treatment options
- Clinical psychologists trained in the unique needs of the cancer patient

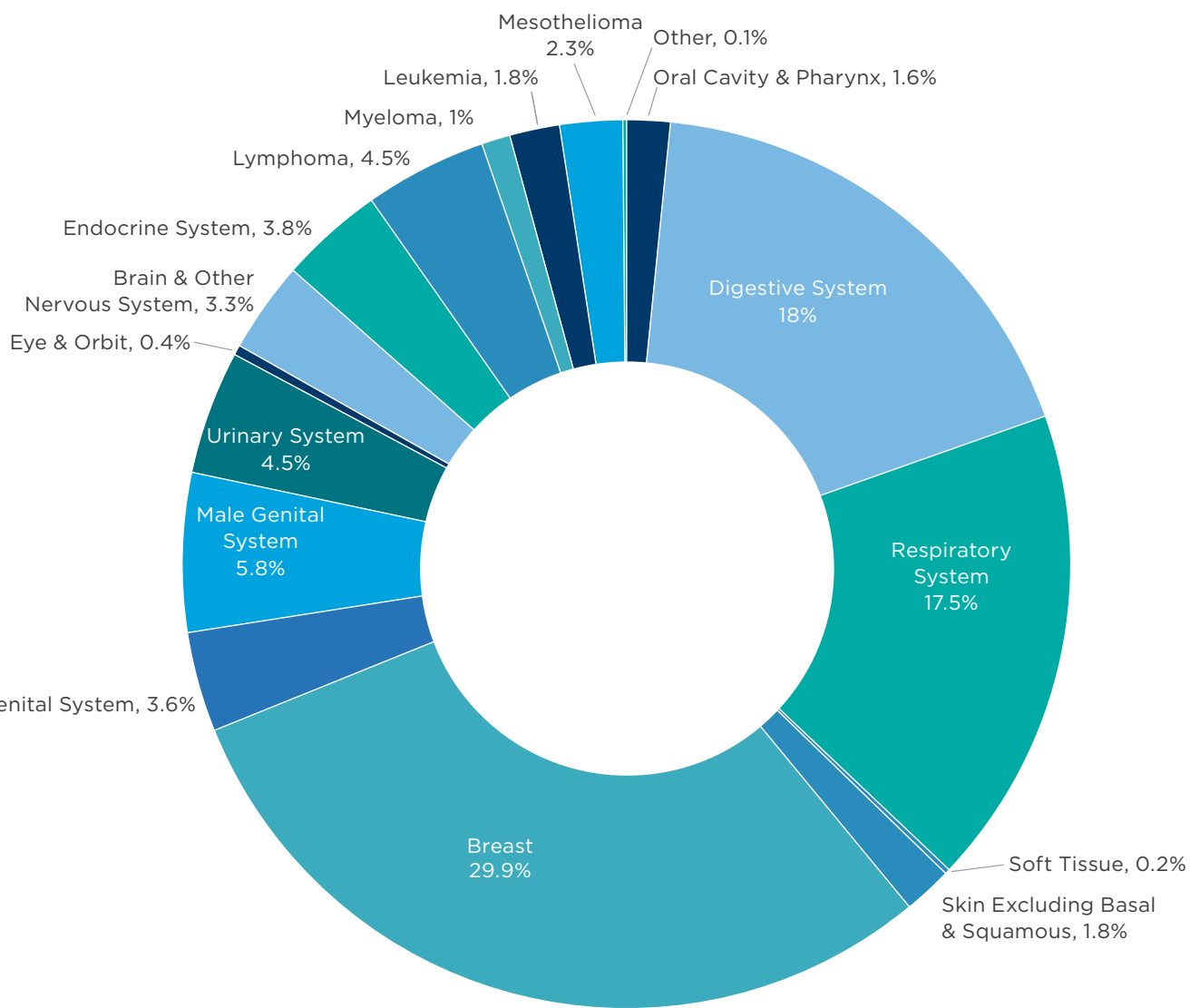
We've implemented screening programs designed to identify those at highest risk for developing lung or breast cancer. We've expanded our GI cancer program to make it even more convenient for patients to access our multidisciplinary care. And as we strive for prevention and cures, we also seek new treatments and innovative care plans for patients who won't have the best outcomes.

Because we won't stop until we can stop cancer for good.

Regards,

Timothy J. Pluard, MD
Medical Director

2016 Summary of Body System, Saint Luke's Health System Analytic Cases



Primary Site	2016
Oral Cavity & Pharynx	35
Digestive System	396
Respiratory System	384
Soft Tissue	4
Skin Excluding Basal & Squamous	39
Breast	657
Female Genital System	80
Male Genital System	127
Urinary System	99
Eye & Orbit	8
Brain & Other Nervous System	73
Endocrine System	83
Lymphoma	98
Myeloma	23
Leukemia	40
Mesothelioma	3
Other	50
All Sites	2,199

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 2016, Saint Luke's offered site-specific cancer conferences for brain and spine, breast, lung, gynecologic, and gastrointestinal cancers.

Summary of 2016 Site-specific Conferences

Site-specific Conference	Interval	Number of Conferences	Number of Analytic Cases Presented
Thoracic	Weekly	49	165
Breast	Weekly	43	319
Gastrointestinal	Weekly	39	339
Neuro-oncology	Weekly	34	253
Gynecologic	Bimonthly	19	56
Totals		184	1,132

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 met six times in 2017.

2017 COMMITTEE MEMBERS

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CANCER COMMITTEE

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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

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

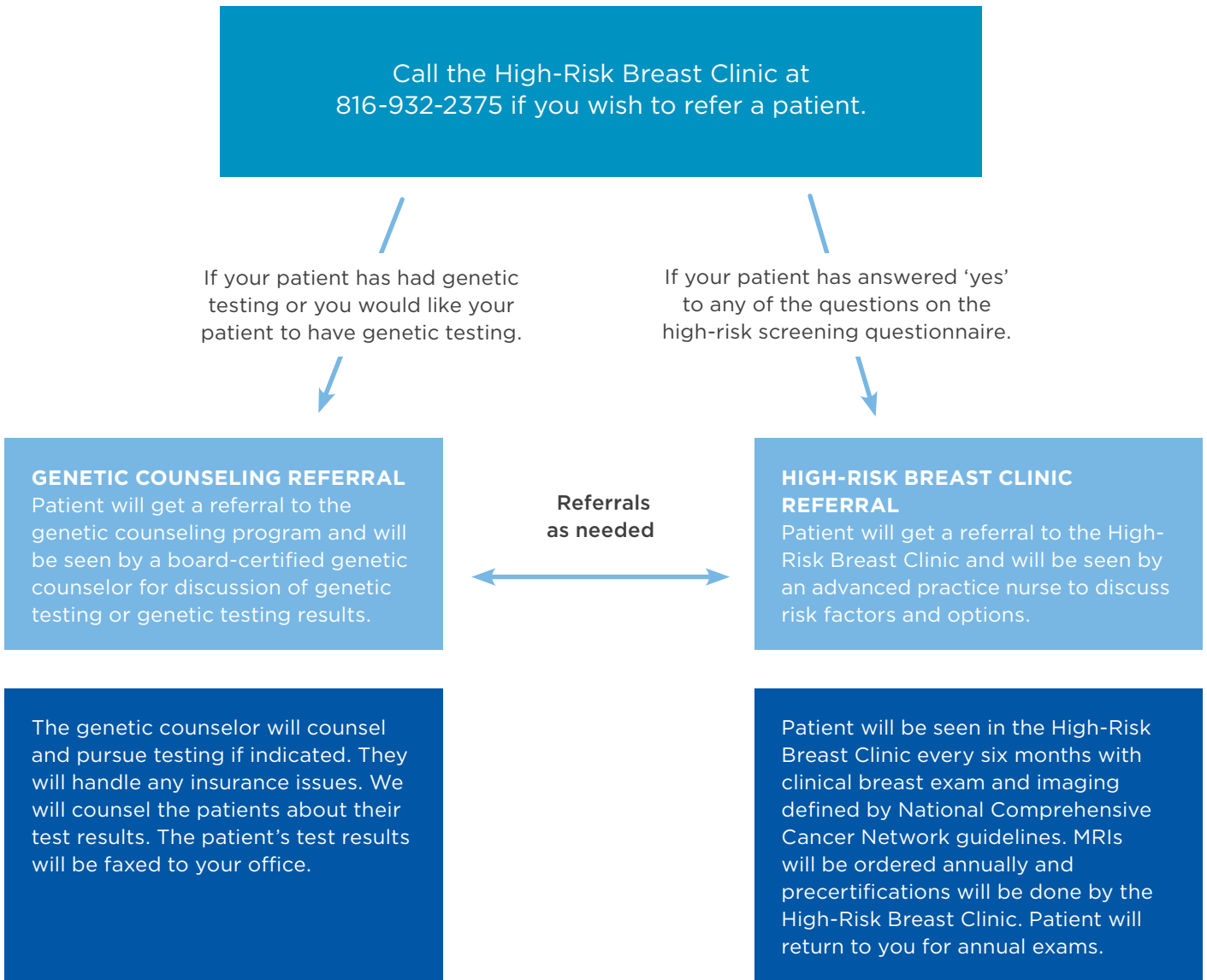
High-risk Breast Cancer Clinic screening	Patients	Patients requiring breast MRI	Cancer diagnosed related to screening
Jan. – June 2016	380	81	2
July – Dec. 2016	366	107	2
Jan. – June 2017	536	169	4

› Learn more

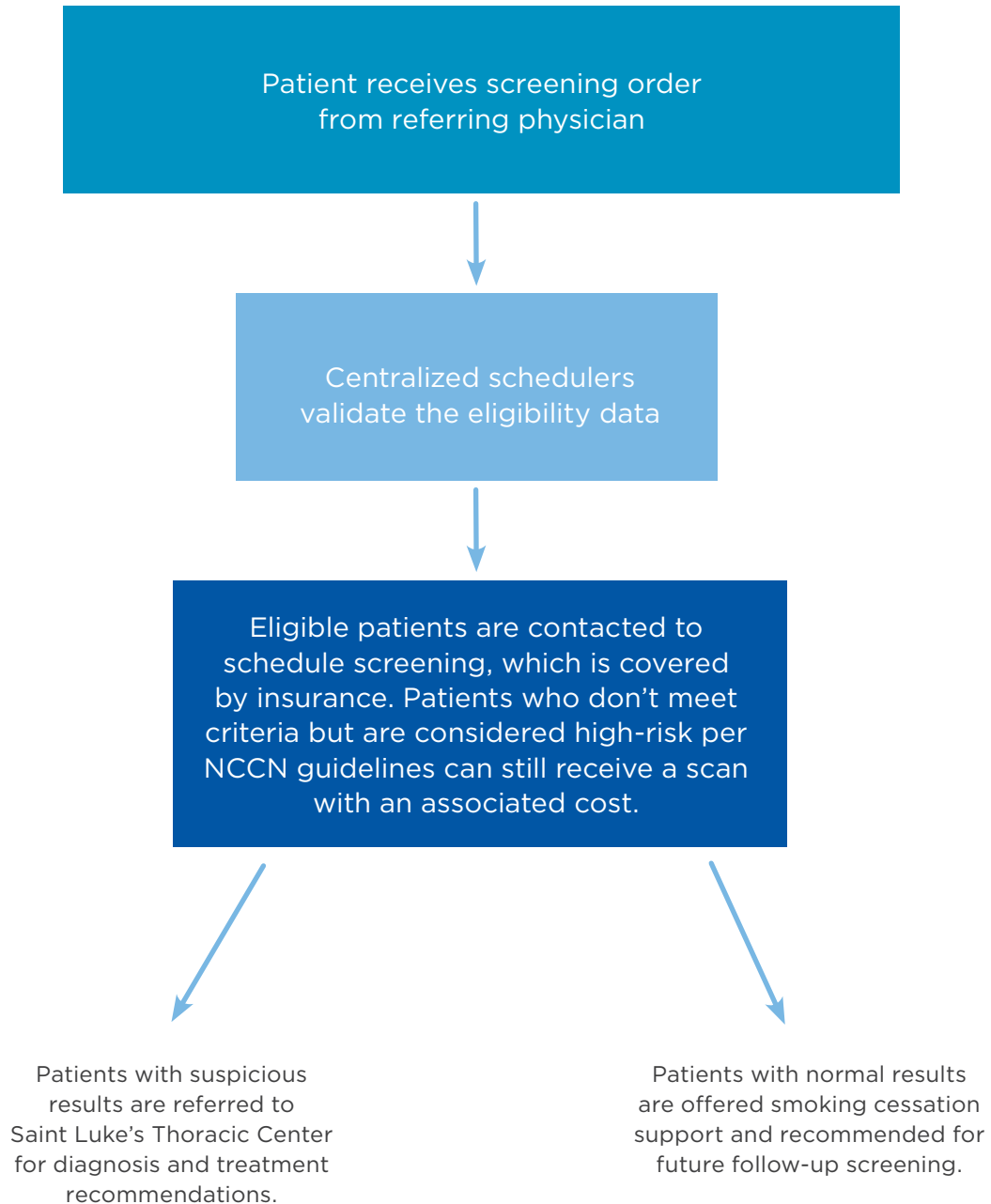
816-932-2375
saintlukeskc.org/high-risk

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 2017, we expanded our high-risk program to encompass all types of cancer, offering a higher level of early detection to patients.



**Referring protocol for the low-dose computed tomography
Lung Cancer Screening Program**



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 patient to review screening findings
- Follow-up recommendations provided
- 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 the 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 all four Saint Luke’s hospitals in the Kansas City Metro area. In 2017, we expanded to include three additional locations:

- Saint Luke’s Medical Imaging Specialists, Kansas City, Missouri
- Saint Luke’s Multispecialty Clinic–Blue Springs, Blue Springs, Missouri
- Saint Luke’s Multispecialty Clinic–Mission Farms, Overland Park, Kansas

As a result, we were able to screen 53 more patients in the first nine months of 2017, compared to all of 2016, and follow-up with even more patients at high risk of developing significant lung disease.

› Learn more

816-932-6800
saintlukeskc.org/lung-screening

Lung cancer screening with low-dose lung CT	Patients screened	Patients requiring active surveillance or follow-up	Patients needing surgical or treatment intervention	Cancer diagnosed related to screening
2015	70	6	0	0
2016	510	69	7	7
Jan. - July 2017	626	88	5	6

Supportive Oncology and Rehabilitation Services

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 throughout treatment and beyond.

The majority of referrals are to social workers for emotional support and financial assistance. Almost half talk with one of our providers about emotional concerns. Twenty-three percent of all referrals are to nutritional services; another 17 percent are for rehabilitation services.

Expertise

- 2 full-time master’s-level genetic counselors
- 5 master’s-level social workers
- 1 PhD-level mental health providers
- 1 registered dietitian
- 1 board-eligible chaplain
- 1 cosmetologist
- 7 nurse navigators
- Multiple** teams of physical and occupational therapists

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. In addition, we regularly offer post-diagnosis education, nutrition for survivorship classes, and support groups throughout the Saint Luke’s Health System.

We have partnered with Gilda’s Club Kansas City to provide education and support to our patient population. 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

Between January and September 2017, we referred 4,162 patients to Supportive Oncology and Rehabilitation Services—an increase of 30 percent compared to 2016.

› Learn more

saintlukeskc.org/supportiveoncology

Saint Luke's Koontz Center for Advanced Breast Cancer

Saint Luke's Hospital of Kansas City's Koontz Center for Advanced Breast Cancer is among of the first of its kind in the country to provide specialized care to women and men with advanced breast cancer.

The team at the Koontz Center for Advanced Breast Cancer has a singular goal: improve the outcomes and quality of life for patients with advanced breast cancer. We focus on precision cancer treatments with complementary integrative therapies that enhance quality of life. Our experts seek out the latest advancements in genomics, immunotherapy, and supportive care. We put a strong focus on clinical trials of emerging therapies and advanced care protocols.

- New patients are offered appointments to see multiple providers on their initial visit for a comprehensive assessment.
- Following initial physician visit the patient has 30- to 45-minute assessments by psychology, physical therapy, nutrition, social work, and spiritual practitioners.
- Patients are also screened for clinical research studies.
- All team members meet after completion of all assessments to provide feedback and treatment recommendations. This information is incorporated into a detailed treatment plan that is shared with the patient during a final meeting.
- Remote family members have the option to attend via videoconference. A video recording of the entire consultation is provided to the patient.
- We analyzed utilization of integrative services under this clinic model.

Year 1 Patient Characteristics: n = 127

- 126 female, 1 male
- Caucasian 87%, African American 13%
- Median age: 55 (33 – 84)

Integrative Therapies

At the Koontz Center for Advanced Breast Cancer, treatment plans include a full menu of integrative therapies that enhance wellness:

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

During their first visit, 50 percent of patients saw all integrative providers and more than 70 percent accessed at least one integrative service.

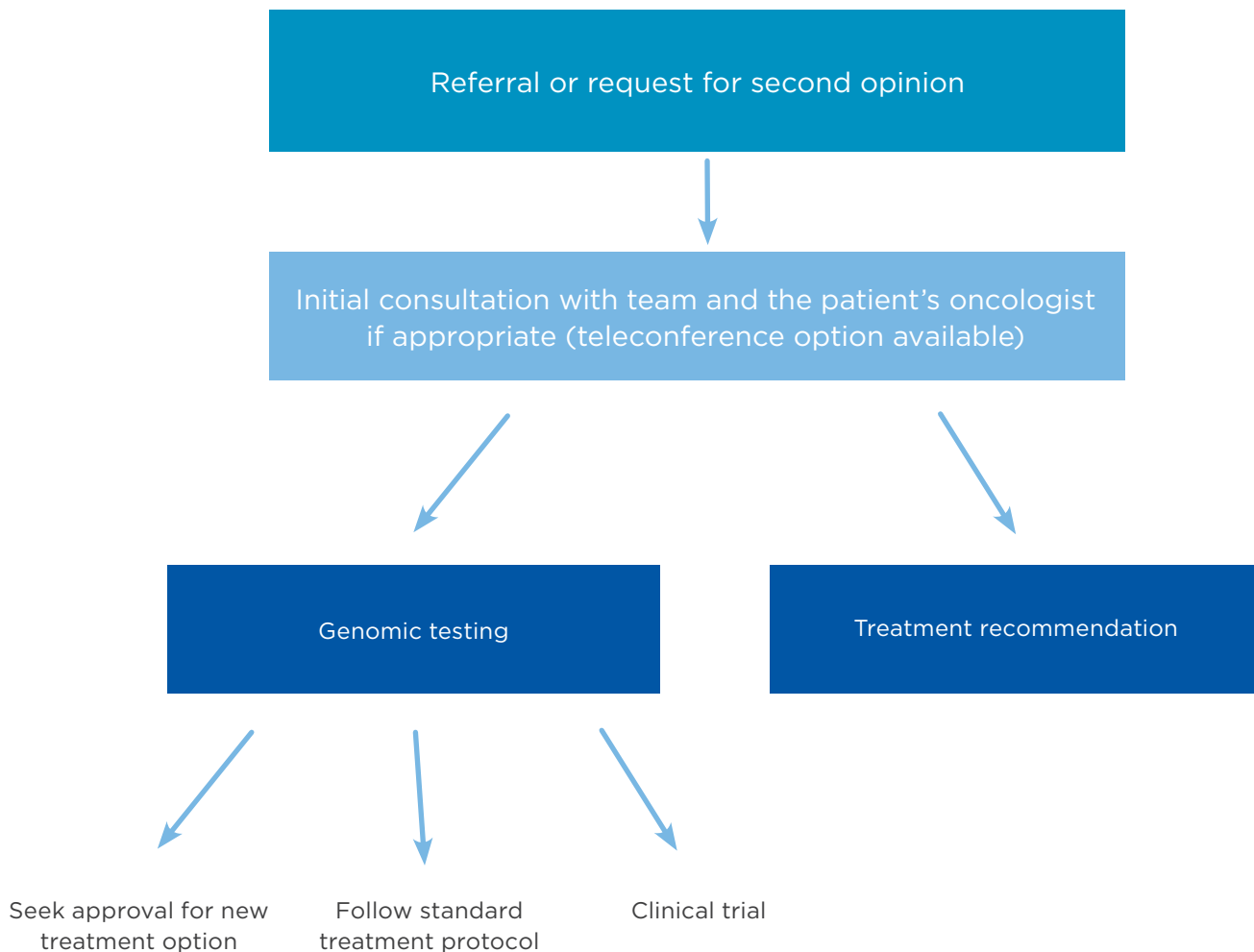
Saint Luke's Precision Oncology Program

Saint Luke's precision oncology experts treat a tumor's mutation, not just the cancer's location. It's the only program within 450 miles that offers this level of expertise in clinical oncology, tumor genomics, and bioinformatics.

Co-director Ashiq Masood, MD, is one of the few practicing oncologists in the country who has been trained in both bioinformatics and cancer genomics. He can interpret the genetic test results and has the oncology expertise to recommend the best medication to treat a patient's specific genetic mutation.

Co-director Janakiraman Subramanian, MD, was involved in one of the first whole genome sequencing projects in lung cancer and served as the project manager for the multi-center Tissue Source Site network, which was instrumental in providing tumor and normal tissue samples for The Cancer Genome Atlas Project.

A significant hurdle is getting patients access to drugs that aren't yet approved by the FDA to treat their specific cancer. Our dedicated specialty pharmacist works directly with pharmaceutical companies and insurance providers to gain that access. Saint Luke's Center for Precision Oncology offers services for any patient with advanced cancer, regardless of their status as a Saint Luke's patient. We also offer second opinions on previous genomic testing results.



Colorectal Cancer Demographics, Treatment Trends at Saint Luke's Health System

Introduction

Colorectal cancer is the third most common cancer diagnosed in the United States. It is estimated that 135,430 new cases will be diagnosed in 2017¹ and 50,260 patients will die due to colorectal cancer¹. The risk factors for colorectal cancer include age, tobacco and alcohol use, physical inactivity, dietary factors such as red meats, obesity, and diabetes². About 5 to 10 percent patients who develop colorectal cancers have inherited cancer syndromes such as familial adenomatous polyposis (FAP), Lynch syndrome, and so on³. The outcome of colorectal has improved over the last few years, and about 1.4 million patients are living with the disease⁴. Furthermore, about 65 percent of patients live more than 5 years⁴. Fortunately, rates of new colon and rectal cancer cases have been declining on average by 2.7 percent per year over the last decade. Similarly, death rates are falling at about 2.5 percent from 2005 – 2014⁵. However, the risk for colorectal has increased among younger individuals over the last few decades⁶. The underlying etiology for this trend is mostly unknown⁶.

Demographics

Over the last five years, there has been a steady increase in the number of patients diagnosed with colorectal cancer receiving treatment at Saint Luke's Health System, with 193 new colorectal cancer patients compared to 139 in the year 2012. The median age of patients diagnosed with colorectal cancer was 64.5 (range 29 – 92). The proportion of men (51.6 percent) diagnosed with colorectal cancer was slightly higher than that of women (48.3 percent). The majority of patients were Caucasians (89.3 percent), the rest included African-Americans (8.9 percent), Asians, and unknown. Twelve percent of patients were younger than 50 years old, suggesting an increase in the number of young individuals diagnosed with colorectal cancers.

Treatment

We focused on both stage III and stage IV colorectal cancers and the pattern of fluorouracil (5-FU)-based chemotherapy utilization at Saint Luke's compared to the national trends.

In stage III, 80 percent of patients were recommended to receive 5-FU-based systemic chemotherapy. Seventy-one percent received systemic chemotherapy compared to 65 percent nationally⁷ as recommended National Comprehensive Cancer Network (NCCN) and European Society of Medical Oncology (ESMO) guidelines. Most common reasons for not receiving systemic chemotherapy were patient refusal, poor performance status, and unknown.

For the stage IV colorectal cancer patients, 92 percent of patients were recommended palliative systemic therapy. Eighty-five percent of these received systemic chemotherapy as recommended by NCCN and ESMO guidelines. Nationally, 63 percent patients with stage IV receive systemic chemotherapy⁸. Most common reasons for not undergoing chemotherapy were poor performance status, patient refusal, and unknown.

This report will be followed by analysis on the patient outcomes.

Conclusion

There has been a steady increase in the number of cases of colorectal cancer treated at Saint Luke's. The majority of our patients with stage III and stage IV colorectal cancer receive treatment consistent with international guidelines, including NCCN and ESMO. We also have numerous clinical trials available for patients with gastrointestinal malignancies, and the number of available trials will increase substantially through our recent Alliance affiliation with Washington University.

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RESEARCH

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Peer-reviewed Major Conference Presentations 2017

Edwards CV, Gould J, Langer AL, Mapara M, Radhakrishnan J, Maurer MS, **Raza S**, Mears JG, Wall J, Solomon A, Lentzsch S. **Final Analysis of the Phase 1a/b Study of Chimeric Fibrin-Reactive Monoclonal Antibody 11-1F4 in Patients with Relapsed or Refractory AL Amyloidosis.** (Oral Presentation at 2017 Annual American Society of Hematology, Dec 2017.)

Leng S, **Raza S**, Assal A, Baliko G, Gould J, Shields R, Mapara Y, Lentzsch S. **An Open-label Phase I/II Study of Carfilzomib, Bendamustine and Dexamethasone in Newly Diagnosed Multiple Myeloma Patients.** (Poster Presentation at 2017 Annual American Society of Hematology, Dec 2017.)

Lagos G, Lentzsch S, Comenzo R, Zonder J, Osman K, Susanna M, Backenroth D, Otap D, Tsai WT, Pregja S, **Raza S**, Sanchorawala V, Landau H. **Final Results of a Phase 2 Study of Bendamustine in Combination with Dexamethasone (Ben/Dex) in Patients with Previously Treated Systemic Light-Chain (AL) Amyloidosis.** (To be presented at 2017 Annual American Society of Hematology, Dec 2017.)

Raymond VM, Diaz J, Banks KC, Ahn E, Brufsky A, Ellis M, Lippman M, Lee C, **Pluard T**, Schreeder M, Schwab R, Lanman RB. **Cell free DNA analysis identifies actionable ERBB2 amplifications in patients with HER2 negative breast cancer.** (Poster Presentation at 2017 San Antonio Breast Cancer Symposium, Dec 2017.)

Yardley DA, Hart L, Favret A, Blau S, Diab S, Richards D, Sparano J, Beck JT, Richards P, Ward P, Ramaswamy B, Tsai M, **Pluard T**, Tolaney S, Esteve F, Small T, Purkayastha D, Miller M, Hortobagyi G. **Efficacy and safety of ribociclib plus letrozole in US patients enrolled in the MONALEESA-2 study.** (Poster Presentation at 2017 San Antonio Breast Cancer Symposium, Dec 2017.)

Pluard T, Oh SY, Oliveira M, Cescon D, Tan-Chiu E, Wu Y, Carpenter C, Cunningham E, Ballas M, Dhar A, Sparano J. **A phase I/II dose escalation and expansion study to investigate the safety, pharmacokinetics, pharmacodynamics and clinical activity of GSK525762 in combination with fulvestrant in subjects with ER+ breast cancer.** (Poster Presentation at 2017 San Antonio Breast Cancer Symposium, Dec 2017.)

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Our Locations

Saint Luke's Cancer Institute

855-663-7524

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Saint Luke's Cancer Specialists

IN MISSOURI

Saint Luke's Hospital of Kansas City
Medical Plaza III, Suite 4000
4321 Washington St.
Kansas City, MO 64111

Creekwood Medical Building
5400 N. Oak Trafficway, Suite 101
Kansas City, MO 64118

Saint Luke's East Hospital
20 NE Saint Luke's Blvd., Suite 500
Lee's Summit, MO 64086

Bates County Memorial Hospital
615 W. Nursery St.
Butler, MO 64730

Hedrick Medical Center
2799 N. Washington St.
Chillicothe, MO 64601

Liberty Hospital
2529 Glenn Hendren Drive, Suite G30
Liberty, MO 64068

Wright Memorial Hospital
191 Iowa Blvd.
Trenton, MO 64683

Western Missouri Medical Center
403 Burkarth Road
Warrensburg, MO 64093

IN KANSAS

Saint Luke's Cushing Hospital
Cushing Multispecialty Clinic
1001 6th Ave., Suite 340
Leavenworth, KS 66048

Saint Luke's South Hospital
12330 Metcalf Ave., Suite 580
Overland Park, KS 66213

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