

# 2019

## ANNUAL ONCOLOGY REPORT

Oncology Registry Data 2018



St. Clair Hospital  
Cancer Center

# 2019 Cancer Care Committee Roster

NAME	TITLE	DEPARTMENT/SECTION
Victoria Andromalos-Dale RN, BSN, PCCN	Clinical Integration Specialist, Clinical Transitions Specialist	Office of Healthcare Quality Improvement
Shahid Bokhari, M.D.	Pathologist	Department of Pathology
Kevin Bordeau, M.D.	Active Physician	Urology
Robert W. Bragdon, M.D.	Active Physician	Plastic Surgery
Raye Budway, M.D.	Cancer Liaison Physician/ Surgeon	Breast Surgery, General Surgery
Lauren Cerqua, MPT, CLT	Physical Therapist, Manager Therapy Services	Outpatient Therapy Services
Haley Childers, MSW, LSW, ACHP- SW	Palliative Care Social Worker	Palliative Care Services
Martha R. Clarke, M.D.	Chair, Dept of Pathology, Medical Director, Laboratory	Department of Pathology
Susan Correa, RHIA	Oncology Registry Assistant	Oncology Registry
Sarah Darby, RHIA, CTR	CTR / Cancer Conference Coordinator	Oncology Registry Supervisor
Ron Fierro, M.D.	Cancer Conference Coordinator, Active Physician	Medical Oncology
Joy Fornof, RN	Breast Care Nurse	Breast Care Center
Meghan Georges, MSW, LSW	Inpatient Social Worker	Social Services
David Glorioso, M.D.	Active Physician	Department of Gastroenterology
Gaurav Goel, M.D.	Active Physician	Medical Oncology
Tara Grahovac, M.D.	Active Physician	Breast Surgery
Jill Gramm, RN, OCN®	Breast Center	Breast Center Navigator
Glen Ha, MD	Diagnostic Radiologist	Radiology
Nanceann Harwick, RN, OCN®	Oncology Nurse	Inpatient Unit 5G
Lisa Lehman, MSN, RN, NEA, BC	Cancer Program Administrator, Executive Director of Nursing	Nursing Services
David Hepps, M.D.	Active Physician	Urology
Kacie Jankoski	American Cancer Society (ACS) Representative	American Cancer Society
Jean Lewis, MS RD LDN	Registered Dietician	Nutritional Services
Richard H. Maley, M.D.	Active Physician	Thoracic Surgery
Marjorie Mills, LCP	Spiritual Counselor / Psychosocial Services Coordinator	Pastoral Care / Psychosocial Services
Leigh Nadler, M.D.	Surgeon	Colorectal Surgery
Jaime L. Nemeth, D.O.	Medical Director, Palliative Medicine	Medical Services
David Palko, M.D.	Diagnostic Radiologist	Radiology
Jennifer Petruski, MBA, RT (R) (MRI)	Director of Outpatient Centers & Medical Imaging	Outpatient Services, Medical Imaging
Laura Pollice, BSN, RN, OCN®, CCRC	Quality Improvement Coordinator, Oncology Nurse Manager	Sipe Infusion Center & Cancer Registry
Diane Puccetti, RN, MS	Cancer Program Administrator, VP/Chief Nursing Officer	Nursing Services
Vincent E. Reyes, Jr., M.D.	Medical Director, Cancer Center Co-Chairman, Medical Oncologist	Chair, Dept of Hematology/ Oncology

## 2019 Cancer Care Committee Roster Contd.

NAME	TITLE	DEPARTMENT/SECTION
Megan Rhoades RN, BSN	Community Outreach Coordinator, Unit Manager	Inpatient Unit 5G, Oncology/Hematology
Shawn M. Roberts, PharmD, RPh	Clinical Pharmacy Specialist, Infectious Disease	Pharmacy
Danielle Rutowski, BSN, CRC	Clinical Research Coordinator	Clinical Research Coordinator
Reema Sharma, OTR/L, CLT	Occupational Therapist, Manager Therapy Services	Inpatient Therapy Services
Joanna Hughes, RN	Clinical Integration Specialist	Office of Healthcare Quality Improvement
Colin Smith, BSN, RN, OCN®	Oncology Nurse, Survivorship Care Plans	Sipe Infusion Center
Corinne Smith, CTR	CTR/ Cancer Conference Coordinator	Oncology Registry
Felicia Snead, M.D.	Radiation Oncologist	Radiation Oncology
John Sullivan, M.D.	Sr. Vice President and Chief Medical Officer	Medical Affairs
Robert VanderWeele, M.D.	Active Physician	Medical Oncology
Kenneth von der Porten, M.D.	Active Physician	Psychiatry
Justin J. Vujevich, M.D.	Active Physician	Dermatology
Zoe Warsaw, M.D.	Pathologist	Department of Pathology
Stephen Wawrose, M.D.	Active Physician	Otolaryngology
Robert Werner, M.D.	Cancer Center Co-Chairman, Radiation Oncologist, Medical Director	Radiation Oncology
Angela Wilson, RHIA	Supervisor, Health Information Management	Medical Records Department
Myles Zuckerman, M.D.	Cancer Registry Quality Coordinator/ Active Physician	Community Physician, Palliative Care / Hospice

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## CHAIRMAN'S REPORT

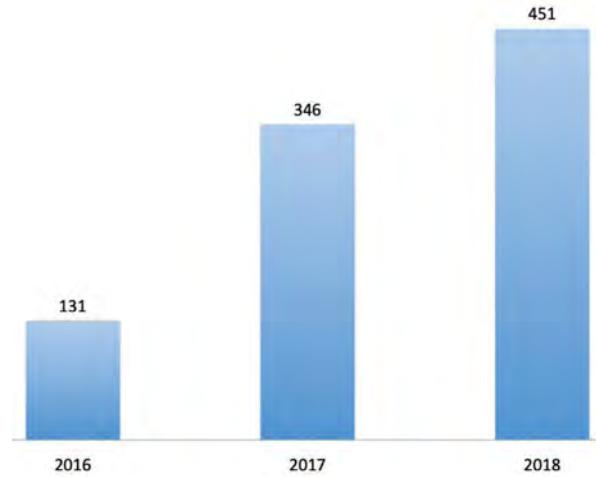
### Vincent Reyes, M.D.

Medical Director, Cancer Center Co-Chairman



St. Clair Cancer Center continued its mission of providing university-level care within our community in 2019. There continues to be incredible advancement in therapeutics and pharmacology in oncology. ASCO (American Society of Clinical Oncology) named progress in treating rare cancers as the advance of the year. Rare cancers account for 20% of all cancers each year in the United States. Historically, advancements in these cancers have lagged behind more common cancers. There were notable achievements, like new combination of targeted therapies for thyroid cancer. Sorafenib, a targeted therapy, increased survival for desmoid tumors, which are rare types of sarcoma. Also, there was new therapy that delivers targeted radiation to cancer cells (lutetium -177), that increases survival in neuroendocrine cancers.

These achievements are only possible because of clinical trial accrual, which advance the science of oncology. An engaged physician network can be the key to complete and conduct a successful trial. St. Clair Hospital has made clinical trial accrual a top priority. With the tremendous collaboration and commitment to this initiative, clinical trial accrual at St. Clair Hospital has risen over the past 3 years.



This academic mission is being furthered by St. Clair Hospital's affiliation with UPMC Hillman Cancer Center. Through this partnership, a vast array of Hillman Cancer Center's clinical trials will be available at St. Clair Hospital. This access will allow our patients to help answer important clinical questions for future generations and participate in cutting edge protocols.

St. Clair Hospital Cancer Center continues to be an elite institution. We maintain our mantra of taking "no shortcuts in patients' cancer care". The science of oncology is improving, and patients are living longer. More importantly, our patients' lives are better.



## CANCER PROGRAM ADMINISTRATOR'S REPORT / CANCER PROGRAM QUALITY REVIEW

### Lisa Lehman MSN, RN, NEA-BC

Executive Director of Nursing

#### Overview

The St. Clair Oncology Program extends beyond our main hospital, incorporating our communities through our dedicated physician practices, state of the art medical and procedural treatments and modalities, community wellness and educational events, and extensive health screenings. Our multidisciplinary approach unites all providers, promoting the highest quality services. St. Clair Hospital has been accredited by the American College of Surgeons Commission on Cancer (CoC) as a comprehensive community based cancer center since 1996. CoC accreditation is nationally recognized by organizations, including the National Cancer Institute, Centers for Medicare & Medicaid Services, National Quality Forum, American Cancer Society, and The Joint Commission, as having established data-driven performance standards and measures for the provision of quality cancer care. These standards set the framework for a program that delivers high-quality, patient-centered care, with access to the full scope of cancer care services required to diagnose, treat, rehabilitate, and support the patient.

The following overview highlights just some of the many enhancements the St. Clair Hospital Cancer Committee has accomplished in 2019:

#### St. Clair Hospital & Mayo Clinic Network:

St. Clair Hospital is a member of the Mayo Clinic Care Network. The collaboration between St. Clair Hospital and Mayo Clinic allows St. Clair providers to have unique access to Mayo Clinic resources, including specialist-to-specialist consultations and a point-of-care database of best-practice information. This clinically meaningful relationship enhances St. Clair's commitment to improve the quality and delivery of health care to the region. One of these best practices is the Mayo eTumor Board. The eBoards are multidisciplinary discussions, offering informal advice regarding suitable diagnostic tests and treatment options for our complex cancer patient cases. E-Tumor conferences sponsored by the Mayo are held in Dunlap Conference Center C and have provided access to 120 collaborative conferences since its inception in 2016.

#### Education through Case Conferences:

Case Conferences provide a collaborative, multidisciplinary approach to cancer care, bringing together professionals from oncology, radiology, pathology, and nursing to review cancer cases which allows for future decision-making and improved care coordination. At St. Clair Hospital there are three types of case conferences

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- *Cancer Care Conference Weekly:*  
These conferences are held weekly as a Tuesday Luncheon , 11:30 am to 1 pm. The oncologists deliver presentations related to some of their most unusual and challenging cases totaling at least 15% of all analytic cases. Ronald Fierro, M.D., (Medical Oncology) is the Cancer Care Conference Coordinator.
- *Thoracic Boards Monthly:*  
This conference occurs the 4th Wednesday of every month where all Low-Dose CT Lung Screening cases resulting in Lung RADS 4 are presented. In these cases physicians are also seeking experience and recommendations for ongoing plans of care.
- *Breast Care Conference Monthly:*  
This conference is held the 3rd Thursday of each month at Oxford Drive 3rd Floor Conference Room, 7:30am- 8:30am.

**Program and Clinical Goal Setting:**  
Yearly, the Cancer Committee establishes, implements, and monitors programmatic and clinical goals for the advancement of cancer care at St. Clair Hospital. This process provides strategic direction and program improvement activities relevant to our cancer population.

This year, the Cancer Committee designed a Programmatic Goal aimed at increasing and improving patient access to comprehensive outpatient oncology services. To do so, a collaborative Medical-Oncology agreement, along with the recently approved joint venture with UPMC Hillman Cancer Center's Radiation Oncology Department, was developed to streamline cancer care. This collaboration provides our community with state-of-the art Radiation Oncology /PET CT Services and Medical Oncology services close to home, on the hospital's main campus. Planning and execution of these integrated services began in January of 2019 and was fully operational by July 1, 2019.

Another goal met this year was an expansion project to increase treatment space in the Sipe Infusion Center. This goal was set to ensure St. Clair will be able to accommodate future increases in patient volumes, providing comprehensive infusion services without undue appointment wait times. The expansion project kicked off in May 2019, adding a new "annex space" to the existing infusion center. In this new space, six (6) new additional treatment bays were added as well as a new nurse's station, an additional public restroom, a utility room, and an ambulance accessible entrance. The project was fully completed and ready for occupancy in August 2019.

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## **Studies of Quality and Quality Improvements:**

The St. Clair Hospital Cancer Committee ensures that the Oncology Program maintains a focus on continuous quality improvement. Our program is guided by the regulatory requirements and standards of the American College of Surgeons (ACoS) Commission on Cancer (CoC). St. Clair's Cancer Program is committed to maintaining our CoC accreditation as a Comprehensive Community Cancer Program (CCCP). Our multidisciplinary committee works throughout the year to

collaboratively monitor program progress and offer guidance regarding ongoing studies of quality and identifying opportunities for program improvements.

The following overview highlights our Cancer Committees' quality improvement efforts over the course of this past year. These improvements will be reported to the CoC to support the maintenance requirements of our program's accreditation:



# CANCER PROGRAM ADMINISTRATOR'S REPORT / CANCER PROGRAM QUALITY REVIEW

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- *Oncology Registry's Radiation-Oncology Patient Identification Process:*  
As required by the Pennsylvania Department of Health , the St. Clair Hospital must report all cancer cases diagnosed and/or treated at St. Clair Hospital. The Committee explored current practices for identification of patients and learned of potential for Registrars to not be notified of radiation therapy treatments for patients. A study was conducted and confirmed the opportunity to enhance the process of identifying patients receiving radiation treatments. The Oncology Registry—in collaboration with Health Information Systems (HIS), the Finance Department, and the Radiation Oncology Department—created an automatic electronic monthly report to capture all Radiation Oncology patients. This new report ensures all cancer patients cared for at St. Clair Hospital Radiation Oncology are identified by the Oncology Registrars in a timely manner. This ensures our hospital meets all regulations for abstraction and incidence reporting throughout the entire continuum of cancer care, from cancer screening through survivorship.
- *Nutritional Support for Oncology Patients:*  
The Cancer Committee explored the current dietary and screening processes and nutritional support for inpatients diagnosed with cancer. A study was conducted and established an opportunity to enhance our nutritional offerings for patients who are identified at “moderate to high nutritional risk” based on nursing assessment on admission. A quality improvement is currently being designed for roll-out in 2020 on Unit 5G, the hospital’s Hematology-Oncology inpatient unit. The Committee plans to trial a supplement called “Med Pass” for all patients identified at Level 2 or Level 3 Nutritional Risk (significant or severe unintentional weight loss). Med Pass is a low-volume, high-energy, high protein oral supplement administered to patients twice daily. The Cancer Committee will continue to monitor this piloted improvement in 2020.
- *Improving Chemotherapy Electronic Order Entry Process in the Infusion Center:*  
One of the Cancer Committee’s primary commitments is to patient safety. This includes monitoring and evaluating medication and chemotherapy order entry

## CANCER PROGRAM ADMINISTRATOR'S REPORT / CANCER PROGRAM QUALITY REVIEW

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and verification. Finding ways to enhance the checks and balances necessary for accurate and safe medication orders is a continual process for the Committee and St. Clair Hospital as an organization. This year the Committee identified an opportunity to streamline the process of electronic order entry in the Infusion Center. The current process did not allow electronic medication or chemotherapy orders to be entered until the patient arrived and was registered for the treatment visit. The Committee determined this workflow did not provide adequate time for the Infusion Center Unit Coordinator (Registered Nurse) to review and verify electronic order entry (by the Unit Secretary) before orders

were released to Pharmacy. In collaboration with Health Information Systems (HIS), Laura Pollice, BSN, RN, OCN, Infusion Center Unit Manager, designed a new process which allows orders to be entered by the Unit Secretary the day before patients' treatment visits. After the Unit Secretary enters the electronic medication orders, the new orders go into an electronic "Hold" status until the Unit Coordinator RN thoroughly reviews and verifies the orders, making adjustments, if necessary. Once verified, the Unit Coordinator RN releases the order to Pharmacy, where the order is again reviewed and verified by a Pharmacist. HIS also developed a new way the Registered Nurse administering the treatment to electronically document his/her verification of the order. Thus, the three required verifications of medication or chemotherapy orders (by Unit Coordinator RN, Pharmacy, and Treatment RN) are electronically documented. The new "Hold Status" process was implemented in October 2019 and the trial has been successful. The Cancer Committee will continue to monitor medication order entry in 2020 to confirm the success of this improvement.

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Laura Pollice, Lisa Fairgrieve and Amy Mosher.

As noted, the Cancer Committee Members are committed to continuous improvement to ensure we provide the highest quality of patient-centered cancer care. It takes a cohesive and collaborative spirit amongst our multiple departments to maintain and enhance our high standards of care and services. We are committed through a common goal to work together to accomplish these many improvements.



## PATHOLOGY DEPARTMENT REPORT COLORECTAL CANCER PATHOLOGY/ TUMOR MARKERS

**Martha R. Clarke, M.D.**

Chair, Department of Pathology

**M**ore than one million new cases of colon and rectal carcinoma are diagnosed every year. Worldwide, cancer of the colon and rectum are the fourth most common cancer in men after lung, prostate and stomach cancer and the third most common cancer in women following breast and cervical cancer. There is a marked variation in incidence between high risk regions, which include Australia, New Zealand, Europe, the Americas and Japan and low risk regions of the world, which include Africa, India and parts of Southeast Asia. These differences are thought to be related to lifestyle and environmental influences including diet, alcohol intake and physical activity.

In the United States colorectal cancer (CRC) is the third most common cancer in both men and women and the fourth most common cancer overall. It is the second leading cause of cancer death following lung and the leading cause of cancer death among nonsmokers. The incidence of colorectal cancer is more common in men than women; however, as women live longer than men, there are similar numbers of total cases and cancer deaths in men and women. As with many cancers, the incidence of CRC increases with age with 1% occurring before age 35 years, 9% before 50 years, and the majority after age 50. In developing countries, the mean age of

onset is lower, at 50 years. In this country, the incidence is highest in African Americans, and lowest among Asian American/Pacific Islanders. Risk factors include family history in first-degree relatives, physical inactivity, long-standing inflammatory bowel disease, obesity, consumption of red meat, and alcohol greater than one drink per day. Epidemiologic risk factors seem to be associated with more proximal colon cancer whereas age and male gender are associated with an increased risk of rectal cancer.

Most CRCs arise from adenomas, which include traditional adenomas, sessile serrated lesions and traditional serrated adenomas, which is why surveillance and endoscopic removal of polyps is so important in reducing the development of CRC in patients.

There is an accumulation of genetic alterations that occur in the progression from a benign adenoma to carcinoma which include the activation of oncogenes or inactivation of tumor suppressor genes. The development and tolerance of genetic mutations is termed genome instability. Two forms of genetic instability that are important in the development of colorectal carcinoma are chromosomal instability and microsatellite instability. A third important pathway is widespread accumulation of epigenetic gene silencing.

# PATHOLOGY DEPARTMENT REPORT

## COLORECTAL CANCER PATHOLOGY/TUMOR MARKERS

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There are a number of genetic syndromes that predispose individuals to CRC, including familial adenomatous polyposis, attenuated familial adenomatous polyposis, juvenile polyposis syndrome, Cowden syndrome, serrated polyposis, Lynch syndrome, and familial colorectal cancer type X. Those syndromes with polyposis represent a small number of overall CRCs compared to those with nonpolyposis syndromes.

The spectrum of CRCs evaluated by pathologists ranges from very small early carcinoma arising in polyps removed at colonoscopy to large ulceration and obstructing tumors resected by surgeons (Fig. 1). The vast majority are adenocarcinomas, 75-80%. Eight to 10% are mucinous adenocarcinomas, 10% are serrated adenocarcinomas, 2% signet ring cell carcinomas and there are very other rare types. Pathologic evaluation of the specimen includes determining the type of tumor, the extent of disease in the specimen and the adequacy of the resection margins. The tumor size and depth of invasion into or through the bowel wall is determined on gross and microscopic examination. All lymph nodes in the specimen are submitted for microscopic examination to look for the presence of metastases. The extent of tumor invasion into or through the bowel wall or into other adjacent organs and lymph node involvement



Figure 1a: Large polypoid circumferential cancer of the splenic flexure.

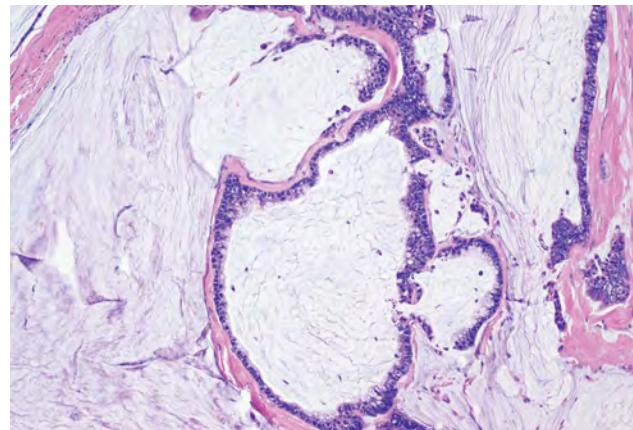


Figure 1b: Splenic flexure polyp confirmed to be a mucinous carcinoma.

are used to determine the pathologic stage. The degree of tumor differentiation (grade), presence or absence of vascular, lymphatic and perineurial invasion and tumor budding at the growing edge are assessed, as they have prognostic implications for the patient. Colorectal tumors are tested for microsatellite instability (MSI), which is characterized by widespread alterations in the sizes of

# PATHOLOGY DEPARTMENT REPORT

## COLORECTAL CANCER PATHOLOGY/TUMOR MARKERS

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repetitive DNA sequences. This alteration is due to defective DNA mismatch repair (MMR) and results in markedly increased rates of mutations in DNA coding sequences. MSI is present in 10 to 15% of CRCs. These tumors occur more often in the right colon, are exophytic or polypoid, are mucinous type or have a mucinous component, signet ring cell or poorly differentiated pattern, and have well circumscribed margins. They may invade deeply but are less likely to show lymph node metastases. MSI CRCs are associated with an overall better prognosis.

Most often MSI is due to an acquired alteration called hypermethylation of the promoter region of the MLH1 gene. In these cases, the tumors occur most often in the right colon and in women over the age of 70 years. Lynch syndrome patients have inherited defects in at least one of the family of mismatch repair enzymes, which lead to MSI and an accumulation of mutations in genes that control pathways of tumor progression. Lynch syndrome is an autosomal dominant condition and the most common form of hereditary colon cancer. Patients do not develop large numbers of polyps, but when polyps occur, they progress rapidly from adenoma to carcinoma. Patients develop colon cancer at a younger age, usually less than 60 years, more often in men and occur in the left colon and rectum. These patients

are also prone to develop cancers in other organs including the endometrium, stomach, small intestine, ovary, pancreas, ureter and renal pelvis, biliary tract and brain.

Testing for MSI by molecular testing or mismatch match repair deficiency by immunohistochemistry provides valuable prognostic information. Studies have shown the MMR deficiency is predictive of good outcome and identifies patients who might not benefit from certain chemotherapy regimens. Further studies can be undertaken to determine whether a mismatch repair deficient tumor is due to sporadic MLH1 methylation or due heritable Lynch syndrome. This is important for future screening of the patient and for evaluation of family members, who may also have the syndrome.

Other molecular alterations are assessed in CRCs that have metastasized to other organs, such as the liver or lung, to determine patient eligibility for newer targeted immunotherapy. Testing for KRAS and NRAS mutations are routinely performed on metastatic CRCs, and, when mutations are present, predict a lack of response to anti-epidermal growth factor receptor (EGFR) therapy.

# COLORECTAL CANCER PREVENTION, SCREENING, AND TREATMENT

Leigh H. Nadler, MD  
and Scott A. Holekamp, MD

**C**olorectal cancer is the 3rd most common cause of cancer death in the United States in females, and the 2nd leading cause of death in males. It is estimated that approximately 145,600 new cases of large bowel cancer are diagnosed annually in the United States, including 101,420 colon and 44,180 rectal cancers. Approximately 51,020 Americans are expected to die of large bowel cancer each year. Fortunately colorectal cancer mortality has been progressively declining since 1990, at a rate of 1.7-1.9% per year. Despite the decline in mortality, the incidence of colorectal cancer (predominantly left-sided colon and rectal cancers) in females and males under the age of 50 have been steadily increasing at a rate of 2.1% per year from 1992 through 2012.

Over 86% of those diagnosed under age 50 are symptomatic at diagnosis, which is associated with more advanced stage and poorer outcomes. Screening for colorectal cancer is recommended at age 45-50 for the general population and earlier with a family history of colorectal cancer or polyps or history of ulcerative colitis. Other possible indications include history of abdominal radiation, and history of breast or gynecologic cancer.

Screening has been shown to detect asymptomatic early stage malignancy and improve mortality and is advocated by major societies and preventive care organizations.

Typical symptoms and signs of colorectal cancer include GI bleeding, change in bowel habits, abdominal or rectal pain, unexplained iron deficiency anemia, abdominal or rectal mass. Obstructive symptoms (abdominal pain, distention, absence of bowel movements) may occur with "apple core" tumors. Rectal cancer can cause tenesmus, rectal pain, rectal bleeding, and decreased caliber of stools.

Diagnosis is most common by colonoscopy, followed by CT scan, CT colonography, or barium enema. Other screening methods include fecal occult blood test and Cologuard (DNA stool testing).

Once a colon cancer is detected, further evaluation and staging include complete colonoscopy, CT scan chest, abdomen and pelvis, and CEA level. A synchronous colon cancer has been reported in up to 4% of patients and synchronous polyps in 30-50%. Preoperative CEA level is an independent predictor of overall survival in stage I to III colon cancer. For rectal cancer, additional studies may include MRI pelvis, PET-CT scan, and rectal ultrasound.

## COLORECTAL CANCER PREVENTION, SCREENING, AND TREATMENT

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Surgical resection is the only curative treatment for localized colon cancer. Resection includes the primary tumor, the vascular pedicles, and the lymphatic drainage nodes. Patients with complicated disease (obstruction, perforation) may require a staged approach to resection.

Most colorectal surgical resections can be performed laparoscopically. This approach, compared to open surgery includes faster

recovery, shorter length of hospitalization, less postoperative pain with no detrimental impact on recurrence or survival. Enhanced Recovery After Surgery, or ERAS is instituted for all patients undergoing colorectal surgery. This includes pre, intra, and post-operative medications, dietary measures and other methods that decrease surgical site infection and improve the postop course for patients with decreased use of opioids and shortened length of stay. Oncologic outcomes, including number of lymph nodes harvested, disease recurrence, and overall survival are comparable to those achieved with an open approach. Patients with node positive disease can often begin postoperative chemotherapy sooner after laparoscopic surgery. There is a direct relationship between the number of lymph nodes evaluated after resection and survival. Resection of few or than 12 lymph nodes is a high risk feature for stage II colon cancer, which increases the risk of recurrence to that of stage IIIA disease. Guidelines recommend that at least



Scott A. Holekamp, M.D. and Leigh H. Nadler, M.D.

## COLORECTAL CANCER PREVENTION, SCREENING, AND TREATMENT

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12 lymph nodes be assessed for adequate staging. At St. Clair Hospital, all patients treated surgically have over 12 lymph nodes retrieved.

The surgical procedures performed include right hemicolectomy, extended right hemicolectomy, left hemicolectomy, sigmoid resection, low anterior resection, abdominal perineal resection with colostomy, ultra low anterior resection with transanal TME (total mesorectal excision), total abdominal colectomy, total proctocolectomy. DaVinci robotic laparoscopic surgery is often used at St. Clair Hospital for the surgical treatment of mid and low rectal carcinoma and select colon cancers.

At St. Clair Hospital, we have a multi disciplinary team approach to rectal cancer that includes input from medical oncology, radiation oncology, radiology, pathology, and colorectal surgery. Many mid and low rectal cancer patients require neo-adjuvant

(preoperative) chemotherapy and radiation, followed by surgery. Our patients are treated according to national guidelines and have excellent survival rates.

In 2018, there were 62 colon cancers and 26 rectal cancers diagnosed at St. Clair Hospital. Most rectal cancer patient is received preoperative neo-adjuvant chemotherapy and radiation. 100% of all colon resections had at least 12 regional lymph nodes removed and pathologically examined. In addition, adjuvant chemotherapy was considered and administered within 4 months in 100% of patients with a diagnosis of stage III (lymph node positive) colon cancer.

We plan to continue a multi disciplinary team approach to colon and rectal cancer treatment at St. Clair Hospital as we move into the future and hope to keep survival rates above the national average.



## COLORECTAL CANCER CURRENT TREATMENTS; TARGETED THERAPIES; IMMUNOTHERAPY

**Robert VanderWeele, M.D.**

Medical Oncology

### Treatment of Colon and Rectal Cancer

Management of colorectal cancer (CRC) depends on the stage at diagnosis and pathological characteristics of the cancer. Fortunately, most patients with CRC are diagnosed at an early stage (i.e., potentially curable). Staging of CRC is based on the American Joint Committee on Cancer (AJCC) TNM staging system. "T" (tumor) is based on the depth or degree of invasion of the primary tumor into the colon wall. "N" (node) is whether any regional lymph nodes are involved with cancer. "M" (metastasis) is whether there is any radiographic evidence of distant spread to other organs, such as the liver or lungs.

Stage I CRC is defined as a tumor with invasion into either the first or second layer of the colon wall with no evidence of lymph node or distant metastatic spread, (T1 or T2, and N0M0). Stage II CRC has invasion into the 3rd or 4th layer of the colon wall, again with no lymph node or distant metastatic spread, (T3 or T4, and N0M0). Stage III colorectal tumors have evidence of spread to the regional lymph nodes but no distant metastatic spread, and they can have any degree of invasion into the colon wall. Stage IV disease has evidence of distant metastatic spread of cancer to other organs. According

to the most recent SEER data for years 2009 through 2015, 39% of patients had Stage I or II CRC at the time of diagnosis. 34% of patients had Stage III disease at diagnosis and 22% had Stage IV disease at diagnosis. In 2018, of the 88 patients diagnosed with CRC at St. Clair Hospital, approximately 37% of patients were Stage I at diagnosis. 25% of patients were stage II, 17% of patients had stage III and about 15% patients had Stage IV cancer at the time of their diagnosis.

Surgery is the only curative treatment of early stage colon cancer. Some patients are also recommended chemotherapy after surgery to improve their chance of cure. For the vast majority of patients with colon cancer, radiation is not part of their treatment regimen. Stage I colon cancer is treated with surgery alone, no chemotherapy is recommended. Cure rates are greater than 90% for these patients. For stage II colon cancer, we divide patients into "low risk" and "high risk" based on certain clinical and pathological features that have been associated with a worse prognosis and increased risk of cancer recurrence. These characteristics are a T4 primary tumor, high-grade or poorly differentiated histology, lymphovascular or perineural invasion, less than 12 lymph nodes removed

# COLORECTAL CANCER CURRENT TREATMENTS; TARGETED THERAPIES; IMMUNOTHERAPY

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during surgery, tumor deposits outside the lymph nodes, and tumor perforation or obstruction of the bowels. Based on these characteristics some patients with stage II cancer would benefit from chemotherapy after surgery. All patients at St. Clair Hospital have their pathology specimens thoroughly examined for these characteristics to aid in our treatment decisions. Spread to regional lymph nodes also increases the risk of distant micro-metastatic spread, therefore Stage III patients are recommended chemotherapy after surgery to improve their cure chances. For the past 15 to 20 years patients have been recommended 6 months of chemotherapy after surgery. More recent data from a clinical trial published in 2018 indicate that some patients with less aggressive appearing stage II or stage III cancer can be treated with only 3 months of adjuvant chemotherapy. Standard chemotherapy includes fluorouracil with or without oxaliplatin. Many other drugs and combinations have been tested over the past several decades but have failed to show a survival benefit.

Localized rectal cancer is initially treated different than colon cancer. Local recurrence of cancer after surgery is higher for rectal cancer than colon cancer. Because of this, radiation is an important component of

treatment of localized rectal cancer. Patients who Stage II or Stage III rectal cancer based on their workup with CT scans and MRI or ultrasound, are recommended a combination of chemotherapy and radiation prior to surgery. After surgery, most patients are recommended another 4 months of chemotherapy. Patients with Stage I rectal cancer can be treated with surgery alone. Despite no significant changes in our management of localized CRC over the past 15 years, there have been major advances in the treatment of metastatic colorectal cancer during this time. In the era when fluorouracil (5FU) was the sole active agent, overall survival was about 12 months. In the modern era, the average median survival duration is now approaching 3 years, with five-year survival rates approaching 20 percent. These improvements have been seen mainly because of the availability of new active agents, which include conventional cytotoxic agents other than 5FU, biological agents targeting angiogenesis and the epidermal growth factor receptor, and immunotherapy. There are now nine different classes of agents available for treatment of metastatic colorectal cancer.

The optimal way to combine or sequence the various approved drugs for metastatic

# COLORECTAL CANCER

## CURRENT TREATMENTS; TARGETED THERAPIES; IMMUNOTHERAPY

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CRC is continually being investigated. Currently, initial treatment decisions are aided by key characteristics of the tumor. Cells have signaling pathways that are important in regulating normal cellular function. Mutations or changes in these signaling pathways can drive cancer and predict response or confer resistance to certain drugs. Mutations in the BRAF or RAS pathways have implications in prognosis and treatment for metastatic CRC. Also important is the evaluation of several "mismatch repair genes". These genes are responsible to correct mistakes made during normal DNA replication.

In terms of traditional cytotoxic chemotherapy options, 3 drugs are approved and used for metastatic CRC. Fluorouracil (either as an intravenous or pill form), oxaliplatin and irinotecan. The most common approach is to combine either oxaliplatin or irinotecan with fluorouracil. Recent data show an increased response rate by using all 3 drugs combined, but there is increased toxicity with this approach, most patients are not suitable for this combination because of the combined side effects.

The development of a blood supply is a necessary prerequisite for tumor growth. The dominant factor controlling angiogenesis

is vascular endothelial growth factor (VEGF). Inhibition of VEGF by a variety of methods produces a marked antitumor response. The addition of bevacizumab, a VEGF inhibitor, has shown improved response rates and survival rates for patients when used in the first line combined with chemotherapy. Clinical trials have also shown benefit of continuing bevacizumab in the second line after a patient's cancer has grown on the first line chemotherapy plus bevacizumab combination. There is no accepted biological or molecular marker to predict response or resistance for VEGF inhibitors.

In metastatic CRC, mutations in the RAS pathway confer resistance to anti-EGFR therapy. Activating mutations in the RAS pathway are found in up to 40% of metastatic CRC patients. Patients with BRAF mutated tumors are also unlikely to respond to anti-EGFR therapy. For patients with wild-type (i.e., normal) BRAF and RAS, then anti-EGFR antibodies (cetuximab or panitumumab) have shown improved response rates and survival when added to chemotherapy in the first or second line of treatment. Patients who have a BRAF mutation can be treated with a BRAF inhibitor in combination with a MEK inhibitor, or anti-EGFR antibody, or a combination of all three drugs. Currently these options are

## COLORECTAL CANCER CURRENT TREATMENTS; TARGETED THERAPIES; IMMUNOTHERAPY

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approved in the second or third line of therapy for patients with BRAF mutated tumors.

Immunotherapeutic approaches to cancer therapy are based on the premise that the immune system plays a key role in surveillance and eradication of malignancy, and that tumors evolve ways to elude the immune system. Historically, CRC was considered non-immunogenic, that is, incapable of inducing immune-mediated tumor destruction. Recently it has been shown that CRC tumors that lack normal DNA mismatch repair mechanisms harbor more mutations and may express “foreign appearing” proteins on their cell surface that can be recognized by the immune system. Immune check point inhibitors such as pembrolizumab or nivolumab allow the immune system to react to these proteins and have shown improved progression free survival in metastatic CRC patients. Mutations in one of several DNA mismatch repair genes is found in 15 to 20 percent of all CRC and in 3.5 to 6.5 percent of metastatic CRC.

With the approval of these various drugs over the past 15 years we now have many different ways to treat metastatic CRC. In addition to

these FDA approved medications, patients at St. Clair Hospital have access to a number of clinical trials through our relationship with the UPMC Hillman Cancer Center. The future for metastatic CRC continues to get brighter as our understanding of the molecular drivers of cancer grows, as well as our knowledge of the interplay of the immune system and cancer.





## RADIATION THERAPY FOR RECTAL CANCER

**Felicia F. Snead, M.D.**

Clinical Assistant Professor of Radiation Oncology

The National Comprehensive Cancer Network (NCCN) reports in 2018 there were an estimated 43,000 new cases of rectal cancer diagnosed in the United States, with an estimated 50,600 deaths due to rectal and colon cancer. Colorectal is the fourth most frequently cancer diagnosis and the second leading cause of cancer death in the United States. Despite these statistics, there have been reported decreases in the rate of new diagnosed cases and deaths from colorectal cancer over the past 10 years. This encouraging data are likely due to the prevention efforts for earlier diagnoses via screening, as well as improvements in multi-disciplinary treatment options using innovations in surgery, systemic therapies and radiation therapy.

Radiation therapy uses ionizing radiation such as external beam photons, electrons, protons or implanted radioactive isotopes to kill cancer cells. In the setting of rectal cancer, external photon radiotherapy is an essential part of the multi-disciplinary treatment of rectal cancer which has invaded the muscular lining of the rectum or draining lymph nodes. For these patients, radiotherapy given simultaneously or concurrently with chemotherapy decreases the rate of cancer return or recurrence, improves surgical success and increases the rate of

survival or cure. Randomized studies have shown better results regarding side-effects, complete surgical success of removal and decreased rate of the return of disease to the pelvis when given before surgery compared to after surgery. However, the benefit of overall disease control and survival are present in either approach before or after surgery.

Radiation therapy technical advances have helped minimize toxicity and long-term side-effects. Intensity modulated radiation therapy (IMRT) is a technique which minimizes dose to nearby organs and decreases the likelihood of long-term side-effects in some select patients. It is a technique which allows preferential targeting of dose with simultaneous integrative boost (SIB), delivering a different dose to various areas in a single treatment. This allows for customized radiotherapy planning to address the extent of disease in select patients. We routinely use both of these techniques at the St. Clair Hospital Cancer Center, affiliated with UPMC Hillman Cancer Center.

For cases of advanced or metastatic disease, radiation therapy may also play a role in disease management. Radiation therapy is often used to control symptoms caused by rectal cancer locally in the pelvis such as

## RADIATION THERAPY FOR RECTAL CANCER

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pain, bleeding or urinary dysfunction. In cases where rectal cancer is outside of the pelvis, radiation therapy is also helpful to control symptoms such as pain, difficulty breathing or as part of the multi-discipline approach to control the further advancement of the disease. External photon beam radiation therapy is used routinely for these purposes and can be given in a short course fashion in coordination with systemic treatments such as chemotherapy. Specialized radioactive implant techniques such as radioembolization, often with chemotherapy can be delivered into the blood vessels feeding the tumor to directly address disease in the liver caused by rectal or colon cancer. Stereotactic body radiotherapy (SBRT) is an effective external beam technique which delivers high precision doses of radiation to areas of disease caused by rectal cancer such as the lung, liver and bone. Typically, SBRT is given in 3 to 5 treatments, which is a much shorter course than conventional external beam treatment which takes 5 to 6 weeks to deliver daily treatments. This treatment pairs well with systemic or chemotherapy options in settings of advanced disease to increase cancer control in those areas with minimal risk of injury to near organs. Our colleagues at the UPMC Hillman Cancer Center in Shadyside,

Pittsburgh, routinely perform these treatments and patients are referred if eligible.

To continue the best care possible within a multi-disciplinary approach, efforts are ongoing to soon offer SBRT here at St. Clair Hospital Cancer Center to allow access of this specialized radiotherapy for patients closer to home. The St. Clair Hospital Cancer Center is affiliated with and part of the UPMC Hillman Cancer Center, a National Cancer Institute (NCI) designated Comprehensive Cancer Center with access to the newest cancer treatments through clinical trials as well as standard advanced radiation therapy practices. Our department of Radiation Oncology is nationally accredited by the American College of Radiation Oncology (ACRO) which recognizes our routine practice of national standards of cancer treatment and patient safety. We look forward to continuing to offer the best cancer care with our multi-disciplinary team at the St. Clair Hospital Cancer Center to the community.



## NUTRITIONAL SERVICES REPORT

### Jean Lewis, MS, RD, LDN

Clinical Dietitian

#### **Nutrition and Cancer Prevention, Treatment and Recovery**

Research continues to confirm that eating a healthful diet plays a key role in cancer prevention and is very important for people diagnosed with cancer, both during and after cancer treatment. The American Institute for Cancer Research 2007 Guidelines for Nutrition and Cancer Prevention provide good advice regarding healthful eating for cancer prevention for all individuals, including cancer survivors. These guidelines are based on strong scientific evidence that shows that eating a healthful diet, along with regular physical activity, can promote health and reduce the risk of developing another cancer. The guidelines include the following suggestions for healthful eating.

#### **What Should I Eat?**

- Choose a diet with many types of plant-based foods. Try substituting legumes (dried beans and peas) for meat at some meals each week.
- Try to eat at least 5 servings a day of colorful fruits and vegetables, including citrus fruits and dark-green and deep yellow vegetables; these contain natural health-promoting substances called photochemicals.
- Include more high fiber foods, such as legumes and whole grain breads and cereals, daily.

- Limit high fat foods, particularly from animal sources. Choose lower fat milk and dairy products. Choose lower fat cooking methods, such as baking or broiling.
- Limit sugary foods and drinks.
- Choose salt-cured, smoked, and pickled foods less often.

#### **Action Plan**

- Achieve and maintain a healthful weight and be physically active.
- If drink alcohol, due so in moderation.
- Prepare and store food safely.

#### **Improving Surgical Outcomes with Immunonutrition**

Surgery creates unique nutrition needs that may not be met through a normal, balanced diet alone. Studies have shown that supplementation with an immunonutrition product can help the body prepare for, and recover from, surgery. Specifically, immunonutrition supplements contain key nutrients (omega-3, arginine, nucleotides) that modulate the immune and inflammation responses, gut oxygenation, and intestinal reperfusion after surgery. This can lead to a reduction in surgical wound complications, infections and hospital length of stay (LOS).

St. Clair Hospital did not have a pre- and post-surgery immunonutrition program

## NUTRITIONAL SERVICES REPORT

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when the literature showed that nutrition optimization can reduce postoperative complications and hospital length of stay. Based on study recommendations, St. Clair Nutritional Services implemented the supplementation of an immunonutrition drink, 2 bottles per day for **5 days before** colorectal surgery, as well as 2 bottles per day for **5 days after** colorectal surgery. This protocol began to be piloted at St. Clair Hospital February of 2018 and remains successful to date.

Nutritional Services also collaborated with the Enhanced Recovery After Surgery (ERAS) Task Force. ERAS is an acronym for **Enhanced Recovery After Surgery**, a set of “best practice” protocols used by the surgical team to help ensure a patient has the best possible outcome from their surgery. Important components of these protocols occur before, during, and after a procedure. Nutritional Services proposed integrating the use of an immunonutrition supplement along with other components of the Colorectal ERAS protocol. The ERAS Program has proven to successfully reduce surgical wound complications, infections, and hospital LOS for our patients undergoing colorectal surgery. The Task Force, comprised of surgeons, nurses, and quality specialists gave approval for the immunonutrition program. To facilitate the initiation of these

processes, we collaborated with St. Clair Health Information Specialists to create an electronic order for the immunonutrition supplement within the Colorectal ERAS Postoperative Order Set. This electronic order makes it easy for surgeons to order the supplement post-operatively. Additionally, our clinical dietitians provided staff education to clinicians within the surgeons’ offices, Nursing Unit 6E , and Nutritional Services regarding the supplement and the process for ordering to ensure compliance with the protocol. Finally, we created educational materials to be distributed to patients to reinforce messaging about the importance of pre- and postoperative nutrition for optimal outcomes.

Results of compliance audit showed:

- Almost all patients accepted and tolerated the nutritional supplementation.
- Almost all patients completed the full preoperative course of supplementation.
- No adverse effects on intra-operative blood glucose levels were observed (a concern of some members of the ERAS Task Force).

### References:

Academy of Nutrition and Dietetics Nutrition Care Manual 2019; Abbott Nutrition 2017



## ST. CLAIR HOSPITAL COMMUNITY OUTREACH, CANCER PREVENTION, AND SUPPORT PROGRAMS

### Megan Rhoades, RN, BSN

Oncology Nurse Manager and Community Coordinator

**S**t. Clair Hospital continues to provide diverse community outreach programs geared toward prevention, early detection, screening, and survivorship. Several of our programs are offered throughout the year to help members of our community address lifestyle changes to decrease their risk of cancer. St. Clair will continue to provide programs based on the information received in our community needs assessment.

#### FREE PROSTATE CANCER SCREENING PROGRAM

Prostate cancer continues to be one of the most frequently diagnosed cancers at St. Clair Hospital and within Allegheny County. Thus, in 2019, St. Clair continued to offer its well-received Prostate Cancer Screening Program for uninsured and underinsured patients over the age of 50. In September and October, 14 community members representing 11 ZIP Codes surrounding St. Clair Hospital were screened for prostate cancer. The program was offered in two parts: During Part 1, an educational seminar and open Q&A session with St. Clair urologist Kevin Bordeau, M.D. was offered. This seminar highlighted the latest information regarding prostate cancer screening and surveillance according to the American Cancer Society. Following the seminar, free PSA blood testing was provided to each attendee. Part 2 of the program provided participants a prostate examination and

one-on-one consultation with Dr. Bordeau to review PSA results. Follow-up and monitoring recommendations were given to each participant based on the results of the blood testing and physical examination.

#### WOMEN'S HEALTH AND WELLNESS AND FREE MAMMOGRAM EVENTS

Women's Health and Wellness Events were held in April and September of 2019. These programs provided free mammograms to low-income, under / uninsured women over the age of 40. Free transportation was provided, and a Spanish-speaking interpreter was on site. Registered nurses representing St. Clair Hospital provided health / wellness information regarding tobacco use, cessation and secondhand smoke as well as education regarding cancer screenings and prevention. Blood pressure screenings were also made available to patrons of this event. Also at these events, St. Clair nurses highlighted the importance of Human Papilloma Virus (HPV) vaccination and annual cervical screenings in light of currently low vaccination rates (approximately 40%) in Allegheny



## ST. CLAIR HOSPITAL COMMUNITY OUTREACH, CANCER PREVENTION, AND SUPPORT PROGRAMS

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County and cervical cancer rates which are higher in Washington County than the state and national averages. Approximately one quarter of the events' attendees had no prior mammogram or had last prior mammogram greater than five (5) years ago, and two-thirds of the attendees reported that without this free screening program, they would not have had an annual mammogram. This year, 92 mammograms (and follow-up testing, if necessary) were provided at no cost to the participants. The events were supported by the St. Clair Hospital Foundation.

### **COLON CANCER WELLNESS AND FREE SCREENING EVENT**

Colon Cancer remains to be a frequently diagnosed cancer in our service area. Thus, in March of 2019, St. Clair Hospital offered a free event for the community to educate themselves on colon cancer. A medical oncologist and a colorectal surgeon provided education on prevention of colon cancer, stages of cancer, and treatments. St. Clair staff provided free blood pressure screenings, educational material, dietary suggestions, smoking cessation, and spiritual counseling. This year, over 25 people attended the event and were privately screened to have a FIT test or a colonoscopy. The event was supported by the St. Clair Hospital Foundation and will continue for 2020.



### **RELAY FOR LIFE**

In June 2019, the American Cancer Society's (ACS) "Relay for Life" was held at Mt. Lebanon High School Stadium. St. Clair Hospital was represented by several St. Clair registered nurses, CNAs, secretaries and UPMC Cancer Center clinicians who provided health and wellness education related to cancer prevention/screening to include colorectal cancer screening; women's health and wellness; human papilloma virus (HPV) infections and HPV vaccination as a cancer prevention. SCH support groups were also highlighted to interested patrons. Sunscreen was distributed to over 150 attendees to increase awareness of skin cancer prevention.

# ST. CLAIR HOSPITAL COMMUNITY OUTREACH, CANCER PREVENTION, AND SUPPORT PROGRAMS

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## PSYCHOSOCIAL SUPPORT GROUPS AND SERVICES:

St. Clair Hospital continues to offer our community members affected by cancer and their caregivers many opportunities to find and maintain a needed network of support. Registered nurse facilitators work throughout the year to coordinate guest speakers and events to help individuals understand their diagnosis, develop coping strategies, and find friendship and strength throughout their treatment period and continue through their survivorship.

- The **General Cancer Support Group** welcomes patients and caregivers with all cancer types. This group meets at St. Clair Hospital on the second Thursday of every month.

- The **Breast Cancer Support Group** supports women and men who are newly diagnosed with breast cancer, as well as breast cancer survivors. This group meets at St. Clair Hospital on the third Monday of each month.
- The **Prostate Cancer Support Group** supports men who are newly diagnosed with prostate cancer, as well as the prostate cancer survivors. This group meets at St. Clair Hospital on the fourth Thursday of each month.
- The **Head and Neck Cancers Support Group** is provided through St. Clair's affiliation with UPMC CancerCenter and is held at the UPMC Cancer Center at Upper St. Clair. This group meets on the first Wednesday of each month.

- The **Caregiver Support Group** is for adults who are caring for a loved one with a chronic illness. Caregivers can connect with other individuals with similar experiences and utilize the resources of an experienced licensed professional counselor who facilitates the group meetings. This support group meets the 2nd Thursday of each month.
- St. Clair Hospital continues its sponsorship of a **Free Restorative Yoga for Cancer Patients and Their**



## ST. CLAIR HOSPITAL COMMUNITY OUTREACH, CANCER PREVENTION, AND SUPPORT PROGRAMS

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**Caregivers.** Classes are held monthly at St. Clair Hospital's Dunlap Conference Center and in 2019 over 100 community members and their primary caregivers or support person participated in this class.

- St. Clair Hospital assumed sponsorship for the 5 sessions of "**Look Good Feel Better**" workshops held at St. Clair Hospital. These small group sessions of 4-10 women offered self-care education and an opportunity for women facing cancer to share camaraderie with other women experiencing a similar journey. This program was attended by 20 women in 2019 and will continue to be offered in 2020.
- Also through our collaboration with the American Cancer Society, dedicated St. Clair Hospital volunteers maintained our **Free Wig Salon** with wig fitting appointments available Mondays through Fridays throughout the year. The salon serves approximately 50 women per year, and since its first fitting in March of 2013, the salon at St. Clair has provided over 455 wigs and educational resources to women in our community.
- **Threshold Singers** of the South Hills now volunteer their time here at St. Clair Hospital for our hospice patients. When invited, they visit in groups of two to four singers. Many of their songs

are composed by National Threshold Choir members to communicate simple, powerful feelings of peacefulness, love and comfort. For more information you can call 412.564.3664 or visit their website thresholdchoir.org.

- St. Clair Hospital remains one of a small group of institutions maintaining a full-time Spiritual Counselor on staff to provide emotional support and counseling to patients and families facing cancer and other life-threatening illnesses at the Hospital. This licensed counselor coordinates our "Distress Screening Program" for patients who have a cancer diagnosis and are being treated at St. Clair for their cancer or for other reasons. This program helps to identify patients who may need additional support and resources during a particularly stressful time in their cancer journey and ensures they receive those resources. In 2019, 524 patients were screened for distress.

Our health fairs, screening events, support group offerings are announced via flyers posted within the Hospital and in our SCH network provider offices, as well as on the St. Clair Hospital home page ([stclair.org/calendar](http://stclair.org/calendar)) and St. Clair Hospital Facebook page. Community members may also call 412.942.5082 for additional information regarding upcoming Community Outreach offerings in 2020.

## BREAST ONCOLOGY PROGRAM UPDATE

### Tara Grahovac, MD, and Raye Budway, MD

Breast Surgery

In 2019, the Breast Care Center and Breast Oncology Program at St. Clair hospital has continued to refine its team-based approach in the diagnosis and treatment of patients with breast cancer comparable with large academic centers within our region and across the country. Our physicians have traveled to visit our oncology partners at Mayo Clinic to learn more about program development from one of the nation's leading cancer centers, treating over 26,000 patients systemwide per year.

Here at St. Clair, we maintained our multidisciplinary breast cancer conferences where surgeons, oncologists, pathologists and radiologists collaborate on challenging patient cases, taking these to Mayo Clinic Tumor Board when their expertise is desired. We have been working to enhance our Lymphedema Program so that all patients undergoing axillary surgery may have access

to these services and streamlining procedures with the Breast Imaging Center to reduce turnaround time between diagnostic tests for our patients and improve

safety-related communication.

The Breast Imaging Center has improved for patient access to screening mammograms which are uniformly 3D, the modality preferred by the American Society of Breast Surgeons (ASBrS), at no added cost to our patients. St. Clair Breast Imaging Center will perform over 10,000 screening mammograms this year. Highlights in 2019 included two community breast cancer screening events for uninsured and underinsured women when our Breast Imaging team performed 55 mammograms in five hours. The center also added evening hours for screenings mammograms.

The year of 2019 also saw our second annual "Survivorship Saturday" event at the Crown Plaza South Hills. This event celebrates life after breast cancer and focuses on ongoing wellness. Moving into 2020 and beyond, we will strive to emphasize services not routinely seen within other community-based centers such as survivorship services and high-risk programs. ASBrS now states all women greater than 25 years old should undergo a formal breast cancer risk assessment. We see this as an opportunity to implement new risk assessment technology into our services here at St. Clair and to enhance care and education for women who are at high risk.



Raye J. Budway, M.D. and  
Tara L. Grahovac, M.D.

# ONCOLOGY REGISTRY REPORT

## Sarah Darby, RHIA, CTR

Oncology Registry Supervisor



- 1,104 cases were diagnosed or treated at SCH and accessioned by the Oncology Registry in 2018.
- As you will note from the Frequency table, the Five major sites/types for 2018 cases were: Breast (284 cases), Prostate (180 cases), Lung (148 cases), Colorectal (88 cases); and Urinary Bladder (41 cases).
- The Oncology Registry at St. Clair Hospital is staffed by one full-time Registry Supervisor, a full-time Registrar, and a standby Registrar--all of whom are credentialed Certified Tumor Registrars (CTR). An RHIA (Registered Health Information Administrator) works as an assistant in the Oncology Registry part-time coordinating Cancer Care Conference and facilitating continuing medical education credits for the medical and nursing staffs.
- Registry Staff performs case finding, abstracting, and lifetime follow-up and submits information to the Pennsylvania Department of Health and American College of Surgeons, Commission on Cancer, National Cancer Data Base (NCDB). The Registry provides accurate and timely data that are used for national and statewide cancer prevention and control, as well as special studies at St. Clair Hospital.
- Data are submitted monthly to the NCDB RQRS (Rapid Quality Reporting System) data reporting system as well as the Pennsylvania Department of Health. This report is utilized to ensure cases are treated within the National Quality Forum and NCCN (National Comprehensive Cancer Network) recommended treatment guidelines in a real time format.
- Annual 2019 submission to the National Cancer Database in June of 2019 and was awarded 100% error-free status qualifying St. Clair Hospital's Cancer Program for a Commendation by the American College of Surgeons.

# 2018 Frequency Report

Sarah Darby, RHIA, CTR

PRIMARY SITE	TOTAL # OF CASES (%)	AJCC STAGE (ANALYTIC CASES ONLY)										
		M	F	Alive	Exp	00	01	02	03	04	88	Unk
Tongue	8 [0.7%]	4	4	8	0	0	3	2	0	1	0	0
Salivary Glands	2 [0.2%]	1	1	2	0	0	0	1	0	0	0	1
Floor of Mouth	3 [0.3%]	2	1	3	0	0	1	1	0	0	0	0
Gum and Other Mouth	3 [0.3%]	1	2	3	0	0	0	0	0	1	1	0
Tonsil	12 [1.1%]	10	2	12	0	1	5	4	0	0	0	2
Oropharynx	1 [0.1%]	1	0	1	0	0	0	0	1	0	0	0
Hypopharynx	3 [0.3%]	3	0	3	0	0	0	1	0	1	1	0
Esophagus	10 [0.9%]	10	2	7	3	0	3	0	2	2	2	0
Stomach	19 [1.7%]	12	7	12	7	0	5	4	2	4	2	0
Small Intestine	6 [0.5%]	2	4	5	1	0	0	2	0	0	3	1
Colon Excluding Rectum	62 [5.6%]	36	26	60	2	0	23	14	12	9	3	1
Rectum & Rectosigmoid	26 [2.4%]	17	9	24	2	1	9	6	3	4	1	2
Anus, Anal Canal & Anorectum	5 [0.5%]	0	5	4	1	0	1	1	1	2	0	0
Liver & Intrahepatic Bile Duct	9 [0.8%]	8	1	4	5	0	2	0	2	2	1	1
Gallbladder	5 [0.5%]	2	3	2	3	1	0	0	0	4	0	0
Other Biliary	5 [0.5%]	2	3	2	3	0	0	1	1	1	1	1
Pancreas	33 [0.3%]	17	16	21	12	0	7	2	3	15	4	2
Nose, Nasal Cavity & Middle Ear	1 [0.1%]	0	1	1	0	0	0	0	0	0	1	0
Larynx	8 [0.7%]	7	1	8	0	0	3	3	0	1	0	0
Lung and Bronchus	148 [13.4%]	69	79	99	49	0	37	14	28	54	7	1
Soft Tissue	1 [0.1%]	1	0	1	0	0	1	0	0	0	0	0
Melanoma - Skin	7 [0.6%]	2	5	7	0	0	6	0	0	1	0	0
Other Non-Epithelial Skin	1 [0.1%]	0	1	1	0	0	0	0	0	1	0	0
Breast	284 [25.7%]	3	281	280	4	41	149	22	9	7	13	1
Cervix Uteri	3 [0.3%]	0	3	2	1	0	0	0	0	2	0	1
Corpus & Uterus, NOS	14 [1.3%]	0	14	14	0	0	4	1	2	0	1	0
Ovary	11 [1.0%]	0	11	8	3	0	0	0	1	8	0	0
Vagina	1 [0.1%]	0	1	1	0	0	0	1	0	0	0	0
Vulva	2 [0.2%]	0	2	2	0	0	1	0	0	0	0	0
Other Female Genital	4 [0.4%]	0	4	4	0	0	0	0	0	0	3	1
Prostate	180 [16.3%]	180	0	177	3	0	54	77	43	4	1	1
Testis	3 [0.3%]	3	0	3	0	0	3	0	0	0	0	0
Penis	1 [0.1%]	1	0	1	0	0	0	1	0	0	0	0
Urinary Bladder	41 [3.7%]	30	11	36	5	0	12	4	2	1	1	0
Kidney & Renal Pelvis	28 [2.5%]	15	13	23	5	0	16	1	5	1	2	1
Ureter	4 [0.4%]	2	2	3	1	0	1	1	0	0	0	0
Other Urinary Organs	2 [0.2%]	1	1	2	0	0	0	0	0	0	2	0
Thyroid	39 [3.5%]	13	26	38	1	0	31	3	1	2	0	2
Other Endocrine Inc Thymus	2 [0.2%]	1	1	2	0	0	0	0	0	0	2	0
Hodgkin Lymphoma	3 [0.3%]	2	1	1	2	0	0	0	1	1	0	1
Non-Hodgkin Lymphoma	42 [3.8%]	25	17	38	4	0	12	6	8	10	2	1
Myeloma	21 [1.9%]	11	10	17	4	0	0	0	0	0	21	0
Leukemia	10 [0.9%]	6	4	7	3	0	0	0	0	0	9	0
Mesothelioma	1 [0.1%]	1	0	0	1	0	0	0	1	0	0	0
Miscellaneous	30 [2.7%]	17	13	16	14	0	0	0	0	0	27	0
<b>TOTAL</b>	<b>1,104</b>	518	586	965	139	44	389	173	128	139	111	21