MAKING OUR COMMUNITIES BETTER

Saint Anne's Hospital Regional Cancer Center

Esophageal Cancer Study 2016

Commission on Cancer® ACCREDITED PROGRAM

A QUALITY PROGRAM OF THE AMERICAN COLLEGE OF SURGEONS

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Radiation Oncology provided in collaboration with Brigham and Women's Radiation Oncology Associates

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From the Cancer Registry:

The Cancer Registry is an information system designed for the collection, management, and analysis of data on persons with a diagnosis of a cancer. Cancer Registrars are data management experts who work closely with physicians, administration, and other health care professionals to provide support for cancer program development, ensure compliance of reporting standards, and serve as a valuable resource for cancer information with the ultimate goal of preventing and controlling cancer. The Cancer Registrar is involved in managing and analyzing clinical cancer information for the purpose of education, research, and outcome measurements

Maintaining a Cancer Registry ensures that health officials have accurate and timely information, while ensuring the availability of data for treatment, research and education. Cancer Registries strictly maintain confidentiality of patient information and related medical data. All aggregate data are submitted, analyzed and published without any patient identifiers

SAH Cancer Registry Staff

Kimm Duclos, RHIT, CTR – Cancer Program Coordinator

Jane O'Connell, CTR – Support Specialist

Diana Hughes, CTR - Abstractor

Dawn Loomis – Abstractor

Audrey Potts – Data Specialist

Cancer Program Practice Profile Report (CP3R)

Breast, Colon and Lung Measures		2012	SAH 2013	2014
BREAST	Tamoxifen considered or administered within 1 year of diagnosis for AJCC T1cN0M0, or stage II or III ER and/or PR positive cancer [HT]	94.6%	100%	
	Radiation administered within 1 year of diagnosis for women <70 with breast conserving surgery [BCS/RT]	97.2%	98.3%	100%
	Combination chemo considered or administered within 4 months of diagnosis for women <70 with AJCC T1CN0M0, or stage II or III ER/PR negative breast cancer [MAC]	100%	88.9%	100%
COLON	At least 12 regional lymph nodes removed and pathologically examined for resected colon cancer [12RLN]	50%	100%	
	Chemo considered or administered within 4 months of diagnosis for patients <80 with lymph node positive colon cancer [ACT]	100%	100%	100%

SAINT ANNE'S HOSPITAL COMPARATIVE CASE DISTRIBUTION 2016

		Saint Anne's 2016		2016 ACS National Figures
SITE	**N**	**%**	**N**	**%**
Breast	201	21	249,260	15
Lung	163	17	224,390	13
Prostate	103	11	180,890	11
Colon	47	5	95,270	6
Rectum & Rectosigmoid	23	3	39,220	2
Lymphomas Hodgkin's Dis	31 4	3 <1	72,580 8,500	4 <1
Stomach	27	3	26,370	2
Pancreas	22	2	53,070	3
Esophagus	14	1	16,910	1
Oral Cavity & pharynx * Tongue Pharynx Other oral cavity	25 8 8 9	3	48,330 16,100 16,420 15,810	3
Thyroid	31	3	64,300	4
Larynx	12	1	13,430	<1
Female Genital System Corpus uteri Cervix uteri Other Gyn	57 37 6 14	6	105,890 60,050 12,990 32,850	6
Brain & CNS	10	1	23,770	1
Hematopoietic System Leukemia Myeloma	31 21 10	3	90,470 60,140 30,330	5
Bladder	24	3	76,960	5
Kidney & renal pelvis Liver Gall Bladder & Biliary	25 10 6	3 1 <1	62,700 39,230 11,420	4 2 <1
Melanoma	9	1	76,380	5
All Others	67	7	All others & unknown primary** 105,870	6
Total	942	(100)	1,685,210	(100)

Included are in-situ and unstageable cases.

Included are analytic cases, those cases first diagnosed at SAH and/or received all or part of the first course of therapy at SAH and/or the radiation/medical oncology satellite at Dartmouth.

*Oral Cavity includes mouth, tongue, lip, salivary gland, gum and other mouth.

** **ACS** figure includes unknown primary and all others Excluded are the non-analytic cases, patients diagnosed elsewhere and received all of their 1st course of therapy elsewhere (recurrent cases).

Cancer Registry Data for 2016

New Cases Accessioned in 2016	**942**
Analytic	**857**
Diagnosis and all or part of 1st course of treatment at SAH	522
Diagnosis elsewhere and all or part of 1st course of treatment at SAH	305
Diagnosis only at SAH	30
Non-Analytic	
Treatment for recurrence or metastasis only	85
Total number of Analytic Cases in the Registry since Reference Year 1995	**20,448**
Total living patients in follow-up	8,771
Percentage of successful follow-up (target 90%)	91%
Multidisciplinary Case Conferences	**59**
Lung Case Conferences (with BWH surgeon in attendance)	10
General Case Conference	41
DFCI Tumor Boards and Lectures	8
Clinical Trial Patients	
Number of patients entered on/referred for clinical trial	78
Cancer Screenings	
Screening Mammography	4,971
Screening Colonoscopies	5,692
Free Skin Screening	70

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Esophageal Cancer Treatment in 2016
Comparison of Patients at Saint Anne's Hospital versus National Averages

By Jason Lee, MD, Radiation Oncologist

Esophageal cancer is an increasing problem in the United States. While squamous cell carcinomas have decreased, adenocarcinomas of the esophagus and esophagogastric junction (EGJ) are rising in incidence, particularly among while males. Gastroesophageal reflux disease and the presence of Barrett's esophagus are major risk factors for esophageal cancer. Most patients present with dysphagia and have locally advanced and/or metastatic disease at diagnosis. Treatment for esophageal cancer requires a high degree of multidisciplinary effort, and can include endoscopic resection, chemotherapy, radiation therapy, and/or esophagectomy. Saint Anne's Hospital (SAH) benefits from a close association with many surgical/oncologic centers of excellence including SEMC, BWH/DFCI, MGH, and BMC.

Most patients are diagnosed with esophageal cancer after undergoing upper endoscopy for dysphagia, weight loss, or other symptoms of epigastric distress. Some patients have previously diagnosed Barrett's esophagus and undergo surveillance endoscopies and random biopsies to detect dysplasia or early cancers. Initial staging evaluation of esophageal cancer typically begins with full-body CT scans. In cases without metastatic disease and where surgery is under consideration, PET/CT scan and endoscopic ultrasound are also performed to further clarify clinical staging. Patients with very early clinical stage (stage I, T1a/T1b) cancer may be candidates for endoscopic mucosal resection or other local ablative therapies. This scenario is uncommon in this country where screening is not performed, and indeed, no patients were treated in this manner at SAH. Patients with T2-T4 or node positive disease are typically treated with chemoradiation therapy, with or without esophagectomy. Patients with metastatic disease are managed with systemic therapy or other palliative measures.

In 2016, there were 18 new cases of esophageal cancer at SAH. One (6%) patient had stage I disease, 3 (17%) patients had stage II disease (T2-3 primary node-negative disease, early T1-2 primary with 1 or 2 positive nodes), and 5 (28%) patients had stage III disease (involvement of multiple positive nodes and/or more invasive primary tumor). Nine (50%) of patients had metastatic disease at presentation. The corresponding incidences according to the National Cancer Database (2003-2009) are 13%, 24%, 24%, and 38% for stage I, II, III, and IV disease, respectively.

NCCN Guidelines for Esophageal and Esophagogastric Junction Cancers divide treatment algorithms into those for squamous cell carcinoma and those for adenocarcinoma. Similar to national trends, only 2 of these 18 cases had squamous cell histology. One patient had a proximal cancer and had previously received treatment for lung and breast cancer. The second patient had a locally advanced distal cancer with extensive adenopathy. Both patients were treated per NCCN Guidelines with definitive chemoradiation therapy. At SAH, chemotherapy administered during radiation therapy has been a combination of paclitaxel and carboplatin. This is a "preferred regimen" for definitive therapy for squamous cell histology but not considered category 1. Both patients are alive and without evidence of cancer.

NCCN Guidelines Version 2.2017
Esophageal and Esophagogastric Junction Cancers

HISTOLOGY	TUMOR CLASSIFICATION[g]	PRIMARY TREATMENT OPTIONS FOR MEDICALLY FIT PATIENTS
Squamous cell carcinoma	cT1b-T4a, N0-N+[o]	Preoperative chemoradiation[w,x,ll] (non-cervical esophagus) (RT, 41.4-50.4 Gy + concurrent chemotherapy or Definitive chemoradiation [w,x] (only for patients who decline surgery) (recommended for cervical esophagus) (RT, 50-50.4 Gy + concurrent chemotherapy) or Esophagectomy [c,d,t,u] (non-cervical esophagus) (T1b/T2, No low-risk lesions: <2 cm, well differentiated)
	cT4b[p]	Definitive chemoradiation w,x (RT, 50-50.4 Gy + concurrent chemotherapy) Consider chemotherapy alone in the setting of invasion of trachea, great vessels, or heart[w] See Palliative Management (ESOPH-10)

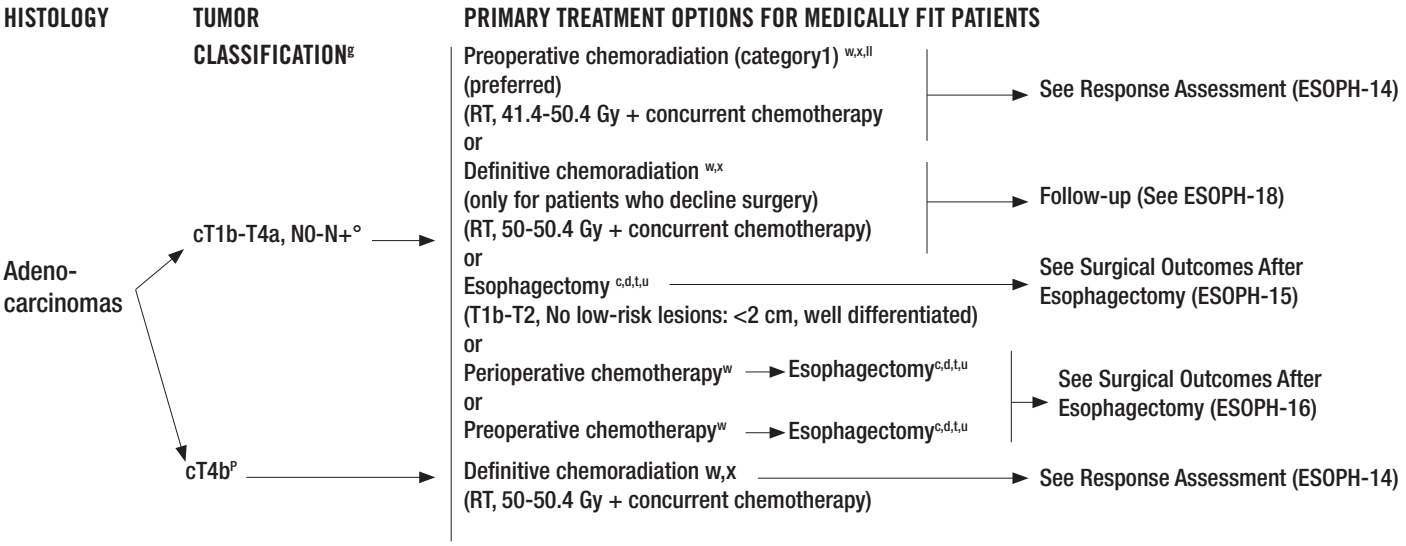
Continued on next page

The remaining 16 patients were diagnosed with adenocarcinoma of the distal esophagus and/or EGJ. Nine of the 16 patients had metastatic disease at presentation, and the remaining 7 patients had nonmetastatic disease. Two patients had stage II disease, and 4 patients had stage III disease. One patient had stage I disease, but was medically inoperable due to co-existing hepatocellular carcinoma.

NCCN Guidelines for stage cT1b-T4aN0-N+ adenocarcinomas allow for a variety of primary treatment options. These can include preoperative chemoradiation therapy followed by esophagectomy, chemoradiation therapy alone, or perioperative chemotherapy as commonly administered in Europe. Patients with unresectable nonmetastatic disease are advised to receive definitive chemoradiation therapy alone. Six patients completed chemoradiation therapy with concurrent paclitaxel and carboplatin. For adenocarcinoma, paclitaxel and carboplatin is considered a "preferred regimen" with category 1 evidence according to the CROSS clinical trial (NEJM 2012). Four patients also underwent esophagectomy following neoadjuvant chemoradiation therapy at Boston tertiary care centers. One patient who received chemoradiation therapy alone died of unclear causes 3 months after treatment. One patient who underwent surgery died of early recurrence of cancer also 3 months after treatment. Five of 7 patients with nonmetastatic disease are alive and doing well (one patient under treatment for suspected persistent disease), including 1 patient who refused all treatment.

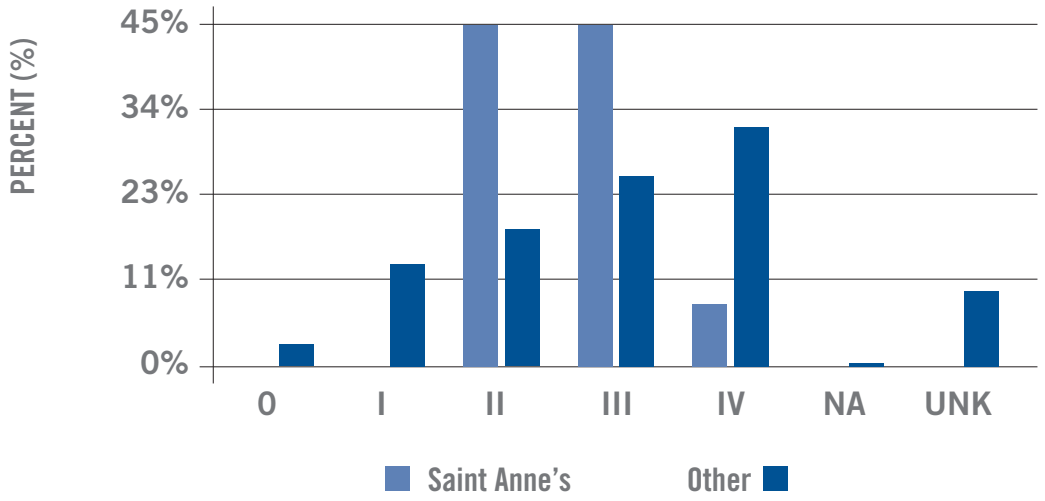
The outcome for patients with metastatic disease is much less favorable. Historically, about 30-40% of patients with esophageal cancer have stage IV disease at presentation. In 2016, 50% of patients at SAH had metastatic disease at diagnosis, all with adenocarcinoma histology. HER2 testing is advised by NCCN Guidelines Principles of Pathologic Review in metastatic cases. Seven of the 9 patients had HER2 testing, and 1 was positive. The other 2 patients did not receive systemic therapy and therefore HER2 status was unnecessary. NCCN Guidelines for Metastatic disease advise systemic therapy for patients with good performance status, and best supportive care for all others. Preferred regimens for metastatic esophageal cancer include fluoropyrimidine and cisplatin (category 1), fluoropyrimidine and oxaliplatin, or three drug combinations with docetaxel. Trastuzumab is recommended for HER2 overexpressing cases. Five patients were treated initially with FOLFOX, including 1 who also received trastuzumab. The other two patients received paclitaxel with carboplatin ("Other Regimen," according to the NCCN) and radiation therapy for local symptoms, either concurrently or sequentially. Only 2 of the 9 patients with metastatic disease are still alive, approximately 11 to 12 months from diagnosis.

In summary, esophageal cancer patients at SAH were diagnosed at more advanced stages compared with national averages. Evaluation and treatment of these patients are consistent with NCCN Guidelines. NCCN Guidelines do provide several primary treatment options for locally advanced adenocarcinoma of the esophagus, the most common nonmetastatic clinical scenario. The practice pattern at SAH typically involves chemoradiation therapy (with concurrent paclitaxel and carboplatin) often followed by esophagectomy. Patients with metastatic disease are generally offered FOLFOX as first line therapy. Survival after diagnosis of esophageal cancer is generally unfavorable. In previous cases diagnosed at SAH between 2003-09, 2 year and 5 year survival was 31% and 14%. Average 2 year and 5 year survival reported by the NCDB during the same time period was 34% and 19%. This disparity is likely based on the advanced stage at diagnosis at SAH compared with patients reported by the NCDB. In addition to improving survival outcomes, maintaining quality of life and reducing treatment related toxicities are priorities for our patients who endure aggressive therapies for esophageal cancer.


HISTOLOGY
TUMOR CLASSIFICATION[g]
PRIMARY TREATMENT OPTIONS FOR MEDICALLY FIT PATIENTS
Adeno-carcinomas
cT1b-T4a, N0-N+°
Preoperative chemoradiation (category1) [w,x,ll]
(preferred)
(RT, 41.4-50.4 Gy + concurrent chemotherapy
or
Definitive chemoradiation [w,x]
(only for patients who decline surgery)
(RT, 50-50.4 Gy + concurrent chemotherapy)
or
Esophagectomy [c,d,t,u]
(T1b-T2, No low-risk lesions: <2 cm, well differentiated)
or
Perioperative chemotherapy[w] Esophagectomy[c,d,t,u]
or
Preoperative chemotherapy[w] Esophagectomy[c,d,t,u]
See Response Assessment (ESOPH-14)
Follow-up (See ESOPH-18)
See Surgical Outcomes After Esophagectomy (ESOPH-15)
See Surgical Outcomes After Esophagectomy (ESOPH-16)
cT4b[p]
Definitive chemoradiation w,x
(RT, 50-50.4 Gy + concurrent chemotherapy)
See Response Assessment (ESOPH-14)

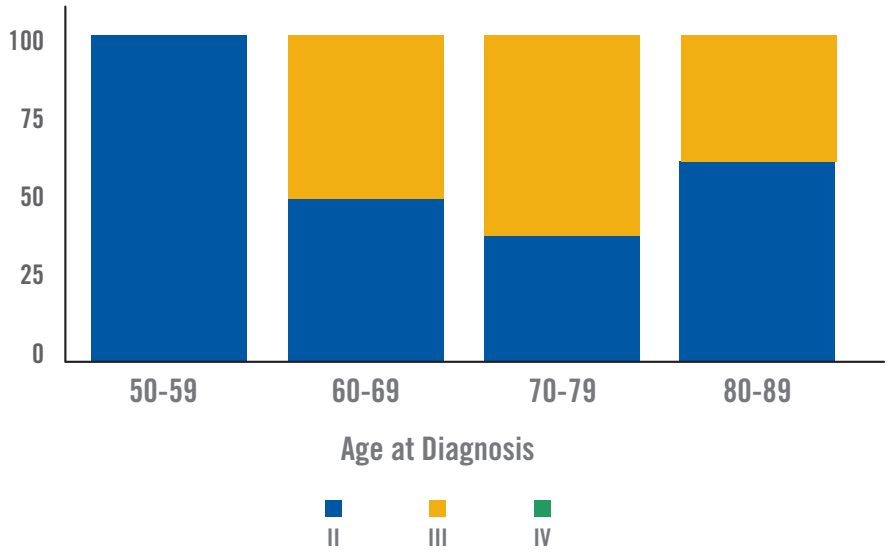
Stage of Esophagus Cancer Diagnosed in 2014
Saint Anne's Hospital

vs. Comprehensive Community Cancer Program Hospitals in All States
Combination: Class of Case 10-14 and Class of Case 20-22 – Data from 540 Hospitals



	0	I	II	III	IV	NA	UNK
SAH			45%	45%	9%		
Other	3%	13%	18%	25%	30%	0%	10%

Age Group by Stage of Esophagus Cancer Diagnosed in 2014
Combination: Class of Case 10–14 and Class of Case 20–22



"Taking It Head On": An oncology nurse-led team approach to decrease treatment delays and hospitalizations in head and neck cancer patients

Presented as an abstract, poster presentation and podium presentation at the 2016 International Congress of the Oncology Nursing Society in San Antonio, TX, by Susan P. O'Brien, CNP; Helena C. Viveiros, RN, BSN OCN; and Yvette Rosa, RN, BS, OCN, Saint Anne's Hospital Regional Cancer Center

Patients with head and neck malignancies frequently have complex psychosocial and medical issues. It is imperative to provide ongoing evaluation and resources to this high-risk population.

In April 2014, oncology nurses in our practice identified concerns about profound treatment-related sequelae which resulted in significant treatment delays and hospitalizations. This effect was even more pronounced when the patient was receiving concomitant radiation and chemotherapy.

This premise was validated when nursing initiated a 1.5-year review of our morbidity and mortality records. This review of 74 consecutive patients revealed a 59% risk of significant treatment delay (> 3 days), with or without hospitalization.

Research has shown nursing interventions can help minimize treatment delays and hospitalizations. In June 2014, oncology nurses in our facility created a multi-disciplinary team which included social workers, dietitians, speech therapists, and palliative care nurses, as well as the treating physicians. Our purpose was to identify interventions to limit treatment delays and interruptions.

The team developed and implemented an algorithm with our nursing colleagues in the surgery department ensuring timely referral to home care services for gastric tube management, as well as early referral for swallow and speech therapy. We established a protocol for bi-weekly oncology nursing visits during radiation to assess and manage side effects in a timely manner. Detailed educational materials for oral care and symptom management were developed for distribution to the patients and family care givers. Aggressive supportive measures were instituted both during and after treatment.

In May 2015, a six-month review and evaluation of 28 patient records after implementing these interventions demonstrated a 34% absolute reduction in hospitalization and treatment delays.

The team continues to meet on a monthly basis with quarterly chart reviews to further improve this process. This collaboration of expert clinicians has improved the quality of care for patients with head and neck cancer and has decreased hospitalizations and treatment delays.

Glossary

Adjuvant – additional cancer treatment given after the primary treatment to lower the risk that the cancer will come back.

Diagnostic – scientific methods used to establish the cause and nature of a disease, confirm a diagnosis, identify the type of cancer, or determine the stage of the cancer.

Molecular markers - Specific gene patterns and expressed molecules within tumor cells that provide important insight into the behavior of a tumor and which treatments may be more effective.

Multidisciplinary – a team of professionals with varied qualifications working together; an efficient and effective approach to complex challenges such as cancer care.

Oncology – the study of cancer.

Prognostic Indicator – an indicator of the course of the cancer; the prognosis predicts the outcome and therefore the future for the patient.

Standard of Care – a diagnostic and treatment process that a clinician should follow for a certain type of patient, illness, or clinical circumstance.

Clinical Trial – a type of research that studies a test or treatment given to people to study how safe and helpful the test or treatment is.

CT Scan – Computed Tomography scan, detailed images of internal organs are obtained by this sophisticated X-ray device.

NCCN Guidelines – National Comprehensive Cancer Network, an alliance of 26 of the world's leading cancer centers working together to develop treatment guidelines for most cancers, and dedicated to research that improves the quality, effectiveness, and efficiency of cancer care.

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795 Middle Street
Fall River, MA
508-674-5600
SaintAnnesHospital.org