Northern Light℠
Eastern Maine Medical Center

2018 Cancer Report

Northern Light Cancer Care
Bringing Hope to Life, Research to Cures

Allen L'Italien, BSN, OCN, RN

It is with mixed emotion that we watch the growth of all areas of the cancer program. Both pediatric oncology and radiation oncology have had new highs in numbers of patients served. More and more the region is relying on the cancer program in managing the best care options for their needs. We have been in our Brewer facility for only nine years. It is hard to fathom that there is already a need to enter a new phase where we look to modify current areas to increase patient care space as well as expand our building to meet the needs for the increasing number of services provided.

In recognition of the expansion of our research, academic collaborations, as well as the scope of cancer types treated, we are privileged to have the overall program's name and building's name changed to the Lafayette Family Cancer Institute. This new distinction recognizes the amazing growth in the capacity and expertise of the physicians and staff to care for many of the rarer and more complex cancers that folks in our region experience alongside the needs of all in our region facing a cancer diagnosis.

The increase in complexity and volume of patients treated has been supported with an increase in both the number and expertise of surgeons who have chosen a profession of working with cancer patients here in our community. Such specialists are key in helping patients remain locally even for complex surgical needs. Certainly the benefits are appreciated when emergent situations arise.

The Dana-Farber Cancer Care Collaborative has helped us successfully expand the level of expertise brought into difficult care decisions and treatment planning. Weekly case presentations with teams of physicians from Dana-Farber Cancer Institute and our center assures that the best treatment plans and options are implemented. With the increasingly complex information that needs to be evaluated, it is certainly reassuring to have many minds working on developing a plan of care that will include all known treatment and research options. Dana-Farber Cancer Institute's ongoing support continues to transform our methods of decision making as well as our research initiatives so that patients can be provided more treatment options including treatment clinical trials, especially when the standard therapies will not likely accomplish a cure. This will remain a high priority for years to come.

We continue to appreciate the amazing generosity of the many individuals and groups who chose to donate hard earned or raised funds in support of the program. Such support continues to allow us to provide for individual patient support needs, program needs, and the ever expanding needs of hematology and cancer research. We are very fortunate for your generosity and allowing us to continue to meet patient and community needs as a result. On behalf of the cancer care community, I extend a heartfelt thank you to each of you who chose to make a difference for those touched by cancer.

For information, please call us at 207.973.8202.

Thomas Openshaw, MD

Our most exciting initiative this year has been the increased collaboration between Northern Light Cancer Care's adult medical oncologists with cancer specialists at the Dana-Farber Cancer Institute (DFCI). As one of only four member hospitals in the Dana-Farber Cancer Care Collaborative, we have brought additional clinical trials to our center in Brewer. This link between the two institutions has been instrumental in increasing our speed of incorporating and offering new treatments made possible by cancer research.

Clinical Care Statistics:

- 1,677 surgical procedures related to cancer were completed at Northern Light Eastern Maine Medical Center in calendar year 2017. This is 11 percent more than in 2016. This number represents 69 percent of all cancer related surgical procedures for those diagnosed and beginning treatment at Northern Light Eastern Maine Medical Center in 2017.
- 1235 patients began or were considered for systemic treatment through Medical Oncology in 2017, up 9% from 2016.
- 761 patients began or were considered for radiation treatments through Radiation Oncology in 2017 up 8.5% from 2016.
- 20 pediatric-adolescent-young adult patients (birth to age 25) were newly diagnosed in 2017. Eighty percent required or were considered for systemic therapy. Cases of melanoma and thyroid cancer were managed by surgery alone according to established guidelines.

Clinical Highlights – New in 2018:

- In Radiation Oncology, the use of newest technology enables treatment to be more focused, in some cases reducing the number of treatments needed. The rate of use of SBRT has grown by over 50% since 2015. It has become an important modality in the treatment of lung cancer. The use of accelerated treatment (fewer treatments at higher dose) has grown. Ten to fifteen percent of those with prostate cancer along with sixty-five to seventy percent of those receiving radiation therapy following breast cancer surgery were eligible for this approach to treatment.
- Supportive Care consultation service returned to the Lafayette Family Cancer Institute in late spring resulting in improved access to care. Our focus for 2018 was to increase discussion of supportive care as an integral part of patient care. For those with stage IV lung and pancreatic cancer, 95 and 100 percent respectively discussed this option with their oncologist. Over 85% went on to initiate this care; others were referred to home based hospice care near home. Initiation of Northern Light Health-based hospice care for those diagnosed with cancer increased by 112% over the previous year. Importantly, hospice care is being elected earlier by patients with 37 percent engaged in this service for 30 days or more, increasing the opportunity for the team to make a positive difference for both the patient and family.
- Enhanced Recovery After Surgery (ERAS), a surgical care initiative evidence based, protocol-driven, multispecialty care approach to pre and post-op patient preparation was implemented in 2018. Review by Dr. Huang of those with colon surgeries, including those diagnosed with cancer, provided evidence of improved recovery and no additional complications, reduced length of stay and enhanced patient satisfaction.
- Surgical management for those with esophageal cancer has returned to Northern Light Eastern Maine Medical Center. A qualitative review was completed by Dr. Latif for patients undergoing Minimally Invasive Esophagostomy (MIE) using abdominal laparoscopy and right chest thoroscopy (Total Endoscopic Approach). For those undergoing this surgery, there were no anastomotic leaks (a potential post-surgical risk) and no deaths. This compares very favorably to national statistics of 5 to 20% and 1.4 to 5%, respectively.
- Cancer Genetics consults rose by 24 percent with 383 patients accessing this service across FY2018. Overall referrals were up 37% in 2018 compared to 2017.

- Chase Cardurns, PMHNP-BC, Northern Light Integrated Behavioral Health Program joined our group in late May to expand mental health assessment and treatment services to our patients, now on-site 3 days each week. As a result, consultations for this service are up by 30%.
- Our center's Oral Medication Management Program – enrolled 12 physicians and 4 nurse practitioners in 2018 and provided new service to over 437 patients. This increased access to oral medications that they might otherwise not have been able to afford. In eight months over $600,000 was secured in co-pay assistance. Additionally patients received medications valued at nearly six million dollars at no cost. Phone follow up by dedicated nursing staff helps with compliance to recommended regimens and with managing symptoms patients may be experiencing with their oral drug therapy. Both physicians and patients are very satisfied with this new initiative.
- Our center's Breast Cancer Advisory Board was formed to address identified needs of breast cancer patients across the trajectory of care. A meeting in May entitled "Your Survival, Your Voice," drew more than 50 survivors to participate in a collective needs assessment. Early directions included offering a dedicated Survivorship Educational Series for breast cancer survivors, a program for families facing cancer together. Focus for 2019 is enhanced communication to assure awareness of existing services including website development and access to expanded services specifically designed to meet survivor, partner and family needs.

Clinical Staff

Joining our pediatric oncology team this year was Subha Mazzone, MD. Maria Michailidou, MD, joined our surgical team, expanding services to those with colorectal cancer. Paul Castellanos, MD, joined Northern Light Ear, Nose and Throat Care team, broadening resources to those facing oral, oropharyngeal, and laryngeal cancers.

Screening and Early Intervention Services

Our Lung Cancer Risk Screening (using low dose CT imaging) continues to grow. Through this program, people at risk for lung cancer receive a special low dose CT to detect lung cancer at an early, potentially curable stage. In our region **762 exams** were completed which identified **23** lung cancers**,** which represents **3%** of those screened. The program increases access to care, education, and smoking cessation services to reduce the risk of lung cancer and other tobacco-related diseases. For information, call **207-973-5293**. To schedule a screening CT, call **207-973 -8150**.

We continue to focus efforts on increasing the rate of age and risk appropriate colonoscopy screening for people at risk of colon and rectal cancer. Through Northern Light Primary Care practices and across all patients, the rate remained stable at 69% in 2018. This result is above the national rate of 57 percent but still below the targeted rate of 80 percent. Addressing colon cancer risk screening remains a priority for our primary care practices.

As a joint project through the Bangor Y and Northern Light Health Eastern Maine Medical Center, Caring Connections maintains an active outreach program for those with inadequate insurance coverage to access screening for early breast and cervical cancers. As of December 2018, **162** women participated in screening – clinical breast exams and mammograms funded through the Maine Breast and Cervical Health Program with continued care covered through Northern Light Eastern Maine Medical Center. Of those screened in 2018, **4** cancers were identified, representing **2%** of those screened. In the cervical cancer screening program, no invasive cancers were identified.

Through our on-site lymphedema clinic, over 130 women were seen. Through this program a specially trained physical therapist provides evaluation, education, and treatment to reduce the development and impact of lymphedema.

"LIVE**STRONG** at the Y," a wellness approach to managing a cancer diagnosis and recovery has assisted over 70 survivors to reach personal wellness goals – many continuing on after the formal program concludes. There is no cost to participate. For more information about this exciting program, call **207- 941-2808.**

Cancer Case Multidisciplinary Review – to make a referral for review, please call 207-973-7483.

Each meeting is designed to facilitate interdisciplinary discussion, review of best treatment options according to national guidelines, timely completion of diagnostics, and engagement of the entire team on behalf of the individual newly diagnosed with cancer. Each case is considered for referral for clinical trial participation and cancer genetic consultation.

These include:

- A weekly cancer case conference where new patients are discussed and plans made for further diagnostic studies and treatment by surgery, medical oncology, and radiation oncology, as well as referral for clinical trials and genetics.
- A weekly review of new breast cancer cases including early referral to clinical research trials, genetic and/or behavioral medicine consultation.
- A weekly review of new lung cancers and other thoracic malignancies needing special diagnostic procedures or multimodality treatment.
- A semi-monthly review of new urologic cancer cases including prostate cancers.
- Led by Dahl Chase Pathology Associates, a monthly molecular case discussion to review the impact of tumor genetics on treatment decision making.

Quality Care – Meeting Standards Set by the American College of Surgeons Commission on Cancer

Our program is guided by standards of care set by the American College of Surgeons Commission on Cancer (ACoS-CoC). As recommended by ACoS-CoC, we annually review four cancer sites comparing stage at diagnosis and patterns of treatment with the most current data available from the National Cancer Data Base (NCDB). This year Peter Huang, MD, our Cancer Liaison Physician with ACoS-CoC, did a thorough review of thyroid, renal, liver cancers and soft tissue sarcomas. For each of these, stages at diagnosis paralleled national benchmarks. Patterns of treatment were similar with clear evidence of collaboration between surgeons, medical and radiation oncologists in best care management. Across these diseases, our survival rates parallel nationally published rates.

Our ACoS-CoC Cancer Program Practice Profile Reports demonstrate excellent adherence to recommended standards of practice. In each of the breast cancer standards, our performance met or exceeded that of the 2016* national database on the following measures: use of image/hand guided biopsy for initial diagnosis, appropriate referral for radiation therapy following a mastectomy for node positive disease, referral for endocrine therapy for hormone receptor positive disease, and referral for medical oncology consultation for hormone receptor negative disease. Additionally, performance on measures for the care of individuals with colon and rectal cancer exceeded the national standard, including surgical removal and pathologic examination of 12 or more lymph nodes at the time of surgery and referral of patients for consideration of chemotherapy. Performance on standards surrounding the recommendation and use of chemotherapy in the management of certain lung cancers were also well above the required rate.

* Most current comparative NCDB data available.

Our participation in ACoS-CoC Rapid Quality Reporting System allows us to monitor ongoing compliance with practice standards in the treatment of breast and colon cancers. In our most recent monitoring of **2018** case activity, performance at Northern Light Eastern Maine Medical Center met or exceeded national rates on all standards.

A full analysis of our management of oral and oropharyngeal cancers diagnosed and treated during **2017** was completed by Antoine Harb, MD. Each case was reviewed. His evaluation verified accurate staging and appropriate treatment of these patients when compared to national guidelines. Dr. Harb's review is featured in this report.

For those initiating infusion based or radiation cancer treatment completion of a distress screening tool is routine. Completion rate of these screenings for those that receive radiation therapy was up by over 20 percent this year. More than 26 percent of patients identified significant stress and 50 percent indicated a need for a specific service. Our team of social workers, patient advocates, and navigators assisted in addressing the range of concerns from emotional support to care access, including transportation, lodging, insurance, medication assistance and more.

Educational Offerings for Health Care Providers

In May, Northern Light Cancer Care held the fifth annual *Spring Topics in Cancer* Care conference. It focused on screening, diagnosis, and treatment of upper GI malignancies including pancreatic, esophageal and hepatocellular cancers. Our guest speaker was Brian Wolpin, MD, MPH, of the Dana-Farber Cancer Institute. His focus was on new systemic treatment approaches for pancreatic cancer. It was well attended by primary care providers and allied health professionals across the region. Our **2019** topic is the **Management of Oral and Oropharyngeal Cancer,** scheduled for **Thursday**, **May 9, 2019**. The guest lecturer will be Lori Wirth, MD, of Massachusetts General Hospital.

Cancer Committee Chair Report

In October, the Ninth Annual Woodcock Foundation Breast Cancer Symposium – Innovations in Care was held. Visiting lecturers were William Jones III, MD, of South Texas Veteran's Health Care Center who spoke about hypofractionated radiation treatment in breast cancer and Harold Burstein, MD, PhD of Dana-Farber Cancer Institute spoke about advances in systemic management of breast cancer. Eric Zhou, PhD of Dana-Farber Cancer Institute spoke about the effects of insomnia in cancer survivors and how to address this common problem. Local experts Amy Harrow, MD, Susan O'Connor, MD and Elaine Chambers, RN, discussed use of 3D mammography in diagnosis and management of breast cancer. More than 130 health professionals from Maine attended this event. Our fall breast cancer symposium is scheduled for **Friday**, **October 25, 2019**.

Strong Research Program Brings Treatment Trials to Maine

Our cancer clinical trials program is active with more than 60 adult trials and 20 pediatric-young adult trials available for enrollment. Most exciting is the increased availability of Dana-Farber Cancer Institute clinical trials in the treatment of our breast cancer patients. Affiliation with the Alliance Foundation and the Blood Cancer Research Partnership of the Dana-Farber Cancer Institute also brings the opportunity for novel therapies to our patients. As of early December, our program had 166 new patient enrollments. This represents over nine percent of new patients participating in clinical trials which is well above the 6 percent standard set by ACoS-CoC. Our enrollment is in the top 25 percent of centers in the Alliance for Clinical Trials in Oncology Activity in our bio-repository and research laboratory continued through the collection of blood, bone marrow, and tumor tissue. Collected specimens are preserved for later use in laboratory studies. More than 50 patients participated in this program in 2018.

New Directions for 2019

Lung cancer is the second most common cancer diagnosis treated in our cancer center and hospital, affecting well over 300 new patients annually. Recognizing the increasing complexity of the evaluation and treatment of lung cancer, we studied the paths that our patients take to diagnosis and treatment. We plan to design a unified system approach to facilitate rapid diagnosis and treatment of this disease. Of particular interest is the expedited diagnosis and treatment of patients with curable, early stage disease, including those who are identified through our lung cancer screening program.

Antoine Harb, MD

The head and neck cancers are malignancies that arise from different anatomic subsites including the mouth, oral cavity, nasal cavity, paranasal sinuses, tonsils, salivary glands, pharynx, larynx and the thyroid. The oral cavity (oral) comprises multiple parts including the lips, buccal mucosa, the anterior two thirds of the tongue, floor of the mouth, hard palate and upper and lower gingiva. The oropharynx (OP), which is part of the pharynx, has also multiple anatomical structures: base of tongue (distal one third of the tongue), the palatine tonsils, tonsillar pillars, valleculae, soft palate and the posterior pharyngeal wall.

Human papilloma virus (HPV) infection has become over the last decades a leading cause for head and neck malignancies, especially oropharyngeal cancers and to a lesser extent oral cavity malignancies. HPV related tumors are usually seen in younger patients compared to the HPV negative cancers. The patients frequently present with bulky cervical lymph node involvement and have a better prognosis as opposed to the non- HPV related malignancies.

Other important risk factors include tobacco (smoked and smokeless) and alcohol consumption. They seem to have a synergistic negative effect on the aero-digestive mucosa. Poor oral hygiene and immunocompromised states have also been identified as potential risk factors.

Precancerous lesions include leukoplakia and erythroplakia which are superficial white and red oral plaques respectively. They have the potential to transform into oral/oropharyngeal malignancies.

Squamous cell carcinoma is the most common histologic subtype of head and neck malignancies accounting for 90-95% of all cases.

According to the American Cancer Society (ACS) 51,540 adults (37,160 men and 14,380 women) will be diagnosed with oral and oropharyngeal cancer in the United States this year. These cancers are more than twice as common in men as in women. The median age at diagnosis is 62. An estimated 10,030 deaths (7,280 men and 2,750 women) from both diseases will occur this year. Locally each year, on average 35 people are diagnosed with this type of cancer with similar age and gender distribution as nationally. The overall 5-year survival rate for people with oral or oropharyngeal cancer is 65 percent. It is higher for HPV related cancers.

Head and neck cancers and specifically oral and OP malignancies have widely variable presenting symptoms. They include:

- mouth pain, mouth ulcer, mouth bleeding, teeth loosening, dysphagia (difficulty swallowing) odynophagia (pain with swallowing), otalgia (ear pain) or a neck mass for oral cancers.
- dysphagia, odynophagia, dysphonia (voice changes), snoring, neck pain, otalgia, sleep apnea for oropharyngeal malignancies.

The American Joint Committee on Cancer (AJCC) classification is used for staging of head and neck cancer. It takes into consideration the size of the primary tumor (T), the number of reginal lymph nodes involved (N) and the presence of distant metastatic disease (M). It also takes into consideration the P16 status of the tumor, which play a prognostic role especially in oropharyngeal cancers. The higher the stage, the more advanced the cancer is.

To confirm the diagnosis, the patient should be first evaluated by an ENT (Ear, Nose and Throat) surgeon. A direct flexible laryngoscopy for a full evaluation of the head and neck area is recommended. Further evaluation should include imaging studies like a neck ultrasound, CT scan of the neck and a PET scan. CT scans can provide information about the primary tumor as well as regional cervical lymph node involvement. The PET scan can identify the primary site of disease, regional lymph nodes a well as the presence of distant metastatic disease. For tissue confirmation, the patient undergoes a biopsy, either of the primary tumor (during examination by the ENT surgeon), or the involved lymph nodes in the neck (by an Ultrasound-guided biopsy for example).

Cancer staging for oral – oropharyngeal cancers follows:

- Stage I and II cancers: are tumors smaller than 4 cm without lymph node involvement. Surgery is the preferred treatment for oral cavity and OP malignancies. Definitive radiation is also used as a treatment modality. Locally, approximately 35 percent are diagnosed in these stage groups annually paralleling national rates.
- Stage III cancers are either larger tumors or tumors with lymph node involvement on one side of the neck. Surgery is treatment of choice for oral tumor. For OP malignancies, the options are surgery or combined chemotherapy and radiation.
- Stage IVA and IVB cancers are either large tumors with lymph node involvement on one or both sides of the neck. Oral tumors are treated with surgery followed by radiation and possibly chemotherapy. If the patient is not considered to be a good candidate for surgery or if the surgery is too morbid, then they are treated with definitive chemotherapy and radiation for organ-sparing.
- Stage IVC cancers are very advanced malignancies with distant metastatic disease. They are usually treated with palliative chemotherapy followed by immunotherapy. They are not curable cancers.

In the revised AJCC 2018 classification, the P16+ OP cancers are considered a separate entity and have a different staging compared to the P16 (-) OP cancers. These patients are given a lower stage compared to the previous staging. The reason for the new classification is likely to de-intensify the treatment offered aimed towards minimizing toxicities in this subgroup of patients who are known to have a better prognosis.

Many patients develop weight loss due to the location of the tumor and difficulty swallowing secondary to treatment (either surgery or radiation). So many patients have a PEG tube (feeding tube) placed to counter this issue. Referral to nutrition services for support of their care is routine. Other complications could include dry mouth, decreased taste, tinnitus (ringing in the ears), fatigue, thyroid problems.

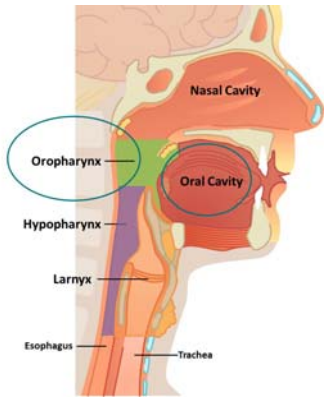
Patients usually have a repeat PET scan 12 weeks after completion of their treatment. If it does not show any signs of residual disease, then they are monitored routinely initially every 3-4 months (for the first 2 years) with clinic visits, examination, and possible direct visualization with laryngoscopy. Then they are seen every 4-6 months for the next 2-3 years, then yearly thereafter. Additional imaging studies are not obtained unless the patients have new symptoms concerning for disease recurrence.

For our focused quality review, records of 38 patients diagnosed with oral and oropharyngeal cancers at Northern Light Eastern Maine Medical Center in 2017 were examined. Of those, 31% had early stage (I-II) disease, all were treated with surgery. For those with stage III disease (23.7% overall) most in this group had combined chemotherapy and radiation (77%) (4 were treated with cetuximab and 3 with cisplatin). In the combined stage IV category (42.1% overall), 36.8% had stage IVA and 5.2% had stage IVB. One did not receive any treatment, 1 was treated with surgery followed by radiation, 3 had surgery followed by combined chemotherapy and radiation and 11 had combined chemotherapy and radiation (8 with cisplatin and 3 with cetuximab). Those in stage IVC (2.6% overall) did not receive any therapy. In each case the staging was appropriate and treatment offered followed recommended care guidelines. Of those with early stage (I-II) 83.3% patients of achieved or are still in remission, 77.8% of stage III patients, and 64.7% of more advance stages. The total of patients who achieved remission was 28/38 (73.6%).

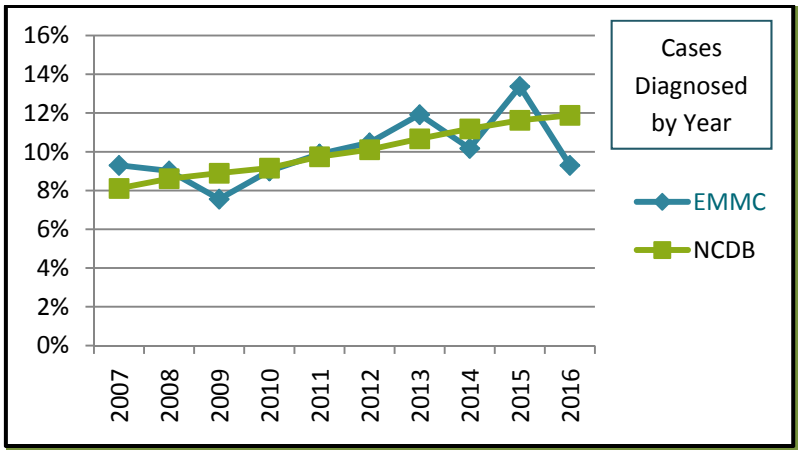
In line with known risk factors our patients fit the national patterns - 84% of patients are current or former tobacco users; 39% are current or former alcohol drinkers. P16 was tested in 29 patients and it was positive in 69%. For those patients identified as P16(+), 85% achieved remission compared to 61% of P16 negative or untested patients, which supports the literature proving that HPV related oral and oropharyngeal malignancies have a better prognosis. The CDC continues to recommend use of HPV vaccination through age 26 for females and for males routinely through age 21, with recommendation for immunocompromised men and men who have sex with men through age 26 as a cancer risk reduction strategy. The US Preventive Health Task Force continues to recommend vaccination for cervical cancer risk reduction. A growing body of literature suggests HPV vaccination may well be a useful oral cancer risk reduction strategy in both men and women. The usefulness of extending the age through which vaccination is recommended continues to be explored.

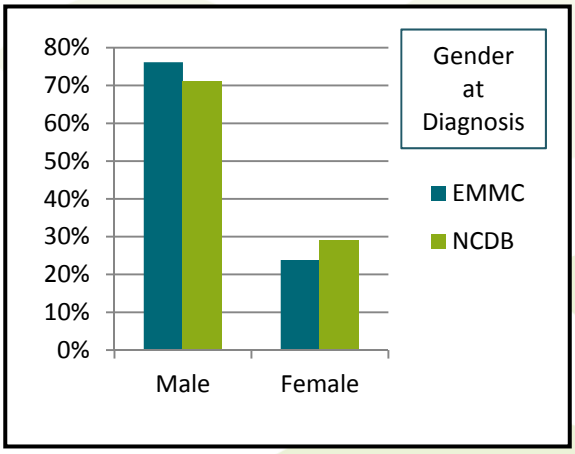
To assure that patients were receiving care in the most expeditious manner we reviewed cases diagnosed from 2014 to 2017 looking at time from diagnosis to initiation of treatment. A national benchmark study indicates that optimal time to treatment is less than 67 days from tissue diagnosis. Our review shows that 92% meet that benchmark. Work is underway to assure that this standard is met for all patients and shortened whenever possible.

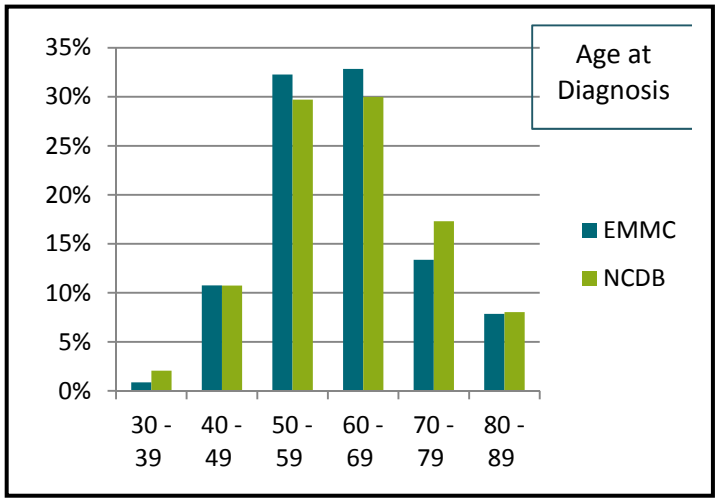
Oral - Oropharyngeal Cancers

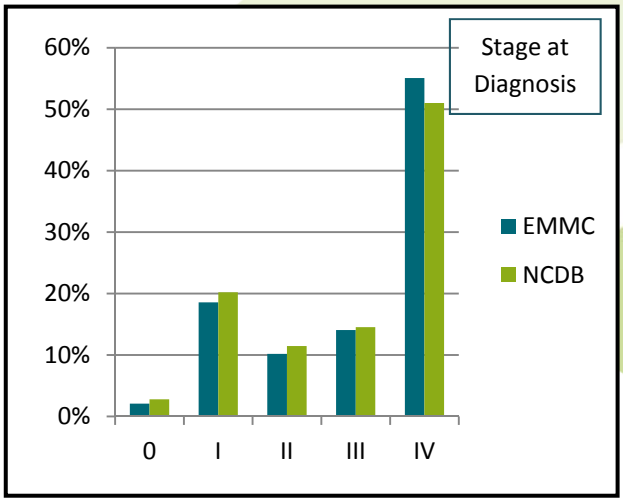


Data below compares cases diagnosed between 2007 and 2016 which is the most current comparison available between American College of Surgeons – Commission on Cancer – National Cancer Data Base (NCDB) and Northern Light Eastern Maine Medical Center. Included in this composite are those diagnosed with Oral and Oropharyngeal Cancers. Specifically included are floor of the mouth, gum and other mouth, lip, oropharynx, tongue and tonsil cancers. Data for others in this category was not available for comparison. On each measure gender, age and stage at diagnosis, Northern Light Eastern Maine Medical Center experience parallels that of the rest of the nation. In terms of case volume, nationally, there appears to be a 4% case increase when comparing 2007 to 2016, demonstrating an upward trend. Based on overall lower case volume, Northern Light Eastern Maine Medical Center shows more variation from year to year, but seems also to be following an upward trend.









Elaine Chambers, MSB, RN

The Breast and Osteoporosis Centers offers 3 tomosynthesis mammography units (3D) between the two Northern Light Eastern Maine Medical Center locations, State Street and Union Street, so we can provide the highest quality mammography services. Both sites offer FDA certified and American College of Radiology (ACR) accredited high quality 3D and 2D mammography with computer aided diagnostic (CAD) review. Our 3D stereotactic breast biopsy unit received another 3 year accreditation from the American College of Radiology this past summer. This unit allows our radiologists increased visualization for challenging cases and those involving 3D diagnostics. Same day mammogram results for our diagnostic patients continue to be offered at the State Street location.

Nancy San Antonio, RN, CBCN, CN-BN, our Breast Patient Nurse Navigator continues to coordinate seamless supportive care during this challenging time for our patients from a concerning mammogram result to relief or the next step in definitive care.

January 1, 2018 celebrates the sixth anniversary of the opening of Northern Light Breast Surgical Specialists on the third floor of the Lafayette Family Cancer Institute in Brewer. Our practice is intertwined with diagnostic imaging, pathology and both medical and radiation oncology services. It specializes solely on breast health issues. Our approach is a key to connecting diagnostics, multispecialty evaluation and treatment in a cohesive manner.

In our institutional quality review of breast cancer cases and in our image-guided breast biopsy case review, we continue to meet or exceed all breast care benchmarks. Our breast surgical quality project this year conducted by Dr. Susan O'Connor reviewed our institutional experience with surgery after neoadjuvant chemotherapy (NAC). Reviewed were patients completing definitive surgery following NAC from mid-December 2016 to mid-February 2018. Dr. O'Connor's focus was on how often surgery occurred in the 4 to 6 week interval after completion of NAC. Included were patients who had received both NAC and definitive surgery at Northern Light Eastern Maine Medical Center only. The majority, seventy-five percent met completion of surgery within this time frame. Case review for each not falling within this interval was completed. Six were found to be outliers due to scheduling issues either with the patient, breast surgeon or plastic surgeon; one due to stopping NAC earlier than planned. Of these 6, 5 completed surgery within week seven; 1 was delayed until week eight due to personal preference. This information was presented to the Cancer Committee by Dr. O'Connor. As a result of this review an improvement measure was instituted assigning the PA in the Breast Surgical Specialists practice to follow all patients receiving NAC to assure optimal timing of surgical scheduling.

Caring Connections, a collaborative program between Northern Light Eastern Maine Medical Center and The Bangor Y had more than 1042 participants in services designed to provide information about breast health, risk reduction, early detection of breast and cervical cancer, the Men's Cancer Network, LIVESTRONG at the Y program for all cancer survivors and maintenance of bone health. We increased our outreach to schools in the greater area targeting cancer risk reduction.

The Breast Lymphedema Clinic on the first floor of the Lafayette Family Cancer Institute, in collaboration with Northern Light Eastern Maine Medical Center Physical Therapy department, continues to be a great asset for women in our service area with this specialized need.

For information, please call us at 207-973-9700.

Renee Stefanik, BAS, RHIT, CTR

Services

The Cancer Registry collects and maintains a computerized database of all patients with a diagnosis of cancer and conducts lifetime follow-up. This resource provides the means for monitoring and evaluating the success of the cancer program. The Cancer Registry at Northern Light Eastern Maine Medical Center has six Certified Cancer Registrars (CTR) and one cancer registrar in training.

The Cancer Registry holds 33,613 **analytical** cases (first diagnosed and/or received all or part of first course treatment at EMMC) and 23,857 **non-analytical** (first seen at EMMC after completion of a full course of therapy at another facility, coming to EMMC for recurrence, and/or subsequent treatment). These numbers represent registry data collected from 1987 to 2018.

In 2017, the Cancer Registry accessioned 2,182 cases. Analytical cases totaled 1,847 and 335 were non-analytic. Annual follow-up is required on all cases. For those diagnosed within the last five years, the follow-up rate required by the American College of Surgeon's Commission on Cancer (ACoS-CoC) is 90 percent. Our follow-up rate on the 5,826 cases diagnosed 2013-2018 was 91 percent. For those diagnosed from our reference year of 1998 the ACoS-CoC required follow-up rate is 80 percent. Our review of 13,752 cases resulted in a follow-up rate of 87 percent. Our rates exceeded set standards.

The Cancer Registry at Northern Light Eastern Maine Medical Center reports cases to the Maine State Cancer Registry for Northern Maine Medical Center; provides reporting and cancer registry services to Northern Light AR Gould (formerly The Aroostook Medical Center); and provides consulting services to Northern Light Mercy Hospital's cancer program.

Quality

The Cancer Registry participates in the National Cancer Data Base (NCDB) request for data submission annually. Additionally for select breast and colon cancer cases, data is submitted monthly to assure the best opportunity to adhere to national treatment guidelines. Our physicians utilize this information to assure treatment offered is concurrent with these guidelines on an individual basis. Consistently hospital performance is at or above the standard. Hospital data is also reported to the Maine State Cancer Registry quarterly, which in turn reports data to the Center for Disease Control.

A quality review was performed on the Cancer Registry data recording by twenty-three physicians (medical oncologists, radiation oncologists, pediatric oncologists, and surgeons). Fifteen percent of the 2017 analytic caseload was reviewed. This represents 272 cases of a total analytic caseload of 1,847. Review requirement is 10 percent. Data reviewed included 16,500 elements (61 data points per case); of these, 41 elements required correction. This represents a 99 percent accuracy rate. All suggested corrections were reviewed and made.

Northern Light Eastern Maine Medical Center hosts a weekly multi-disciplinary diverse site cancer conference, prospective breast care conference, breast correlation biopsy conference, and thoracic cancer conference. In addition, monthly genito-urinary, molecular, and bone marrow conferences are held. In each use of American Joint Committee on Cancer staging, prognostic factors and treatment guidelines are reviewed. In 2017, 581 cases were presented, over 32 percent of our analytic case load which is well above the ACoS-CoC required 15 percent.

Cancer Registry Data Tables in this report reflect cancer case accessions (cataloged for the first time at Northern Light Eastern Maine Medical Center), frequency and stage of disease at presentation and prevalence for 2017.

For information, please call us at 207.973.7483.

Cancer Data – 2017 Cases

	2013	2014	2015	2016	2017
Total Analytic Cases	**1,708**	**1,746**	**1,679**	**1,698**	**1,847**
Cancer diagnosed and/or treated at EMMC	928	959	910	946	1,033
Cancer diagnosed elsewhere with first treatment at EMMC	780	787	769	752	803
Total Non-Analytic Cases	**246**	**216**	**277**	**250**	**335**
Cancer diagnosed and treated elsewhere; follow up at EMMC					
Total Accessioned Cases	**1,954**	**1,962**	**1,956**	**1,948**	**2,182**

Cancer Site / Type	EMMC Actual		ACS Estimates*			
	Cases		Maine*		Nation*	
Breast (Female)	393	18.01%	1,350	15.43%	252,710	14.96%
Lung	389	17.83%	1,380	15.77%	222,500	13.18%
Prostate	262	12.01%	960	10.97%	161,360	9.55%
Colo-Rectal	150	6.87%	720	8.23%	135,430	8.02%
Melanoma	63	2.89%	450	5.14%	87,110	5.16%
Bladder	92	4.22%	570	6.51%	79,030	4.68%
Lymphoma (Non-Hodgkins)	103	4.72%	380	4.34%	72,240	4.28%
Uterus	53	2.43%	380	4.34%	62,380	3.69%
Leukemia (all types)	59	2.70%	310	3.54%	62,130	3.68%
Cervix	10	0.46%	---		12,820	0.76%
Total # of Cases	2,182	72.14%	8,750	74.29%	1,688,780	67.96%

Cancer Data – 2017 Cases

Primary Site	Total	%Total Cases	Male	Female	Stg 0	Stg I	Stg II	Stg III	Stg IV	Total Staged	%Stage O,I,II
Oral	57	2.6%	44	13	0	10	7	9	22	48	35%
Esophagus	35	1.6%	30	5	0	4	7	6	11	28	39%
Stomach	24	1.1%	18	6	1	7	0	4	7	19	42%
Small Intestine	15	1.1%	7	8	0	1	1	4	5	11	18%
Colon	94	4.3%	50	44	0	16	25	13	23	77	53%
Rectal	56	2.6%	31	25	0	11	9	16	13	49	41%
Liver	20	1.3%	23	5	0	9	2	6	3	20	55%
Pancreas	50	2.3%	36	14	0	6	14	6	21	47	43%
Larynx	17	0.8%	12	5	0	7	5	1	1	14	86%
Lung & Bronchus	389	17.8%	188	201	3	111	32	72	134	352	41%
Bones & Joints	1		0	1	0	0	1	0	0	1	100%
Soft Tissue	11	0.5%	7	4	0	3	5	2	0	10	80%
Melanoma	63	2.9%	36	27	5	11	8	12	5	41	59%
Breast	393	18.0%	2	391	59	168	88	34	13	362	87%
Cervix	10	0.5%	0	10	0	4	2	1	1	8	75%
Uterus	53	2.4%	0	53	0	25	4	10	2	41	71%
Ovary	20	0.9%	0	20	0	6	1	5	3	15	47%
Prostate	262	12.0%	262	0	0	11	95	35	36	177	60%
Testis	8	0.4%	8	0	0	2	1	2	0	5	60%
Penis	3	0.1%	3	0	1	2	0	0	0	3	100%
Urinary Bladder	92	4.2%	75	17	32	10	12	2	15	71	76%
Kidney	83	3.8%	55	28	2	40	3	15	6	66	68%
Brain & CNS	47	2.2%	21	26	0	0	0	0	0	0	NA
Thyroid	21	1.0%	11	10	0	10	4	1	1	16	88%
Lymphoma	113	5.2%	67	46	0	15	14	31	32	92	32%
Myeloma	31	1.4%	14	17	0	0	0	0	0	0	NA
Leukemia	59	2.7%	33	26	0	0	0	0	0	0	NA
Other	164	7.5%									
Total	**2,182**		**1,105**	**1,077**	**108**	**493**	**346**	**299**	**361**	**1,607**	**59%**

*This graph reports case distribution by STAGE for ANALYTIC CASES ONLY (1,847) for cancers most commonly diagnosed or treated throughout Northern Light Eastern Maine Medical Center. For some the appropriate classification is other than a specific stage. For others they are included in the "other" category and are not included in the staging distribution. Thus when adding by stage the total does NOT equal the total cases.

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