



Northern LightSM

Eastern Maine Medical Center

2019 Cancer Report



Northern Light Cancer Care

Bringing Hope to Life, Research to Cures





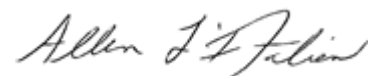
Allen L'Italien, BSN, OCN, RN

We live in exciting times when it comes to treatment options that are available to patients with cancer. The rapid changes in the past four to five years have brought hope to reality for so many of our friends and families. The world of cancer treatment has dramatically and visibly changed with the significant impact of the introduction of and rapid advancement in the use of immunotherapies in treating many cancer types. This has been a real game changer in both the quality and extension of life. Yet, it is well recognized that it is not enough to hold the disease at bay when what is obviously needed is a complete cure.

Similarly, the rapid advancement in the understanding of tumor genetics has greatly improved the targeting of the tumors with specialized treatments. However, what is little appreciated is that at times this testing identifies patients that do not need treatment. Not too long ago they would have had full courses of chemotherapy just like everyone else with a cancer involving that organ. This saves a patient from what is now recognized as unnecessary treatment as well as the emotional and financial expense associated with such. Everyone appreciates that each person with cancer deserves access to the best information and direction in treatment planning for their specific cancer disease. The collaboration with Dana Farber Cancer Institute provides access to some of the nation's leading researchers, clinicians, and clinical trials. In turn, this provides options that would not have existed in our state just a few years ago. This collaboration has elevated the intellectual decision-making bandwidth providing both education as well as, at times, meaningful and impactful results in patient care.

Likewise, there have been noteworthy advances in how patients are treated in radiation and pediatric oncology. These have helped many patients get what is needed by minimizing travel, with treatment modalities that are now fully in place right here in Brewer, Maine. Additionally, patients needing surgical interventions for key cancer types have benefited from the outstanding skills of specialty trained cancer surgeons working with thoracic, neurological, breast, genitourinary, head and neck, and gastrointestinal cancers. These talented surgeons frequently are the first contact patients have, as the physician responsible for initiating most of the testing and imaging studies needed in order to set the stage for the beginning of their cancer journey. Furthermore, the connection with the cardio-oncology program provides a key preventive care connection for many treatment patients. In addition, we benefit greatly from the talent and expertise as well as the diagnostic technology found at Northern Light Eastern Maine Medical Center. All this is in addition to the unmatched expertise and collaboration of Dahl Chase Pathology, Spectrum Radiology, Northeast Radiation Oncology, and Northern Light Health's surgical and medical oncology physicians, each key to helping design the best treatment options for newly diagnosed patients.

I will soon end my tenure as the executive director of Northern Light Cancer Care and the services at the Lafayette Family Cancer Institute. Without doubt I recognize the great gifts and talents of our amazing physicians and staff. They are the true leaders who implement change, as well as assure patients get the care needed each day. So much more has been accomplished than anticipated, in part thanks to the many generous donors to Champion the Cure Challenge as well as the significant generosity of the business community. Some key individuals should be named but their pattern of humble giving is being honored by simply stating a heartfelt "thank you" for the amazing generosity and kindness you extend. So many people benefit from your unselfish and philanthropic spirit. I plan to continue to advocate in the background for our citizens and friends with cancer as well as to support the advancement of cancer care for all in our greater region. Signing off with grateful appreciation for the fantastic journey that I have been privileged to be on and the many wonderful people I have encountered on the way.



For information, please call us at 207.973.8202.



Thomas Openshaw, MD

We are now entering our fourth year as an Adult Oncology member of the Dana-Farber Cancer Care Collaborative. Our practice is one of six in New England who have entered this special relationship with Boston's largest cancer treatment and research center. This has made the expertise of the DFCI team available through expedited consultations as well as educational resources and access to clinical trials for the benefit of our community.

This report will describe the clinical program at Northern Light Eastern Maine Medical Center and at the Lafayette Family Cancer Institute and outline the many services available at these care centers.

Clinical Care Statistics for those newly diagnosed with cancer in calendar year 2018:

- 1,499 surgical procedures related to cancer were completed at Northern Light Eastern Maine Medical Center. This number represents 66 percent of all cancer related surgical procedures.
- 1,191 patients were seen in Medical Oncology and considered for systemic treatment. 69 percent initiated treatment.
- 663 patients were seen in Radiation Oncology and considered for radiation therapy. 72 percent initiated treatment.
- 13 pediatric-adolescent-young adult patients (birth to age 25) were seen in Pediatric Oncology. 69 percent initiated treatment.

Clinical Highlights – New in 2019:

- In Radiation Oncology, the use of the newest technology enables treatments to be more focused and, in some cases, reduces the number of total treatments necessary. In addition to use of advanced technology, through our Cancer Research program, in 2019, we began offering participation in Radiation Therapy clinical studies. This allows patients to access the newest approaches to care close to home.

The use of Stereotactic Body Radiation Therapy (SBRT) and Stereotactic Radio Surgery (SRS) has grown by more than 100 percent since 2015. SBRT has become an important modality in the treatment of lung cancer. We are continuing to expand the use of SBRT to include treatment of the liver, the adrenal glands, as well as the spine and other bone metastases. The use of this accelerated treatment, which gives fewer treatments at a higher dose, allows select patients to come in for as few as one to five total treatments.

We also utilize hypo-fractionated Radiation Therapy to treat both breast cancer and prostate cancer patients. For patients fitting specific criteria appropriate for this regimen, the number of treatments has been shortened by anywhere from 33-45 treatments to 16-28 treatments. This is especially helpful in the winter months when patients are traveling from long distances for their daily treatments. Most importantly, studies have demonstrated the same quality and benefit from treatment delivered in this manner. Ten to fifteen percent of those with prostate cancer and sixty-five to seventy percent receiving radiation therapy following breast cancer surgery were eligible for this approach to treatment.

- Our Cardio-Thoracic Surgery program successfully pursued the addition of a nursing coordinator, Amy McClary, RN, for the lung cancer screening program. As a result, the process has been streamlined; follow up has been enhanced. Additionally, the program was successful in developing a proposal for and hiring a coordinator for the Thoracic Surgery Program, Mackenzie Caldwell, RN, whose focus will be on assuring expedited follow up on positive nodules. Under consideration is the development of a single call number for providers concerned about positive findings on imaging studies to use for patient referral or to discuss the most appropriate next step in patient care and/or testing to order. Looking to the future, a request for integration from imaging findings via our electronic medical record to tracking system for lung screenings has been initiated.

- Supportive Care consultation service at Northern Light Eastern Maine Medical Center and at the Lafayette Family Cancer Institute is recognized as instrumental in the management of symptoms related to disease or care. Consistently our oncologists make referrals for those diagnosed with stage IV cancers and/or ongoing concerns related to symptom or pain management. Hospice care in the home is equally important. For those in our most immediate region, more than 46 percent of those entering hospice-based care had a cancer diagnosis with referrals to service coming from a broad base. Importantly, hospice care is being elected earlier by patients now with an average length of stay of greater than 41 days, increasing the opportunity for the team to make a positive difference for both patient and family.
- Chase Cardurns, PMHNP-BC, Northern Light Integrated Behavioral Health Program continues, now one day each week, to provide onsite mental health assessment and treatment services to our patients.
- Easing access to care is a priority. Our team of patient advocates, social workers, and navigators assist in addressing a range of concerns. For those initiating infusion-based cancer treatment or radiation therapy, completion of a distress screening tool is routine. Overall, more than 25 percent of patients identified significant stress and 50 percent indicated a need for a specific service. Follow up care included not only emotional support, but also assistance in access to care, including transportation, lodging, insurance, medication assistance, and more. Our social work team also hosted focused educational opportunities for parents affected by cancer assisting their children to cope positively; for individuals new to survivorship to address concerns they face as they step out of the world of treatment. Offered as well are support groups.
- Due to the departure of our cancer genetic nurse practitioner early in FY19, 33 percent fewer cancer genetic consults were completed than in FY18. Average weekly referrals are now double what they were in FY18. Elizabeth Schweitzer, MS, CGC, joined the staff in late FY19. Currently, efforts are directed at expanding resources to address this recognized gap in service delivery.
- Our center's Oral Medication Management Program continues to help patients to make expensive oral cancer drugs more affordable. On average this program initiates assistance to nearly 60 patients a month. Cost savings to participants exceeds well over \$10,000,000. The program includes nurses, who provide close telephone follow up of patients on these drugs. This assures that these medications are taken appropriately and helps patients to minimize side effects. Both patients and physicians have found this service very helpful.
- Our center's Breast Cancer Advisory Board continues to meet regularly. The focus for 2019 was to enhance communication with survivors. A primary goal is to increase survivors' awareness of available services including direct communication between survivors and access to expanded services designed to meet survivor, partner, and family needs. The group published its first newsletter in July 2019, and the second is set to go to press in January 2020. In December 2019, there will be a workshop for parents whose children are affected by parental cancer, as well as a workshop focused on nutrition and breast cancer survivorship. Both will be repeated throughout 2020.

Clinical Staff

Joining our Medical Oncology team with a special interest in survivor care service is Elizabeth Dennis, DO. Dr. Dennis comes to us from Mayo Regional Hospital where she has worked both as a primary care provider and alongside our medical oncology team delivering cancer care services to that region.

Screening and Early Intervention Services

Our Lung Cancer Risk Screening program 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 and potentially curable stage. In 2019, 363 initial screening scans led to an additional 687 completed follow up scans. From this activity ten lung cancers and one GI cancer were identified; this number represents three percent of those screened. Of the lung cancers identified, 50 percent were identified as Stage I. Since 2014, when the program was launched, 2,000 patients have been enrolled; 42 lung cancers identified (2.2 percent of those screened) with the majority (69 percent) identified in an early stage and offered curative therapy. New in 2019 was an offer to other Northern Light Health system members to support their local low dose CT screening activity by managing the surveillance and data tracking. This offer has been well received. 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 screening people at risk of colon and rectal cancer due to age or other factors. In the transition from our former electronic medical record to our current record, prompts reminding providers when patients were due for screening were lost. As a result, a commonly used important tool was not available. This reminder system is now once again fully integrated in our current EMR. During this time the screening rate shifted from 69 to 67 percent. The national rate is now reported as 68.8 percent; Maine's rate is reported at 75.9 percent. An initiative is set to begin in early December to increase age and risk appropriate screening throughout our Northern Light Health primary care practices.

As a joint project through the Bangor Y and Northern Light Eastern Maine Medical Center, Caring Connections, makes it possible for those with inadequate insurance coverage to access screening for breast and cervical cancers. As of December 2019, 165 women participated in screenings. These clinical breast exams and mammograms are funded through the Maine Breast and Cervical Health Program. Continued care is covered through Northern Light Eastern Maine Medical Center. Of those screened in 2019, four cancers were identified, representing two percent of those screened. In the cervical cancer screening program, no invasive cancers were identified.

Through our on-site lymphedema clinic, more than 100 men and women affected by a cancer diagnosis and/or related treatment were seen in 2019. Referrals are on the rise, resulting in a waiting list for this important service. Through this program a specially-trained physical therapist provides evaluation, education, and treatment to reduce the development and impact of lymphedema. The service also focuses on post-surgical range of motion improvement and pain reduction.

"LIVESTRONG at the Y," a wellness approach to managing a cancer diagnosis and recovery saw over 40 new enrollees in 2019 work to reach personal wellness goals, with many continuing after the formal program concludes. The program is so successful there is routinely a waiting list! There is no cost to participate. For more information about this exciting program, call **207.941.2808**.

Cancer Case Multidisciplinary Review

Each meeting is designed to facilitate interdisciplinary discussion leading to 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 genetic consult.
- A weekly review of new breast cancer cases including early referral to clinical research trials, genetic, social work 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.
- A monthly molecular case discussion, led by Dahl Chase Pathology Associates, reviews the affect of tumor genetics on treatment decision making.

To make a referral for review, please call 207.973.7483.

As part of our multidisciplinary case conferences, we had eight visiting professors from Dana-Farber Cancer Institute in 2019. These physicians review cases with local cancer specialists. At each visit, immediately following the case conference, they give a talk in their area of expertise. They also conduct a journal club-style review of research articles at lunch time. In 2019 we continued weekly collaborative teleconference case reviews with our DFCI colleagues. Cases are reviewed to obtain input regarding diagnosis and treatment, often sparing patients from traveling to Boston for consultation.

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, did a thorough review of pancreas, esophagus, uterine, and gastric cancers. For each of these, stages at diagnosis were comparable to national benchmarks. Also, patterns of treatment compared favorably to national benchmarks, with clear evidence of collaboration between surgeons, and medical and radiation oncologists in planning and delivering cancer treatment. For these diseases, our survival rates parallel nationally published rates.

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. When a case seems to be “outside” the standard, it is carefully reviewed. In every case the intent of the standard was met. At Northern Light Eastern Maine Medical Center, based on reporting timing, our most recent monitoring of **2019** case activity exceeded, met, or will meet national performance standards.

A full analysis of our management of colorectal cancers diagnosed and treated during **2018** was completed by medical oncologist Catherine Chodkiewicz, MD. Each case was reviewed. This evaluation verified accurate staging and appropriate treatment of these patients when compared to national guidelines. Dr. Chodkiewicz’ review is featured in this report.

Educational Offerings for Health Care Providers

In May, Northern Light Cancer Care held its *Sixth Annual Spring Topics in Cancer Care* symposium. The focus was on screening, diagnosis, and treatment of head and neck cancers. Our guest speaker, Lori Wirth, MD, Massachusetts General Hospital, focused on the role of the human papilloma virus (HPV) in the development and management of head and neck cancers. It was well attended by primary care providers and allied health professionals across the region. Our **2020** topic will be the **Management of Colon and Rectal Cancers**, scheduled for **Thursday, May 7, 2020**.

In October, the *Tenth Annual Woodcock Foundation Breast Cancer Symposium – Innovations in Care* was held. Christina Minami, MD, MFA, MS, Brigham and Women’s Hospital, spoke on breast conservation surgery following pre-surgical chemotherapy. Lecturers from Dana-Farber Cancer Institute included Rachel Freedman, MD, MPH, who spoke about survivorship and breast cancer; Jennifer Bellon, MD, who addressed radiation therapy in regional lymph nodes; and Sharon Bober, PhD, addressed sexual health in breast cancer survivorship. Sarah Sinclair, DO, Northern Light Cancer Care, highlighted breast cancer clinical trials available locally. Our **2020** fall breast cancer symposium is scheduled for **Thursday, October 15, 2020**.

Strong Research Program Brings Treatment Trials to Maine

Our physicians and research team are to be congratulated. In March 2019 our program was notified by the National Cancer Institute of our selection as a High-Performance site within the National Clinical Trials Network. This award provides additional funding for infrastructure based on the site’s overall participation and performance in the accrual of patients to trial, integration activities within the cooperative group, and data quality from the site. For high accruing sites such as Northern Light Cancer Research the additional funding is intended to augment funds necessary to sustain high enrollment levels. The funding supports enrollment and continued follow-up for enrolled patients.

Sarah Sinclair, DO, medical oncologist, now leads our research team as medical director of Cancer Research at the Lafayette Family Cancer Institute. She brings to her new position a goal of making clinical research trials accessible to more patients. Featured as a speaker at our Breast Cancer Symposium, she explained how physicians and other providers can encourage their patients to participate in clinical trials. She highlighted some of the benefits to current and future generations of patients.

Our cancer clinical trials program is active with more than 60 adult trials and 20 pediatric-young adult trials available for enrollment. In 2019, two clinical trials opened participation to patients receiving radiation therapy. Increased availability of Dana-Farber Cancer Institute clinical trials for treatment of breast cancer remains an important part of our Dana-Farber Cancer Care Collaboration. Affiliation with the Alliance Foundation and Dana-Farber Cancer Institute's Blood Cancer Research Partnership also brings to the region the opportunity for use of novel treatments in patient care close to home.

As of early December, our program had 146 patient enrollments in 2019 including cancer treatment, cancer control, prevention and registry trials. This represents over 9 percent of new patients 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.

New Directions for 2020

Over the course of the next few years, my colleagues in Radiation Oncology will be expanding our treatment technology – both the guidance and delivery systems. This will allow us to continue to deliver the highest quality care to those in our region. At present, construction is coming to conclusion for our new state-of-the-art pharmacy. Discussions have begun to strengthen our approach to navigation services to assure that those in need of care are able to access care in the most efficient and expedited manner possible. As mentioned earlier, Dr. Dennis will be taking the lead on developing a comprehensive approach to survivor services – building on what exists, feedback received from survivors in our region, and borrowing best practices from around the country.



Catherine Chodkiewicz, MD

Colorectal cancer is the fourth most frequent cancer diagnosis and the second leading cause of cancer death in the United States. Annually, there are 101,420 new cases of colon cancer and 44,180 new cases of rectal cancer. In the state of Maine, Colorectal cancer is the fifth most common cancer, with 668 cases in 2015. On average, each year at Northern Light Eastern Maine Medical Center, 140 new cases are identified.

Recognized risk factors for developing colorectal cancer include low socioeconomic status, unhealthy diet, smoking and obesity. Each are characteristics of our patient population.

Surgery is the primary curative modality for patients with non-metastatic colon cancer. Most patients with stage I and II disease (defined as disease confined to the colon or rectum) are treated with surgery alone. Adjuvant chemotherapy is recommended for a small number of patients with high risk stage II disease and for all patients with stage III disease (defined by peri-tumoral lymph node involvement with tumor present at surgery). Chemotherapy is associated with improved outcomes in these patients.

Patients with non-metastatic rectal cancer are often treated with chemoradiation upfront to minimize the risk of local recurrence and to improve the rate of sphincter preservation, thus decreasing the risk of permanent colostomy at surgery. Patients often receive adjuvant chemotherapy postoperatively to decrease the risk of distant metastases and improve survival.

Whenever possible, for patients with colorectal cancer stage IV or metastatic (defined as the presence of tumor to other organs, often liver or lung) disease with limited metastatic sites (i.e. limited number tumor sites in liver or lung amenable to surgery), are offered aggressive management of their disease. This involves both surgery of the primary site and metastatic site(s) together with systemic chemotherapy. Patients treated in this fashion have a significant improvement in survival compared to those treated with chemotherapy alone.

When patients have multiple sites of metastatic disease, chemotherapy is usually the only treatment modality offered. When complications such as obstruction, bleeding, or perforation occur at the site of the primary tumor surgery may be required.

PATIENTS' CHARACTERISTICS:

For our focused quality review of 2019, we looked at all cases of colon and rectal cancer that were seen at the Northern Light Cancer Care, between 2013 and 2017. A total of 420 patients with colon cancer and 170 patients with rectal cancer were identified. The median age for patients with colon cancer was 71 and for rectal cancer was 65. (Figure 1)

For patients with colon cancer, 216 (51.4 percent) were male and 204 (48.6 percent) were female. For rectal cancer, 99 patients (58.2 percent) were male and 71 were female (47.8 percent). (Figure 2)

The distributions of age at diagnosis and gender were both similar to national data from the National Cancer Database (NCDB) for 2013-2016 (gray bars over-laid in figures).

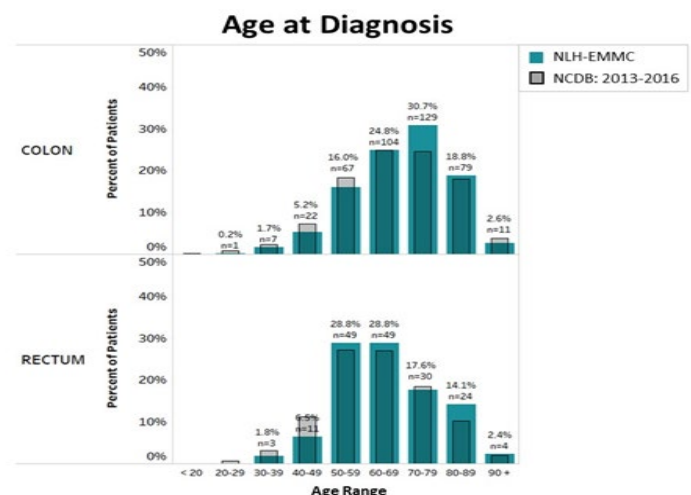
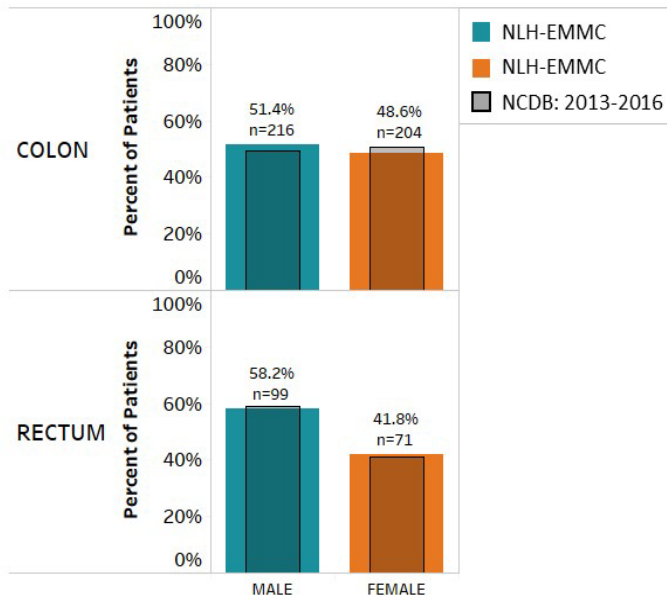


Figure 1

Gender

Figure 2



Colorectal Cancers 2013-2017 Patient Characteristics

Figure 3

	Colon Cancer (N)	Rectal Cancer (N)
Median Age	71	65
Male/Female	216/204	99/71
Stage I	72	37
Stage II	125	45
Stage III	110	50
Stage IV	103	33
Not Staged	10	5
Total	420	170

Tumor Location	Patients (N)
Right Colon	244
Left Colon	176
Rectum	170

Of the 420 patients with colon cancer, 244 patients (58.1 percent) had right-sided tumors (cecum, ascending, hepatic flexure and transverse colon), which are considered more aggressive and have a poorer prognosis (Figure 3).

Of the 420 cases of colon cancer, 72 had stage I, 125 had stage II, 110 had stage III, and 103 patients had stage IV cancer. There were ten patients with colon cancer for whom disease stage could not be determined due to factors such as premature death or comorbidities that prevented a complete staging workup. Of the 170 patients with rectal cancer, 37, 45, 50 and 33 patients had stage I, II, III and IV disease respectively. There were five patients with rectal cancer for whom disease stage could not be determined for reasons similar to those found in un-staged patients with colon cancer. The stage distribution for both colon and rectal cancers was similar to national data from the NCCDB for 2013-2016 (gray bars over-laid in figure below – Figure 4).

Stage at Diagnosis

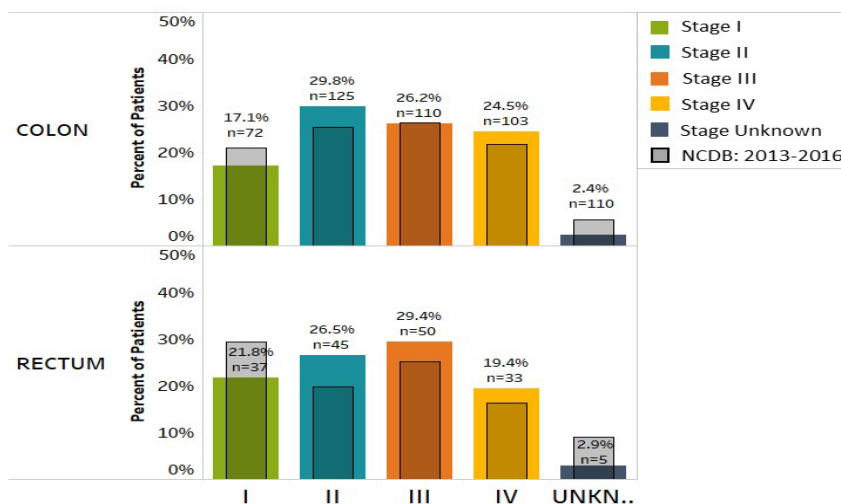


Figure 4

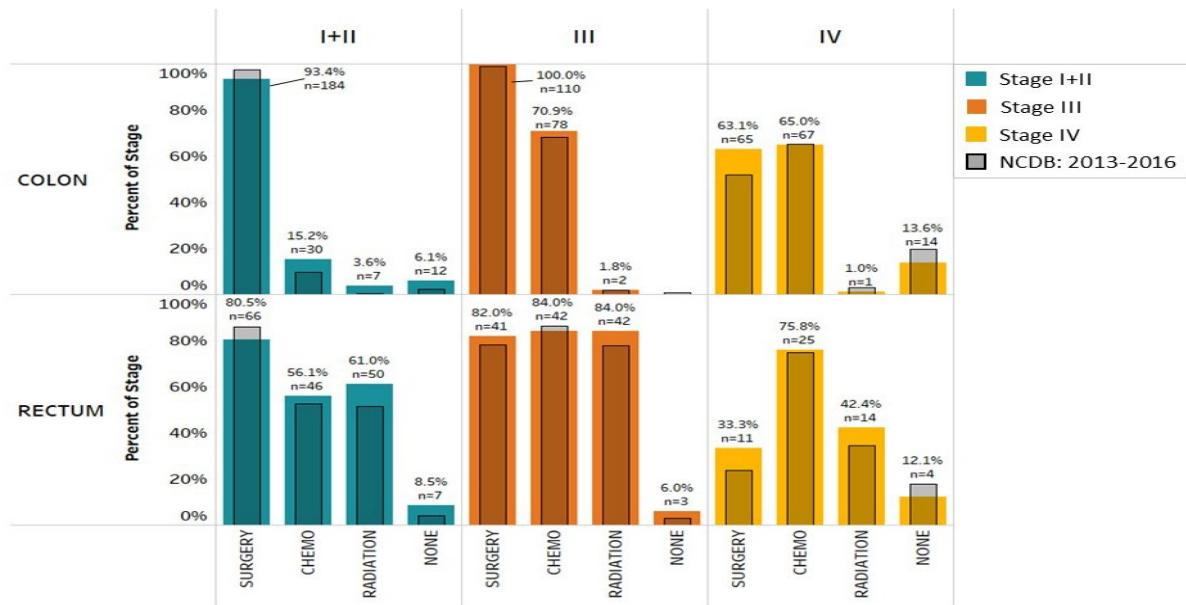
SURGICAL TREATMENT

A total of 359 patients with colon cancer underwent surgery, which included most patients with stage I – II (184 patients), all patients with stage III (110 patients), and some of the patients with stage IV (65 patients).

Of the 170 patients with rectal cancer, 66, 41, and 11 patients with stage I-II, III, and IV disease underwent surgery at some point in their treatment course, respectively. Percentages of both colon and rectal cancers treated with surgery were similar to national data from the NCDB for 2013-2016 (gray bars over-laid in figure below – Figure 5).

Treatment Modality By Stage

Figure 5



CHEMOTHERAPY FOR COLON CANCER

Of the 175 patients with colon cancer who received chemotherapy, there were 30 patients with stage II disease, and 78 patients with stage III disease. This represents only 15 percent and 71 percent of patients with stage I-II and III disease respectively. Only 65 percent of the 103 patients with stage IV disease received chemotherapy. Percentages of both colon and rectal cancers treated with chemotherapy were similar to national data from the NCDB for 2013-2016 (gray bars over-laid in figure on previous page – Figure 5).

Detailed analysis of the 110 patients with stage III disease revealed that 13.6 percent were medically unable to receive treatment and 11.8 percent of patients declined offered treatment altogether. Of the 102 patients with stage IV disease, 14.7 percent were deemed medically unable to receive treatment, 10.8 percent declined offered treatment altogether, and 7.8 percent died prior to treatment initiation. (Figure 6)

REASON FOR NO CHEMOTHERAPY TREATMENT STAGE III-IV PATIENTS

STAGE	COLON		RECTUM	
	Stage III (110 pts)	Stage IV (102 pts)	Stage III (50 pts)	Stage IV (33 pts)
CHEMOTHERAPY				
Yes	78 (70.9%)	66 (64.7%)	42 (84%)	25 (75.8%)
No	32 (29.1%)	36 (35.3%)	8 (16%)	8 (24.2%)
REASON FOR NO TREATMENT				
Declined	13 (11.8%)	11 (10.8%)	3 (6%)	4 (12.1%)
Comorbidities	15 (13.6%)	15 (14.7%)	4 (8%)	3 (9.1%)
Post Op Complications	2 (1.8%)	0	0	0
Lost follow up / death	2 (1.8%)	10 (9.8%)	1 (2%)	1 (3%)

Figure 6

CHEMORADIATION FOR RECTAL CANCER

Of the 170 patients with rectal cancer, about half of the patients with stage I and II, and most of the patients with stage III disease had chemotherapy and radiation as part of their treatment. A small percentage of patients with stage IV disease also received radiation, but most received chemotherapy only. A similar pattern was observed in the national data from the NCDB. (Figure 5)

TIME FROM DIAGNOSIS TO SURGERY

For patients undergoing surgery as their first treatment for colon or rectal cancer, the average time from colonoscopy to surgery was determined. For those who received their colonoscopy at Northern Light Eastern Maine Medical Center, the average time from colonoscopy to surgery was significantly lower than for patients who received their colonoscopy at another facility and were then referred to Northern Light Eastern Maine Medical Center for surgery. The average interval from colonoscopy to surgery was 12 and 13 days shorter for stage I-II and stage III, respectively, for those patients who received their colonoscopy at Northern Light Eastern Maine Medical Center. There was no difference observed in time from colonoscopy to surgery for patients with stage IV disease, but only a limited number of stage IV patients had surgery (21 patients out of 136 patients (15 percent)). (Figure 7)

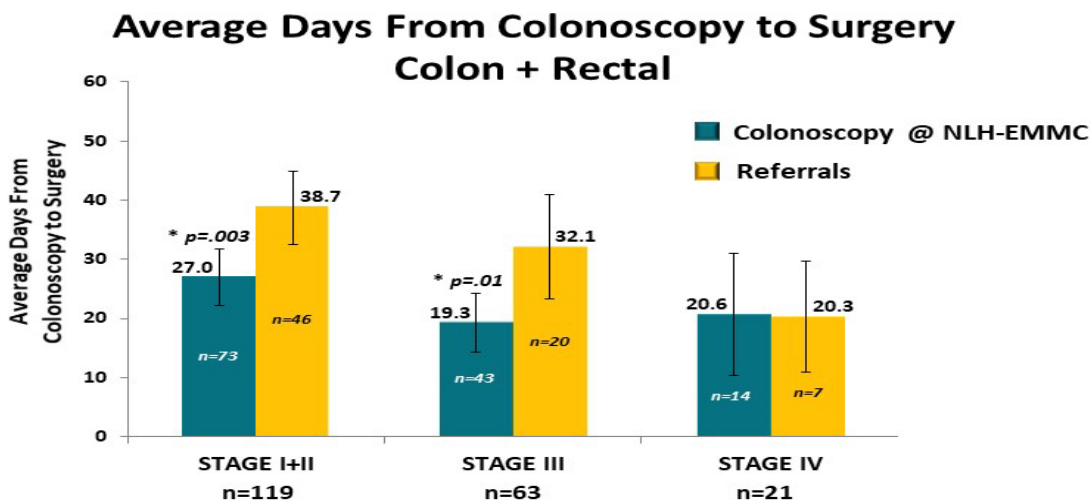


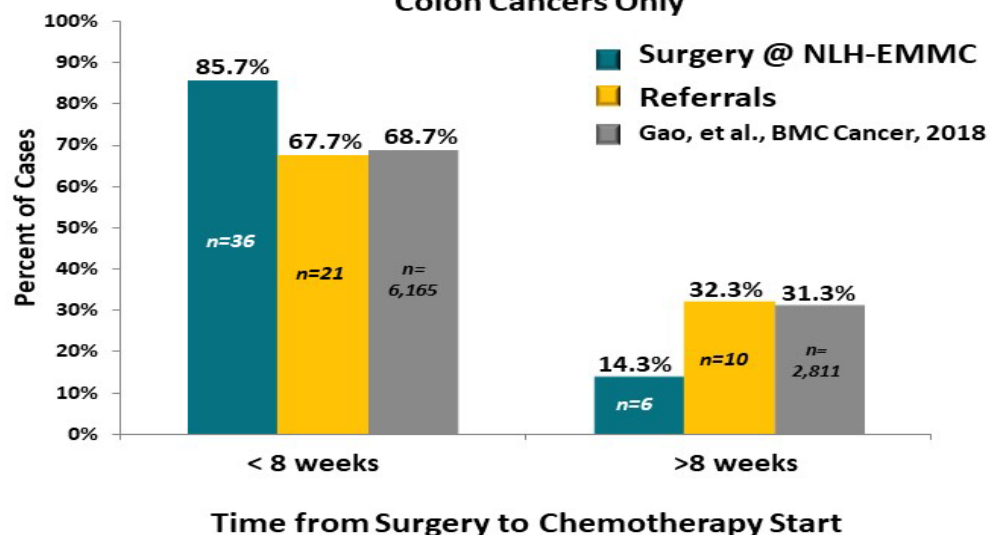
Figure 7

TIME FROM SURGERY TO CHEMOTHERAPY

Our analysis shows that the average time from diagnosis to surgery was shorter in all patients with stage I-II and III disease when they received both surgery and chemotherapy at Northern Light Eastern Maine Medical Center, compared to chemotherapy patients treated at Northern Light Eastern Maine Medical Center who had their surgery at an outside institution. [Figure 8]. Our results compare favorably with other published series, particularly for patients treated at Northern Light Eastern Maine Medical Center, since 85 percent of patients are treated less than 8 weeks from surgery, compared to 67.7 percent when surgery was performed at another facility, which is equivalent to large published retrospective study.

Surgery to Chemotherapy Interval

Percent of Cases Exceeding 8 Weeks
Colon Cancers Only



DISCUSSION

Taken together, our data compares favorably with the published national data from the National Cancer Database (NCDB). Almost all patients with non-metastatic colon cancer underwent surgery with curative intent. The number of patients receiving adjuvant chemotherapy is similar to the national average. Unfortunately, we had a high number of patients who were deemed unable to undergo treatment because of multiple comorbidities. This information helps us to recognize the importance of comorbidity management and coordination of care between specialties and primary care to improve the overall health of our population.

Our analysis identified that patients referred from outside Northern Light Eastern Maine Medical Center experienced delays in treatment initiation and surgery compared to patients who had all treatment at Northern Light Eastern Maine Medical Center. This emphasizes the need for better communication and navigation of patients through all segments of their care, both in and outside the system, to optimize care coordination.

We were pleased to observe that the comparison between disease specific predicted survival rates from the SEER database and our patient population with colon cancer showed similar survival rates. This was despite our patient population having a significantly higher than average number of comorbidities and the fact that the majority of our patients had right sided colon cancer. (Figure 9)

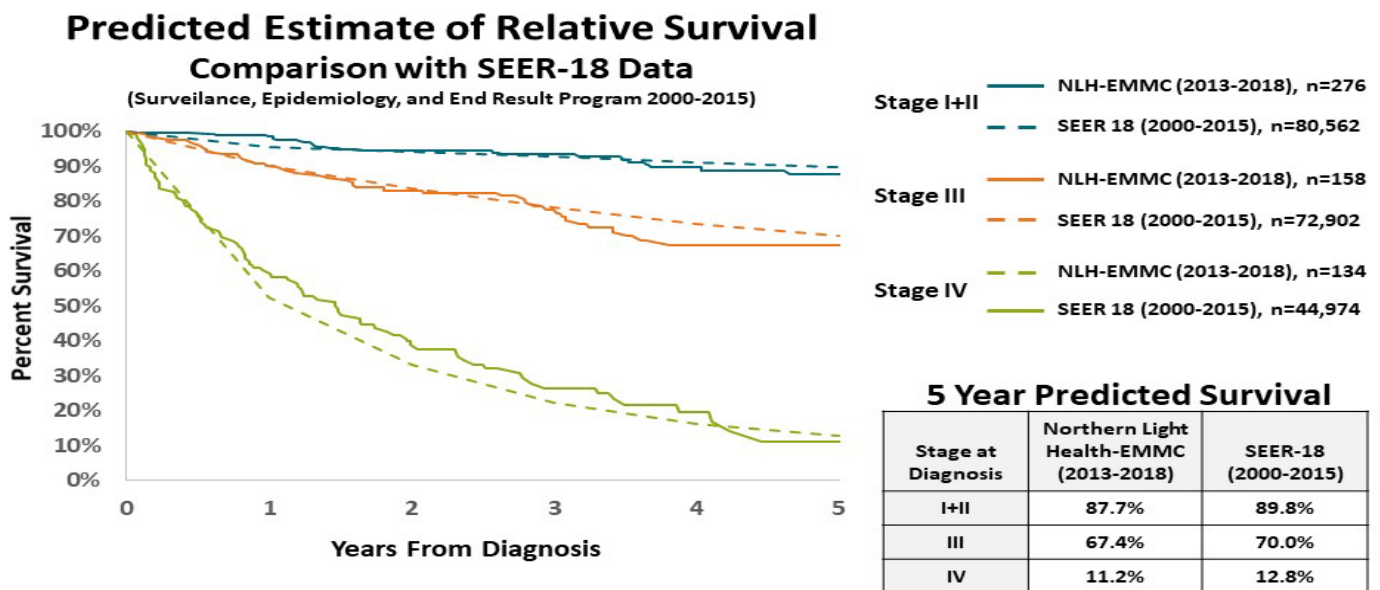


Figure 9

We are currently strengthening our navigation program to address the issues of care coordination. The goal is to improve access to care for all in the community, whether referred from within or from outside the Northern Light Health system.

As part of our quality review for the year 2019, we also assessed in detail the entire population of patients diagnosed with colorectal cancer during 2018. We verified that our patients were consistently treated according to standards established by the National Comprehensive Cancer Network (NCCN) guidelines. All deviations from the standard of care were well documented in the patient's record and were justified. Most treated outside the standard had multiple comorbidities.

As is true for all cancer patients treated at Northern Light Cancer Care, we screen every patient with colorectal cancer for potential participation in any of our available clinical trials. Giving our patient population, the opportunity to participate in clinical research is a very important part of our program. Expanding the number of available trials for patients with gastrointestinal malignancies, colorectal cancer, in particular, is one of our goals for the year to come.



Elaine Chambers, MSB, RN

Thanks to the generosity of wonderful donors, the Breast and Osteoporosis Centers installed our fourth and final 3D mammography unit this past summer. This puts all our mammography units on the same platform and capability. Both Northern Light Eastern Maine Medical Center sites, located on State Street and Union Street campuses, offer FDA certified and American College of Radiology (ACR) accredited high quality mammography with computer aided diagnostic (CAD) review. Same day mammogram results for our diagnostic patients continue to be offered at the State Street location.

Joyce Remeschatis, CNOR, RN, joined our program as our new Breast Patient Nurse Navigator. Joyce hit the ground running and has made many strides, already blending diagnostics with support to our Breast Surgical Specialist practice. We are very thrilled to have her on our team. She brings to her new role surgical, office practice, and navigation experience, each which has been very helpful in continuing to develop this role.

January 1, 2020 celebrates the seventh anniversary of the opening of Northern Light Breast Surgery on the third floor of the Lafayette Family Cancer Institute in Brewer. This practice is intertwined with other treating specialists and focuses solely on breast health issues. Its location has been key in connecting diagnostics, multispecialty evaluation, and treatment in a cohesive manner.

In our institutional quality review of breast cancer cases and image-guided breast biopsy cases, we continue to meet or exceed all breast care benchmarks. These meetings provide a multidisciplinary review of these services and the plan of care for our patients.

Caring Connections, a collaborative program between Northern Light Eastern Maine Medical Center and The Bangor Y, had more than 1,093 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 Physical Therapy at Northern Light Rehabilitation, 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 Tumor Registrars (CTR), and one Cancer Registrar in training. As we close the 2019 calendar year, we have added one Cancer Registry Assistant.

The Cancer Registry holds 35,052 **analytical** cases (first diagnosed and/or received all or part of first course treatment at Northern Light Eastern Maine Medical Center) and 24,574 **non-analytical** (first seen at Northern Light Eastern Maine Medical Center after completion of a full course of therapy at another facility, coming to Northern Light Eastern Maine Medical Center for recurrence, and/or subsequent treatment). These numbers represent registry data collected from 1987 to 2019.

In 2018, the Cancer Registry accessioned 2,182 cases. Analytical cases totaled 1,844 and 301 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 5,595 cases diagnosed 2014-2019 was 96 percent. For those diagnosed from our reference year of 1998 the ACoS-CoC required follow-up rate is 80 percent. Our review of 14,010 cases resulted in a follow-up rate of 84 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 use this information to ensure that 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.

The Cancer Registry also participates in quality care reviews supplying data for physician-driven quality studies and case review. Additionally, the Cancer Registry completes case review for Medical Oncology's participation in QOPI – a quality review as part of the program's accreditation through Association of Community Cancer Centers.

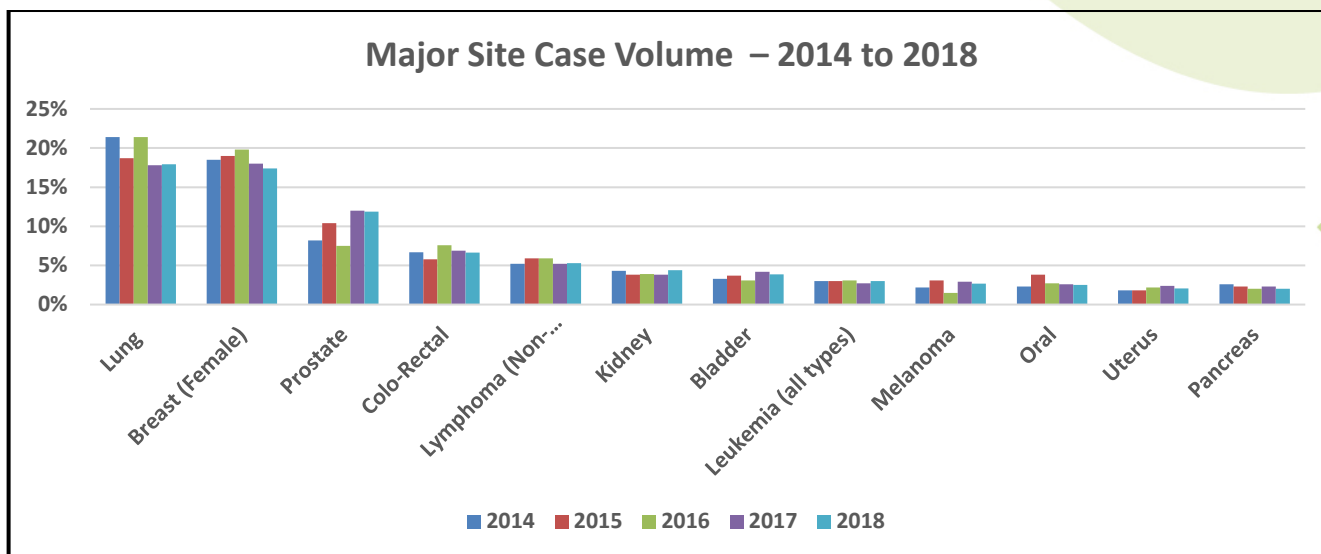
Twenty-three physicians (medical oncologists, radiation oncologists, pediatric oncologists, and surgeons) performed a quality review on Cancer Registry data recording. Fifteen percent (280 cases) of the 2018 analytic caseload (1,844 cases) was reviewed. Review requirement is 10 percent. Data reviewed included 16,896 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 2018, 657 cases were presented. This figure represents more than 36 percent of our analytic case load which is well above the ACoS-CoC required 15 percent.

For information, please call us at 207.973.7483.

	2014	2015	2016	2017	2018
Total Analytic Cases	1,746	1,679	1,698	1,847	1,844
Cancer diagnosed and/or treated at EMMC	959	910	946	1,033	1,054
Cancer diagnosed elsewhere with first treatment at EMMC	787	769	752	803	790
Total Non-Analytic Cases	216	277	250	335	301
Cancer diagnosed and treated elsewhere; follow up at EMMC					
Total Accessioned Cases	1,962	1,956	1,948	2,182	2,149

Cancer Site / Type	EMMC Actual for 2018		ACS Estimates for 2018*			
	Cases		Maine*		Nation*	
Lung	372	17.91%	1,450	16.86%	234,030	13.49%
Breast (Female)	383	17.40%	1,380	16.05%	268,670	15.48%
Prostate	254	11.88%	710	8.26%	164,690	9.49%
Colo-Rectal	142	6.64%	660	7.67%	140,250	8.08%
Lymphoma (Non-Hodgkins)	57	5.29%	400	4.65%	74,680	4.30%
Bladder	83	3.88%	580	6.74%	81,190	4.68%
Leukemia (all types)	113	2.99%	320	3.72%	60,300	3.47%
Melanoma	44	2.67%	470	5.47%	91,270	5.26%
Uterus	64	2.06%	380	4.42%	63,230	3.64%
Cervix	12	0.56%	50	0.58%	13,240	0.76%
Total # of Cases	2,138	71.28%	8,600	74.42%	1,735,350	68.66%



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 2018.

Primary Site	Total	%Total Cases	Male	Female	Stg 0	Stg I	Stg II	Stg III	Stg IV	Total Staged	%Stage O, I, II
Oral	54	2.5%	43	11	1	5	9	5	23	43	35%
Esophagus	39	1.8%	34	5	0	2	4	9	14	29	21%
Stomach	23	1.1%	16	7	0	5	2	1	9	17	41%
Small Intestine	11	0.5%	7	4	0	1	1	1	3	6	33%
Colon	97	4.5%	58	39	1	14	21	24	19	79	46%
Rectal	45	2.1%	34	11	0	12	8	5	8	33	61%
Liver	12	0.7%	10	2	0	0	1	3	4	8	13%
Pancreas	42	2.0%	21	21	0	14	3	3	15	35	49%
Larynx	16	0.7%	13	3	0	1	6	3	2	12	58%
Lung & Bronchus	383	17.9%	203	180	0	108	32	74	102	316	44%
Bones & Joints	4	0.2%	3	1	0	0	0	0	1	1	0%
Soft Tissue	12	0.6%	8	4	0	1	6	1	1	12	58%
Melanoma	57	2.7%	30	27	11	18	6	7	6	48	73%
Breast	375	17.5%	3	372	52	198	44	21	19	334	88%
Cervix	12	0.6%	0	12	0	2	1	2	2	7	73%
Uterus	44	2.1%	0	44	0	24	2	4	3	33	79%
Ovary	14	0.7%	0	20	0	4	1	1	4	10	50%
Prostate	265	12.4%	265	0	0	53	72	31	26	182	69%
Testis	8	0.4%	8	0	0	6	0	0	0	6	100%
Penis	3	0.1%	3	0	0	1	0	0	2	3	33%
Urinary Bladder	83	3.9%	66	17	1	11	18	2	8	40	76%
Kidney	94	4.4%	68	26	0	53	4	5	19	81	70%
Brain & CNS	40	1.9%	25	15	0	0	0	0	0	0	NA
Thyroid	21	1.0%	7	14	0	13	2	2	1	18	83%
Lymphoma	125	5.8%	63	62	0	20	20	13	38	91	44%
Myeloma	24	1.1%	18	6	0	0	0	0	0	0	NA
Leukemia	64	3.0%	33	26	0	0	0	0	0	0	NA
Other	182	7.5%	83	99	2	2	9	14	10	37	35%
Total	2,149		1,121	1,028	68	568	263	231	339	1478	61%

*This graph reports case distribution by STAGE for ANALYTIC CASES ONLY (1,849) 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.

Medical Staff Committee

Thomas Openshaw, MD, Cancer Leadership Committee Chair, Northern Light Cancer Care
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Catherine Chodkiewicz, MD, Hematology – Oncology Section Head, Northern Light Eastern Maine Medical Center
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Susan O'Connor, MD, Surgeon, Northern Light Breast Care
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Raish Peavey Haskell Children's Cancer and Treatment Center - Pediatric-Adolescent-Young Adult	207.973.7572

Important Contact Information at Eastern Maine Medical Center State Street Campus

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