2020 Annual Report on Cancer

Northern Light℠

Eastern Maine Medical Center

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Clinical Highlights for 2020

Catherine Chodkiewicz, MD, Chair of the Cancer Leadership Committee

The year in patient activity at Northern Light Cancer Care includes:

	New Patients	Follow up visits/treatments
Adult Hematology and Oncology	2,044	29,045
Radiation Oncology	887	17,747

	New and follow up visits
Pediatric Hematology and Oncology	1,654

Responding to the COVID-19 Pandemic

Collectively, the COVID-19 pandemic has irrevocably disrupted our lives over the last year. It has also led to many changes in care patterns for cancer patients, including screening, treatment, support services, surveillance, follow-up interventions across specialties. Although unprecedented in its reach, the pandemic may have become a catalyst for changes that are beneficial to patients and care delivery, such as expanding telehealth services.

Since February-March 2020, the Northern Light Cancer Care under the leadership of **Brenda Farnham, MBA, BSN, RN, OCN,** our newly appointed associate vice president of Oncology Services, has implemented many measures to minimize patients' and staff exposure risk to the virus, following CDC, state, and national guidelines.

When deemed non-detrimental to patient care and outcome, we delayed non-urgent screening procedures, surgeries, and modified care patterns. When necessary, we offered alternative treatment, following recommendations and guidelines from various medical societies, including American Society of Clinical Oncology (ASCO) and American College of Surgeons, National Comprehensive Cancer Network (NCCN) published during the pandemic. It allowed us to preserve our limited supply of personal protective equipment (PPE) as well.

A team of CNAs and schedulers worked tirelessly in providing technical support to our patients implementing telehealth visits.

We implemented stringent safety measures in early February, screening each person entering our facilities for symptoms and temperature checks.

Clinical Staff

New Interim Executive Director

Our executive director **Allen L'Italien, BSN, RN, OCN,** will be retiring at the end of 2020. He has been a tireless champion of our cancer program for 40 years. As a result of his dedication, commitment, and determination, the cancer center has developed and thrived into its current state. Among a few of his many achievements are our practice relocation at Lafayette Family Cancer Institute in 2010, and our collaboration with the Dana-Farber Cancer Institute started in 2016. We will miss Allen dearly. In the interim, our steering committee has nominated Terry Leahy to step in as interim executive director. Already, it is evident that she will bring her enthusiasm and dedication to this program.

Our team of providers and supportive staff

We have a fully invested and dedicated team of surgeons, radiation oncologists, medical oncologists, and interventional radiologists providing the highest level of care to our cancer patients.

Nursing and Ancillary Services
More than 30,370 visits occurred in 2020 in the medical oncology unit alone. A dedicated staff of oncology certified nurses (OCN) delivers treatments in our state-of-the-art infusion room.

Terry Leahy, support staff manager, has been instrumental in making our operational procedures more efficient by improving coordination of care for our patients. Our scheduling team, which is key to providing high-quality care to our patients, has significantly benefited from these changes.

Emotional and Financial distress
The COVID-19 pandemic has accentuated some of our patients' financial and psychological distress. We have a devoted and engaged team of social workers, case managers, and behavioral therapists supporting our patients through their cancer journeys. Over the last year, several initiatives have successfully targeted patients living alone, with limited or no support in the community. An extensive program addressing food insecurity was implemented in the early stage of the COVID-19 pandemic and is ongoing, addressing many patients' needs.

Services Offered for Cancer Patients

Surgical Services

Neurosurgery - Michael Cohen, MD, Northern Light Neurosurgery and Spine

The Neurosurgical Oncology division of the Northern Light Neurosurgery and Spine provides state of the art care for patients with tumors of the brain and spine. We operate on a wide range of brain tumors: glioma, brain metastasis, meningioma, acoustic neuroma, schwannoma, chordoma, pituitary tumor, craniopharyngioma. We perform complex microsurgical techniques for tumors near the skull base and advanced techniques (cortical mapping, awake craniotomy) and monitor patients closely during surgery to allow for safe resection while minimizing brain injury risk.

We also treat spinal tumors that arise from the vertebrae or around the spinal cord. We work in close collaboration with our colleagues from radiation oncology and medical oncology to provide state-of-the-art neuro-oncology care and provide optimal outcomes for our patients.

Cardiothoracic Surgery - M. Jawad Latif, MD, Northern Light Cardiothoracic Surgery

Lung cancer is the second largest number of cases seen at the Northern Light Cancer Care. Most cases are reviewed weekly at our interdisciplinary lung conference. We have a dedicated team of thoracic surgeons, who perform state of the art surgeries using minimally invasive techniques. We continue to increase the number of robot-assisted lung surgery since its inception in the fall of 2017. In 2020, despite several months of restricted services due to COVID-19, our numbers have remained steady. Robotic-assisted surgery has significantly improved patients' experience with recovery time, length of stay, pain management, and risk for complications, our results match or even exceed that of the National Cancer Database (NCDB).

Early detection is key to improving the survival of patients with lung cancer. We have partnered with primary care practices in the community to develop a very successful Lung Cancer Screening Program using low-dose CTs for eligible patients, bringing early detection of lung cancer to more people in Maine.

Gastrointestinal Surgery - Sophia Villanueva, MD, Cancer Liaison Physician, Northern Light Surgery

The surgical oncologist and colorectal surgeons in Northern Light Eastern Main Medical Center continue to provide surgical treatment for colorectal cancer, small bowel, gastric and pancreatic cancers. Despite the pandemic, we continued to deliver services in a timely manner. We provide robotic-assisted surgery using the DaVinci system platform to treat colorectal cancers. This year we acquired the Da Vinci XI, the latest and most advanced system in the country, allowing surgeons to perform complex procedures through smaller incisions, allowing for less blood loss and faster recovery time.

In addition, we have developed quality initiatives using evidence-based protocols in the perioperative treatment of colon cancer through the Enhance Recovery After Surgery (ERAS) program. As a result, we shortened patients' length of hospital stays, lessened post-operative complications and improved patient satisfaction.

Breast Surgery - **Susan O'Connor, MD, Medical Director, Northern Light Breast Surgery**

Despite the global COVID-19 pandemic, Northern Light Breast Surgery and Northern Light Surgery has continued to provide diagnostic, treatment, and follow-up care for our patients. Using guidelines from our national societies and the Dana-Farber Cancer Institute, we adjusted our protocols to meet patient's needs.

Our multidisciplinary approach to breast cancer management with weekly conferences allows us to craft an individualized treatment plan for every patient selecting the safest strategy. As travel has become more precarious, we have utilized telehealth services and coordinated visits thanks to our Nurse Navigator program that support patients through their cancer journey. Our newly created Survivorship Clinic supports patients as they transition out of the active phase of their treatment. The pandemic has given us an opportunity to critically revaluate some of our protocols, including how we deliver safe, effective, personal care to each patient. As we look to the future, lessons learned will inform our future choices in providing the best possible care to our patients.

Head and Neck Cancer - **Zvorufura Makura, MD, Northern Light Ear, Nose, and Throat Care**

The Otolaryngology/Head & Neck surgery department is responsible for diagnosing, treating, and following up with head and neck cancers, mainly laryngeal and tongue. As in other centers across the US, we are seeing an increasing number of HPV-related oropharyngeal cancers.

We use the tumor's excision, neck lymph node dissection, transoral laser resections, and frozen sections where appropriate. Smoking cessation is encouraged, as it is a significant risk factor for these cancers. We have worked in close collaboration with the Dana-Farber Cancer Institute in Boston when major resections requiring free flap reconstruction are needed, however in the future, our new head and neck surgeon, **Nicole Lebo, MD**, can perform free flaps locally.

We test all patients for COVID-19 before each flexible laryngoscopy to ensure patient and staff safety.

Urology Services - **Jonas Gricius, MD, Northern Light Urology**

Northern Light Urology provides a comprehensive multidisciplinary expert assessment and treatment for patients with any urological malignancy, including renal, bladder, prostate, penile, and testicular cancers, according to American Urology Association (AUA), NCCN (National Comprehensive Cancer Network) guidelines.

We provide a full spectrum of both open and minimally invasive surgical options for renal, bladder, and prostate malignancies, with three of the four surgeons performing minimally invasive procedures. The use of minimally invasive technique allows better functional and oncologic outcome for patients, reducing length of hospital stays, which is particularly important during the COVID-19 pandemic.

We have a bi-weekly Genito-Urinary multidisciplinary conference where cases are discussed in detail and patients are evaluated for potential participating in clinical trials and management according to NCCN guidelines.

Medical Oncology - **Catherine Chodkiewicz, MD,** Chair of the Cancer Leadership Committee

Over the last year, four new medical oncologists have joined our team: **Shruti Bhandari, MD; Hilal Hachem, MD; Yelena Patsiornik, MD**; and **Sriman Swarup, MBBS, MD, MBA;** as well as four new Nurse Practitioners: **Stephanie Bosse, FNP; Alessandra Guerin, MSN, APRN, FNP-C; Jennifer Gasaway, MSN, APRN, FNP-BC;** and **Beatrice Russell, FNP.**

Our team is composed of 12 physicians and 7 nurse practitioners. We work in close collaboration with the Dana-Farber Cancer Institute to deliver high quality care in compliance with NCCN guidelines and quality measures established by the Commission on Cancer.

Radiation Oncology – Tracey Carter, RT(T), manager, Northern Light Radiation Oncology

Our Radiation department is composed of four board certified Radiation Oncologists who, along with their therapy staff, manage the treatment of our patients by delivering state of the art Radiation treatments. As a result of the pandemic, we delayed curative-intent breast Cancer radiation treatments post lumpectomy as well as many prostate cancer patients by modifying our usual treatment techniques with no adverse consequences. For others that were already under treatment or for whom a deferral would be detrimental to their care, we were able to carry on treatments without any delays.

Our radiation department continues to increase the utilization of a hypo-fractionated treatment schedule after breast-conserving surgery (BCS) for many of our patients, based on well-established evidence from randomized trials. This allows for a reduction in the number of treatments and has successfully increased patient satisfaction.

We maintain our stance to seek out new advances in technology and treatment regimens to bring to our center so that our patients will continue to have innovative treatment options right here at home.

Pharmacy Quality Update

Megan Derba, PharmD, Manager, Oncology Pharmacy, Northern Light Cancer Care

Compliance with new regulations and guidelines from US Pharmacopeia (USP) 797 and USP 800, describing the practice and quality standards for handling hazardous drugs has resulted in the construction of a completely new IV compounding room at Northern Light Cancer Care. This includes new electronically monitored preparation rooms, and new hoods equipped with a sophisticated ventilation system.

As a result of these new regulations, a significant number of policies and procedures have been updated, under the leadership of Megan Derba, our lead pharmacist at Northern Light Cancer Care. Although most of these transformations remained unnoticed by outside observers, their delivery occurred without diminishing service quality or delaying care to our patients.

Pathology Services - Marek Skacel, MD, Director, Molecular Pathology Laboratory, Dahl-Chase Pathology Associates

Dahl-Chase Pathology provides comprehensive diagnostic services for our oncology program, evaluating tissue samples and blood in order to establish accurate diagnosis, assess prognosis and determine responsiveness to specific treatments. Besides conventional microscopic examination, specialized tests such as immunohistochemistry and flow cytometry are used to evaluate the expression of proteins/antigens on cancer cells. Next-generation sequencing is utilized to detect targetable mutations in the cancer DNA and RNA, enabling more personalized treatments for many patients. In close cooperation with our clinical teams, communicating via general, gastrointestinal, genitourinary, and molecular tumor boards, this work constitutes to be an integral part of modern oncology care.

Radiology Services - Amy Harrow, MD, Section Head, Breast Imaging, Spectrum Healthcare Partners

Adequate and timely imaging studies are key to making an accurate diagnosis and establishing a plan to achieve the best possible outcome. The radiology team at Spectrum Healthcare Partners provides Northern Light Cancer Care with a broad array of imaging services that supports the diagnostic process, such as image-guided biopsies and diagnostic workups including breast imaging, MRI, CT, and PET/CT scans. Our physicians play an important role in treatment for many patients with image-guided tumor ablation and embolization, and therapeutic/palliative image-guided procedures for cancer evaluation and therapy. Often these procedures are associated with decreased invasiveness, reduced pain, and lower costs than comparable alternatives.

Pediatric Oncology - Nadine SantaCruz, MD, Medical Director, Northern Light Pediatric Cancer Care

The pediatric oncology program continues to strive to provide compassionate, comprehensive, evidence-based care to the children and young adults of northern, central, and Downeast Maine. Our multidisciplinary team includes experienced pediatric nursing, child life specialists, social work, patient advocates, and board-certified pediatric hematologist/oncologists. We are an active member of the Children's Oncology Group and participate in a regional pediatric tumor board. We currently have 23 clinical trials open for enrollment giving our patients access to leading edge therapies. This year we welcomed **Daniel**

Callaway, MD to our group, who brings expertise in hematologic malignancies. Our program includes **Nadine SantaCruz, MD**, the only fellowship-trained pediatric neurooncologist in the state.

Survivorship Program - Elizabeth Dennis, DO, Director, Cancer Survivorship Program, Northern Light Cancer Care

We have a new Survivorship program at Northern Light Cancer Care. As the Director of the Cancer Survivorship Program, Dr. Dennis coordinates these efforts, bringing her expertise as an internal medicine physician with an interest in cancer patients.

Ongoing advancements in cancer treatment have resulted in a growing number of cancer survivors. As of 2019, there are an estimated 17 million cancer survivors in the United States. We expect this number to grow by 30% in the next ten years. In Maine, approximately 150,000 of our neighbors have lived through and are now living beyond a cancer diagnosis.

The National Institute of Cancer (NIC) defines a cancer survivor as "anyone who has been diagnosed with cancer from the time of diagnosis to the end of his or her life." Given the nature of having had a cancer diagnosis, and the often-extensive treatment required, cancer survivors have a host of unique needs.

We divide survivorship in different phases. The acute survivorship phase begins at diagnosis and continues through the end of initial treatment focusing on acute treatment side effects. Extended survivorship phase begins at the end of initial therapy and progresses through the months after focusing on more long-term effects of cancer treatment. Long-term or permanent survivorship is the time when years have passed since cancer treatment has ended. Adjusting to living with, through and beyond cancer is the focus of this phase.

In our program, we work with each survivor, exploring potential long-term and late physical and psychosocial effects of cancer and cancer treatment and discussing management options. Survivors also learn tools to decrease cancer recurrence risk and the occurrence of new cancers, including a healthy diet, regular exercise, and risks associated with tobacco use and excessive alcohol consumption. A key component of our program is to connect survivors to available supportive services both within Northern Light Health and in the community.

Our survivorship team includes social workers, dieticians, patient advocates, nurses, physical therapists, administrative staff, and representation from Caring Connections-- our partnership with the Bangor YMCA. In our current pilot phase, we are offering services to women with breast cancer treated with curative intent who require chemotherapy and patients with head and neck cancer treated with curative intent. Our plan is to expand this service to our entire cancer patient population.

Genetics Program - Margaret Rieley, MD, Section Head, Clinical Genetics, Northern Light Cancer Care

The Cancer Risk Genetics program at Northern Light Cancer Care provides genetic counseling for patients and families who have been diagnosed with cancer or who may have a family history of cancer. Cancers of the breast, ovary, pancreas, prostate, colon, uterus, and stomach have an increased risk of being hereditary, in which case, a person has inherited a genetic risk factor from a parent, increasing their lifetime risk of developing a specific type of cancer.

We help families understand their cancer risk, and genetic testing options. We address privacy concerns about genetic information, coordinate testing if elected, and interpret results while taking a patient and family-centered approach to addressing problems and emotional responses to testing.

As we identify a hereditary component with increased frequency in cancers, our practice has grown to include three board-certified genetic counselors and a medical genetics physician in 2020. National guidelines recommend genetic testing for a growing number of cancers, including men with prostate cancer with a high tumor Gleason score. Additionally, all women with ovarian cancer and men and women with pancreatic cancer should undergo genetic counseling.

Palliative Care - James VanKirk, MD, Medical Director, Northern Light Palliative Care

The Palliative Care program continues to grow at the Northern Light Cancer Care. Palliative Care is an interdisciplinary team whose purpose is to work with patients struggling with severe or life-threatening illnesses. We assist with completing and reviewing Medical Advance Directives to ensure a patient's wishes about treatment are always followed and respected.

Our Palliative Care team includes physicians, nurse practitioners, physician assistants, nurses, medical assistants, volunteers, and support staff. We also work closely with social workers, pharmacists, chaplains, dieticians, and therapists.

Multiple studies since have demonstrated that Palliative Care involvement leads to patients experiencing improved symptom control, a better quality of life, and longer survival times when struggling with advanced cancers.

At Northern Light Eastern Maine Medical Center, we have demonstrated similar results. We showed that if the Palliative Care team is involved early in the course of their illness, 95% patients spent their final days, weeks, or months at home with the support of hospice care rather than in the hospital, with 50% of hospitalized patients in the ICU. Establishing an early relationship with patients who have incurable cancers, whether they are on active treatment or not, is key to improving quality of life and in some instances extending patients' lives. We also facilitate goals of care discussions with patients and families to help plan for future possibilities. Patients are encouraged to talk to their provider if they feel that Supportive Care could benefit their overall treatment program.

Cancer Research – **Sarah Sinclair, DO, Medical Director, Oncology Research, Northern Light Cancer Care**

Northern Light Cancer Research has participated in oncology clinical trials for more than 40 years. Our clinical research program has grown significantly over the past several years allowing us to become a main member of The Alliance for Clinical Trials in Oncology in 2012. The Alliance is part of a clinical trials network sponsored by the National Cancer Institute (NCI). Membership in the Alliance has enabled us to open numerous important clinical trials at Northern Light Cancer Care. Since joining the Alliance, we have continued to be a high-accruing site, and we have been recognized as a high-performance site by the National Clinical Trials Network. As a top accruing site within the Alliance, we hold a seat on the Board of Directors.

Currently, we have 70 open adult clinical trials available across various hematologic and oncologic malignancies. Our clinical trials portfolio includes studies from Cooperative groups, Dana-Farber Cancer Institute, Jackson Laboratory, and Industry.

Many of our patients have received genomic tumor testing through participation in the Maine Cancer Genomic Initiative (MCGI). The MCGI is a statewide collaboration with The Jackson Laboratory that has enabled hundreds of patients in Maine access to genomic tumor testing aimed at improving the understanding of the complex biology of an individual tumor.

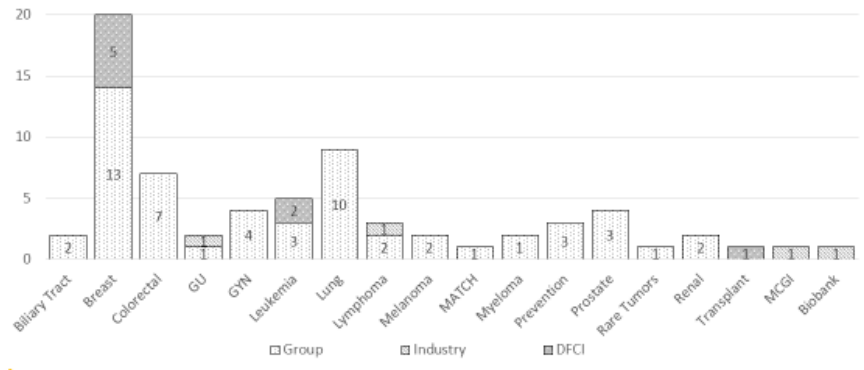
Nationally, we have seen a decrease in accruals to clinical trials in 2020, as a direct result of the COVID-19 pandemic. Despite these challenges, we have continued to open and enroll patients on clinic trials at Northern Light Cancer Care. This year we have enrolled 123 patients on clinical trials.

There are many barriers to enrollment on a clinical trial, and these barriers have been further amplified by the COVID-19 pandemic. An estimated 3% of cancer patients enroll on a clinical trial in the United States, and the number is even lower for older patients.

In an effort to decrease barriers to enrollment at our center, we have focused our attention on the following: broadening our clinical trial portfolio so that more trials are available across multiple tumor types, consistent review of patient eligibility prior to the initial consultation and at time of disease progression, educating and updating physicians on available trials. Nationally there have been ongoing efforts to expand eligibility criteria for cancer clinical trials as many are excluded from participating in trials based on restrictive eligibility criteria.

We look forward to continuing to strengthen our efforts, expand our clinic trials, and further our collaborations in 2021.

Adult Oncology Clinical Trials



70 Total Clinical Trials

55 Alliance

8 Dana-Farber Cancer Institute

6 Industry (Including MCGI)

1 NIH COVID-19 Study

Meeting the American College of Surgeon Quality Standards

Our program has been fully accredited by the American College of Surgeons, for three years, on February 26, 2020. **Sophia Villanueva, MD**, surgeon and our new physician liaison, reported at each leadership meeting an in-depth retrospective analysis in patterns of care of breast, colon, rectal, esophageal, anal, prostate cancer, melanoma population, comparing our results to that of the National Cancer Database (NCDB).

Although our population is, on average, older with a higher number of comorbidities across tumor types, compare to that of the NCDB, our patterns of care compare favorably, and for some tumors, exceed national benchmarks. Our survival rates parallel nationally published data as well. Later in this report, we will present in-depth 2019 results for our prostate cancer population.

Cancer Program Quality Reports from the Commission

The Commission on Cancer (CoC) requires accredited cancer programs to treat patients according to nationally accepted accountability and quality improvement measures defined by the Commission. To be fully accredited, programs must meet pre-established benchmarks for these measures. The CoC releases several reports, analyzing the cases provided by each program as feedback to each accredited program.

Our program has met all the benchmarks established by the commission except for one measure in four patients with lung cancer in 2017. Our program has been 100% compliant for this measure in 2018 and 2019.

Our facility is above the national average for the 30 and 90-day mortality rate for all tumors (gastrectomy, lung resection, and colorectal cancer). Adjusted (for age, race, sex, cancer sequence, insurance status, comorbid conditions), survival rates for breast, colon, lung are similar, if not above the national average.

Time from diagnosis to treatment for early-stage breast, colon, and lung cancer is equivalent or superior compared to regional and nationwide affiliated programs.

Cancer Registry Report

Tumor Registry Responsibilities - Renee Stefanik, BAS, RHIT, CTR, Cancer Registrar lead, Northern Light Cancer Care

Our Cancer Registry team is responsible for collecting and maintaining a computerized database of all cancer patients within the Northern Light Health system. Systematic data collection started in 1987. Our team includes seven of Certified Tumor Registrars (CTRs), one Cancer Registrar Assistant and one Data Quality Oncology Analyst. Our team is responsible for populating the database with new cases and conducting lifetime follow up for all patients in the database. 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.

A special thank you to Renee Stefanik for her hard work and dedication. Her knowledge, attention to detail, and leadership is instrumental in assuring we produce accurate, timely, and quality data for our oncology services.

Multidisciplinary Tumor Board and Subspecialty Tumor Boards

All multidisciplinary conferences converted to telehealth platforms since March 2020. Despite this conversion, participation remained very high among participants. Our Cancer Registry Assistant, Heather McCue was instrumental in making these conferences an ongoing success:

The number of patients' cases presented at our tumor boards was 688 and 2019 and 820 in 2020 at the time of this publication.

For each case, we review the clinical/pathologic stage, treatment planning NCCN guidelines, options/eligibility for genetic testing, clinical research studies, and support care services.

We regularly invite speakers from Dana-Farber Cancer Institute to discuss cases in their area of expertise at our main tumor board.

Multidisciplinary Cancer Conferences include:

- Weekly General Case Conference
- Weekly review of new Breast Cancer Cases
- Weekly Lung Cancer Conference
- Bi-monthly Urology Conference
- Bi-monthly Gastrointestinal Conference
- Monthly Molecular Tumor Conference
- Monthly Hematopathology Conference
- Weekly Dana-Farber Cancer Institute Tumor Conference

Screening and Early Interventions
As a result of the COVID-19 pandemic, most of our screening efforts and early interventions were postponed. Lessons learned from the pandemic will likely result in improved protocols to maintain a safe environment for patients and staff. It is essential that screening and early detection remain active, allowing early detection of cancer for our patient population.

Education and Events
Due to the COVID-19 pandemic, the two symposiums were canceled and rescheduled for 2021. We changed many of our community events into virtual events and continue to work tirelessly to accommodate this new and hopefully temporary reality.

Tumor Registry Activity
The tumor registry reports to various entities regularly. Some are mandatory or required for CoC accreditation maintenance. We also use the database to perform internal quality reviews, comparing our data to that of the National Cancer Database (NCDB) to monitor and improve the quality of care delivered to our patients.

Mandatory Submissions

- **State of Maine:** Every quarter, the cancer registry exports data to the State of Maine Cancer Registry, which reports to the Centers of Disease Control (CDC).
- **Commission on Cancer:** Until recently, our team would submit data to the NCDB annually and the RQRS database monthly. This reporting mechanism is now changed, as outlined below.
  The table below summarizes the Cancer Registry activity in 2020, including new cases addition, follow-up of existing cases from the last five years, and beyond.
  New reporting system to the Commission on Cancer: Starting September 28, 2020, the commission has consolidated the mandatory submissions to the NCDB and RQRS into one system called the Rapid Cancer Reporting System (RCRS). The RCRS now serves as the new, single source of data submission for all CoC accredited hospital registries.

Volume of New Cases Analyzed and Processed by the Registry In 2020

Registry	Analytical cases	Non-Analytical Cases
Analytic and non-analytic numbers for 2019	1,831	331
Number of cases submitted to the NCDB in 2020	10,375	N/A
Total Number of cases submitted last 5 years	90,247	N/A

Volume of Follow Up Cases Processed by the Registry In 2020

Registry	Cases Number	Follow up rate (CoC % benchmark)
Follow Up cases last 5 years 2015-2020	8,615	97% (90)
Follow Up cases since 1998	32,329	84% (80)

Quality Control of Data

Our team performs regular quality control of the data included in the database. The COC mandates that each center review 10% of new cases for concordance and data accuracy entered in the database with patients' records. All our physicians participating in cancer patient care, reviewing individual charts for accuracy and treatment compliance with published guidelines.

In this report, Cancer Registry Data Tables reflect cancer case accessions at Northern Light Eastern Maine Medical Center, frequency, and disease stage at presentation and prevalence for 2019. For information, please call us at 207.973.7483.

A Focus on Prostate Cancer

Each year we study one tumor type in detail. This year we focused on prostate cancer. The American Cancer Society indicates that other than skin cancer, prostate cancer is the most common cancer in American men, the second leading cause of cancer death, behind only lung cancer.

According to the latest Maine annual cancer report published by the state in 2018, a total of 860 prostate cancers were diagnosed in 2016 and it was the second leading cause of cancer in male patients after lung cancer.

Tumor marking screening with PSA has evolved in national guidelines over the last few years. There has been a trend toward less screening and, resulting in a reduced number of early-stage detection.

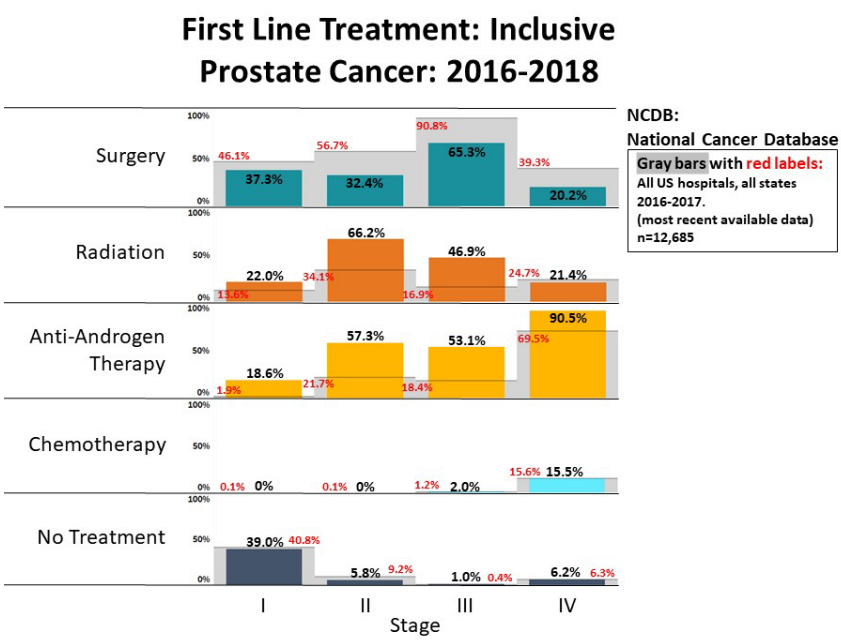
When patients have disease limited to the prostate, the choice of treatment or active surveillance decision is complicated. It is based on a constellation of factors including, the clinical stage of the tumor, Gleason score, PSA levels, comorbidities, and life expectancy at presentation.

The NCCN (National Comprehensive Cancer Network) guidelines segregate patients with the localized disease into different risk categories (low, intermediate, high risk of recurrence) and provide treatment algorithms for patients, defining standards of care nationwide. A web-based tool such as the Personal Patient Profile-Prostate Cancer or P3P, developed by Dana-Farber Cancer Institute (https://www.p3p4me.org/users/login), can be used to help patients make an informed decision about their care.

New systemic treatment options have emerged based on specific germline (the patient carries a mutation) or somatic (within the tumor itself) mutations. Bone involvement is frequent and painful in patients with metastatic prostate cancer; palliative radiation is an essential part of treatment for these patients. Our ability to diagnose early metastatic disease has been improved with the recent acquisition of an Axumin PET CT scan at our facility.

Prostate Cancer Risk Category and Treatment According to NCCN guidelines V2. 2020	
Limited disease low risk	For most patients consider active surveillance
Limited Intermediate risk	For most patients consider surgery or radiation therapy
Limited High risk	For most patients treat with either surgery or radiation
Metastatic disease	Systemic treatment and anti-androgen therapy (ADT)

In June 2020, we presented results at our Leadership Cancer Meeting for our prostate cancer data and compared our results to that of the NCDB from 2013 to 2017. We also analyzed all prostate cancer cases seen for 2019 at our facility, looking for compliance with NCCN guidelines regarding initial workup, treatment, or active surveillance, according to the risk categories outlined above. Detailed analysis of these patients at our Leadership Meetings in June and August 2020. We are showing here some of the highlights of this analysis.



Comparison of our patient population with the NCDB from 2014 to 2018 (see slide set: Prostate Cancer 2016-2018)

Our patient volume has been consistently more than 130 patients, with a significant increase in 2017 and 2018. When compared to the NCDB, our patient population tends to be older (44% of patient above the age of 70 compared to 31.8% in the NCDB) and have a more advanced stage at presentation. The also had a higher number of comorbidities. Despite these differences, when looking at first-line treatment inclusive of all treatments, many patients were treated, and when treated, most patients received radiation therapy with ADT when deemed appropriate.

Detailed Analysis of our 2019 Patient Population

PATIENT POPULATION TOTAL = 132 of 133 patients *

* One patient had been diagnosed in 2017 not 2019

Risk Group	Number of patients	Median PSA	Median Age
Low	25	6.3	67
Intermediate	47	8.2	67
High	31	16.5	69
Metastatic	23	179.5	75

In parallel, we did a detailed analysis of our 2019 population regarding compliance with NCCN guidelines. We divided our total of 133 patients by risk categories for early-stage and metastatic disease according to NCCN guidelines (below). We found that patients in each stage category were treated appropriately for the most part, and when present, standards deviations were justified. Overall, the population of patients referred for genetic counseling based on personal, family history, or both was non-existent. Most patients in the intermediate and high-risk category received radiation therapy and, when appropriate, in combination with Androgen Deprivation Therapy (ADT). We treated patients with metastatic disease per NCCN guidelines.

Prostate Cancer 2019 Analysis: Summary of treatment and surveillance patterns by tumor risk category

Risk Category	Management Modality			
	Surveillance or no Tx	Surgery	RT +/- ADT	Systemic treatment
Low	15	3	2	0
Intermediate	4	15	27	1
High	2	7	21	1
Metastatic	3	0	4	24

Discussion

Although our patient population is older, with significant comorbidities, our data compares favorably with the published results for the NCDB in our first report. A substantial number of patients present with high Gleason scores and elevated PSA. Our patient population is rural, and we wonder if limited access to care, less insurance coverage, influence the number of more advanced disease at presentation. We are currently discussing screening strategies within the Northern Light system to see if we should adapt our screening strategy to capture earlier cancers.

When studying our 2019 prostate cases, we see that our treatment patterns are congruent with that recommended by NCCN. When present, deviations from guidelines, were justified. We are currently implementing a new referral system to ensure patients in whom germline testing is recommended testing be screened and tested consistently.

As is valid for all cancer patients treated at Northern Light Cancer Care, we screen every patient with prostate cancer for potential participation in clinical trials. Allowing our patient population to participate in clinical research is an essential part of our program. Expanding the number of available trials for patients with prostate cancer, is one of our many goals for the year to come.

New Directions

Over the last year, we have launched several initiatives to facilitate quality data analysis in various tumor types. We strongly believe that our ability to measure trends in treatment patterns, time intervals between care segments for different tumor types while comparing ourselves to national and regional benchmarks through the NCDB is key to identifying our strengths and weaknesses. As a result, we will allocate appropriate resources and continue to provide the best possible care to our patients and our community. We desire to acknowledge the generous support of Danny and Carla Lafayette for their ongoing support, even in these economically difficult times, to help us utilize data to improve outcomes.

A Closing from the Executive Director: Cancer Care and Change

Change happens quite quickly in the realm of cancer treatment. The 1980's until about 2005 saw slow progress in the treatment of cancer. It was like being on a sailing ship stuck in the doldrums. Yet today, changes happen quite rapidly. Physicians and other providers are constantly learning and adapting what can and should be done for different patients. The pace is often faster than anticipated. That is extremely rewarding because it is making a meaningful impact in relieving the very significant health and emotional burden that cancer and blood diseases have upon patients and their families.

As with any change there is a challenging period, yet usually many benefits result, as has been the case in the world of medical care for cancer patients. For me personally, I will finish out the year 2020 and retire from fulltime work. I am privileged to have been part of the oncology program for more than 39 years working at Northern Light Eastern Maine Medical Center. I certainly did not imagine how fulfilling and personally rewarding this road would be! When I came in 1981 few people wanted to work with cancer patients, as the mindset of many of the caregivers demonstrated a lack of hope that went along with the disease. Now the diagnosis is just as scary, but oftentimes there is real hope that can be demonstrated, thanks to the courage of so many patients that dared to try new research trials as well as endure the stress that comes with the many appointments and testing that are part of most cancer diagnoses.

That said, the administrative role changes for the cancer program have already happened and the program is in amazing hands. **Brenda Farnham, BSN, RN, OCN**, has loyalty, dedication and intellectual capacity to move the clinical program forward to the next level as the associate vice president for Oncology. Additionally, **Terry Leahy** in her expanded role as the interim executive director has management experience, passion, and desire to assist all the oncology services to get to the next level of patient care satisfaction as well as continue to move Northern Light Cancer Care to the next phase of being more efficient electronically.

It is with a grateful heart that I thank all the staff at the Lafayette Family Cancer Institute who are making a real difference each day in the lives of so many of our community members, friends, and families. Also, a special thank you for the very generous spirit of giving by so many over the years that have transformed cancer care for our entire region. How appreciative each one of us is for your generous sacrifices.

With deep respect and appreciation,

Allen J. Fabian

Cancer Data – 2019 Cases

	2015	2016	2017	2018	2019
Total Analytic Cases	**1,679**	**1,698**	**1,847**	**1,844**	**1,831**
Cancer Diagnosed and /or treated at EMMC	910	946	1,033	1,054	1,055
Cancer Diagnosed elsewhere with first treatment at EMMC	769	752	803	790	776
Total Non-Analytic Cases	**277**	**250**	**335**	**301**	**330**
Cancer diagnosed and treated elsewhere; follow up at EMMC					
Total Accessioned Cases	**1,956**	**1,948**	**2,182**	**2,145**	**2,161**

Cancer Site/Type	EMMC Actual for 2019		ACS Estimates for 2019			
	Cases		Maine		Nation	
Lung	414	19.16%	1,400	15.70%	228,150	13.15%
Breast (Female)	361	16.71%	1,390	15.58%	271,270	15.63%
Prostate	238	11.01%	660	7.40%	174,650	10.06%
Colo-Rectal	125	5.78%	670	7.51%	145,600	8.39%
Lymphoma	103	4.77%	400	4.48%	74,200	4.28%
Bladder	102	4.72%	560	6.28%	80,470	4.64%
Leukemia (all types)	67	3.10%	310	3.48%	61,780	3.56%
Melanoma	58	2.68%	510	5.72%	96,480	5.56%
Uterus	33	1.53%	320	3.59%	61,880	3.57%
Cervix	15	0.69%	50	0.56%	13,170	0.76%
Total # of Cases	**2,161**	**70.15%**	**8,920**	**70.29%**	**1,735,350**	**69.59%**

Cancer Registry Data Tables in this report reflect cancer case accessions, frequency and state of disease at presentation and prevalence for 2019.

Primary Site	Total	% Total Cases	Male	Female	Stg 0	Stg I	Stg II	Stg III	Stg IV	Total Staged	% Stage 0, I, II
Oral	72	3.3%	53	19	0	10	10	5	9	34	74%
Esophagus	32	1.5%	25	7	0	0	2	2	4	8	50%
Stomach	21	1.0%	17	4	0	2	2	0	5	9	44%
Small Intestine	4	0.2%	2	2	0	0	2	2	0	4	100%
Colon Excluding Rectum	84	3.9%	33	51	0	11	23	21	10	65	85%
Rectum & Rectosigmoid	41	1.9%	28	13	0	9	5	5	2	21	90%
Pancreas	47	2.2%	21	26	0	0	2	2	19	23	17%
Lung & Bronchus	414	19.2%	212	202	0	61	21	38	54	174	69%
Bones and Joints	2	0.1%	2	0	0	0	0	0	1	1	0%
Soft Tissue	8	0.4%	4	4	0	1	0	2	0	3	100%
Melanoma -- Skin	58	2.7%	32	26	6	24	9	4	3	46	93%
Breast	361	16.7%	1	360	27	163	22	5	6	223	97%
Cervix Uteri	15	0.7%	0	15	0	4	0	0	2	6	67%
Corpus & Uterus, NOS	33	1.5%	0	33	0	15	1	5	2	23	91%
Ovary	12	0.6%	0	12	0	1	4	1	2	8	75%
Prostate	238	11.0%	238	0	0	15	15	29	10	69	86%
Testis	6	0.3%	6	0	0	2	1	0	0	3	100%
Penis	5	0.2%	5	0	0	2	0	1	0	3	100%
Urinary Bladder	102	4.7%	69	33	0	2	3	6	4	15	73%
Kidney & Renal Pelvis	104	4.8%	76	28	0	29	3	21	5	58	91%
Brain and other nervous system	51	2.4%	30	21	0	0	0	0	0	0	N/A
Thyroid	23	1.1%	9	14	0	16	1	1	1	19	95%
Lymphoma	113	5.2%	71	42	0	5	3	1	9	18	50%
Myeloma	33	1.5%	18	15	0	0	0	0	0	0	N/A
Leukemia	67	3.1%	44	23	0	0	0	0	1	1	0%
Other	215	9.9%	99	116	3	8	5	8	11	35	69%
Total	**2,161**		**1,095**	**1,066**	**36**	**380**	**134**	**159**	**160**	**869**	**72%**

This graph reports case distribution by stage for analytic cases only 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 the stage total does NOT equal the total cases.

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