Northwell Health: New York’s Destination for Quality, Comprehensive Care

In 2016, we continue our journey with a new name: Northwell Health.
This new identity reflects our shared vision for the future, as we work together to discover extraordinary new ways to keep people healthy.

In the nearly two decades since the North Shore-LIJ Health System was formed, we have emerged as a national leader in patient care, scientific discovery, medical education and community involvement. Our commitment to guiding patients along a path of continued health and wellness is stronger than ever.

Northwell Health is the 14th largest health care system in the United States and the largest in New York State, looking after eight million people in the New York City metropolitan area. We care for our communities with a network of 21 hospitals, 6,600 hospital and long-term care beds, 450 ambulatory and physician practices and a staff of more than 15,000 highly skilled physicians and nurses with a range of specialties. The 61,000 dedicated professionals of Northwell Health are working together not only to meet your unique needs but to consistently exceed your expectations.

Here at Northwell Health, we help everyone equally and with dignity. Our staff comes from all over the world, allowing us to provide access to the very best care with language and culture in mind. By respecting and cherishing each individual’s identity, our
“Patients come first” isn’t a slogan here; it’s a promise and everyday practice.

Provider-patient connection grows stronger and we can overcome barriers together. “Patients come first” isn’t a slogan here; it’s a promise and everyday practice. We’ve received national recognition for our focus on patient safety and outcomes, but the greatest honor is helping our communities stay healthy with the highest quality care.

Our achievements would not be possible without the future-focused work of The Feinstein Institute for Medical Research and the Hofstra Northwell School of Medicine. Both institutions are transforming medical education and biomedical research. At the Feinstein Institute, scientists and researchers are engaging in awe-inspiring studies — like investigating the frontier of bioelectric medicine or exploring the use of 3D printers for prosthetics. Our groundbreaking clinical trials test the next generation of promising therapies for conditions from Alzheimer’s to heart disease. Similarly, the Hofstra Northwell School of Medicine offers a refreshing take on medical education with a patient-centered focus. Students begin interacting with patients within the first semester, and become EMTs within the first nine weeks. This forward-looking approach creates the next generation of physicians and scientists — a diverse and driven community of students, residents and fellows who connect with patients from all corners of the globe.

We are many things, but every day we are one thing: dedicated to the community. We are Northwell Health — more than a health system.
Dear Colleagues,

We are pleased to present this Clinical Innovations and Outcomes Report covering the year 2014 at Northwell Health Cancer Institute and its 12 disease-oriented Centers of Excellence. In this, our inaugural issue, we offer a comprehensive overview of one of the nation’s outstanding programs in cancer care. We think you will find our record truly impressive and hope that you will call on us to ask follow-up questions, to arrange consults or referrals, or to gain any other additional information you may need in regards to our patient services, research and educational opportunities.

As one of the New York metropolitan area’s largest providers of cancer care — with patient volumes rivaling those of the largest cancer programs in the country — the Cancer Institute is where Northwell Health’s vast repertoire of diagnostics, treatments and expert physicians, along with outstanding researchers, converge in the battle against cancer.

As a comprehensive cancer program within one of the largest integrated health systems in the country, Northwell Health Cancer Institute offers patients the highest quality cancer care in addition to seamless access to a vast range of primary care physicians, specialists, emergency rooms, imaging centers, laboratories and home care.

While Northwell Health’s mission has long focused on providing the best available care to patients, we are now even better positioned, as part of an integrated Cancer Institute to extend and improve the lives of individuals at risk for and with cancer in the communities we serve and beyond. To do so, we harness the vast resources of Northwell Health across 21 hospitals and the expertise of more than 200 expert cancer focused physicians and researchers in more than 25 specialties.

The Cancer Institute’s focus is comprehensive, encompassing the latest diagnostic approaches, treatments and therapies, epidemiology and cancer control, all of which are underscored by our continuous funding support of more than 30 years by the National Cancer Institute (NCI) and other preeminent, allied organizations.

While we continue to work with the scientists at the Feinstein Institute for Medical Research, we are also excited to announce our new strategic affiliation with the internationally renowned Cold Spring Harbor Laboratory (CSHL) with the goal of jointly developing innovative bench-to-bedside early phase diagnostic and therapeutic research for our patients as part of our commitment to decrease the burden of cancer in our community and ultimately contribute to prevention and cures of cancer.

Our physicians and researchers are committed to training future clinicians and scientists in our medical school, Hofstra Northwell School of Medicine, and our graduate training programs in hematology, medical oncology, radiation oncology and surgical oncology. Our extensive public and professional education programs and outreach initiatives demonstrate our dedication and commitment to sharing our knowledge and expertise.

Our reputation is further enhanced by the leadership roles of our physicians and researchers in leading research and professional organizations, national cooperative groups and at national and international meetings. All of these efforts, together with a culture of innovation and personal commitment, form the arsenal with which we continually push the boundaries of what is possible in the fight against cancer while improving the lives of our patients living in our communities.

We hope you will find the Clinical Innovations and Outcomes Report that follows informative. We appreciate your consideration and look forward to serving you and your patients in the future, should the need arise.
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Northwell Health Cancer Institute was formalized in 2012 in response to the evolving size and scope of Northwell Health, the increasing prevalence of the disease in the communities we serve, and the desire to improve outcomes through leading transformations in cancer care delivery and accelerating translational research.
Overview

Northwell Health Cancer Institute was formalized in 2012 in response to the evolving size and scope of Northwell Health, the increasing prevalence of the disease in the communities we serve, and the desire to improve outcomes through leading transformations in cancer care delivery and accelerating translational research. The Cancer Institute provides an organizational structure across the organization for coordinating and implementing this vision. As one of the largest cancer care providers in the New York metropolitan area, Northwell Health Cancer Institute treated more than 15,000 new cancer cases in 2014.

Personalized, Multidisciplinary Cancer Care

The goal of Northwell Health Cancer Institute is to provide compassionate, comprehensive multidisciplinary care focusing on the individual needs of each patient. Our programs and services offer state-of-the-art diagnostic and treatment technologies, as well as comprehensive social and psychological support for patients and their families. Our oncologists specialize in creating personalized treatment plans using the latest evidence-based medicine and have access to cutting-edge therapies through our clinical trials program, offering the best possible outcomes.

Northwell Health Cancer Institute is comprised of both inpatient and outpatient clinical cancer centers and services throughout the New York region, bringing together a team of more than 200 multidisciplinary physicians and clinical scientists spanning early detection, prevention, diagnosis, treatment and survivorship.
The Cancer Institute is organized around 12 disease-focused Centers of Excellence. The Centers provide leadership and infrastructure for integrated, disease-oriented care delivery and research across the entire organization.

- Brain Tumor Center
- Breast Cancer Center
- Center for Cancer Genetics and Cancer Control
- Gastrointestinal Oncology Center
- Gynecologic Oncology Center
- Center for Head and Neck Oncology
- Hematologic Oncology Center
- Lung Cancer Center
- Melanoma and Rare Skin Cancer Center
- Supportive Oncology and Pain Management Center
- Pediatric Hematology/Oncology Center
- Prostate and Genitourinary Cancer Center

Interdisciplinary care is coordinated and enhanced through 30 active disease-specific tumor boards across the organization to review care management and treatment. During each tumor board, specialists from surgery, medical oncology, radiation oncology, radiology, pathology and other medical subspecialties collaborate to discuss the latest, evidence-based treatment approaches, review care management and determine the appropriate treatment plans.

Advancing Research and Education

As part of our commitment to training and developing future clinicians and scientists, the Cancer Institute supports graduate medical education programs that include hematology/medical oncology fellowships, a pediatric hematology/oncology fellowship, and radiation oncology and medical physics residency training programs. We also provide oncology training for medical and surgical residency training programs and for the medical students at Hofstra Northwell School of Medicine. Education and research training is provided through didactic lecture series case-based teaching in the hospital and ambulatory setting, and opportunities for participating in faculty mentored individual research projects.

In 2015, we received approval for a joint, postgraduate physician-scientist fellowship program with Cold Spring Harbor Laboratory (CSHL), focused on clinical translational research training in the Cancer Institute, and basic translational research training at Cold Spring Harbor Laboratory. It is the intent of this exciting new program to mentor physician scientists, foster bench-to-bedside translational research and train future faculty members.

Our Clinical Research Program is built on more than 30 years of continuous National Cancer Institute (NCI) peer reviewed competitive funding. As founding members of the prestigious Community Clinical Oncology Program (CCOP), we have enrolled more than 12,000 cancer patients in clinical trials. The Cancer Institute is recognized as a main member of NCI cooperative groups, including the Alliance for Clinical Trials in
Oncology, NRG Oncology and the Children’s Oncology Group, which are national associations of university hospitals known for their cancer care. Initial NCI sponsorship of many of these activities has enabled the Cancer Institute to successfully establish one of the largest community oncology research programs in the New York area. Most recently, Northwell Health Cancer Institute was one of only 46 institutions across the country to be awarded a prestigious NCI Community Oncology Research Program (NCORP) grant ($4.1M, five-year grant). This grant is used to pursue early drug development, therapeutic trials, cancer control and supportive care studies, and population health programs to improve cancer care delivery and survivorship.

The strategic affiliation of Cold Spring Harbor Laboratory (CSHL) and Northwell Health, announced in April 2015, will further enhance our approach to clinical translational research, improve patient care and ultimately improve outcomes. By integrating the cancer care delivery and clinical research expertise of Northwell Health with the world-renowned basic and translational research expertise of CSHL, there will be a transformation of bench-to-bedside research spanning cancer prevention, diagnostics, therapeutics and survivorship across these two institutions.

**Accolades and Achievements**

Commendations and accreditations we have received from distinguished organizations exemplify our commitment to providing cancer patients with the highest quality of medical care.

Cancer Institute programs that are accredited by the American College of Surgeons Commission on Cancer (CoC) include North Shore University Hospital, Long Island Jewish Medical Center, Staten Island University Hospital, Southside Hospital, Huntington Hospital, Forest Hills Hospital, Glen Cove Hospital, Franklin Hospital and Plainview Hospital. In 2015, the Cancer Institute added two more CoC accredited cancer programs, Northern Westchester Hospital and Phelps Memorial Hospital Center.

Staten Island University Hospital, North Shore University Hospital and Long Island
Jewish Medical Center have all been recipients of the Commission on Cancer (CoC)’s Outstanding Achievement Award (OAA).

Our Cancer Institute hospitals have also achieved continuous accreditation for their breast cancer programs as evidenced by their high quality care recognized by the American College of Surgeons and National Accreditation Program for Breast Centers (NAPBC). North Shore University Hospital, Long Island Jewish Medical Center, Northern Westchester Hospital and Huntington Hospital maintained full three-year accreditation. Accreditation by the NAPBC is awarded to centers that have committed to provide the highest of quality breast care and undergo a rigorous on-site evaluation and review of their record of performance.

Another example of our high quality programs includes the prestigious accreditation from the Foundation for the Accreditation of Cellular Therapy (FACT). North Shore University Hospital’s Don Monti Adult Bone Marrow and Stem Cell Transplantation Program received a three-year reaccreditation in 2014. The transplant program underwent a rigorous inspection and evaluation to maintain its accreditation, underscoring the program’s commitment to excellence in patient care, laboratory practices and outcomes.

Cohen Children’s Medical Center has also achieved continuous FACT accreditation for its Pediatric Bone Marrow Transplant Program. Moreover, the US News & World Report recently ranked the hospital in the top 50 nationwide for its work in pediatric cancer.

Acknowledging our surgical expertise, the American Institute of Minimally Invasive Surgery (AIMIS) has designated Huntington Hospital, Long Island Jewish Medical Center and North Shore University Hospital as Academic Centers of Excellence for Minimally Invasive Surgery in Gynecologic Oncology and Gynecology. This distinction is awarded to teaching hospitals that meet the highest standards of quality and safety for minimally invasive surgery.

All nine sites associated with the Department of Radiation Medicine are accredited by the American College of Radiology (ACR). The accreditation represents the highest level of quality and patient safety. It is awarded only to facilities meeting specific practice guidelines and technical standards developed by ACR after a peer-review evaluation by board-certified radiation oncologists and medical physicists who are experts in the field.

As our Cancer Institute looks forward to the future, we are committed to maintaining our accreditations, and to providing safe, effective, high quality cancer care to our patients and their families.
### 2014 Cancer Institute By the Numbers

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<th>Category</th>
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<td>New Cancer Cases Treated in 2014</td>
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<td>Cancer Institute Members</td>
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<td>Cancer Support Groups</td>
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Brain Tumor Center

A Collaborative Approach

The Brain Tumor Center provides state-of-the-art treatment for benign and malignant tumors of the brain, skull base and spine, from preoperative evaluations through postoperative in-hospital management and outpatient treatment. Astrocytoma, brainstem gliomas, ependymomas, glioblastoma multiforme, medulloblastomas, oligodendrogliomas and metastatic brain malignancies are some of the many tumor types that our physicians diagnose and treat. We also treat metastatic disease to the central nervous system.

Our expert team holds weekly tumor boards to collaborate and reach consensus on the best course of treatment for each patient.
Diagnosis and Treatment Planning
Our Center’s physicians utilize the latest diagnostic imaging technologies, including traditional MRI and MRI spectroscopy, the latter of which measures biochemical changes in the brain, to help identify tumors. Additionally, functional MRI and diffusion tensor imaging, which are both used to identify areas of the brain that control important functions such as language and speech, are used to help plan surgery. Stereotactic biopsy, a minimally invasive, image-guided procedure, may be used in some patients to help identify the specific type of brain tumor. Our experts work as part of a multidisciplinary team to provide patients with the most advanced options in chemotherapy treatment, including participation in the most innovative clinical trials.

Our multidisciplinary team of brain tumor specialists includes:
- Neurosurgeons
- Neuro-Oncologists
- Medical Oncologists
- Radiation Oncologists
- Radiologists
- Neuropathologists
- Cancer Rehabilitation Specialists
- Oncology Nurses
- Oncology Social Workers
- Oncology Nutritionists
- Research Scientists
The Latest Approaches to Care

To remove tumors of the brain or skull base, our surgeons may use traditional open surgery (craniotomy) or minimally invasive endoscopic procedures. These surgeries are performed with intraoperative MRI brain mapping, which improves surgical accuracy and helps to preserve critical areas of the brain.

State-of-the-art stereotactic radiosurgery and radiotherapy are minimally invasive treatment options available at our Center. In 2014, we became the only one in the New York metropolitan area offering all available platforms for radiosurgery and radiotherapy, allowing treatment of brain tumors with unparalleled accuracy.

Other treatment approaches include Visualase® Laser Interstitial Therapy (LITT), which uses fiber optics to transmit laser energy directly to the tumor, and the Gliasite® Brachytherapy System, which can deliver a high dose of radiation to tissue that surrounds a tumor that has been removed, reducing risk of recurrence. Carefully selected patients may be candidates for chemotherapy treatments, which are coordinated by expert neuro-oncologists and medical oncologists to offer the best possible options including innovative clinical trials in our clinical research program.
Cutting-Edge Research and Education

The Brain Tumor Center participates in National Cancer Institute-sponsored multi-center clinical trials in radiation oncology, chemotherapy treatments including pharmaceutical industry-supported clinical trials, investigator-initiated trials and laboratory research at the Feinstein Institute for Medical Research, for both primary and secondary brain tumors.

Some of our many trials include evaluation of functional and intraoperative imaging and approaches to stereotactic radiosurgery, as well as optimizing drug delivery to brain tumors by breaking down the blood brain barrier. Additionally, our investigators have established a substantial biorepository of malignant and benign tumor samples for the advancement of various research projects.

In 2014, the Feinstein Institute for Medical Research launched the world’s first and only dedicated Brain Tumor Biotech Center, which serves as a collaborative hub for scientists, clinicians and biotech companies to translate basic research into the accelerated delivery of novel drugs and other treatment approaches to the bedside of patients living with brain tumors.

Our research scientists carry out in vitro and in vivo studies using state-of-the-art tools and methodologies, including models for glioblastoma and medulloblastoma. The Brain Tumor Biotech Center represents an ideal partnership for clinical development initiatives.

A neurosurgery residency and neurosurgical oncology fellowship continue our dedication to the education of physicians entering the field.
Breast Cancer Center

Team-Based, Patient-Focused Care
At Northwell Health, our medical, surgical and radiation oncologists collaborate with pathologists, radiologists, fertility specialists, nutritionists and others on the breast care team, to develop patient-focused, evidence- and consensus-based clinical recommendations that often include participation in clinical trials. All participate in weekly tumor boards as well as monthly, teleconferenced tumor boards that bring together our experts from across our organization.

Breast cancer nurse navigators are available from the time of a patient’s diagnosis to help coordinate appointments, to provide education and to address any questions that may arise about the cancer or its treatment. Our center’s social workers offer a variety of support programs. Cancer genetic counselors are available to our cancer patients to assess the potential risk of developing breast and other cancers, based on family history, and offer testing for genetic predisposition mutations such as those in the BRCA1 and BRCA2 genes, amongst others.

Our centers are certified by the National Accreditation Program for Breast Centers (NAPBC), recognizing our complete range of breast cancer treatment and care, from diagnosis through survivorship.

Sophisticated Diagnostics
The Breast Cancer Center sites offer the latest diagnostic techniques, including digital breast tomosynthesis (3D mammography), which provides higher sensitivity and specificity compared to traditional mammography leading to more accurate diagnoses and fewer call back evaluations.

Our pathologists provide comprehensive and rapid analysis of tumor tissue to diagnose breast cancer and assess traditional pathologic prognostic factors and newer, molecularly-based tests to help determine whether patients will likely benefit from receiving chemotherapy and radiation therapy where appropriate.
As part of our commitment to precision and personalized breast cancer medicine, a recent partnership with OPKO Health, Inc. has been launched to facilitate a wide array of genomic testing to unlock the specific genetic code of individuals’ cancers, allowing the use of molecularly and genetically targeted therapies that are currently available or as part of clinical trials.

**Personalized, State-of-the Art Treatment**

With comprehensive diagnostics, our team of oncologists and other specialists develop a personalized treatment plan for each patient. For example:

- Based on the molecular make-up of the cancer, our medical oncologists can prescribe targeted therapies or, in some instances, even spare patients therapies that would not otherwise benefit them.

- Our oncologic breast surgeons employ the latest techniques to remove breast cancer. For example, where appropriate, breast surgeons often use additional shave margins in patients who undergo a lumpectomy because this approach reduces the need for a second surgery.

- We use radioactive seeds preoperatively to accurately localize tumors, sparing patients the discomfort and inconvenience of having localizing wires placed prior to breast conserving surgery. If mastectomy is required, our surgeons can perform skin-sparing procedures and use state-of-the-art reconstructive techniques to help preserve the appearance and symmetry of the breasts.

- Highly accurate delivery of intensity-modulated radiation therapy (IMRT) helps treat breast cancer, while preserving surrounding healthy tissue.

- Partial breast radiation, which delivers treatment to the tumor bed, and accelerated radiation therapy treatment schedules of three weeks, rather than six weeks, are also available at our centers as well as high-dose rate (HDR) brachytherapy, an internal form of radiation.
There is an established cardio-oncology program that seeks to identify individuals at risk for cardiac complications from specific therapies through the use of high-resolution echocardiograms and specialized cardiac MRI as well as other diagnostic tests where appropriate. Some patients may then benefit from more personalized cardiac monitoring, prophylactic therapies, or early treatment to improve their outcome. For patients who have complex and symptomatic bone metastases, there is a unique and highly specialized multidisciplinary bone metastasis tumor board that brings together medical, surgical and radiation oncologists as well as orthopaedic oncologists, neurosurgeons and pain specialists to develop a coordinated and optimal plan of care. There are relatively few examples of specialized multidisciplinary bone metastasis tumor boards nationally and our participating physician experts are convinced this leads to optimal care for our patients.

At the Forefront of Research and Education

With more than 30 years of National Cancer Institute-sponsored clinical research experience, the Breast Cancer Center also provides investigator-initiated trials and pharmaceutical-sponsored research as well as participation in cooperative group programs, including the Alliance for Clinical Trials in Oncology (the former Cancer and Leukemia Group B Cooperative Group) and NRG Oncology (which includes the former National Surgical Adjuvant Breast and Bowel Project, Gynecologic Oncology Group and the Radiation Therapy Oncology Group). Through participation in these studies, our patients and physicians contribute to changing treatment research and better outcomes. In collaboration with the scientists of the Feinstein Institute for Medical Research and through our Breast and Ovarian Cancer Specimen Bank, researchers collect blood and tissue samples from women who have, or are suspected to have, either type of cancer. These specimens are used by our investigators to discover molecular and genomic signatures that may predict a higher risk of cancer recurrence. There is ongoing research as part of the Geriatric Breast Oncology Program to evaluate the benefit of early geriatric assessment to minimize the complications and improve treatment outcomes in elderly women with breast cancer. Other studies are evaluating supportive services that may help to improve outcomes.
Through our new affiliation with the Cold Spring Harbor Laboratory (CSHL), we have launched a first-in-human breast cancer study with a novel targeting therapy. We are developing a series of further early phase diagnostic and therapeutic studies with our new partner to continue to bridge bench-to-bedside discovery as part of our joint commitment to decrease the physical and emotional burden of breast cancer.

As part of our continued commitment to the communities we serve, we offer community-based screening and outreach and partner with local advocacy and support groups. Our Breast Cancer Center offers free conferences and other educational activities to the public that address up-to-date information on diagnostic and therapeutic approaches and evolving research in breast cancer. There are weekly pre-treatment conferences for new patients that are about to begin their treatments as well as seminars throughout the year that address the transition to post-treatment wellness care.

Northwell Health

New Breast Cancer Cases Treated
2012-2014

Source: Northwell Health Hospitals’ Cancer Registries
Center for Cancer Genetics and Cancer Control

Our Commitment to Reducing Cancer Risk
The role of the Center for Cancer Genetics and Cancer Control at Northwell Health Cancer Institute is to identify individuals and families at increased risk of cancer for the purpose of promoting awareness, early detection and cancer prevention.

A Sophisticated Understanding of Cancer Genetics
Though there are several different factors that can cause cancer, a small percentage of cancers are inherited, meaning that the cancer tends to run in some families. In these cases, an alteration in a gene — a part of every cell that determines traits, or characteristics, such as eye color — is passed from one generation to the next. The cancer itself is not inherited, just the mutated gene that can lead to cancer.

Our counselors are available to our cancer patients and their relatives to discuss their personal and family history of cancer and the likelihood of carrying a hereditary predisposition to cancer. Furthermore, the range of available tests, the benefits, risks and limitations of testing, and potential early detection and prevention options are discussed. Genetic counselors help patients understand the complexities of genetic information, make informed decisions about genetic testing, and make lifestyle or medical adjustments consistent with one’s personal beliefs.

Some of the many inherited conditions that we may test for include:

Colorectal Cancer Syndromes
- Lynch Syndrome
- Cowden Syndrome
- Polyposis Syndrome

Breast Cancer Syndromes
- Hereditary Breast-Ovarian Cancer Syndrome
- Li Fraumeni Syndrome
- Hereditary Diffuse Gastric Cancer Syndrome

Renal Cancer Syndromes
- Von-Hippel Lindau
- Birt-Hogg-Dubé
- Hereditary Papillary Renal Cell

Gynecological Cancer Syndromes
- Cowden Syndrome
- Lynch Syndrome
- Hereditary Breast Ovarian Cancer Syndrome (HBOC)

Dermatologic Cancer Syndromes
- Hereditary Melanoma
- Neurofibromatosis
- Basal Cell Nevus Cancer Syndrome

Endocrine Cancer Syndromes
- Multiple Endocrine Neoplasia, Type 1 & 2
- Pheochromocytoma/Paraganglioma Syndrome
- Medullary Thyroid Cancer
Cancer Control Program

The multidisciplinary team of specialists has a long-established legacy using chemo-prevention, genetic risk evaluation, conventional and novel symptom control and pain management techniques that reduce fatigue, nausea and other side effects, while enhancing overall quality of life. This is accomplished through coordinated and comprehensive care with currently available interventions while offering access to research studies for our patients with the hope of contributing to new breakthroughs.

Through these and other community outreach efforts and partnerships, the Cancer Control Program is committed to finding ways to reduce the incidence and burden of cancer in the communities we serve, as well as ways to reduce disease-based symptoms and treatment-related side effects. With a focus on individuals who are at high risk for developing specific cancers, the Center provides counseling to our patients on how to minimize risk of developing the disease.
Gastrointestinal Oncology Center

Comprehensive Diagnosis and Treatment
At Northwell Health’s Gastrointestinal Oncology Center, our multidisciplinary team treats patients with tumors of the colon, rectum, pancreas, esophagus, liver, stomach, bowel, gallbladder and bile ducts. To ensure all treatment decisions are made collaboratively, our highly experienced team meets in a gastrointestinal tumor board to discuss cases and ensure the highest quality care is delivered using the most promising evidence-based therapies. A dedicated gastrointestinal oncology nurse navigator is available to help patients coordinate their care, expedite necessary appointments and provide education and support on treatment options.

Employing the Latest Diagnostic Techniques and Genetic Testing
The Center offers state-of-the-art advanced endoscopic suites offering cutting edge endoscopic and imaging techniques, including 3-D endoscopic ultrasound, high-definition video endoscopy and single-balloon enteroscopy. Using endoscopic procedures, physicians can perform minimally invasive biopsies and place fiducial markers to guide later treatment.

For patients with colorectal cancer, genetic tumor testing may be recommended to rapidly determine whether surgery is the most effective treatment for a patient. For those with a strong family history of colorectal cancer, genetic testing may be recommended to determine a patient’s individual risk for cancer.

Northwell Health
New Digestive System Cancer Cases Treated 2012-2014

Source: Northwell Health Hospitals’ Cancer Registries. Includes all gastrointestinal sites.
Remaining at the Forefront of Care

Northwell Health has a dedicated team of surgeons with extensive expertise in minimally invasive surgery, including laparoscopic techniques using only a few tiny incisions and robotic surgery. Our surgeons are highly skilled and able to perform the most complex procedures and incorporate techniques aimed at preserving a patient’s quality of life.

Medical oncologists who focus on gastrointestinal cancers work closely with patients and their families to develop the best treatment plan with the most up-to-date chemotherapy treatments available.

Precision external beam radiation therapy techniques such as intensity-modulated radiation therapy (IMRT) and Stereotactic Body Radiosurgery (SBRS) are treatment modalities used for some gastrointestinal malignancies, including colorectal, esophageal and gastric cancers.

Patients with gastrointestinal cancer also have access to interventional techniques such as radiofrequency ablation and cryotherapy, as well as promising therapies through our extensive clinical trials program.

Our team is comprised of:
- Medical Oncologists
- Radiation Oncologists
- Oncology Surgeons
- Colorectal Surgeons
- Pathologists
- Gastroenterologists
- Diagnostic and Interventional Radiologists
- Oncology Nurses
- Oncology Social Workers
- Oncology Nutritionists
- Cancer Genetic Counselors
- Research Scientists
Gynecologic Oncology Center

A Full Scope of Services
Northwell Health Cancer Institute’s Gynecologic Oncology Program — one of the largest and most comprehensive gynecologic oncology centers in the region — specializes in treating cancer and precancerous conditions of the female reproductive system. Gynecologic malignancies include cervical, uterine, endometrial, ovarian and fallopian cancers, among others. Our multidisciplinary team convenes in weekly tumor board conferences to collaborate on treatment plans that meet each patient’s unique clinical, social and emotional needs.

Genetic Testing and Fertility Preservation
Genetic counselors are available to our cancer patients to discuss the risk of developing gynecologic cancer because of a family history of disease, known as BRCA1 and BRCA2, amongst other mutations, which are associated with ovarian cancer, or a hereditary condition — for example, Lynch Syndrome, which can increase the risk of ovarian and uterine cancers.

Women in their reproductive years that are diagnosed with cervical, ovarian and endometrial cancers are treated with fertility-sparing techniques whenever possible and seamless referrals are made to reproductive medicine specialists to discuss fertility preservation options.

The Latest Technological Advances
Our nationally recognized experts employ the latest technological advances, including minimally invasive laparoscopic robotically assisted surgery to treat cancer. North Shore University Hospital, Syosset Hospital and Southside Hospital have received the AAGL Center of Excellence for Minimally Invasive Gynecology (COEMIG) designation. The American Institute of Minimally Invasive Surgery (AIMIS) has designated Long Island Jewish Medical Center, North Shore

Our multidisciplinary team includes:
- Gynecologic Oncologists
- Medical Oncologists
- Radiation Oncologists
- Reproductive Medicine Specialists
- Pathologists
- Radiologists
- Oncology Nurses
- Oncology Social Workers
- Oncology Nutritionists
- Cancer Genetic Counselors
- Research Scientists
University Hospital and Huntington Hospital as Academic Centers of Excellence for Minimally Invasive Surgery in Gynecologic Oncology and Gynecology.

Other approaches to care include hormonal agents, targeted medications, investigational chemotherapy, intensity-modulated radiation therapy (IMRT) and high-dose rate brachytherapy.

Dedication to Research, Education and Prevention

Our physicians are at the forefront of research in the early detection of ovarian cancer and uterine cancer. As historic members of the Gynecologic Oncology Group (GOG), and presently full members of the current NRG Oncology Cooperative Group — a National Cancer Institute sponsored organization conducting and coordinating research in cancer — the Center participates in important national clinical trials that give patients access to the most contemporary treatments to increase the prospects for a cancer-free life. The protocols range from experimental agents to studies designed to enhance the efficacy of standard treatments.

In conjunction with the Feinstein Institute for Medical Research, the Center is actively involved in developing blood tests to accurately determine the absence or presence of early stage ovarian cancer before it manifests, as well as ongoing translational research programs for all gynecologic cancers.

We are also working on new modalities for the prevention of endometrial and ovarian cancer, for example, the preventative effects of progestin in women with high-risk ovarian cancer.

Our expert physicians are also involved in leading-edge programs in the prevention of cervical cancer through regular screenings and the identification of precancerous cervical lesions associated with papilloma virus infections.

### New Gynecologic Oncology Cases Treated in 2014

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<td>Vagina</td>
</tr>
<tr>
<td><strong>Total New Gynecologic Oncology Cases Treated</strong></td>
</tr>
</tbody>
</table>
Compassionate, Multidisciplinary Care
Specialists at the Center for Head and Neck Oncology provide patient directed, multidisciplinary care for patients with malignancies of the oral cavity, oropharynx and larynx, the thyroid and parathyroid, the salivary glands, the sinonasal cavity and skull base, and all skin cancers arising in the head and neck region.

Our physicians are considered nationally and internationally foremost authorities in Head and Neck Oncology. They hold numerous academic and administrative positions, and are expanding their knowledge of the field with an array of research activities, all of which inform outstanding patient care. Our team of specialists holds weekly tumor board conferences to discuss the latest, evidence-based approaches to head and neck cancer and to create personalized treatment plans.

Innovative Treatments
Our surgeons specialize in minimally invasive approaches to the removal of head and neck tumors, with the goal of preserving function and maintaining the patient’s quality of life. For example, robotic surgery provides a way to surgically access certain tumors of the tonsils and tongue base and thus serves as a way to modify treatment and/or minimize the toxicity of treatment. In certain patients, this may also include lowering the dose of radiation and/or eliminating chemotherapy and radiation altogether. Our surgeons also routinely perform endoscopic endonasal surgery for sinonasal tumors, avoiding large facial incisions and craniotomies.

Northwell Health
New Head and Neck Cancer Cases Treated
2012-2014

Source: Northwell Health Hospitals’ Cancer Registries. Cancers of the oral cavity, pharynx, larynx, nose and nasal cavity and thyroid are included.
In addition to surgery, we offer the latest approaches to radiation therapy for head and neck cancers, including Stereotactic Radiosurgery (SRS), intensity-modulated radiation therapy (IMRT) and various brachytherapy applications. Our medical oncologists specializing in head and neck cancers offer a full range of treatment options including access to novel clinical trials and provide personalized chemotherapy regimens, in addition to targeted medications and investigational drugs in clinical trial settings.

To address the many challenges that accompany a diagnosis of head and neck cancer, the Center offers speech and swallowing therapy, physical and occupational therapy and social work support to help arrange home nursing and other services.

Providing Leadership and Expanding Knowledge
Our physicians collaborate with the Feinstein Institute for Medical Research to better understand head and neck cancer biology and investigate novel therapies for metastatic squamous cell head and neck cancer.

In addition to expanding our knowledge through research, a residency rotation in otolaryngology/head and neck surgery and fellowships in skull base surgery and head and neck oncology ensure that our physicians in training are highly knowledgeable about the latest approaches to patient care.

Our multidisciplinary team of head and neck cancer specialists includes:
- Head and Neck Surgeons
- Medical Oncologists
- Radiation Oncologists
- Reconstructive Surgeons
- Neurosurgeons
- Endocrinologists
- Radiologists
- Oncology Nurse Navigators
- Oncology Social Workers
- Oncology Nutritionists
- Oral Pathologists
- Research Scientists
- Speech and Swallowing Therapists
- Cancer Rehabilitation Specialists
- Oral and Maxillofacial Surgeons
Hematologic Oncology Center

Tailored Treatment Regimens

Our Hematologic Oncology Center is acknowledged as one of the leading referral centers in the country for acute and chronic leukemias. Our medical oncologists specializing in hematologic malignancies are nationally and internationally renowned and offer the most advanced treatment options. The Center offers state-of-the-art diagnostic and therapeutic approaches for acute and chronic leukemias, Hodgkin and non-Hodgkin Lymphomas, Multiple Myeloma, Myelodysplastic Syndrome and Myeloproliferative Disorders. Tailored treatment regimens based on molecular and genetic pathology may incorporate chemotherapy, immunotherapies, targeted drugs and biologic therapies as well as stem cell transplantation in select patients.

### New Hematologic Malignancies Cases Treated in 2014

<table>
<thead>
<tr>
<th>Malignancy</th>
<th>New Cases Treated</th>
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<tbody>
<tr>
<td><strong>LYMPHOMA</strong></td>
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<td>Hodgkin Lymphoma</td>
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<td>Non-Hodgkin Lymphoma</td>
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<tr>
<td><strong>LEUKEMIA</strong></td>
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<tr>
<td>Lymphocytic Leukemia</td>
<td>184</td>
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<tr>
<td>Myeloid &amp; Monocytic Leukemia</td>
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<tr>
<td>Other Leukemia</td>
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<tr>
<td><strong>MYELOMA</strong></td>
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<tr>
<td>Total New Hematologic Malignancies Cases Treated</td>
<td>1,216</td>
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</table>

Volume is an indicator of experience, which is often associated with improved outcomes.
Bone Marrow Transplant Program
Our Don Monti Adult Bone Marrow Transplant Program (BMT) at North Shore University Hospital and Monter Cancer Center provides autologous and allogeneic hematopoietic stem cell transplantation. The program also incorporates haploidentical and cord blood transplantation as potential treatment options. As one of the largest programs in the New York metropolitan area, it has the prestigious accreditation by the Foundation for the Accreditation of Cellular Therapy (FACT) — the only one in the Brooklyn, Queens and Long Island area — and designation as a National Marrow Donor Program (NMDP) Apheresis Collection Center.

Transplant physicians have demonstrated an ongoing commitment to improving the stem cell transplantation procedure. For example, 20 years ago we helped pioneer the removal of the preservative dimethyl sulfoxide from the stem cell cryopreservation process because the agent can cause a reaction in some patients after infusion. Our physicians were also among the first to use a novel drug combination to prevent the development of hepatic veno-occlusive disease after allogeneic stem cell transplant.

Northwell Health has one of the largest Hematologic Malignancies programs in the New York metropolitan area.
Dedication to Research

The Center for Hematologic Oncology is a member institution of the National Cancer Institute-sponsored Cooperative Alliance for Clinical Trials in Oncology, which is researching several novel approaches to treatment for Acute Myeloid Leukemia (AML) and Acute Lymphocytic Leukemia (ALL). Through the Alliance, the Hematologic Oncology Center is pursuing cytogenetic studies that may lead to the discovery of new markers for these malignancies and personalized approaches to treatment.

We are nationally recognized for our treatment of and research in chronic and acute myeloid leukemias. Collaboration with the Feinstein Institute for Medical Research has led to setting new standards in prognostic testing for acute leukemias and Chronic Lymphocytic Leukemia (CLL). In concert with the Karches Center for Chronic Lymphocytic Leukemia, our physicians and researchers continue to develop a better understanding of the biology of CLL through novel translational research.

Our investigators also participate in industry-sponsored research and have contributed to the development of several drugs recently approved by the FDA to treat CLL, including two targeted oral agents, ibrutinib and idelalisib.

In stem cell transplantation research, Northwell Health Cancer Institute collaborates with 20 other bone marrow transplant programs in the United States to pool databases for retrospective analyses that may help to further the success of future transplant procedures. Researchers are also trying to lay the groundwork for furthering the use of acellular therapy and regenerative medicines for patients whose bone marrow has been damaged.
Distinguished Leadership
Our esteemed physicians have held top leadership positions both nationally and internationally:
American Society of Hematology
- Past President
- Wallace H. Coulter Award for Lifetime Achievement in Hematology
American Society for Clinical Oncology
- Karnofsky Lifetime Achievement Award
NCI-Alliance
- Board of Directors
- Committee Chairs

Committed to Education
Education is an integral part of our Hematologic Oncology Center’s mission. Our physicians are actively involved in teaching at Hofstra Northwell School of Medicine. As our hematology/medical oncology fellowship, clinical research and clinical care programs are all integrated, many of our trainees, as well as medical residents, elect to conduct their mentored research projects with this team.
Lung Cancer Center

Personalized, Multidisciplinary Assessment
The Lung Cancer Center offers a full range of diagnostic and therapeutic procedures for all stages and subtypes of non-small cell and small cell lung cancer. Our specialists also treat uncommon thoracic malignancies, including mesothelioma and thymoma. The multidisciplinary team meets weekly in a thoracic tumor board to develop tailored treatment plans and also to include symptom control, quality of life and nutritional status. We treated approximately 1,500 new lung and bronchus cancer patients in 2014.

Sophisticated Diagnostics and Therapeutics
Some of the latest minimally invasive diagnostic procedures our specialists use include electromagnetic navigational bronchoscopy (which is similar to using a GPS system for the lungs), endobronchial ultrasound with fine needle biopsy, video mediastinoscopy and robotic thoracoscopy.

To remove lung tumors with a wedge resection or lobectomy, our thoracic surgeons use minimally invasive procedures such as video assisted thoracic surgery and robotic-assisted surgery. These procedures help to reduce scarring and recovery time. In carefully selected patients, our surgeons may use more extensive surgery to remove complex lung cancers that have spread to surrounding tissue.

Our multidisciplinary team of lung cancer experts includes:
- Thoracic Surgeons
- Medical Oncologists
- Radiation Oncologists
- Interventional Radiologists
- Pulmonologists
- Pathologists
- Radiologists
- Oncology Nurses
- Oncology Social Workers
- Oncology Nutritionists
- Cancer Rehabilitation Specialists
The medical oncologists prepare a personalized treatment plan based on each patient’s tumor genetics, tumor immunology and other clinical characteristics. NCI and FDA approved protocols are available for patients. The radiation oncologists and neurosurgeons collaborate to provide Stereotactic Radiosurgery (Gamma Knife®) treatments to patients with brain metastases from lung cancer. Palliative approaches, including bronchoscopic airway stenting and laser surgery, are also available to patients whose lung cancer involves tumors of the trachea.

Screening in High-Risk Populations
We are also dedicated to screening populations at high risk of developing lung cancer with the hope of detecting and treating malignancy as early as possible. Current or former smokers may be eligible to receive lung screening using Computed Tomography (CT) scans at one of our locations.

Our imaging centers are American College of Radiology (ACR) Designated Lung Cancer Screening Centers.

Research and Education Initiatives
Patients who receive care at the Lung Cancer Center have access to pioneering clinical trials involving promising new therapies. We have an extensive portfolio of clinical trials for all stages of lung cancer addressing important unmet needs.

In addition to research, our specialists offer clinical rotations to thoracic surgical fellows and residents, teaching them the latest oncologic approaches.
Melanoma and Rare Skin Cancer Center

Ready Access to a Team of Specialists
The Melanoma and Rare Skin Cancer Center treats melanoma and rare forms of skin cancer, including Merkel Cell Carcinoma, Extra-Mammary Paget’s Disease and Skin Appendage Tumors. We are also recognized for our expertise with locally advanced basal and squamous cell carcinomas.

Dermatologists within Northwell Health and those in the community refer patients to our Center for a quick and accurate diagnosis of skin cancer and a personalized treatment plan, developed by a team of surgical, radiation and medical oncologists.

Treating Skin Malignancies While Preserving Healthy Tissue
Specialized dermatopathologists provide microscopic and sub-microscopic assessment of cutaneous malignancies, including diagnostically challenging forms of disease, to help our oncologists develop the right treatment plan for the patient. Our goal is to preserve the greatest amount of normal tissue while providing the highest possible cure rate.

Our surgical oncologists offer a full range of procedures, including sentinel node mapping and biopsy, wide excisions and lymph node dissections, as well as more extensive surgeries for advanced disease.

Northwell Health
New Melanoma and Other Rare Skin Cases Treated
2012-2014

Source: Northwell Health Hospitals’ Cancer Registries.
Excludes basal and squamous cell cancer.
Patients with skin cancer at Northwell Health have seamless access to a number of skin cancer specialists who may serve an integral role in their care:

- Surgical Oncologists
- Medical Oncologists
- Radiation Oncologists
- Plastic and Reconstructive Surgeons
- Dermatologists
- Physical Therapists
- Occupational Therapists
- Oncology Nurses
- Oncology Social Workers
- Oncology Nutritionists
- Cancer Rehabilitation Specialists

Our medical oncologists help determine which adjuvant therapies to administer to patients, including the most recently FDA-approved targeted drugs and immunotherapies. We are one of the few programs in the region with experience using these novel medications. Our expert physicians can also help decide whether patients are candidates for new systemic therapies, available through one of our multi-institutional National Cancer Institute-sponsored clinical trials.

Our radiation oncologists use advanced techniques such as intensity-modulated radiation therapy (IMRT), hypofractionated radiation and electron beam therapy to carefully target and deliver the optimal dose of radiation to the skin malignancy while sparing healthy tissue.

Research and Education

Our physicians are committed to excellence in research and education, and deliver lectures to dermatologists, plastic surgeons and the community to ensure they are apprised of the latest approaches to treating melanoma and rare skin cancers.

General surgery and dermatologic surgery residents also rotate through the Center to receive clinical training.
Supportive Oncology and Pain Management Center

Offering Patient-Centered Care
Specialists from a wide range of disciplines in our unique Supportive Oncology and Pain Management Center tailor individual, comprehensive interventions that address the often overwhelming needs of patients coping with the complications of cancer and its treatments. Whether the condition is curable or advanced, our physicians strive toward providing patient-centered care that improves an individual’s quality of life.

Providing Unique Support Programs
Through state-of-the-art application of palliative care and supportive medicine programs, patients find relief from pain, fatigue, depression, cognitive malfunction, nausea, weight loss and neuropathy, among many other possible symptoms.

One such innovative program, unique to Long Island and the New York City area, is our multidisciplinary Bone Metastases Program, created to support and improve the lives of our patients with pain resulting from advanced spinal and skeletal bone metastases. Our palliative care physicians consult with an interdisciplinary tumor board to review each individual’s case and to evaluate options and make the optimal treatment choice for bone-related pain and restore quality of life.

In addition to traditional pain management modalities such as medication, newer treatment options may include percutaneous vertebral augmentation, radiofrequency ablation, cryotherapy, laser interstitial therapy, and MRI-directed sonography.

Our interdisciplinary team consists of:
- Medical Oncologists
- Radiation Oncologists
- Orthopaedic Surgeons
- Neurosurgeons
- Interventional Radiologists
- Cancer Rehabilitation Specialists
- Oncology Social Workers
- Oncology Nurses
- Oncology Nutritionists
- Chaplains
Advancing Research and Education
Our investigators conduct pain control trials and studies of new drugs and therapies. We are currently working with the Alliance for Clinical Trials in Oncology, along with 19 other institutions across the US, on a landmark study of palliative outcomes in patients with either lung or gastrointestinal cancer.

We offer a year-long fellowship in Hospice and Palliative Care Medicine with a rotation in the supportive oncology and pain management program.

Additionally, monthly supportive and palliative care grand rounds are held and broadcasted to physicians in training at Northwell Health as part of our educational initiative. Our specialists also offer a lecture series and case conference programs to increase awareness of oncology supportive therapies and palliative care.
Pediatric Hematology/Oncology Center

Individualized, Multidisciplinary Care

The Division of Hematology/Oncology and Stem Cell Transplantation at Steven and Alexandra Cohen Children’s Medical Center offers children with cancer individualized, multidisciplinary care through the collaboration of our expert medical, radiation and surgical oncologists. We see about 200 new patients annually, accounting for approximately 12 percent of the pediatric oncology volume in the New York metropolitan area.
Offering Innovative Treatment Programs

The Division offers many innovative and family-centered oncology programs that enable our specialists to provide the latest treatments to pediatric patients:

- **The Center for Primary Oncology**—takes a family centered approach to the diagnosis and treatment of the more common types of pediatric cancer.

- **The Bone Tumor/Sarcoma Program**—brings together orthopaedic and pediatric oncologists to aggressively remove tumors and preserve a patient’s maximal function without sacrificing cure rates.

- **The Childhood Brain and Spinal Cord Tumor Center**—offers state-of-the-art neuro-oncologic care based on clinical, basic science and translational research to more than 50 children each year.

- **The Center for Rare Tumors**—coordinates the expertise of medical, surgical, orthopaedic, radiation oncology, diagnostic radiology and surgical pathology specialists to treat pediatric cancers such as hepatoblastoma, hepatocellular carcinoma and malignant germ cell tumors. Our multidisciplinary team of physicians consults with other rare tumor experts around the world to customize treatment plans for these patients.

- **The Myelodysplastic Syndrome and Bone Marrow Failure Clinic**—combines treatment, education and research to care for patients with inherited or acquired forms of bone marrow failure. The experts are internationally renowned specialists at diagnosing bone marrow failure and serve as a trusted second opinion when confronting bone marrow failure syndromes.

- **Pediatric Stem Cell Transplant Program**—accredited by the Foundation for Accreditation of Cellular Therapy (FACT), performs 20 to 25 bone marrow, umbilical cord or stem cell transplants annually.
Offering Ongoing Support

The Survivors Facing Forward Program tackles the often challenging physical, psychological and financial consequences that can follow young patients into their adult lives. This multifaceted program — which also identifies, screens for, prevents and treats issues that face this group — is available to patients regardless of where they originally received treatment.

Expanding Medical Knowledge

As a member of the NCI Children’s Oncology Group (COG), our physicians are conducting several phase 1 and 2 trials in neuro-oncology based on a translational model of research. The Center also participates in clinical research through the Metropolitan Brain Tumor Consortium and other organizations.

Collaboration with the Feinstein Institute for Medical Research allows our researchers to investigate pediatric brain tumors, in addition to bone marrow failure and cancer predisposition. Our pediatric

The Pediatric Hematology Oncology research program has received grants from the National Institutes of Health, the Department of Defense, and private foundations to further its groundbreaking research to help young patients.
hematologists/oncologists are also working with researchers at the University of Chicago to study the genetics and genomics characteristics of childhood cancer with the goal of understanding cancer biology and improving treatment. Our research laboratories at the Feinstein Institute for Medical Research integrate with our clinicians and clinical researchers to understand the mechanisms of human disease and translate laboratory science to improved outcomes.

The Pediatric Hematology Oncology research program has received grants from the National Institutes of Health, the Department of Defense and private foundations to further its groundbreaking research to help young patients.

Fellowship training in pediatric oncology and stem cell transplantation is another priority. Additionally, general pediatrician or pediatric subspecialist residents can opt for a rotation on cancer and blood disorders.
Prostate and Genitourinary Cancer Center

Team-Based, Coordinated Care
Our Prostate and Genitourinary Cancer Center includes a team of urologic surgeons, medical oncologists, radiation oncologists, pathologists and radiologists that offers cutting-edge treatments for prostate, bladder, kidney, testicular, adrenal and penile cancers. Our multidisciplinary team meets weekly to discuss and facilitate the coordinated treatment of these malignancies.

Robust Diagnostic and Treatment Planning Programs
Our researchers have collaborated with the National Cancer Institute to develop a premier MRI Prostate Imaging Program and to test the effectiveness of the MRI/ Ultrasound fusion platform to perform targeted prostate biopsy. Based on this research collaboration, doctors use sophisticated prostate MRI imaging and real-time ultrasound — called fusion biopsy — to evaluate 100 percent of the prostate and target suspicious areas that may be missed during conventional “blind” prostate biopsies. This technique allows our doctors to more accurately diagnose patients and identify patients in the early stages of high-risk prostate cancer.

We also offer one of the only multidisciplinary clinics in the metropolitan area that gives men with prostate cancer one setting in which to see a urologic surgeon and radiation oncologist without having to attend two separate appointments.

Delivering the Latest Surgical Approaches
Our experts have pushed the boundaries of minimally invasive surgical techniques in all aspects of genitourinary cancers. The urologic surgeons perform among the highest volume of minimally invasive kidney surgeries in the country and were the first to perform robotic radical cystectomy for bladder cancer, robotic urinary neobladder reconstruction, and minimally invasive inguinal lymph node dissection for penile cancer in the metropolitan area. For prostate cancer, state-of-the-art surgical approaches to care include minimally invasive nerve-sparing robotic and laparoscopic single-site surgery (LESS) for prostatectomy.
In addition to surgery, our radiation oncologists are recognized international leaders in the treatment of prostate cancer and offer the latest radiation therapy techniques for prostate cancer, including Stereotactic Body Radiation Therapy (SBRT), intensity-modulated radiation therapy (IMRT), brachytherapy (seed implant) and radium-223 dichloride injections for metastatic disease.

The Center’s medical oncologists are at the forefront of chemotherapeutic treatment, including molecular targeted therapy, immunotherapy and agents only available through clinical trials. Focal laser ablation and cryotherapy are also available from our interventional radiologists.

The Prostate and Genitourinary Cancer Center is active in research, participating in NCI cooperative group and industry sponsored and investigator initiated studies. The National Institutes of Health and Department of Defense have awarded our program several research grants to study the genetic biomarkers of prostate cancer and medical decision making before and after treatment for the condition.

We offer urology and radiation oncology residency programs and medical oncology fellowships that expose trainees to the complete breadth of urologic oncology. One- and two-year fellowship opportunities are also offered for urologic oncology and provide experience in advanced laparoscopic and robotic surgery.

Source: Northwell Health Hospitals’ Cancer Registries.
Hematology and Medical Oncology

Innovative and Integrated Treatments
Our program provides expert care for virtually every type of cancer with a wide range of fully coordinated ambulatory and inpatient hematology, medical oncology and chemotherapy services encompassing eight sites.

Our 50 full time disease-oriented medical oncologists and hematologists are leaders in emerging chemotherapy and immunotherapy therapy treatments as well as biological therapies. Our oncologists are patient-oriented and collaborate with cancer specialists in surgery, radiation oncology, pathology, radiology and supportive care across the organization to develop the best treatment plans available. They ensure that each patient receives the most effective chemotherapy treatments available, including access to the latest treatments only available through clinical trials. Advanced diagnostic tests, including genomics, are available in real time and integrated into the decision making of diagnosis and care.

National Leaders
Our esteemed hematologists and medical oncologists have held top leadership positions both nationally and internationally:

American Society of Hematology
- Past President
- Wallace H. Coulter Award for Lifetime Achievement in Hematology

American Society for Clinical Oncology
- Karnofsky Lifetime Achievement Award

NCI-Alliance
- Board of Directors
- Committee Chairs

NRG
- Committee Members
Our Hematology and Medical Oncology program’s commitment to excellence is reflected in our patient satisfaction scores with over 94 percent of patients who would recommend our hematology/medical oncology practices.

**Northwell Health**

**Likelihood to Recommend**

2012-2014

- 100%
- 75%
- 50%
- 25%
- 0%

2013 2014

- 100%
- 75%
- 50%
- 25%
- 0%

Our Hematology and Medical Oncology program’s commitment to excellence is reflected in our patient satisfaction scores with over 94 percent of patients who would recommend our hematology/medical oncology practices.

Source: Press Ganey Surveys received 1/1/2013-12/31/2014 for Hematology and Medical Oncology Physician Practice/Treatment Centers at Moniter Cancer Center, Glen Cove and Huntington Hospitals.

**Dedication to Research and Education**

As investigators, the faculty participate in National Cancer Institute Cooperative Groups and pharmaceutical and investigator-initiated clinical studies, ranging from fundamental cellular investigations to the latest cutting-edge translational and clinical research. As educators, they train tomorrow’s generation of medical oncologists and hematologists through a three-year hematology/medical oncology fellowship training program. They also carry academic responsibilities at Hofstra Northwell School of Medicine.

**Full Spectrum of Support Services**

We provide a full spectrum of support services to patients and their families through all phases of the cancer experience. These include oncology nurse navigators to coordinate treatment, social work services, nutrition counseling, support groups, and survivorship and wellness programs. In addition, we have a supportive oncology care and pain management program.

**Survivorship**

Our care doesn’t stop once treatment ends. Whether dealing with lingering physical issues, nutritional issues, psychological struggles or adjusting to life, our survivorship program offers education, events and resources dedicated to improving life and enhancing wellness as a cancer survivor.

Our multidisciplinary survivorship care team works with patients to create an individual approach to address the challenges that may affect patients as a result of the diagnosis and treatment of cancer. We also work closely with primary care physicians to ensure a common plan of care. Our oncology team focuses on issues that are meaningful to the patient beyond the medical surveillance of the specific cancer type.
Department of Radiation Medicine

Northwell Health Cancer Institute’s Department of Radiation Medicine — the second largest radiation medicine program in the metropolitan area — offers a rare combination of modern technology and physician expertise. The department has 16 radiation oncologists providing a full range of treatments using the latest in technology and techniques in nine locations to almost 4,000 patients annually.

Our extensive range of technologies uniquely positions Northwell Health Cancer Institute to provide personalized, evidence-based care for every patient. Further, we have one of the largest brachytherapy programs in the nation, performing over 500 procedures annually and offering one of four scholarship spots for a (visiting) resident.

In 2014, we opened two new sites:
- $47 million outpatient facility at the Center for Advanced Medicine in Lake Success, which includes a Brain Tumor Program and Stereotactic Radiosurgery
- Lenox Hill Hospital—a new department of radiation medicine that offers state-of-the-art tomotherapy and HDR/LDR Brachytherapy
Quality and Safety

Department physicians and staff are dedicated to delivering the highest level of quality care with compassion and respect, and committed to ensuring patient safety and satisfaction. The Department’s mission of Smarter Radiation Oncology® is centered on providing the highest level of care focused on three pillars:

- **Evidence-based medicine**—Patients receive care supported by data; based on proven studies and methods that have been published in respected medical journals.

- **Quality and safety**—The department has instituted Smart Rounds in which all the physicians and physicists meet daily to review every new patient’s treatment plan. We have instituted the ‘No Fly Program’ which, similar to an airline, uses checklists to ensure that a patient’s treatment will only commence when ready. This program is internationally recognized and is being adopted by other leading cancer centers around the world.

- **The patient experience**—Our staff is committed to providing outstanding and compassionate care and services. As two-time winners of the National Press Ganey Guardian of Excellence award, we consistently rank as one of the top radiation oncology programs in the nation based on patient experience and satisfaction.
Commitment to Research and Education

Our team is engaged in cutting-edge clinical trials that aim to achieve higher treatment success rates, improve delivery methods, reduce side effects from treatment and improve patients’ lives.

We are committed to educating tomorrow’s Radiation Specialists with our Radiation Oncology Residency Program; clinical partnership with the Medical Physics Graduate Program at Hofstra University; Medical Physics Therapeutic Radiological Residency Program; clinical affiliate of the University of Wisconsin’s MS in Dosimetry Program; partnership with Nassau Community College for Radiation Therapist training.

In 2014, our radiation oncologists published 16 original research studies and 36 abstracts, and also presented more than 44 invited lectures. Additionally, Northwell Health radiation oncologists present at numerous international and national educational symposia, including those organized by:

- American Society for Radiation Oncology (ASTRO)
- International Stereotactic Radiosurgery Society (ISRS)
- IUC Global Task Force on Radiotherapy for Cancer Control
- National Institutes of Health: National Cancer Institute
<table>
<thead>
<tr>
<th>Department of Radiation Medicine</th>
<th>Center For Advanced Medicine</th>
<th>Long Island Jewish Medical Center</th>
<th>North Shore University Hospital</th>
<th>Southside Hospital</th>
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<td>221</td>
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<td>Liver Sphere</td>
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<td>40</td>
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<tr>
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<tr>
<td>Intravascular Brachytherapy</td>
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<td>41</td>
<td>-</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>Skin / Other</td>
<td>8</td>
<td>-</td>
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<td>9</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>64</td>
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<tr>
<td>Partial Breast Irradiation</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>200</td>
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<tr>
<td><strong>Total Brachytherapy</strong></td>
<td>184</td>
<td>306</td>
<td>-</td>
<td>32</td>
<td>-</td>
<td>32</td>
<td>232</td>
<td>117</td>
<td>903</td>
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<tr>
<td><strong>Total Visits</strong></td>
<td>25,350</td>
<td>6,109</td>
<td>1,232</td>
<td>6,947</td>
<td>1,780</td>
<td>1,118</td>
<td>11,490</td>
<td>10,078</td>
<td>64,104</td>
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Source: Northwell Health Department of Radiation Medicine
Oncology Surgical Specialties

The surgical oncologists and surgical subspecialists of Northwell Health Cancer Institute are at the forefront of surgical advances, such as specializing in the latest minimally-invasive laparoscopic procedures and robotic-assisted techniques. A major goal is to minimize patient recovery time, shorten the hospital stay, maximize the path to wellness and optimize the quality of life of patients.
Minimally Invasive and Robotic Surgery

Surgical oncologists and surgeons are well versed in the surgical management of rare and complex tumors as well as more common malignancies. They treat the patient, not just the condition. Our surgeons are recognized nationally and internationally for their pioneering work and specialize in the following procedures and techniques:

- **Robotic surgery**—the surgical staff has expertise in robotic surgical treatments for prostate, kidney, colon, esophageal, liver, pancreas, cervical, lung and thoracic cancers. Our surgeons were among the first in the Northeast to offer robotic hysterectomy and myomectomy.

- **Laparoscopic**—the faculty members are world leaders in minimally invasive approaches in treating urologic cancers and were part of the teams that performed the first laparoscopic prostate and kidney removals. They pioneered robotic surgery and the next evolution, the laparoendoscopic single-site surgery (LESS). Advanced laparoscopic surgery is currently used to treat tumors of the esophagus, stomach, intestine, colon, liver, pancreas, adrenal gland and retroperitoneum. Advantages include short hospital stay and quicker overall recovery.

- **Video-Assisted Thoracic Surgery (VATS)**—is used by Thoracic Surgeons to diagnose and treat lung and thoracic cancers.

- **Minimally Invasive Endoscopy Surgery**—surgeons utilize the most advanced techniques to spare damage to organs, and employ the latest and highest quality reconstruction.

- **NanoKnife®—Irreversible Electroporation (IRE)** is used for cancers of the pancreas, which are not removable by conventional methods. Other ablative techniques are used at times in conjunction with surgical, radiologic and medical treatments. This allows for an individualized approach to treatment and control of these cancers.

Oncologic Surgery specialties:
- Breast Surgery
- Colon and Rectal Surgery
- Endocrine
- Head and Neck
- Hepatobiliary
- Neurosurgical
- Orthopaedic
- Plastic and Reconstructive Surgery
- Pediatric
- Thoracic
- Urologic
A Focus on Education

Residencies, Fellowships and Medical Student Education

Northwell Health is committed to training the next generation of oncology specialists. The mission of our training programs is to nurture and inspire the careers of future academic and clinical leaders in oncology and to ensure that our graduates excel in patient care, medical knowledge, translational medicine, practice-based learning and improvement, interpersonal and communication skills, and professionalism. Our fellowship and residency programs are listed in the chart on the facing page.
Our cancer specialists also provide medical students at Hofstra Northwell School of Medicine with an extensive education program focusing on innovative and patient centered approaches to care for adult and pediatric cancers.

Continuing Medical Education
As part of our commitment to expanding cancer care knowledge, we held seven continuing medical education (CME) accredited conferences with over 1,000 physicians and care providers in the metropolitan area.

Our nationally and internationally renowned faculty has published and presented research at many of the major oncology conferences, including but not limited to:
- American Brachytherapy Society—Orlando
- American College of Surgeons
- American Society for Blood and Marrow Transplantation
- American Society for Radiotherapy and Oncology
- American Society of Clinical Oncology
- American Society of Hematology
- American Society of Neuroradiology
- International Association for the Study of Lung Cancer
- International Stereotactic Radiosurgery Society (ISRS) Congress
- National Institutes of Health: National Cancer Institute
- North American Skull Base Society
- San Antonio Breast Cancer Symposium

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<tr>
<th>Focus on Education</th>
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<tr>
<td>Program</td>
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<tr>
<td>Cancer Specialties</td>
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<tr>
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<td>Hematopathology</td>
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<tr>
<td>Hospice/Palliative Medicine</td>
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Dedication to Research

Research is an essential element of Northwell Health Cancer Institute and provides the foundation for all of our patient care programs. Our oncologists have participated for more than three decades in hundreds of National Cancer Institute-sponsored clinical trials, continuing the legacy of on-going National Cancer Institute-supported clinical trials infrastructure grant funding as founding members of the prestigious National Cancer Institute Community Clinical Oncology Program (CCOP). Our Cancer Institute is the repository of state-of-the-art clinical research protocols for both treatment and cancer control in the communities we serve. Our oncologists also collaborate with researchers at the Feinstein Institute for Medical Research who are conducting translational research studies on brain tumors and chronic leukemias.

Our research ranges from early drug development to optimizing radiation therapy, to clinical trials evaluating the safety and efficacy of treatments, to quality of life and supportive care investigations, to population studies of cancer screening and prevention, to evaluating the overall patient experience at our Centers.

In 2014, the Cancer Institute continued its long-standing peer reviewed support from the National Cancer Institute and was awarded a prestigious five-year, $4.1 million National Cancer Institute Community Oncology Research Program (NCORP) grant to study large patient populations. The Cancer Institute was one of only 46 institutions in the United States — and the only one on Long Island — selected to participate in this prestigious, peer reviewed program. This grant allows our Centers of Excellence to conduct cancer care delivery research, as well as cancer prevention, control and screening trials for prostate, breast and lung cancers, among other malignancies.

In addition to our oncologists having their papers published in high impact peer-reviewed journals such as the New England Journal of Medicine, Journal of Clinical Oncology, Practical Radiation Oncology, Breast Cancer Research, the Journal of Neurosurgery and the Journal of Oncology Practice, among many others, they are also routinely invited to write editorials for the New England Journal of Medicine and the Journal of the American Medical Association. Oncologists from our Cancer Institute also regularly speak and present their data at medical conferences, including the annual meetings of the American Society of Clinical Oncology, the American Society for Therapeutic Radiology and Oncology and the American Society of Hematology.

The Future

In late 2015, Northwell Health announced a new genomics partnership with OPKO Health, Inc. This brings expanded germline testing, as well as deep sequencing of tumors, for the care of our patients at risk for and with cancer. As there are increasing numbers of known genetic mutations that potentially predispose individuals and their families to cancer, our partnership will allow us to better customize germline test panels to better suit the needs of our patients. Furthermore, in the evolving era of precision oncology, targeting specific tumor
mutations detected by deep sequencing and other evolving genomic technologies may suggest specific molecular and genomically targeted therapies in the standard and research setting. In light of the size, breadth and depth of our Cancer Institute, and as part of this partnership, we are planning to innovate the future paradigm for cancer care delivery combining genomics and data analytics to mold the future of personalized cancer medicine.

In 2015, Cold Spring Harbor Laboratory (CSHL) and Northwell Health announced a transformative strategic affiliation to align CSHL’s world-class cancer research with Northwell Health’s growing network of clinical services encompassing more than 15,000 new cancer cases annually across the New York metropolitan area.

The CSHL and Northwell Health affiliation will benefit from the investment of more than $120 million to accelerate cancer research. As part of this affiliation, a planned facility designated for early phase development of new agents will contribute to the joint development of new diagnostics and therapeutics, with first in-human experimental therapeutics being conducted in both the inpatient and outpatient settings at the Cancer Institute. Additionally, an expansion of a cancer biorepository to enhance basic and translational collaboration is underway. Medical students from Hofstra Northwell School of Medicine will have the opportunity to train with scientists at CSHL. This partnership also enhances oncology care by offering new educational and research training opportunities. This will include the launching of a joint fellowship track that will offer postgraduate clinical and clinical translational research training in oncology at the Cancer Institute combined with basic translational research training at Cold Spring Harbor Laboratory to provide trainees with the mentoring and skills to better bridge bench-to-bedside-to-bench (again) translational research.

It is anticipated that the CSHL and Northwell Health affiliation will distinguish the organization from other cancer specialty centers with its focus on innovation and ability to provide access to new cancer diagnostics and therapeutics to patients throughout the region. Its vision is to decrease the emotional, physical and financial burden of cancer in the communities we serve and beyond.