Introduction Letter

MedStar Health Cancer Network represents a true collaboration in cancer care, providing patients throughout the greater Baltimore region with access to the nation's leading technology, the latest clinical trials and unparalleled expertise.

At MedStar Cancer Network, patients are offered a full range of sophisticated, proven and promising diagnostic treatment options, support programs, rehabilitation and follow-up services. And every patient benefits from our multidisciplinary approach to care, which culminates in a customized, comprehensive treatment plan unique to each individual.

While the breadth and depth of our cancer program has grown dramatically in recent years, we continue to evolve to meet the needs of the communities we serve. Here are a few examples.

In this region, one of the greatest barriers to care for many patients is transportation. Patients cannot access the services they need when they can’t get to them. To address this, the Cancer Philanthropy Council at MedStar Franklin Square Medical Center raised more than $260,000 during 2016 to launch a complimentary patient transportation program for our cancer patients in need. Funded primarily through private philanthropic investments, the patient transportation program began assisting eligible cancer patients in July 2016, making it possible for many individuals to get the care they need when they need it.

At the same time, we continued to expand our footprint within the community to further ensure that patients have convenient access to the latest medical technology closer to where they live, with a wide range of diagnostic and treatment options and the highest quality care. In April, we opened a MedStar Health Bel Air Medical Campus—a 100,000-square-foot center offering urgent care, along with primary and multi-specialty care, including a breast center and an oncology center. This includes a warm and welcoming infusion center that provides a wide range of outpatient services such as IV therapy of all types, including, but not limited to chemotherapy, immunotherapy and iron infusion, as well as radiation therapy using our state-of-the-art linear accelerator.

In addition, many of our patients are now benefiting from new treatment options that have emerged in recent years—enabling our specialists to develop truly individualized treatment plans. One particularly exciting development is the use of molecular tumor profiling to identify treatment options that may not have been considered initially. This method of testing is offering new hope to many patients and is ideal for individuals who have aggressive or rare cancers that may not or have not responded to standard treatments.
Another new approach is immunotherapy, which works to harness the innate power of the immune system to fight cancer. Today, we offer several immunotherapy drugs—and more are being developed—that mobilize a patient's own immune system against their tumor cells. The results we have seen have been amazing and we’re hopeful these medications will benefit patients in the long term.

Our patients also have more access to clinical research than ever before. Many of our providers collaborate with National Cancer Institute-sponsored research organizations, the pharmaceutical industry and independent investigators to enroll patients in clinical trials that may provide them with access to new treatments that could be beneficial. These clinical trials are the path to the future of oncology and the development of new drugs.

Providing the highest level of cancer care has long been a hallmark of MedStar Cancer Network. It’s a level of care that recently earned the Breast Center at MedStar Franklin Square a Women’s Choice Award from the National Accreditation Program for Breast Centers as one of America’s best centers. We take great pride in the fact that we were one of only five centers in the state of Maryland who met the required standards to receive the award—acknowledging our ongoing commitment to providing the best possible care to patients with breast cancer.

Of course, our commitment to caring for the community extends far beyond the walls of our facilities. Through partnerships with organizations such as American Cancer Society, the Susan G. Komen Foundation, Hopewell Cancer Support and the Ullman Cancer Fund for Young Adults, to name a few, we have been able to reach far more individuals in the fight against cancer than we could on our own.

In the text that follows, you’ll read more about our accomplishments of the past year. As we look to the future, we hope to build on our successes—for the benefit of our patients, their families and the community—for many years to come.

Sincerely,

Albert Aboulafia, MD
Medical Director
MedStar Health Cancer Network

Linda Rogers, RN, MBA, CPA
Vice President
MedStar Health Cancer Network
Highlights of 2016

MedStar Health Cancer Network had a great year of growth and achievement. Following are some highlights.

GENETIC COUNSELING

Cancer risk assessment and genetic counseling are integral to the oncology services offered through MedStar Cancer Network. Risk assessment for inherited cancer syndromes allows high risk cancer families to be identified and offered appropriate medical management to prevent future cancer and/or allow for early detection within these families.

In 2015, more than 400 patients and their families were seen within the Center for Cancer Risk Evaluation. These patients are not only being offered genetic testing for the most common gene mutations, they are also being offered testing for dozens of other gene mutations that have recently been uncovered. Through this testing, an additional 30 percent of families were found to have inherited cancer mutations.

Our universal screening program has been particularly successful in identifying two to three families each year as having Lynch syndrome, the most common form of inherited colon and endometrial cancer. This most likely would have gone undetected, since these families did not meet typical history criteria for the condition.

By May of this year, all pathology departments within MedStar Cancer Network were performing universal mismatch repair immunohistochemistry for Lynch syndrome on all newly diagnosed endometrial cancers. This compliments the colon cancer screening for Lynch syndrome which began several years ago throughout the network.

To keep both healthcare providers and the community up to date regarding advances in cancer genetics, regular educational programs are offered. For healthcare providers, a quarterly journal club is available, and for the community, several events occurred in 2016 including a Mother’s Day breakfast in which over 200 women attend our lecture and screening series.

The Center for Cancer Risk Evaluation continues to grow and offers patients and their families personalized medicine as their individualized risk for cancer is determined by personal risk factors, family history of cancer and genetic mutation status.

COMMUNITY OUTREACH

MedStar Cancer Network is committed to improving the health of our communities by providing comprehensive prevention, screening and outreach activities. These activities are monitored and documented in an annual community outreach activity summary that is presented to the cancer center committee at the end of each calendar year.

In 2016, our cancer outreach focused on four areas of cancer screening education; colorectal, skin, breast and lung. Overall, 744 people were provided education about these types of cancers and a total of 188 people were screened. These activities occurred in Baltimore City, Baltimore County and Harford County in Maryland.

During 2016, we also participated in 22 community and business partner events held throughout Baltimore City, Baltimore County and Harford County.
Colorectal Cancer Screening

In 2016, MedStar Health was, for the first time, directly awarded the Baltimore City Cancer Prevention Education, Screening and Treatment Grant by the Department of Health and Mental Hygiene under the Cigarette Restitution Fund Program. The grant, in the amount of $1,212,000, provides free colonoscopies and treatment to low income, uninsured and underinsured residents of Baltimore City and Anne Arundel County.

To meet the larger scope and demands of the program, three new associates were hired including one nurse case manager and two outreach workers, one of which provides Spanish translation. The program supplies colonoscopies at MedStar Good Samaritan Hospital, MedStar Harbor Hospital and MedStar Union Memorial Hospital.

During 2016 the program completed 212 colonoscopies, four air contrast barium enemas and one sigmoidoscopy. Two colon cancer cases and one rule out for cancer were found. More than 150 colon polyps were removed in the procedures. New in 2016, the program began offering iFOBT testing to patients who didn’t complete their colonoscopies as an alternative screening method. The program was highlighted with two appearances on Fox 45’s morning news show. One of the broadcasts reached a patient who was then screened through the program and found to have early stage colon cancer, which has been successfully treated. The patient is now cancer free.

Breast and Cervical Center Screening

The Baltimore City Breast and Cervical Cancer Program (BCCP) has been going strong since 2002. Made possible through $800,082 in contract funds from the Maryland Department of Health and Mental Hygiene, the BCCP has provided over 13,500 breast exams, mammograms and Pap tests to women in need since the program began.

In 2016, MedStar Health Cancer Network BCCP performed 666 mammograms and 203 Pap tests through this program. Because 60 percent of program clients are Hispanic, MedStar has created a very robust program designed to support these women through the screening process. This includes two full time BCCP outreach reps and an additional three translators three times per month for “Amiga’s Day,” where as many as 20 spanish-speaking women come for breast and cervical cancer-screening services in one day. Translation services are provided for them in the doctor’s office and mammogram department and they are escorted from one department to another.

CLINICAL TRIALS

The clinical trials program at MedStar Cancer Network is one of the largest in the state. The reputation of our network, doctors, and the greater availability of new treatments through MedStar Health Research Institute attract patients from a tristate area. Our physicians conduct a variety of trials, ranging from treatment of cancer using surgery, chemotherapy and/or radiation therapy, to supportive care and symptom-management studies.

Currently, MedStar Cancer Network has more than 31 clinical trials active. These trials are open at all MedStar Health oncology sites. Our physicians, working closely with our clinical research nurses, provide excellent care for patients undergoing treatment and registry trials.

Our target for Commission on Cancer Integrated Network accreditation is to enroll six percent of analytic cases for a goal of 131 patients. Our expected accrual for calendar year 2016 is 250 patients or 12 percent based on the 2,102 analytic cases for 2015. This will reflect commendation status for this standard.

Other highlights for 2016:

• High enrolers for the Merck 3475-024 study comparing pembrolizumab to chemotherapy in patients with PDL1 + stage IV lung cancer.
• First in the world to enroll to Merck 3475-407 study for stage IV squamous cell lung cancer patients.
• Implemented immunotherapy trials for melanoma, lung cancer and cervical cancer.

All oncology clinical trials can be found on MedStarCancer.org/Trials.
Performance Improvement

SMOKING CESSATION

Due to high incidences of smoking and lung cancer in Baltimore City and Baltimore County, smoking cessation continues to be a focal point of our cancer prevention programs. Overall, our smoking cessation classes quit rates are higher than most throughout the state. However, our city programs are challenged with low registration and low attendance. In an effort to improve these results, we conducted a 12-month performance improvement study, comparing and evaluating all of our cessation programs.

After reviewing data that included attendee demographics, educator quality, class promotion, cessation aids offered, and tracking mechanisms, the Performance Improvement Committee recommended improvements that focus on:

- Educator resources and training.
- Standardizing class programs like incentives, length of classes and outcomes tracking methods.
- Marketing and promotion.
- Building stronger local health department synergies.

These recommendations are already being implemented and the results from all classes continue to be monitored and reported to our cancer committee.

### Smoking Cessation Classes

In 2016, we held a total of 14 smoking cessation classes throughout Baltimore County and City, and Harford County.

<table>
<thead>
<tr>
<th>Smoking Cessation Classes</th>
<th>MedStar Franklin Square Medical Center</th>
<th>MedStar Union Memorial; MedStar Good Samaritan Hospital; MedStar Harbor Hospital</th>
<th>MedStar Bel Air*</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td>Total Classes</td>
<td>8</td>
<td>5</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Registered</td>
<td>76</td>
<td>48</td>
<td>6</td>
<td>130</td>
</tr>
<tr>
<td>Attended</td>
<td>50</td>
<td>33</td>
<td>5</td>
<td>88</td>
</tr>
<tr>
<td>Completed</td>
<td>43</td>
<td>21</td>
<td>5</td>
<td>69</td>
</tr>
<tr>
<td>Quit Smoking</td>
<td>25</td>
<td>10</td>
<td>3</td>
<td>38</td>
</tr>
<tr>
<td>Quit Rate**</td>
<td>58 percent</td>
<td>50 percent</td>
<td>60 percent</td>
<td>56 percent</td>
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</table>

*New class established in October 2016

** Quit Rate at the end of this class
ORAL CHEMOTHERAPY EDUCATION STUDY

Nationally, there has been an increase in the number of oral pharmaceuticals available and being prescribed for oncology treatment. Due to a surge in research efforts, this increase is expected to continue.

As a result, there is a shift from chemotherapy treatment being primarily done in an infusion center to being taken by pill at home by the patient. That means it is more critical than ever that the healthcare team thoroughly educate patients and caretakers about the drugs and side effects and monitor compliance. It is especially important for the nurse to contact the patient within a week of the start of the medication. This allows the nurse to determine how the patient is tolerating the medication, managing any side effects, and if it is being taken as prescribed.

We decided to evaluate how consistently and timely the new education was occurring with patients prescribed oral chemotherapy throughout MedStar Health Cancer Network.

From January 2016 through June 2016 we documented the number of days between a patient starting oral chemotherapy and receiving the first follow-up. Initially the average was 13.6 days. We agreed that our goal should be less than 7 days, which aligns with the Oncology Nursing Society recommendation. So we standardized and implemented some process improvements across the network.

After implementing the process improvements, we reassessed the timeliness of this education and follow-up. The average number of days from the patient starting oral chemotherapy to the first follow-up decreased from 13.6 days to 4.22 days. We met our network goal and are very proud of our team.

<table>
<thead>
<tr>
<th>January to June 2016</th>
<th>n size</th>
<th>Average Number of Days from the patient starting oral chemotherapy to the first follow up</th>
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<tbody>
<tr>
<td>MedStar Franklin Square Medical Center</td>
<td>41</td>
<td>5.29</td>
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<tr>
<td>MedStar Union Memorial Hospital</td>
<td>9</td>
<td>9.56</td>
</tr>
<tr>
<td>MedStar Good Samaritan Hospital</td>
<td>7</td>
<td>7.71</td>
</tr>
<tr>
<td>MedStar Harbor Hospital</td>
<td>9</td>
<td>30.89</td>
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Network goal: < 7.00 days

<table>
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<th>October to November 2016</th>
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<th>Average Number of Days from the patient starting oral chemotherapy to the first follow up</th>
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<tr>
<td>MedStar Franklin Square Medical Center</td>
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<td>MedStar Union Memorial Hospital</td>
<td>3</td>
<td>6.67</td>
</tr>
<tr>
<td>MedStar Good Samaritan Hospital</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>MedStar Harbor Hospital</td>
<td>0</td>
<td>0</td>
</tr>
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</table>

Network goal: < 7.00 days
Our Centers of Excellence

THE ANGELOS CENTER OF LUNG DISEASE

The Angelos Center for Lung Diseases treats more patients with lung disease than any other community hospital in Maryland. The diverse range of skills and expertise of our multidisciplinary team of specialists enables us to provide patients with seamless, integrated care beginning with the initial visit and throughout the treatment program.

We also offer the newest and most promising technologies for early diagnosis including, autofluorescence bronchoscopy and superDimension™. Multimodalities and an outstanding team of thoracic surgeons, radiation oncologists, medical oncologists, interventional pulmonologists and rehab pulmonologists along with a dedicated thoracic nurse navigator help make us one of the nation’s premiere lung cancer prevention and treatment centers.

THE BREAST CENTER

We are dedicated to providing state-of-the art services and treatments as well as the most individualized care that can be found in Maryland for individuals with breast abnormalities. We offer the full spectrum of diagnostic and treatment options in a multidisciplinary collaborative environment. Our clinicians, specialists in breast surgery, medical oncology and radiation oncology, work with breast radiologists, pathologists, nurses and other support staff to carefully evaluate each patient’s diagnosis and create a personalized treatment plan specially designed to meet that individual’s unique needs. This seamless care is backed by support services that include patient navigation and genetic counseling.

THE CENTER FOR GYNECOLOGIC ONCOLOGY

Our multidisciplinary team of experts offers patients with all types of gynecologic cancers a wide range of comprehensive treatments including minimally invasive surgeries, the most advanced radiation therapies and access to clinical trials. To achieve the best possible outcomes, surgery may be combined with radiation therapy, chemotherapy or hormonal therapy. For women who have undergone extensive surgeries to remove cancer, the center offers reconstructive surgery, a surgical specialty not available at all hospitals.

THE CYBERKNIFE® CENTER

CyberKnife® Robotic Radiosurgery is one of the most advanced treatments available for patients with inoperable or surgically challenging tumors. These patients may have tumors of the brain or spine, or tumors that are wrapped around other critical structures. They may also be patients who are elderly or cannot tolerate other treatment options.

Performed on an outpatient basis, CyberKnife is a type of radiation therapy used to treat tumors in the head and brain, neck and spine, lung, liver, kidney, pancreas and prostate; all without the stress and recovery time needed for surgery. The robotically guided treatment is accurate, painless, and effective for malignant and benign tumors anywhere in the body. For patients with few other treatment options, CyberKnife can be lifesaving.
THE MARYLAND MELANOMA CENTER
Our innovative team of nationally known surgical and medical oncologists, researchers, and oncology practitioners offer patients the best and most current practices in melanoma diagnosis and treatment. We are one of the few facilities in the country with the technology and expertise for vaccine biotherapy and hyperthermic-isolated limb perfusion.

We are also home to a research laboratory where scientists are able to analyze patient tumors, which aids in the development of individualized treatments. Our team includes oncology surgeons, plastic surgeons, medical oncologists, radiation oncologists, experienced oncology nurses, a dedicated nurse navigator clinician and support staff.

THE NATIONAL CENTER FOR BONE AND SOFT TISSUE TUMORS
Our comprehensive approach to treating adolescents and adults with primary bone and soft tissue tumors as well as metastatic disease incorporates every resource we have to ensure our patients receive the best treatment available. Patients benefit from the latest advances in medical and surgical treatments for these rare tumors. This includes minimally invasive diagnostic biopsies and the revolutionary CyberKnife, to target tumors that were previously inoperable. Limb-sparing surgery using advanced techniques is utilized for most bone and soft tissue cancers.