

2016
ANNUAL
REPORT

THE GEORGE WASHINGTON UNIVERSITY
CANCER PROGRAM
AND **CANCER REGISTRY**

THE GEORGE
WASHINGTON
UNIVERSITY
HOSPITAL
UHS

THE GEORGE WASHINGTON UNIVERSITY CANCER CENTER

THE GEORGE WASHINGTON UNIVERSITY HOSPITAL

THE GEORGE WASHINGTON MEDICAL FACULTY ASSOCIATES

THE DR. CYRUS AND MYRTLE KATZEN CANCER RESEARCH CENTER

THE GEORGE WASHINGTON SCHOOL OF MEDICINE AND HEALTH SCIENCES

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A MESSAGE FROM THE DIRECTOR

“Personalized Medicine,” “Patient-Centered Care,” and “Precision Oncology” are just a few of the terms in the media that entered our conversations about cancer in 2016. I am heartened by the renewed national spotlight on cancer research and the importance of investing in prevention, discovery and treatment. In my conversations with faculty members across GW, a common theme that emerged was the expertise already available in cancer biology, immunology, neuroscience, biomedical engineering, bioinformatics, computational sciences and population sciences. This expertise, together with the compassionate and state-of-the-art clinical care provided by our physicians, was clearly a formula for success and has provided us with solid pillars to build upon and proudly transform cancer care in our region and beyond.

Here at the George Washington University (GW) Cancer Center, our commitment to investing in next generation research was put on full display as we proudly opened the doors of our new research facilities on the eighth floor of GW’s newly built Science and Engineering Hall. The days of isolated scientists working in windowless labs in search of the next discovery are in the past. In today’s research world, collaboration is essential, which is why the opening of these new facilities is such an important step for the GW Cancer Center. We have also continued our strategic focus on scientific programs in cancer immunology and immunotherapy, cancer biology, microbial oncology, cancer engineering and technology, cancer epidemiology and cancer prevention, control and policy. These programs are supported by shared resources in flow cytometry, cancer biorepository, and OMICs/bioinformatics, with more growth projected in the future.

This year we continued to grow our leadership team with the appointment of Michael Benedict, PharmD as our associate center director for administration and finance, Mandi Pratt-Chapman, MA, as associate center director for patient-centered initiatives and health equity, and Robert Siegel, MD, as our new associate center director for education and training. Under their leadership, I am confident that our efforts will continue to flourish.

One of our priorities this year was continuing to align all of the cancer-related activities across GW. To that end, we were thrilled to bring the Institute for Patient-Centered Initiatives and Health Equity and the Dr. Cyrus and Myrtle Katzen Cancer Research Center into the fold under the GW Cancer Center, combining separate histories and missions to support one common vision. The Institute for Patient-Centered Initiatives and Health Equity has grown in its scope and size in its 13 years, and brings patient navigation, patient support and its strong community ties to the GW Cancer Center. Katzen brings to the GW Cancer Center its charge to foster scientific research in cancer and provide personalized and empathetic clinical care for cancer patients.

Together, our unified team is highly committed to becoming leaders in cancer research in innovative laboratory, translational, population sciences and clinical approaches with the overarching goal of obtaining National Cancer Institute (NCI) designation within a decade. I could not be more optimistic about the future of the GW Cancer Center and the continued alignment with our mission to drive innovative cancer research, personalized patient care and cancer policy in the nation’s Capital.

Sincerely,

Eduardor Sotomayor, MD

Director
The George Washington University Cancer Center
Professor of Medicine
George Washington University
School of Medicine and Health Sciences

2016 CHAIRMAN'S REPORT

The GW cancer program is a model partnership that unites the best clinical and research programs from the George Washington University (GW), the GW Hospital, GW Cancer Center, the GW Medical Center, and the GW Medical Faculty Associates (MFA). We have continued to demonstrate our commitment to providing the best outcomes and quality of life for each of our cancer patients. I am proud of our growth over the past year, and look forward to exceeding our goals for the coming year as we continue to build a successful enterprise across the cancer care continuum.

In 2016, the number of faculty focused on cancer research and cancer treatment has grown significantly. We welcomed Farzana Walcott, MD, MPH, in survivorship, Holly Dushkin, MD, in medical oncology, Ed Seto, PhD, in basic sciences, Michael Whalen, MD, in urology, and will welcome Faysal Haroun, MD, in medical oncology. Mitchell Smith, MD, PhD, has been appointed to expand GW's clinical research programs and Kieron Dunleavy, MD, has been appointed leader of the lymphoma section in the Division of Hematology and Oncology and co-leader of the Microbial Oncology Research Program at the GW Cancer Center. In combination with the Urologic Oncology team, Jianqing Lin, MD, is working closely with several urologic oncologists to improve and expand our treatment of prostate, kidney, and bladder cancers. Other new researchers include Catherine Bollard, MD, from Children's National Health System, who will study immunotherapy, and Frank Glass, MD, who was recruited from Moffitt Medical Center, to begin a cutaneous lymphoma section.

Other aspects of our cancer center includes survivorship, a key part of any modern cancer program, which is enrolling an increasing number of patients as they complete active treatment. Our outreach program (including a new Mammovan) offers free screening for a variety of malignancies. All aspects of our clinical program will continue to grow, as more clinicians and clinical investigators are brought on board to treat an increasing variety of cancers.

We are looking forward to expanding our outpatient program to the ground floor in the Ambulatory Care Center, and the hospital will be supporting a new oncology unit and new home for our Bone Marrow Transplant Program. Additional staff are being hired to support these operations.

The GW Cancer Registry remains a vital part of the GW Cancer Program. The growth of the GW Cancer Registry has matched the increasing cancer caseload during last five years. The number of patients diagnosed and/or treated at GW Hospital increased from 1,506 cases in 2012 to 2,289 cases in 2017.

We are making great progress toward applying for National Cancer Institute designation as a comprehensive cancer center. We are proud of our accomplishments and grateful for all who have contributed to our efforts along the way.

Sincerely,

Robert Siegel, MD

Professor of Medicine

Chairman, Cancer Committee

DISCUSSION OF TREATMENT-RELATED INFERTILITY IN BREAST AND TESTICULAR CANCER PATIENTS

By Lauren Mauro, MD

Hematology and Oncology

The American Society of Reproductive Medicine, American Society of Clinical Oncology, and the National Comprehensive Cancer Network guidelines all recommend that providers should discuss the possibility of treatment-related infertility for patients of child-bearing age prior to the initiation of chemotherapy. Options for fertility preservation should be discussed and referrals should be made to specialists when the patient expresses interest. As we were concerned that the GW Cancer Center was not meeting this recommendation for all appropriate patients, we examined new patients diagnosed with breast cancer or testicular cancer in calendar years 2013, 2014, and 2015. For the breast cancer patients, we specifically looked at those who were less than 45 years old and were given chemotherapy. For the testicular cancer patients, we looked at those who were less than 50 years old and included those who did and did not receive chemotherapy, as all underwent orchiectomy as part of their treatment. These two cancer subtypes were chosen as they are the largest group of patients at GW who should receive this counseling given their age and treatment paradigm

In 2013-15, we had 79 new breast cancer patients who were less than 45 years old of age and were recommended chemotherapy. Of the 79 cases, 25 patients did not receive chemotherapy here and therefore we do not have documentation whether the infertility risks were discussed with the patients. Of the 54 patients who did receive chemotherapy here, one was actively pregnant and therefore not a candidate for fertility preservation. Of the 53 other patients, 33 had documented discussions regarding the infertility risk with chemotherapy and were referred per patient preference. Many others did have infertility or premature menopause discussed as a possible side effect of chemotherapy, however their desire for fertility preservation was not documented. Of those, many were greater than age 40 and/or already had children. It is unknown whether more conversations occurred between the patient and the physician yet were undocumented. It is considered the responsibility of the medical oncologist to discuss the infertility side effects of the chemotherapy as opposed to the surgeon or radiate oncologist. Therefore, 62% of the qualified patients who received chemotherapy here at GW had documented discussions regarding the risk of infertility and their interest in preserving their fertility, lower than the recommended goals.

When looking at testicular cancer diagnoses in the years 2013 through 2015, we had 35 new diagnoses in men less than age 50. One chart was unable to be accessed because of medical record issues. 5 of these patients did have their surgeries and thus pathology reports here at GW Hospital, however there are no available urology or medical oncology notes, meaning that those providers were not part of the GW MFA. Of the 29 patients who received their urology and/or medical oncology care here, 20 patients (accounting for 68% of qualified patients) had documented discussions of infertility and referrals made to specialists per patient preference. There was no clear documentation of a discussion in the other nine cases. As noted above, it is unknown whether the other patients had discussions with their physicians that were undocumented.

Therefore we concluded that although the majority of patients who are child bearing age are receiving appropriate fertility counseling, we are not at our goal of having an onco-fertility discussion with all appropriate patients. We took this data to create a quality improvement project as detailed below.

THE DR. CYRUS AND MYRTLE KATZEN CANCER RESEARCH CENTER 2016

Leo Schargorodski

Executive Director

Celebrating our seventh year, the Dr. Cyrus and Myrtle Katzen Cancer Research Center (Katzen Center) launched a number of new programs in 2016, expanded our most successful projects and continued our efforts to attract outstanding scientists to contribute to the GW cancer research efforts. Utilizing our state-of-the-art clinical facilities, funded by the donation from Cyrus, DDS, and Myrtle Katzen in 2008, the Center has expanded its research efforts by support staff dedicated to enhancing patient care by developing a comforting environment to facilitate the delivery of care to our patients and to include the ability to participate in new life-saving clinical trials.

The Katzen Center has enabled GW to offer new therapies to more patients, expand the physician and nursing teams to attend to the vast needs of their patients and offer patients a relaxing, healing atmosphere as they receive what can be exhausting treatment. For medical students, our facilities have provided them with more opportunities to learn about personalized cancer medicine and targeted therapies and get hands-on experience learning about cutting-edge modalities for treating the various types of cancers.

Treating the Whole Patient and the Family

The 2001 Institute of Medicine (IOM) report *Cancer Care for the Whole Patient: Meeting Psychosocial Health Needs*, states that health problems, limited finances and inadequate social support are associated with increased morbidity and mortality, and decreased functional status.

As part of providing comprehensive cancer care, the Katzen Center hosts many holistic and wellness support groups, supported by the Patient's Assistance Fund (PAF). These groups are open to all cancer patients in the Washington, D.C., metropolitan area and currently we serve more than 500 patients annually. Our support groups include:

- Active Treatment Support Group
- Caregiver Support Group
- Kids' Club - for children and grandchildren of patients (during the school year)
- Brain Tumor Support Group

- Post-Treatment Breast Cancer Education Group
- Prostate Cancer Support Group - for men, their families and significant others
- Washington D.C. Metropolitan Area Brain Tumor Support Group
- Multiple Myeloma Support Group for Patients and Family Members
- DC Young Adult Cancer Community
- Restorative Yoga

These groups have grown to provide increased care and coping skills that improve our patients' quality of life. These groups are free, not only to patients of the Katzen center, but to all patients in the Washington, D.C., metropolitan area. The PAF pays for literature for the groups, provides parking vouchers and sometimes snacks or a meal.

A Katzen Cancer Research Center Support Group patient recently wrote:

"The new you...

Is not the patient...

It is you who started doing yoga...

You who attended meetings

that light your way to better health...

You who have been offered new venues to share and exchange...

You who have more love and compassion and can laugh louder...

The new you."

Another patient wrote *"The myeloma program is enormously valuable for me by providing information about the disease and the emotional reassurance that I am not alone in the myeloma category. The stories of other patients are inspiring and show me the way forward in my own battle. At the same time, our myeloma group receives medical info from physicians and scientists who educate us about developments in the fast-changing world of multiple-myeloma treatment."*

One of the newest support groups is the Gentle Yoga class. This class meets every Tuesday from 4 - 5 pm and is led by certified yoga instructors. Two patients recently commented on their experience,

THE DR. CYRUS AND MYRTLE KATZEN CANCER RESEARCH CENTER 2016

Leo Schargorodski

Executive Director

"Whenever I can attend the class, I feel better afterwards. This gentle yoga class helps alleviating temporarily my body aches and pain. Please continue this class."

"The yoga group is a staple of my treatment plan. The classes are fun, helpful, and help me connect with others. Yael (one of the instructors) is always funny, never pushy and runs the group based on our needs of the day."

Parents of children participating in our Kids Club tell us how important this program is to them and their children. For some children, it often feels like they are the only family who has a parent dealing with cancer. This program helps children normalize the cancer experience by working with other children in a similar situation and through the ability to express their feelings through art therapy.

Starting in 2015, we have been offering an "Introduction to Chemotherapy" class for all new patients. This is a comprehensive class where patients and their caregivers get to meet various key staff people (nurse, social work, patient navigator, financial counselor, office manager), as well as learn about pertinent topics such as symptom management, fatigue, fertility, logistics of treatment and support services. This has been a great addition to our programming, and we have received a great deal of positive feedback regarding how helpful the class is.

We are now offering free massage, three times a week, to patients who are receiving infusions. We teamed up with specially trained oncology massage therapist who come into our clinic and give shoulder, head, hand and foot massage to patients as they are receiving treatment. One patient said, *"I was lucky enough to get to meet Lucille, and get a lovely massage during my treatment yesterday. This is a wonderful service, and I really appreciated the gentle and relaxing massage (I went with neck and shoulders). It was a very nice treat, and helped me pass the time in infusion."*

We are hoping to be able to expand the integrative services we offer while patients are receiving infusion. We have received a number of requests for Reiki as well as art therapy.

The Patient Assistance Program Continues to Grow

The Patient Assistance Fund continues to grow, in large part through the generous donations of the Dr. Cyrus and Myrtle Katzen Cancer Research Center (Katzen Center) patients.

In 2016 the Katzen Center added a monthly support group meeting for Cancer survivors. With improvements in diagnosis and treatment, more people are surviving cancer. It is estimated that there are approximately 14 million cancer survivors as of January 2014 and there will be close to 19 million by 2024. Our healthcare system is not prepared to handle the needs of these patients over the next 10 years, so new models of care are being piloted and studied.

The Cancer Survivors Support Group, collaboration between the oncology and the primary care departments at MFA, has many potential benefits—combining expert knowledge of the disease and treatment with expert knowledge of the patient. The support group, has three goals:

- Improve the lives of cancer survivors by addressing symptoms and focusing on screening and proper follow up to reduce and manage possible long term toxicities of cancer treatment.
- Conduct and participate in clinical trials focused on this population.
- Educate patients, doctors, nurses, and other healthcare providers on the long term needs of cancer survivors.

There are on average 120 new cases of cancer diagnosed each month, or over 1,400 new cases diagnosed a year at the George Washington University Hospital. The Katzen Center hopes to meet and provide care to each and every cancer survivor.

Additionally, the social services staff was increased by three important positions. The Katzen Center added a patient navigator, an oncology dietician and a financial resources manager. These positions greatly enhance the ability to identify and assist patients throughout the year.

THE DR. CYRUS AND MYRTLE KATZEN CANCER RESEARCH CENTER 2016

Leo Schargorodski

Executive Director

Establishment of the Albert L. and Elizabeth T. Tucker Foundation Research Fellowship Award

In 2015, through a generous contribution of \$1 million from the Albert L. and Elizabeth T. Tucker Foundation, an Oncology Postdoctoral Research Fellowship was established at the Katzen Center. As a part of the GW Cancer Center, the Katzen Cancer Research Center will continue and expand this educational program for postdoctoral scientists who propose to work on highly innovative research projects that challenge the traditional paradigms of understanding the causes, mechanisms, progression, disease markers or risk factors of the most difficult-to-treat cancers, including multiple-myeloma, pancreatic, lung, liver, sarcomas, esophageal, brain, gastric, bone, and ovarian cancers, along with rare leukemias, lymphomas, and MDS.

The program will integrate the highest quality of basic science laboratory studies with a fundamental understanding of the unique requirements of clinical translation of the discoveries. It is designed to train postdoctoral fellows in the development and testing of clinically important diagnostic and therapeutic strategies. As the first priority, fellows are trained in highly critical and successful laboratories of cancer researchers at the GW campus to assure the highest level of scientific rigor. In addition, seminar discussion series will be designed to focus on the unique requirements for clinical translation of the basic science findings. Postdoctoral fellows will be expected to take part in both clinically relevant courses and participate in the seminar discussion series.

Research leading to breakthroughs in these types of cancers and increased life expectancy are at the core of the Cancer Center's mission.

Convening of nine Mid-Atlantic Consortium dinner meetings for physicians and surgeons on the topics of breast cancer, lung cancer and hematology

The Mid-Atlantic Hematology Consortium is presented by the Katzen Cancer Research Center to inform oncology physicians, surgeons and radiologists in the metropolitan Washington, D.C., area (Maryland, Virginia, and Washington, D.C.) of the most recent advances in cancer research and its application to surgery and treatment. At these meetings local physicians and surgeons are asked to focus on the latest cutting-edge information through

case studies and discussion of treatments. Clinicians also present recommendations at round-table discussion groups.

The consortium provides a common forum for oncology physicians and surgeons to take collective action. Members assess changing cancer needs and share resources and knowledge with one another. Ultimately, consortium members do more together than they ever could by working on their own.

Occurring nearly every month throughout the year, the Breast, Lung and Hematology Consortia take advantage of the latest information being presented at national meetings and symposiums. In this way, the local physicians can be introduced to the most current concepts, treatments and medications. And by sharing with their counterparts in other hospitals, potentially change the standard of care for the benefit of cancer patients throughout the Metropolitan Washington area.

Awarding of \$450,000 in grants for innovative pilot cancer research

The Katzen Cancer selected two of the most promising research studies for the Innovative Cancer Research Pilot Grant Program. In its sixth year, the program awarded \$150,000 for research projects. The grants were:

Role of a Novel Mitochondrial Gene in Triple Negative Breast Cancer Phenotype (Clinical/Translational)
Submitted by Goberdhan Dimri, PhD, and Arnold Schwartz, MD

This proposal will test a novel concept that a mitochondrial gene which is encoded inside another mitochondrial gene is the key player in the development of triple negative breast cancer.

Integrating 3D Bioprinting and nanotechnology for Improved Metastatic Cancer Analysis and Treatment (Continuation) Submitted by Robert Siegel, MD, Lijie Grace Zhang, PhD

The biomimetic 3D printed nano bone model developed in this project can facilitate new breast cancer gene treatment discovery. Furthermore, it can provide a highly innovative approach for more efficient *in vitro* analysis of breast cancer bone metastasis and resultant osteotropism in response to biomimetic bone microenvironments in the future.

2016 GW HOSPITAL CANCER REGISTRY

CANCER DATA REPORT

The GW cancer registry has been growing consistently for the past five years between 2012 and 2016. The number of patients admitted to GW Hospital increased from 1,506 cases in 2012 to 2,289 cases in 2016 (*Figure 1*). The number of patients admitted to GW Hospital were 2,289 cases in 2016. Of these admitted patients in 2016, 1,473 cases (64%) were diagnosed and/or treated (analytic cases) at GW (*Table 1*).

As shown in *Figure 2*, breast, lung, prostate, colon, and kidney cancers remain as major cancer sites at GW Hospital. There was a significant increase in prostate cancer cases in 2016 compared to 2015 respectively (18.3 vs. 16.0), hematopoietic neoplasm (3.9 vs. 2.3); accessory gastrointestinal organs like liver and pancreas (4.7 vs. 3.3), and gastrointestinal tract organs (3.7 vs. 2.8). There was a slight increase in head/neck (6.0 vs. 5.4) and female reproductive system organs (5.0 vs. 4.6)

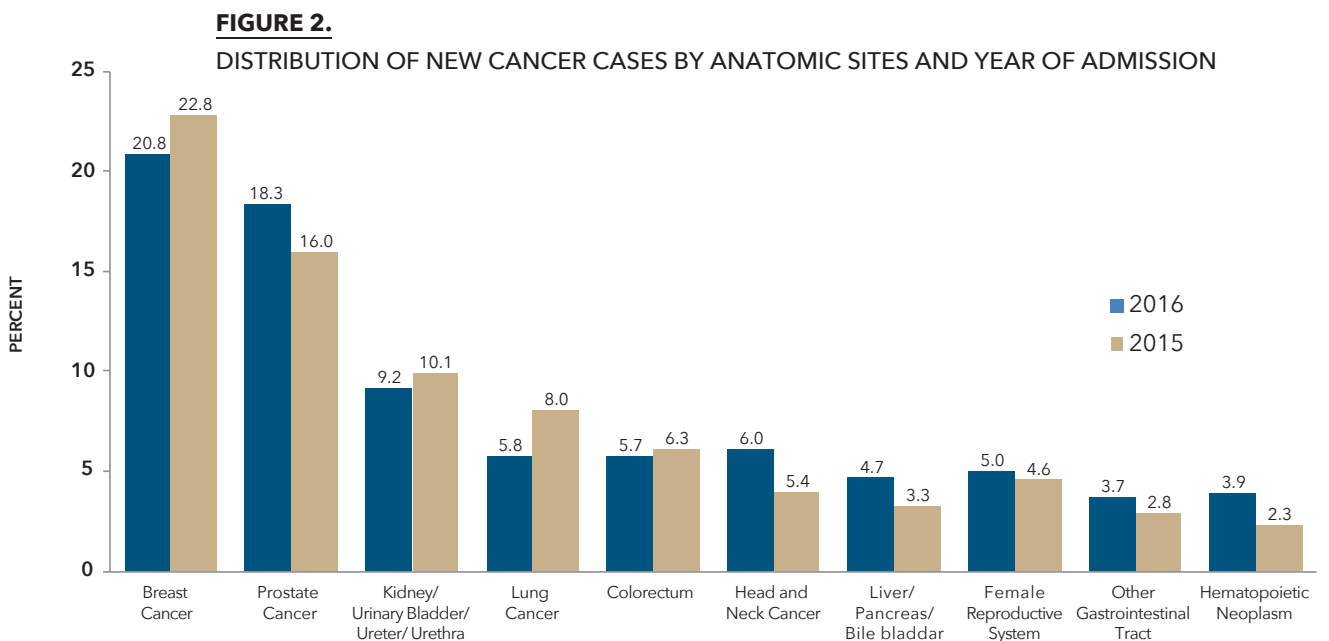
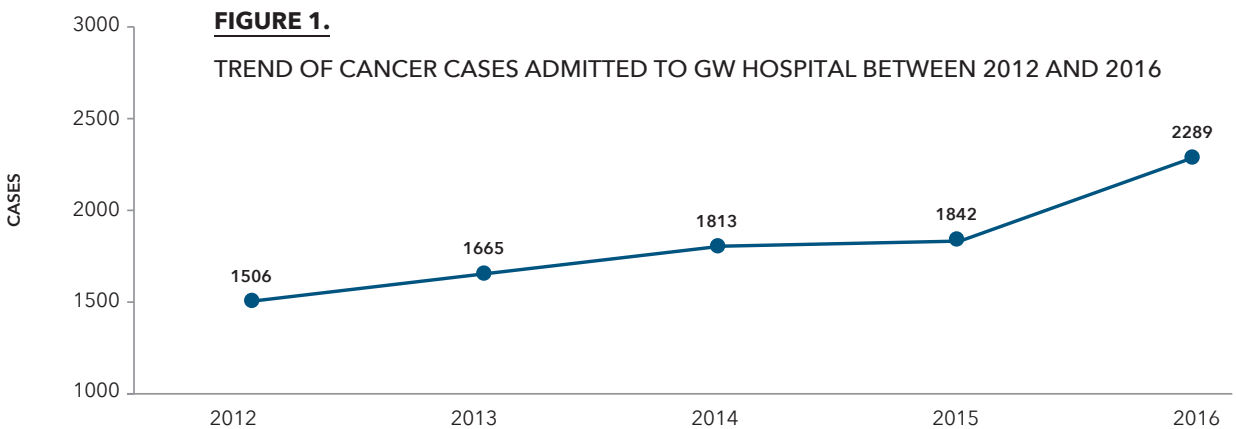


TABLE 1: THE GEORGE WASHINGTON UNIVERSITY HOSPITAL

2016 CANCER CASES BY ANATOMIC SITES

Primary site	All Cases		Analytic Cases		Race*** (Analytic Cases Only)			AJCC Stage at Diagnosis (Analytic Cases Only)						
	#	%	#	%	W	B	O	0	I	II	III	IV	88	UNK
Head and Neck	106	4.6	89	6.0	53	28	8	2	16	17	16	26	7	5
Lips and other	4	.2	3	.2	1	2	0	0	0	0	1	0	1	1
Tongue	26	1.1	17	1.2	14	1	2	0	2	5	1	7	0	2
Salivary Gland	10	.4	9	.6	4	3	2	0	3	3	1	1	1	0
Floor of Mouth	6	.3	6	.4	3	1	2	0	0	2	1	3	0	0
Gum and Palate	8	.4	8	.5	5	1	2	0	4	2	0	0	2	0
Tonsil	15	.7	12	.8	12	0	0	0	1	1	2	8	0	0
Nasopharynx	3	.1	2	.1	0	2	0	0	0	0	1	1	0	0
Oropharynx	7	.3	6	.4	3	3	0	0	0	2	2	2	0	0
Hypopharynx	1	0	1	.05	1	0	0	0	0	0	0	0	0	1
Nose/Nasal cavity	3	.1	3	.2	3	0	0	0	0	0	1	1	0	1
Sinus	1	0	1	.05	0	1	0	0	0	0	0	0	1	0
Larynx	22	1.0	21	1.4	7	14	0	2	6	2	6	3	2	0
Digestive System	256	11.2	208	14.1	81	103	24	6	52	35	34	39	5	37
Esophagus	6	.3	6	.4	2	4	0	0	1	1	3	1	0	0
Stomach	34	1.5	28	1.9	8	14	6	0	9	5	3	5	1	5
Small intestine	21	1.0	20	1.4	5	13	2	0	4	5	7	0	0	4
Colon	58	2.5	43	2.9	17	21	5	1	16	4	7	9	0	6
Rectosigmoid Junction	9	.4	8	.5	3	3	2	1	2	1	1	1	0	2
Rectum	28	1.2	23	1.6	11	7	5	2	3	4	5	3	0	6
Anus/Anal canal	15	.7	10	.7	6	3	1	2	2	1	3	0	0	2
Liver/Intrahepatic duct	25	1.1	19	1.3	6	11	2	0	4	1	3	5	2	4
Gallbladder	6	.3	6	.4	4	2	0	0	3	2	0	0	0	1
Extrahepatic Duct	2	0	2	.1	1	1	0	0	0	0	0	0	1	1
Pancreas	49	2.1	42	2.9	18	23	1	0	8	11	2	15	0	6
Other digestive organs	3	.1	1	0	0	1	0	0	0	0	0	0	1	0
Respiratory System	116	5.0	88	6.0	42	43	3	0	32	5	8	34	3	6
Trachea/Main bronchus	2	0	2	.1	0	1	1	0	0	0	0	1	1	0
Lung	109	4.8	83	5.7	40	42	1	0	32	5	8	33	0	5
Thymus/Mediastinum	5	.2	3	.2	2	0	1	0	0	0	0	0	2	1
Bones	6	.3	1	0	0	1	0	0	0	0	0	0	1	0
Soft Tissue	20	.9	10	.7	4	6	0	0	2	3	0	1	3	1
Peritoneum	6	.3	3	.2	3	0	0	0	0	1	0	0	1	1
Connective tissues	14	.6	7	.5	1	6	0	0	2	2	0	1	2	0
Breast	379	16.6	307	20.8	137	147	23	77	120	79	20	10	0	1
Female Genital	123	5.4	74	5.0	15	50	9	0	31	2	17	16	2	6
Vulva	6	.3	3	.2	1	2	0	0	2	1	0	0	0	0
Cervix Uteri	51	2.2	17	1.2	4	8	5	0	6	1	5	4	0	1
Corpus Uteri	42	1.8	36	2.4	5	27	4	0	21	0	7	6	0	2
Ovary	18	.8	15	1.0	5	10	0	0	2	0	5	5	0	3
Female Genitalia	6	.3	3	.2	0	3	0	0	0	0	0	1	2	0

TABLE 1: THE GEORGE WASHINGTON UNIVERSITY HOSPITAL

2016 CANCER CASES BY ANATOMIC SITES

Primary site	All Cases		Analytic Cases		Race*** (Analytic Cases Only)			AJCC Stage at Diagnosis (Analytic Cases Only)						
	#	%	#	%	W	B	O	0	I	II	III	IV	88	UNK
Prostate	390	17.0	270	18.4	136	118	16	0	45	164	43	18	0	0
Male Genital	29	1.2	25	1.7	22	1	2	1	10	4	4	0	0	6
Other male organs	3	.1	3	.2	2	0	1	1	1	0	1	0	0	0
Testis	26	1.1	22	1.5	20	1	1	0	9	4	3	0	0	6
Urinary System	181	7.9	135	9.2	69	60	6	19	67	13	15	15	0	6
Kidney	98	4.3	82	5.6	40	37	5	0	50	7	11	11	0	3
Renal Pelvis/ Ureter	17	.7	12	.8	7	4	1	5	3	0	2	1	0	1
Urinary bladder	65	2.9	40	2.7	21	19	0	14	14	6	2	3	0	1
Urethra	1	0	1	.1	1	0	0	0	0	0	0	0	0	1
Brain / CNS	69	3.0	51	3.5	29	14	8	0	0	0	0	0	51	0
Meninges	25	1.1	19	1.3	6	10	3	0	0	0	0	0	19	0
CNS/Brain/Spinal Cord	35	1.5	28	1.9	20	4	4	0	0	0	0	0	28	0
PNS	9	.4	4	.3	3	0	1	0	0	0	0	0	4	0
Endocrine System	106	4.6	83	5.6	37	34	12	0	44	10	12	1	15	1
Thyroid	80	3.5	68	4.6	32	24	12	0	11	10	12	1	0	1
Other endocrine glands	26	1.1	15	1.0	5	10	0	0	0	0	0	0	15	0
Lymphoma	36	1.6	27	1.8	15	9	3	5	1	5	6	2	0	8
Hodgkin's	5	.2	4	.3	2	2	0	0	0	1	0	2	0	1
Non Hodgkin's	31	1.4	23	1.5	13	7	3	5	1	4	6	0	0	7
Blood	83	3.6	53	3.6	23	27	3	0	0	0	0	0	53	0
Multiple myeloma	41	1.8	23	1.6	11	12	0	0	0	0	0	0	23	0
Chronic leukemia	7	.3	5	.3	3	2	0	0	0	0	0	0	5	0
Acute leukemia	13	.6	12	.8	4	6	2	0	0	0	0	0	12	0
Other blood disorders	22	0.9	13	.9	5	7	1	0	0	0	0	0	13	0
Skin	356	15.6	28	1.9	20	4	4	7	10	2	2	3	1	3
Melanoma	37	1.6	24	1.6	19	1	4	7	9	1	2	3	0	2
Other carcinoma	319	14.0	4	.3	1	3	0	0	1	1	0	0	1	1
Unknown	33	1.4	24	1.6	12	9	3	0	0	0	0	0	24	0
GRAND TOTAL	2289	100.0	1473	100.0	695	654	124	117	430	339	177	165	165	80

NOTE: * Analytic – diagnosed only (class 0) or initially diagnosed at GW Hospital and all or part of first course of therapy at GW Hospital (class 1) or case diagnosed elsewhere and all or part of first course of therapy at GW Hospital (class 3) ** Non-analytic case – initially diagnosed and treated elsewhere, referred to GW Hospital for recurrence or subsequent therapy and physician office cases. *** Race - W=White; B=Black; O=Other AJCC Staging at Diagnosis is either clinical or pathological staging. For urinary bladder cancer, stage 0 includes 0a and 0is.

REVIEW LYMPHEDEMA REFERRALS IN 2016 TO COMPARE WITH 2013-2015

Sana Tabbara, MD

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	# CASES REVIEWED	CASES HAD AXILLARY LYMPH NODE DISSECTION	LYMPHEDEMA REFERRALS FOR CASES WITH AXILLARY LYMPH NODE DISSECTION	MORE THAN 6 SENTINEL NODES CASES	LYMPHEDEMA REFERRALS FOR >6 SENTINEL NODE CASES
2013	68	46 (68%)	17/46=37%	10	6/10=60%
2014	67	44 (66%)	19/44=43%	10	1/10=10%
2015	42	24 (57%)	18/24=75%	6	1/6=17%
2016	63	39 (61%)	35/39=90%	8	6/8=75%

The risk of lymphedema in patients with axillary lymph node dissection is significant. We evaluated the referral pattern of patients with breast carcinoma who underwent breast surgery and axillary lymph node dissection for consultation for lymphedema therapy.

Prior to 2015, the multidisciplinary team did not include an on-site lymphedema therapist. In 2015 GW hired their own lymphedema therapists affiliated with the STAR program. The therapists met with the oncologists and provided education on lymphedema. As a result of this intervention, the number of referrals increased substantially to 90% in 2016.

During that same time period, the referral pattern for consultation for lymphedema therapy of patients who underwent breast surgery and sentinel lymph node biopsy with more than six lymph nodes removed also showed a significant increase in numbers to 75% in 2016.

This study demonstrates a significant improvement in patient referral pattern to lymphedema therapy and the success of the intervention.

RESOURCES AND SUPPORT

THE GEORGE WASHINGTON UNIVERSITY AND GW CANCER CENTER RESOURCES

The George Washington University Hospital

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(202) 715-4000 1-888-4GW-DOCS
www.gwhospital.com

The GW Medical Faculty Associates

2150 Pennsylvania Ave., N.W.
Washington, D.C. 20037
(202) 741-3000
www.gwdocs.com

Institute for Patient-Centered Initiatives and Health Equity

2030 M St., N.W., 4th Floor
Washington, D.C. 20036
(202) 994-2449
www.gwcancercenter.com

The Dr. Cyrus and Myrtle Katzen Cancer Research Center

2150 Pennsylvania Ave., N.W., Suite 1-200
Washington, D.C. 20037
(202) 741-2250
www.katzencancer.org

The GW Comprehensive Breast Center

2300 M St., N.W., 8th Floor
Washington, D.C. 20037
(202) 741-3270

Cancer Registry

900 23rd St., N.W. Washington, D.C. 20037
(202) 715-4383

Clinical Oncology

2150 Pennsylvania Ave., N.W., 3rd Floor
Washington, D.C. 20037
(202) 741-2210

Hematology/Oncology

2150 Pennsylvania Ave., N.W., 3rd Floor
Washington, D.C. 20037
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Pain Management Center

2131 K St., N.W. Washington, D.C. 20037
(202) 715-4599

Pathology

900 23rd St., N.W. Washington, D.C. 20037
(202) 715-4665

Cancer Survivorship Clinic

22nd & I streets, N.W.
4th Floor Washington, D.C. 20037
(202) 741-2222

Mobile Mammography Program

2150 Pennsylvania Ave., N.W.,
D.C. Level Washington, D.C. 20037
(202) 741-3020

Radiation Oncology

725-A 23rd St., N.W.
(at the corner of H and 23rd streets)
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(202) 715-5097

Radiology

900 23rd St., N.W. Washington, D.C. 20037
(202) 715-5183

Rehabilitation Services

2131 K St., N.W. Washington, D.C. 20037
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2150 Pennsylvania Ave., N.W., 3rd Floor
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