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COMPREHENSIVE CANCER COMMITTEE

The Cancer Committee includes representatives of professional specialists as recommended by the American College of Surgeons Commission on Cancer with areas of responsibilities including: coordinating educational activities for nursing staff, students and professionals; coordinating multi-disciplinary treatment groups such as Oncology, Radiation Oncology and Hematology related clinics and Tumor Board; and overseeing the functioning of the Tumor Registry.

The Cancer Committee is responsible for discussing the diagnosis and treatment of patients with malignancy within the facility as well as reviewing the medical records of cancer patients.

2016 MEMBERSHIP

REQUIRED:
E. Ball, CCRP
S. Bhatia, MD
R. I. Beretvas, MD
K. France, RN
T. Ferrario, MD
L. Hoffman-Hogg, MS RN CNS AOCN®
E. Kim, MD
R. LaTourrette, MS, RD, CDN, CSO, CNSC
M. Le, MD
R. O’Malley, MD
B. McCandless, MD/P. Hegener, MD
L. McCarthy, MD
S. Mehdi, MD, FACP
L. Mock, RN/M. Herrington, RN
I. Uppal, MD
D. Pasquale, MD
V. Thalody, MD
T. Thierbecker, LCSW, OSW-C
B. Williams, CTR

Representative Clinical Research Coordinator
Representative Radiation Oncology
Representative General Surgery/Co-Chair/QM Coord.
Oncology/Hematology Nurse Coordinator
Representative General Surgery & ACoS Liaison
Cancer Program Director
Representative Hematology
Community Outreach Coordinator/Rep Nutrition
ACoS Liaison/General Surgery
ACoS Liaison/General Surgery
Representative Diagnostic Imaging-Nuclear Med
Representative Pathology/Laboratory
Cancer Conference Coordinator/Chair
Quality Improvement Liaisons
Representative Pain Control/Palliative Care
Cancer Registry Quality Coordinator/Rep Hem
Representative Hematology/Oncology
Representative Social Work
Tumor Registry CTR

AD HOC:
R. Dyer, OT
C. Reyes-Lopez/H. Park, MD
D. Kupiak, R.Ph
A. Lupinetti, MD
S. Mehdi, MD
P. Minkler, RN
A. Payne, MD
J. Richter, SW
M. Roth, MD/R. Grimm, MD

Representative Rehabilitation Medicine
Representative Dental
Representative Pharmacy
Representative Otolaryngology
Representative Ethics
Representative Oncology/Hematology Nurse
Representative Psychosocial
Representative American Cancer Society
Representative Primary Care
The Comprehensive Cancer Committee supervises activities related to cancer treatment, control, education and reporting within the Medical Center. The committee maintains and expands activities within our community of Veterans to insure the broadest spectrum of quality care for patients.

The departmental reports data dates are January 1, 2016 thru December 31, 2016.
According to American Cancer Society, cancer will affect 1 in 2 American adult men and 1 in 3 adult women over the course of their lives. Our fight will continue until there is a cure.

2016 has been a very exciting time in diagnosing and treating cancer. Precision Medicine has evolved and different patients with same malignancy are now treated differently with significant improvement in survival.

Our cancer program has been accredited by the Commission on Cancer for over 55 years. The cancer committee is responsible for evaluating quality of care, quality improvements, cancer registry, research & outreach activities and continued educational activities by active participation in the multidiscipline cancer conferences, (Tumor Boards).

Our cancer program is comprised of a dedicated multi-specialty team which includes: Certified Tumor Registrar, Chaplin services, Medical Oncology, Hematology, Radiation Oncology, Interventional Radiology, Surgical Oncology, Dental services, Speech Therapy, Palliative Care, Psychiatry, Nutrition, Quality Improvement, and Primary care.

Each year the members of the cancer committee set up goals / studies to improve the care of cancer patients. We brainstorm ideas in the beginning of the year, and then meet quarterly to follow up. In these meetings we discuss the progress of various goals and studies, their timeliness of completion, and trends in survival. At the end of the year, we share our annual report with the entire medical center and community at large.

Some of the goals, quality improvements, and individual department achievements are well outlined in this annual report and I do not want to steal the thunder by mentioning them here.

My report would be incomplete if I do not mention Lori Hoffman-Hogg NCP who had been our cancer program director over 15 years. She left our VA and is now the National Program Manager, Prevention Policy, VHA. She was an incredible leader & member of the committee; her working attitude & vision was contagious and the vacancy created by her departure has been impossible to fill. We wish her the best in her future endeavors. In 2016, Cheryl Brennan, one of our most seasoned oncology nurses retired. She had been extensively involved with ACOS standards and been a member of our cancer committee. We all miss her and wish her the best.

Although all members of cancer committee are extremely dedicated and devoted, the tireless efforts of our lone CTR Bernice Williams needs to recognized. Her passion for detail, documentation, and hard work ethic has enabled us to be compliant with ACOS standards in 2016.

In the end, I would like to thank all the members of the cancer committee for their tireless, sincere and continued commitments to the fight against cancer. I am positive that with the current pace of scientific advancements and dedicated individuals like our cancer committee, most cancers will become like chronic diseases, if not cured. The future is very hopeful.

Syed Mehdi, MD FACP
Chair Cancer Committee
The Tumor Registry at the VA Medical Center has a reference date of January 1955 (25,998 alive/dead patients) and currently utilizes a computerized/manual system. In addition to registering and following patients with a diagnosis of malignancy, the Registry provides data for research and education to staff. Our data is captured and submitted in accordance with the guidelines and procedures are set forth by the American College of Surgeons Commission on Cancer, the State of New York, the SEER (Surveillance, Epidemiology and End Results) of the National Cancer Institute (NCI), National Cancer Database (NCDB) and the VA Central Cancer Registry (VACCR). Interfacing with all of the components that make up the Cancer Program, the data collected by the Registry helps promote quality patient care as well for present as well as future cancer patients. The registry is currently staffed by Bernice Williams, CTR.

The Stratton VAMC Cancer program is accredited by the Commission on Cancer (CoC) as a Veteran’s Administration Cancer Program (VACP). Our program’s compliance with the CoC standards is committed to providing the best in cancer diagnosis and treatment.

Lifetime follow-up of patients included in the database supports clinical follow-up & surveillance of additional primaries. Follow-up data includes neoplasm status (free or residual/progressive disease), recurrences, subsequent treatment, and vital status. The Tumor Registry maintains a follow up rate for patients diagnosed from registry date 1955 as of 12/31/16 = 99%. *Non-analytical, basal and squamous cell cancers of the skin and in-situ of the cervix are excluded from the calculations of follow-up percentage.

The abstracting timeliness was 89% of the 2016 cases abstracted within 6 months of the date of first contact with the facility, 90% is the requirement by American College of Surgeons. The top five most frequently occurring primary site trends include Prostate, Lung, Bladder, Head and Neck and Liver.

We strive to provide the highest quality database. We endeavor to achieve this through uniformity of data collection, annually physician chart review of 10% of our new cases, software edit checks, and accurate and timely follow-up information on our patients. Our ultimate goal is to contribute to the prevention and cure of cancer.

The Cancer Program continues to support the registry’s educational activities which assist us to meet the Standard 1.10; Cancer Registrar Education which includes participating in cancer-related educational activities other than cancer conferences.

Our weekly Tumor Board is a conference which includes both case presentation and a didactic program. Following each presentation, there is discussion of the case and review of the recommended staging and treatment modalities available. This ensures a multi-disciplinary and multi-specialty approach to the treatment of disease as well as providing education to the house staff, students, and allied health professionals in attendance. Continuing Medical Education credits are given to the physician staff for Tumor Board.

During 2016, there were 159 presentations (151/95% prospective and 8/5% retrospective) of new primaries, recurrences or follow-ups. Sites presented included: Bladder, brain, breast, colorectal, esophagus, kidney, liver, larynx, leukemia, lung, lymphoma, melanoma, nasal cavity, neuroendocrine, oral cavity, pancreas, prostate, tongue and unknown origin.

The Stratton VA Medical Center has several oncology related specialty clinics that oversee the ongoing multi-specialty care and treatment for Veterans with cancer.
### PRIMARY SITE 2016/TOP 5

#### ALL SITES COMBINED

<table>
<thead>
<tr>
<th>TOT#</th>
<th>ANAL</th>
<th>NON</th>
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<td>42</td>
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#### System: C00 Lip/Oral Cavity/Pharynx

- **LIP**: 3
- **TONGUE, BASE**: 10
- **TONGUE, OTHER/NOS**: 3
- **PALATE**: 1
- **OTHER/NOS MOUTH PARTS**: 1
- **PAROTID**: 1
- **TONSIL**: 6
- **OROPHARYNX**: 1
- **PYRIFORM SINUS**: 1

#### System: C15 Digestive Organ

- **ESOPHAGUS**: 8
- **STOMACH**: 7
- **SMALL INTESTINE**: 2
- **COLON**: 12
- **RECTUM**: 7
- **ANUS/ANAL CANAL**: 4
- **LIVER/INTRAHEPATIC BIL**: 33
- **PANCREAS**: 11

#### System: C30 Respiratory System/Intrathoracic Organs

- **NASAL CAVITY/MID EAR**: 1
- **LARYNX**: 6
- **LUNG/BRONCHUS**: 58

#### System: C40 BONES/JOINTS/ARTICULAR

- **HEMATOPOIETIC/RETICULO**: 22

#### System: C44 Skin

- **CONNECTIVE/SUBCUTANEOUS**: 1
- **CERVIX UTERI**: 1
- **OVARY**: 1

#### System: C51 Female Genital Organs

- **PROSTATE GLAND**: 84
- **TESTIS**: 1
- **KIDNEY**: 9
- **RENAL PELVIS**: 1
- **URETER**: 1
- **BLADDER**: 39

#### System: C60 Male/Genital Organs

- **SYSTEM: C64 Urinary Tract**: 2
- **SYSTEM: C73 Thyroid/Other Endocrine**: 7
- **SYSTEM: C77 Lymph Nodes**: 9
- **SYSTEM: C80 Unknown Primary**: 9
The Twenty Fifth Annual Cancer Survivors Celebration was held on Friday June 2, 2017. Approximately 200 cancer survivors, their guests and staff members attended the celebration of life that was held on the grounds of the Fisher House. The positive energy of the day was highlighted by the beautiful spring weather.

We are extremely grateful for the support of Voluntary Service and Committee members. The dedication and generosity of our volunteers has been an invaluable contribution to this annual celebration.

The guest welcome was delivered by our hospital director, D. Scott Guermonprez, FACHE. We are extremely thankful to Jennifer Watson, our key note speaker, cancer survivor, and caregiver who shared her experience and appreciation to VA staff for excellent treatment and support.

Entertainment was provided by both Bob Marcello a gregarious performer drawing the crowd into a sing along and also our very own Veteran cancer survivor, William Faye, singer/musician for the fourth year in a row. The colors were presented by the Lansingburgh Uniform Color Guard.

Our partners at the American Cancer Society were in attendance. Many beautiful items were also donated by staff, and volunteers that were used as door prizes.

Dr. Syed Mehdi our Chief Medical Oncologist delivered the closing remarks and highlighted the accomplishments and improvements in the Cancer program throughout the past year. Our Master of Ceremony was John McDonnell, “Mac”, who happens to be the retired Chief of Police at Albany VAMC.

The VA Chaplain Service presided over the invocation and benediction. Pastries and coffee were provided by Voluntary Service. Volunteers helped with registration and distribution of T-shirts, pens and water bottles. A cook out was provided by Wal-Mart Distribution Center 6096, Johnstown, NY; we are extremely appreciative for their generosity for the sixth year in a row. The Johnstown DC 6096 staff has come to know our veterans and provided conversation, laughter and assistance with getting food to the table for veterans to enjoy.

This event was successful because of the collaborative effort, support and involvement of many dedicated employees and volunteers. The planning committee is comprised of retired employees/veterans and personnel from various disciplines within the medical center. Their unselfish involvement is proof of their dedication to our Veteran patients.

This year’s celebration was again, a huge success. The planning committee is already looking forward to and beginning to plan for next year’s event.

WOMEN VETERANS REPORT
Suzanne Deane, LCSW WVPM

The Women Veterans Program Manager (WVPM) along with our Women’s Health Medical Director, Dr. Grimm continue to support and advocate for women’s health care and services at the Albany facility and our 11 Community Based Outpatient clinics (CBOC’s). The Women Veterans Health Committee, chaired by the WVPM, meets at least bi-monthly to address issues with our Women Veterans Program.
Dr. Rachel Grimm, our designated Women’s Health Primary Care Provider continues to have new female Veteran enrollees assigned to her patient panel so they can receive “comprehensive primary care” which includes their basic gender specific care. Women Veterans who were already assigned to other providers who cannot provide this comprehensive primary care are given the opportunity to switch to Dr. Grimm’s panel.

The “Wellness Woman’s Clinic” takes place every day for GYN except Wednesday which is a surgery day for our GYN provider. Women’s primary care is open Monday, Tuesday, Wednesday, Thursday, and Friday (1/2 days). Patients are seen either in the Women’s Wellness Center to ensure that every woman can receive her basic gender specific care in a separate space designated just for women and from an interested and proficient primary care provider.

Our GYN Provider Dr. Mesidor is full time with surgery time on Wednesdays. This gives our women Veterans a consistent provider face for primary care and GYN care in our Wellness Center. GYN Clinic is held every day except for Wednesday (OR day). There is also a GYN Surgical Care Coordinator who manages preoperative care for GYN surgical patients.

Availability for off tour and weekend patient access until 6:30pm on Mondays and every 3 months the clinic is open on some Saturdays. The current wait times for new and returning appointments in the GYN clinic is below 30 days. As our number of female enrollee’s increases, clinic time will be expanded to maintain access of less than 30 days. Women can access the VA Choice program for mammography if the VAMC cannot provide the service and/or the Veteran lives 50 or more miles from the facility. Same day nursing visits and urgent care scheduling is available.

The Albany VAMC GYN clinic offers a check in and waiting area. In the “Women’s Wellness Center”, the Women’s Health Primary Care Provider and the Gynecologist work collaboratively in this unit to provide women’s comprehensive primary care and GYN specialty care. Behavioral Health is available within the Women’s Wellness Clinic area to provide same day access to behavioral health services. The Women’s Wellness Clinic providers have begun a pilot program for screening all women Veterans who are seen for care for interpersonal violence (IPV) and can provide a warm handoff to the VA IPV Coordinator.

Thin Prep Pap tests with HPV testing are performed for cervical cancer screening. The GYN provider notes any pap tests that are positive and does follow up as needed. The GYN RN receives a monthly PAP report which is reviewed to ensure appropriate follow up was made.

Mammograms are ordered by Primary Care providers or the GYN providers for breast cancer screening. Between January 2016 and December 2016 there were 417 mammograms performed. Mammogram results are tracked by the lead Mammographer, in addition to being reported to the ordering provider.

Patient education involves all staff in the GYN Clinic as well as the Primary care Women’s Health Clinics. Staff has use of the Veterans Health Library, which offers a wealth of medical information to share with all Veterans.

The VA continues to offer women veterans Long Acting Reversible Contraception devices (LARC). They are all easily placed and removed at any time the Veteran chooses. These LARCs are available, in addition to the other hormonal, non-hormonal and surgical options that we have.

The 3 Intra-Uterine devices/contraceptives or “IUD’s” are available (in the US) and through the VA are:
Para guard IUD (No hormones, Copper device for 10 yrs. or less)
Mirena IUD (Progesterone IUD for 5 yrs. or less)
Skyla IUD (Progesterone IUD for 3 yrs. or less)
We also now have access to the Nexplanon subdermal implantable device, which is small, and the size of a matchstick. (Progesterone implant under the skin for 3 yrs. or less)

Providers can send the Veteran the Women’s Wellness Clinic in Albany, or have an e-consult set up for a telephone consult and our GYN provider will call and speak with the Veteran about the best choices for that Veteran. The clinicians are planning to begin to expand services offered through telehealth.

QUALITY MANAGEMENT
Marlene Herrington, BSN

The medical center’s mission is to care for our Veterans with compassion and excellence. Our vision is to be the health care provider of choice, achieving the highest quality in health care delivery, education, and research. We are committed to adding value to our mission by modeling our I- CARE Values: Integrity Commitment, Advocacy, Respect, and Excellence.

Quality and appropriateness of care rendered to oncology patients is reviewed using the following criteria:

- Occurrence Screening
- Management of care
- Utilization review criteria
- Patient Safety/Risk Management
- Performance Measures and External Peer Review Program (EPRP) measures

Cases may have been subjected to clinical review, root cause analysis, and/or peer review as appropriate. Root cause analysis identifies basic reasons that cause or contribute to an adverse event or close call. The analysis focuses primarily on process design and organizational changes. Completed review requires lessons learned action plans, completion dates, and outcome measurement strategies.

The reviewed timeframes for Performance/EPRP measures covers January 2016 through December 2016. The EPRP Quality Specialist provided training to Patient Aligned Care Team (PACT) medical providers and nursing staff in regards to the EPRP measure modules and appropriate documentation of screenings. The results are as follows:

- Colorectal Screening – 78.6%
- Cervical Cancer Screening – 86.1%
- Breast Cancer Screening – 87.4%

Some of the compliance of these measures is due to the patients not making their routine follow-ups within the year time frame (due to patient appointment preference) and some are due to patients re-scheduling appointments which are affecting the year window. Also, some measures are falling out due to the patients relocating to another facility. Patient refusal of a test/procedure also counts against our percentages. The gastroenterology team is increasing their efforts to reach those patients who declined routine screening and may possibly be offering the Colovantage blood test as a potential colon cancer screening method.
Chaplain Service at the Stratton VA Medical Center affirms the following. By virtue of training and experience as pastoral care and health care specialists, chaplains are aware of the spiritual and moral dilemmas which often arise from the anxieties, problems and fears which accompany illnesses and disabilities. The chaplain provides the kind of religious ministry, pastoral care, or just emotional support that seeks to meet the needs of the whole person in his or her struggle for health and peace of mind. The chaplain is sensitive to the variety of religious, spiritual and cultural backgrounds of patients to whom ministry is provided.

A Welcome Space – On the eleventh floor of the medical center you will find our Catholic Oratory and our Interfaith Chapel. The Catholic Oratory is a faith-specific prayer room. The Interfaith Chapel is a religiously neutral area. Both locations are available to all Veterans, families and visitors as places of welcome, prayer, worship, or simple quiet reflection.

Palliative Care Program – Chaplains continue to serve as active members of this team. We join with other staff to provide holistic care for our Veterans and their families. It is our privilege to work with patients and families in exploring their own spiritual nature and resources for health, wellness and hope.

Bereavement Services – As chaplains we continue to express our care and hospitality for families through our active involvement in bereavement services. Through a letter of invitation families and friends are welcome to attend our quarterly memorial services. These interfaith services are held in our hospital interfaith chapel. Families and friends are invited to honor their loved ones through words and participation in a ritual of remembrance.

Ongoing Integration – We continue our efforts to have Chaplain Service and spiritual support integrated into patient care. Chaplains, with Veteran permission, coordinate the spiritual care of any Veteran within our facility who requests or desires such service. Through chaplain visits we can offer a formal spiritual assessment. Additionally, we provide emotional support and spiritual resources that are respectful of each Veteran’s spiritual beliefs, religious practices, and personal values.

Spirituality is an important element in holistic care. For many people their spiritual beliefs, personal values and religious practices are vital resources for coping, addressing existential concerns, and in making decisions. It is our privilege, as chaplains, to step into the circle of care with Veterans and their families during this time in their lives.

HEMATOLOGY/MEDICAL ONCOLOGY REPORT
Syed Mehdi, MD

The Hematology/Oncology department continues to provide fabulous patient-centered care and Veterans are provided evidence based standards of care in a timely manner.

The Hem/Onc team consists of medical providers, nurses, a social worker, Research Coordinator, oncology pharmacists, palliative care team, nutrition services, and a tumor registrar. Everyone is dedicated and extremely devoted. There is excellent communication among all staff members. The infusion room nurses are the back bone of the department. They meet every morning to discuss all patients that receive treatment that day. They follow the National Oncology Nursing Society Standards (ONS) and their caring and compassionate attitudes are always appreciated by our Veterans. They spend a great deal of time explaining
to the patients their regimen, the toxicities and follow up care. They also follow up with regular telephone calls after every treatment. In addition, the oncology nurses are also involved in enhancing academic pursuits. They have developed a patient education module instructing on how to de-access ports. Now almost all patients de-access the infusion pump themselves at home saving them another trip to the hospital with each treatment. This has significantly decreased the extra hardships on our veterans with malignancy.

Nursing students from Russell Sage often rotate through our infusion room and experience the professional aspects of nursing from our devoted nurses. Patty Minkler RN continues to participate in the local Northeast New York Oncology Nursing Education Consortium as both the Co-chair and Treasurer. In the role of the co-chair she coordinates with local hospitals to provide educational opportunities related to oncology nursing. All nurses continue to maintain their ONS chemotherapy/Biotherapy cards which positively impacts clinical care.

The oncology nurses have also participated in establishing and implementing cancer programmatic process improvements as required by ACOS. Now each patient is being followed by the same nurse during the entire treatment. This has improved care and coordination. With significant shift/change in the management of malignancies with target therapy, biotherapy, immunotherapy and the well-known chemotherapy, oncology nurses are also in the process of developing the policies /template for these new innovative treatment approaches.

The availability of palliative care, nutrition and social work integrated into the Hematology/Oncology clinic has been a blessing to our veterans with malignancy. This has improved the timeliness to access services, symptoms management, and an optimal level of functioning/quality of life.

Dr. Pasquale and our Research Coordinator, Elisa Ball continues to help with clinical trials.

Our Tumor Registry continues to adapt to the daunting new requirements from ACOS. Bernice Williams, our Certified Tumor Registrar has again done a fabulous job unassisted.

Our weekly tumor board continues to be very educative and very well attended by all specialties. We also now have a weekly liver specific tumor board. In 2016, there were total of 12,688 encounters which included out patients clinic visits, infusion room, telephone calls, e-consults as well as in-patient consultations.

**NUTRITION AND FOOD SERVICES**

*Regina Latourette, MS, RD, CDN, CSO, CNSC*

Nutrition and Food Services provides an extensive program including meals, nutritional assessment and nutritional counseling to meet the oncology patient’s nutritional needs. The nutrition department recognizes that the nutrition needs of a patient during cancer treatment and recovery differ based on the type of cancer, the stage and treatment of the disease.

The Registered Dietitian (RD) works closely with a multidisciplinary team of cancer specialists which includes: hematology and radiation oncologists, surgeons, nurses, otolaryngologists and speech pathologists. The RD considers the intensity of certain types of cancer, side effects of cancer therapy and the patient's ability to eat when assessing nutritional status. The RD makes recommendations for nutritional therapy which may include diet, oral nutritional supplement (ONS), tube feedings and then counsels patients on ways to improve nutritional intake. The provider may request an outpatient nutrition consult. Nutrition services are provided to Hospice as needed with an emphasis on providing comfort to these patients.
The outpatient Oncology Clinic was increased to Mondays, Wednesdays and Thursdays to meet demand. Providers may send a consult to Nutrition Outpatient to obtain services for their patients.

Nutritional screening by nursing and nutritional staff is routinely provided for hospitalized oncology patients. Nursing alerts the nutrition staff when nutrition risk factors are found. These patients receive further evaluation for nutritional risk. Moderately or severely nutritionally compromised patients receive a comprehensive nutritional assessment by a Registered Dietitian.

Once a nutrition consult is received for an oncology patient, the registered dietitian completes a nutritional assessment. The assessment utilizes timely, pertinent information and compares gathered data to evidenced-based standards. Patients may require assessments and counseling in response to weight loss, compromised nutritional intake, or if they require nutritional supplements for more than 30 days. Counseling sessions include instruction on nutrition interventions to alleviate or minimize nutritionally related disease or treatment related side effects. A nutrition diagnoses is made identifying nutrition problems accurately and consistently. The RD works with the patient by refining or changing interventions to produce the desired outcomes. Per patient's request, family members can be included in nutrition clinic appointments. Consult trends for Outpatient Oncology Nutrition Clinic are illustrated below.

![Out Patient Nutrition Counseling Consults Received for Cancer Patients](Data obtained through VA Consult Tracking Software)

To promote disease prevention, the Nutrition and Food Services department continues to promote the “MOVE!” program which is a national weight management program for Veterans. This program provides weight management services and focuses on maintaining a healthy weight, adopting a physically active lifestyle and eating a healthy diet which are recommended in the American Cancer Society Guidelines for Cancer Prevention.

**ADVANCED ILLNESS COORDINATED CARE (AICC)/PALLIATIVE CARE CONSULT TEAM (PCCT)**

*Ishtpreet Uppal M.D.*

We are very fortunate at the Stratton VA Medical Center to have a sophisticated Palliative Care Consult Team, (PCCT) embedded in the oncology suite and also offering services in both the inpatient and outpatient settings.
Presently we are composed of a full-time registered nurse, a full time nurse practitioner and a part-time (69%) physician. Our interdisciplinary team also includes chaplaincy support and a designated psychologist.

The PCCT services are available to all Veterans diagnosed with a life threatening illness or a chronic disease process that is making everyday life difficult. This may include cancer, HIV/AIDS and advanced organ diseases of the lungs, heart, kidney, liver and brain (i.e. dementia, Parkinson’s, stroke, amyotrophic lateral sclerosis). Any discipline or individual may request PCCT consultation.

The focus of our team is to provide patient-centered care and empower our Veterans to maintain control and dignity throughout the disease process. We aid our patients to evaluate their treatment options in the context of their quality of life, clarify their goals and focus on what is most important to them.

With the encouragement of the Veterans Health Administration, we have been fortunate to function in the inpatient venue for over a decade and in the oncology clinic for outpatient services since 2010. By virtue of this, we are well integrated across multiple clinical settings in the facility. Our team is able to help manage symptoms related to disease process or treatments. If it appears that psychosocial support is what the Veteran needs most, our behavioral health colleagues are able to offer both telephone calls and visits to explore symptoms and offer strategies for control. We work with various social workers from both the primary care teams and the oncology team to offer programs or other means that will be helpful to both Veterans and their families in day-to-day care. We are well supported by our chaplaincy service so that spiritual care may be offered for both existential suffering and emotional support.

The Registered Nurse on our team is able to participate in discharge planning and case-find for new consults either for inpatient or outpatient follow-up using well published and defined criteria (Weissman DS, Meier DE. Identifying patients in need of a palliative care assessment in the hospital setting: a consensus report from the Center to Advance Palliative Care. JPM 2011 Jan; 14(1):17-23). Our RN is also exceedingly skillful at providing emotional support and assistance with goals of care. In addition to helping Veterans and their families cope with their illness, our team also provides bereavement support. We regularly make bereavement phone call. Our social worker mails out a bereavement package to the loved ones of the Veteran who is receiving care in inpatient hospice, at our facility.

Our nurse practitioner, in addition to running the PCCT clinic in oncology, also participates in the Integrative medicine work group. The focus is to bring nonpharmacological therapies to the forefront for veteran care and comfort. Additionally, she participates in the training of the pharmacology PGY2 resident, adding a palliative care perspective. This is very valuable to them because in the clinical scenario, our Veterans often require management of a multitude of symptoms including pain, frailty and debility, mood, anorexia, anxiety, management of bowels, nausea and vomiting and sadly, PTSD.

Oftentimes if the Veterans in our outpatient clinic require hospitalization, the palliative care team continues to follow with them to provide support and help improve the communication between various specialties and their team members. We participate in discharge planning and case-finding to offer our services for Veterans most in need. Upon discharge we arrange for appropriate follow-up for our team.

As our team longitudinally follows Veterans and their families with symptom management, we may participate in the care of both curable and incurable disease processes. If transition to hospice care is looming ahead, we serve as the “pre-hospice” service, seeking to fill the gap between the time of diagnosis and the ultimate referral to hospice.

We actively participate in the care of Veterans who transition to inpatient hospice while on acute medicine and serve as a resource and support for our hospitalist teams, the medical residents, and nursing staff. We continue this support for primary care physicians who are acting as the medical providers on record for Veterans receiving community hospice services.
In 2016 we initiated the “Sherri’s Trees” project. The goal is to increase awareness among VA staff when a Veteran is receiving hospice care/comfort care on acute medicine. A tree image is posted on the door to signify that a comfort care plan is in place. The entire staff including the nursing teams, janitorial staff, respiratory therapists underwent training to recognize “Sherri’s trees” and offer empathy and support and an environment conducive to maintaining veterans’ dignity and comfort.

To advance knowledge of Palliative Medicine, we continue to educate clinical staff through case-based collaboration with providers, in-services and conferences. Over the past year we have continued the Schwartz Center Rounds which allow a safe forum for discussion of patient care related issues. This is valued by multiple interdisciplinary staff members as an important intervention to help cope with burnout and stress. We continue to do ELNEC training (an 8 hour class on End of Life Care for our nursing staff which is also offered to our Hospice/Veterans partners in the community).

The number of AICC/PCCT consults from January 1, 2016 through December 31, 2016 was 421. This includes both inpatient (272) and outpatient (149) consults. Of our outpatient consults, 40 were related to chronic disease, and 109 to oncology diagnoses. Medical oncology, radiation oncology, ENT, general surgery, and Tumor Board are the larger part of our consult referrals. Our inpatient consults include a mix of both chronic disease and oncology diagnoses.

**SOCIAL WORK SERVICES**

**Teresa Thierbecker, LCSW, OSW-C**

The primary focus of the Oncology/Hematology/Radiation Oncology Social Worker is to provide psychosocial support and resource information to patients and families facing the challenge of cancer. Many of the cancer patients treated in our institution have been served by social work. Patients and families are offered psychosocial support as they receive their diagnosis and throughout the course of and following treatment. They are also assisted in obtaining appropriate in-home and community services to enhance their quality of life.

The oncology social worker assists Veterans and families in navigating thru the health care system and provides assistance and reinforcement surrounding diagnosis and education of treatment modalities.

The oncology social worker also manages the distress screening tool provided to patients at initial consultation. Social work reviews all screening tools, and provides follow up contact to those patients who identify needs or concerns. Further referrals are made based on the needs identified on the screening tool.

Emphasis is focused on providing patients and families with supportive counseling and assistance with concrete, practical issues that arise during cancer care as well as in the last phases of life, such as legal, financial, employment and family concerns. Information and assistance is also provided to apply for eligible benefits, and/or assistance with the paperwork needed to take a leave of absence from work to tend to medical needs.

The Oncology Social Worker assists patients to meet the many challenges faced with End of Life Planning. Advanced Directives are discussed with all new Medical Oncology and Radiation Oncology patients. Paperwork is provided and completed, when the patient and family are prepared to do so.

Furthermore, assistance and linkage with available VA and community resources for those facing the imminent death of a loved one and/or resources for those who have recently lost a loved one is available to patients via the Oncology Social Worker. Ongoing social work involvement ensures the continuity of care in the provision of outpatient, inpatient, transitional and Hospice Services.
Speech pathology continues to provide services to cancer patients during the full continuum of their treatment. Patients are seen for assessment and treatment of swallowing, voice, speech and/or language issues that occur as a result of their cancer and/or treatment. Services provided include counseling, education, initial evaluation and treatment, ongoing assessment during cancer treatment and follow up services after treatment is completed.

Cancer patients referred for swallowing and/or communication services make up approximately one fourth of the total speech pathology caseload. Most referrals are for head and neck cancer but also include esophageal, lung, pancreatic and brain.

The majorities of head and neck cancer patients treated by Speech Pathology have both swallowing and voice deficits, some for speech and articulation issues as well. Sites include: oral cavity, tonsil, tongue, larynx, supraglottis, pharynx and nasopharynx. Patients are generally followed weekly during treatment and on a monthly basis for the first year after treatment is completed. Some patients continue to be followed longer term for persistent, significant swallowing/speech/voice deficits.

Speech pathology continues to be actively involved in rehabilitation of total laryngectomy patients. The majority of advanced laryngeal cancers are treated with Radiation and concurrent chemotherapy, decreasing the number of total laryngectomy surgeries done yearly. There was only one new laryngectomy in 2016, down from four the year before, and was salvage in nature. Rehabilitation usually involves teaching someone how to use electrolarynx or voice prosthesis for those who undergo trachea-esophageal puncture (TEP). The majority of patients with voice prostheses wear an indwelling model that requires periodic changing by the speech pathologist. Trouble shooting and problem solving for complications that can develop with voice prosthesis is not uncommon in this patient population. Speech will also work with laryngectomee patients on ways to improve their speech, trials of new products that are used with this population etc.

ENT and speech pathology continue to work closely together to manage treatment of head and neck cancer patients, often co-treating. Speech Pathology also works with Radiation Oncology, Medical Oncology, Nutrition, Dental and other specialty clinics. This comprehensive approach is essential to maximizing speech pathology services as well as overall benefit to the Veteran.

STRATTON VA & AMERICAN CANCER SOCIETY
Partnership Summary Report 2016
Joni Richter

Cancer Information & Patient Support Services

Referrals to ACS January – December 2016

Patients by Channel
800-227-2345 22
Local Office 18
Patient Referral Form 63
<table>
<thead>
<tr>
<th>Service</th>
<th># of Patients</th>
<th># Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information/Personal Health Manager</td>
<td>103</td>
<td>103</td>
</tr>
<tr>
<td>SR Met w/Resource Referral</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>Support Group</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Transportation</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Hotel/Hospitality/Other</td>
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<td>23</td>
</tr>
<tr>
<td>Look Good Feel Better</td>
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<td>Reach to Recovery</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Wigs</td>
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<td>2</td>
</tr>
</tbody>
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**Cancer Resource Volunteer (ACS Patient Navigators)**

- 2 Onsite Cancer Resource Volunteers provided information, resources and support to Veterans in the Medical Oncology and radiation Oncology programs at the Stratton VA
- Onsite distribution of Personal Health Managers (providing information, resources and tools to help patients navigate through their treatment from diagnosis through survivorship
- Partner on Annual Conference – (Colon Cancer 2016)
- Partner with Cancer Committee, Oncology Nurses and Social Worker on Stratton VA Survivors Day

**Making Strides Against Breast Cancer**

- Partner on annual VA Breast Cancer Awareness Event with Linda Carpinello-Dillenbeck
- Partner with Peter Potter, Public Affairs Officer, Dr. Mehdi, MD and Linda Carpinello-Dillenbeck on Making Strides Against Cancer

**80% by 2018**

- Stratton VA Cancer Committee, is committed to working toward increasing the number of people screened for colorectal cancer to 80% by 2018 – and has presently exceeded the goal (82%)
- Partnered with Public affairs office to co-brand materials and share at community events

**ACS Board of Advisors**

Dr. Mehdi is a long-time member and link to ensure ACS understands needs of the Veterans in our community.

In 2016, the American Cancer Society (ACS) continued their long-standing partnership with Stratton VA to support their efforts in meeting the Commission on Cancer (CoC) standards of the American College of Surgeons. The American College of Surgeons CoC standards aim to improve the quality of cancer care in the United States. It is a privilege to partner with Stratton VA Healthcare System, as they have been a CoC-accredited program for 50+ years and are a valuable resource for veterans and their families.

We are proud to collaborate with Stratton VA and to have the opportunity to work with the Veterans served at Stratton VA. Our collaboration includes: Participating and presenting at Cancer Committee, Developing
a strategy for, training and providing Cancer Resource Volunteers onsite, Collaborating on annual Cancer Symposium for Veterans, staff and the community, and Connecting cancer patients with local and national resources such as transportation, lodging, support groups, wellness programs, personal health managers, as well as other services available from the Society, local and national organizations, & local hospitals. We are proud to say that our “Cancer Resource Connection” database, with over 85,000 resources is available free of charge on our website Cancer.org and that it contains thousands of local and national resources. We also make ourselves available to the public through this website and our National Cancer Information Center at 1-800.227.2345.

MAMMOGRAPHY REPORT
Linda Carpinello-Dillenbeck R.T. (R) (M) (ARRT) Quality Control Mammographer

This is our 21rst year of continuous accreditation of our mammography unit. We offer Genius 3D Hologic Tomosynthesis screening for Veterans, employees, and volunteers and continue to partner with community cancer prevention services and to offer free screening. We continue to have expert on-staff mammography radiologists.

Review of our workload for calendar year 2016, is as follows: Number of exams decreased from 866 (CY-2015) to 761 (12% decrease). All required audit elements were in compliance with (American College of Radiology [ACR]). Ten (10) malignant lesions were found (1.3%). Our positive predictive (33%) and negative predictive (53%) values, and sensitivity (100%) and specificity (97%) were excellent (data for this later analysis were from April-2016 through April 2017).

Goals for next year include adding “C-View” software equipment to reduce radiation dose per exam, and to continue partnership with ACS.

CLINICAL RESEARCH
Elissa Ball

In 2016 we continued to follow the 9 Veterans enrolled in the CONNECT CLL and REVEAL Polycythemia Vera Registry trials. Twenty-six Veterans being actively treated or followed post treatment were identified as having enrolled in the VA Million Veterans Program during the months of January, February and March of 2016. The urologic trial “Phenazopyridine to identify ureteral orifices” continues to enroll subjects with 7 being enrolled this year. This investigation is using oral phenazopyridine in the place of other routine local dyes during cystoscopy to aid in the identification of ureteral orifices.

The investigator initiated trial “Discrepancy in Histologic Subtypes of Non-Small Cell Lung Cancer between Veterans and the General Population” found that there is a significant difference in histologic subtypes of NSCLC between veterans and the general population. Adenocarcinoma tended to present at a more advanced stage than squamous cell carcinoma, and was associated with inferior survival. Veteran specific research is necessary in order to improve lung cancer outcomes for that specific cohort.

A total of 26 subjects were enrolled to cancer related research studies in the year of 2016.

COOPERATIVE GROUP STUDIES
Protocol # Title
• Million Veteran Program: A Partnership with Veterans
INVESTIGATOR INITIATED TRIALS

<table>
<thead>
<tr>
<th>Protocol #</th>
<th>Title</th>
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</thead>
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<tr>
<td></td>
<td>• Phenazopyridine to identify ureteral orifices</td>
</tr>
<tr>
<td></td>
<td>• Discrepancy in Histologic Subtypes of Non-Small Cell Lung Cancer Between Veterans and the General Population</td>
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INDUSTRY SPONSORED STUDIES

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<th>Protocol #</th>
<th>Title</th>
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<tbody>
<tr>
<td></td>
<td>• CONNECT: The Chronic Lymphocytic Leukemia Registry- active</td>
</tr>
<tr>
<td></td>
<td>• REVEAL: Prospective, Non-interventional Study of Disease Progression and Treatment of Patients with Polycythemia Vera in United States Academic or Community Clinical Practices-active</td>
</tr>
</tbody>
</table>

Information regarding clinical trials is available by calling or contacting:
Stratton VAMC Elissa Ball 518-626-6447
American Cancer Society 1-800-4-CANCER
ClinicalTrial.gov

RADIOLOGY AND NUCLEAR MEDICINE
F.S. Santos, MM, MBA/HCM, RT (R) ARRT

Changes in medical imaging are driven by advances in technology. Improved and new technology allows further refinement of techniques in completing procedures in the diagnosis, staging, assessing response to treatment, and early detection of cancer. Well trained staff in Radiology and Nuclear Medicine offers several different types of imaging in serving our Veterans in Albany Stratton VAMC.

1. Nuclear Medicine—studies are performed from 0700 -1500 Monday to Friday for Nuclear Medicine (NM) and PET/CT. Requests can be accommodated as soon as the next day if needed. Imaging exams help in assessing tumor activity, lymph node involvement, and bone metastases. Pre- and post-treatment scans can be performed to assess the effectiveness of chemo and radiation therapy. Specialized studies for lymphatic mapping, neuroendocrine tumors, assessment of pulmonary function and left ventricle function after procedures and therapy are also available. The department has a GE PET/CT camera with a 64 slice CT for attenuation correction; Siemens Nuclear Medicine camera with a 16 slice CT for SPECT/CT imaging; low dose CT imaging is used in both NM and PET/CT for attenuation correction and fusion imaging for improved images. PET/CT imaging is also used in positioning treatments in coordination with radiation therapy and as part of treatment planning.

2. VIR – Specialized procedures, in addition to tumor ablation and chemo embolization, biopsy and localization of masses, continue to grow in the vascular and interventional radiology service line. The units have built-in safety and efficiency features that allow more imaging abilities with lesser radiation dose. Smart masking allow contrast enhancement of structures by superimposition of reprocessed or prior images. The auto injector system monitors flow pressures and requires less overall contrast. Studies are available in-house 24/7, through VA interventional radiologists and contract services with the Albany Medical Center (AMC) Radiology Group.

3. MRI – The MRI unit is due for replacement which will convert the current system to digital broadband MRI providing flexible and intelligent tools for faster scanning and better patient comfort. The upgrade not only increases system versatility but also improved throughput and clinical performance for a variety of applications. Radiology has extended MRI scheduling for patient access. Routine appointments are scheduled between 7:15AM – 5:00PM weekdays. Emergency services are provided on an on-call basis outside of administrative hours.
4. **CT** – Radiologists review all CT protocols for dose optimization and better interpretation eliminating unnecessary scan phases and establishing scan start and stop locations to particular areas of clinical interest. CT uses image correction software and tube current modulation to reduce the mA and the overall patient exposure while still producing optimal diagnostic quality images. This technology is particularly beneficial on multiphasic studies which intrinsically have higher doses. Doses are documented for patient safety and record. Routine appointments are scheduled between 8:00AM-3:00PM. Urgent services are available in-house 24/7.

5. **Mammography** – An important and integral part of the Women’s Health program for screening and diagnostic follow up care of breast cancer, mammography exams are scheduled five days a week, M-F, 0800AM-3:30PM. Advancement in technology allows various screening tools with lesser dose for the patients. Recent FDA inspection of our program is without exceptions for seven (7) consecutive years.

6. **Ultrasound** – Ultrasound is instrumental in early detection of masses and establishing its cystic and solid characteristics. Sonography continues to expand services to include vascular assessments and exams for other complications of tumors and its subsequent treatments. Routine appointments are scheduled from 7:15AM-4:00PM and STAT studies and add-on requests are accommodated by extending hours and on call tech for off tours period.

7. **Diagnostic Radiographs and Fluoroscopes** – New radiography systems enable better diagnostic imaging and upgraded fluoroscopy allow efficient and effective studies in screening and following up gastrointestinal and genitourinary tumors and other abnormalities. Two GE portable fluoroscopy C-arms with vascular angiography package enable capable intra-operative imaging support. Fluoroscopy exam doses are tracked and audited for safety and reported to the Radiation Safety Committee.

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**PHARMACY SERVICE**

David Kupiak, R.Ph

Members of the Hematology/Oncology Pharmacy Department continue to be actively involved in the care of hematologic and oncology patients. They serve as an authoritative information source on antineoplastic drugs and adjuvant and neoadjuvant treatment regimens. This would include, proper dispensing techniques and utilization and preparation within our sterile products mixing suite. The pharmacists are supported by a team of technical staff specifically trained in the preparation, handling and dispensing of antineoplastic agents for various treatment regimens. Rick Grembocki R.Ph., Research Pharmacy Program Specialist, works closely with the hematology/oncology team to provide guidance, direction and oversight of Cancer Research Trials. David M. Kupiak R.Ph., Lead Oncology Pharmacy Program Specialist, along with the Research Pharmacist and a team of chemotherapy trained clinical pharmacists; contribute to the design, conduct and evaluation of pharmaceutical related treatment regimens. In addition, they participate in the evaluation and utilization of antineoplastic agents, under the auspices of the VHA Pharmacy Benefits Management Services, VISN 2 Pharmacy & Therapeutics Committee, Medication Use Committee, Quality Assurance, Cancer Committee, Tumor Board, Institutional Review Board and Research and Development Committee. Our state of the art chemotherapy preparation suite is in full compliance with current Joint Commission requirements for pharmacy areas preparing sterile chemotherapy products and is under constant review to maintain the most current standard of practice preparation standards. Our staff participates in continuous training and continuing education. This ensures that our Veterans are receiving medications that are prepared following stringent guidelines, using properly trained and supervised staff.

The Hematology/Oncology Pharmacy also serves as a training site for various colleges of pharmacy around the northeast, which includes amongst others, Albany College of Pharmacy and Health Sciences.
The Radiation Oncology department provides an important treatment option for Cancer Care for Veterans at the Stratton VA Medical Center, Albany, NY. The Nuclear Regulatory Commission and American College of Radiology (ACR) have evaluated our program favorably and we were successfully accredited in October 2016 for three years.

From January 1, 2016 to December 31, 2016 there were 172 consultations and 167 patients received treatment during this review period. There were 207 CT simulations and 573 follow up visits during this period of time. A total of 4147 radiation treatments were delivered during the year. The most predominant diagnosis treated was prostate cancer at 24.5%. The second most common malignancy treated was Head and Neck at 18.5% and third was lung cancer at 16.7%. 83.3% of the patients were treated with curative intent and 16.7% with palliative intent.

Radiation therapy is a highly technology dependent specialty. We are one of the only two VAMC hospitals out of 40 Radiation Oncology centers with a Tomotherapy machine. All patients referred to Radiation Oncology are considered for treatment with advanced radiation techniques including: Intensity Modulated Radiation Therapy (IMRT), Image Guided Radiation Therapy (IGRT), Stereotactic Body Radiation Therapy (SBRT), as well as prostate seed implant brachytherapy.

There are plans to expand services further to include Stereotactic Radiosurgery (SRS) for brain tumors and SBRT for liver tumors.

Brachytherapy is performed with low dose rate permanent prostate seed implants. We are one of the very few Radiation Oncology programs in the VHA system to provide brachytherapy services. 12 patients received prostate seed implants during the year 2016. Our brachytherapy planning and delivery system offers state-of-the-art treatment and delivery of precision brachytherapy for low and intermediate risk patients with prostate cancer.

We had two RN’s and one LPN in the department during the year 2016 who maintained and updated all patient education materials. Social worker, Tess and Nutritionist, Regina continue to provide excellent service to our patients undergoing treatment.

The departmental policies and procedures continue to be updated annually by our physics, dosimetry and therapy staff.

Our staff provides exemplary care to our Veterans. In addition, the staff continues efforts in teaching and research. Our staff mentors short term elective rotations by Albany Medical Center medicine residents. We continue to be a clinical education site of SUNY Upstate Radiation Therapy Technology students. The therapy students spend a semester in the Radiation Oncology Clinic and rotate through each area including treatment, dosimetry and nursing.

The Stratton VA Medical Center provides a wide range of surgical services in multiple specialties for cancer patients. They include general oncologic, hepatopancreaticobiliary, colorectal, otolaryngologic, urologic, and thoracic surgery services, as well as plastic surgery reconstruction services. In addition, robotic approaches to colorectal, pancreatic, and urologic cancers are currently available to our patients. Referral services include but are not limited to Pittsburgh VA Medical Center, Albany Medical Center,
Albany Gastroenterology Center and the Woman’s Breast Center at St. Peter’s Hospital. Our surgical staff members have an active relationship with Albany Medical College and many hold academic appointments and/or dual appointments at Albany Medical Center. Albany Stratton VA staff actively participate in both internal and external continuing medical education activities and multiple surgical conferences by specialty at our own VA medical center, as well as at Albany Medical Center.

Our surgical staff members have attended and presented research at multiple nationally recognized conferences including; the Society of Surgical Oncologist Annual Cancer Symposium, the American College of Surgeons Clinical Congress, the American Urological Association annual meeting, the Society of Urologic Oncology annual meeting, the American Society of Colon and Rectal Surgeons annual meeting, and the American Association of Plastic Surgeons annual meeting, among others. We regularly attend and moderate our weekly general tumor board meeting, our multidisciplinary liver cancer tumor board meeting and our biweekly multidisciplinary lung tumor board meeting at the Stratton VA as part of an effort to provide comprehensive cancer care for our VA patients. In addition, our surgical oncologist attends tumor board meeting at the Buffalo VA to help providing needed surgical care for patients with hepatopancreaticobiliary cancer.

The local surgical representative to the Cancer Committee is Dr. Rebecca L. O’Malley. She is a Board Certified Urologic Surgeon who is fellowship trained in Urologic Oncology. In addition to being a full time urologic oncologist at Albany Stratton VAMC, Dr. O’Malley also manages the Urology division as section chief. She actively participates in research with recent publications related to decision-making and patient outcomes in kidney cancer.

The Stratton VAMC continues to provide a plethora of cancer-related surgical services, patient support and community outreach programs, as well as ongoing clinical research. All are considered central to the comprehensive care we aim to provide for our Veteran patients.

**DENTAL SERVICE CANCER PROGRAM**  
Ilze Eglitis, DDS MS

The Stratton VA Medical Center Dental Service plays an integral role in the management of head and neck cancer patients. The three primary objectives of the Dental Service Cancer Program are:

1. To participate fully in patient assessment and interdisciplinary treatment planning.
2. To establish optimum oral conditions for cancer therapy management.
3. To maintain effective recall for follow-up care of these patients.

On admission to the hospital, all suspected head and neck cancer patients are to be referred by consultation to the Dental Service. Such referral is to be made also for patients referred to Radiation Therapy for irradiation of the head and neck. Each patient is assessed on an individual basis in regard to overall systemic health, prognosis, oral health and motivation in order to develop a dental treatment plan which can be well integrated into the overall treatment plan (surgery, radiation and/or chemotherapy).

Early involvement of the Dental Service for evaluation and proper timing of any necessary dental treatment will provide appropriate integration of medical/dental care, reduce management complications, and best serve the health and welfare of the patients involved. The goal for early dental intervention is to optimize the patient’s oral health prior to surgical resection and/or chemo radiation treatment.

All patients are instructed in proper oral hygiene. Radiation patients are placed on a fluoride therapy protocol. All head and neck dental cancer patients are seen during radiation therapy to screen for any
untoward oral sequelae such as mucositis, xerostomia, loss of taste, and radiation carries. Patients who experience any oral sequelae to radiation therapy are appointed for follow up on a long term basis. In light of this stringent follow-up program, very few cases of osteoradionecrosis have been reported at this center.

Any acute dental problems are best treated prior to surgical, radiation or chemotherapy treatment. Routine dental treatment is reinstituted once the patient is ambulatory and comfortable following surgery, radiation and/or chemotherapy.

By assessing each patient in the pre-treatment phase, any necessary post-treatment prosthetic rehabilitation is facilitated, be it in the form of intraoral obturators, specialized prosthesis such as tongue bulbs or extraoral facial prosthesis.

The annual survey was conducted of head and neck cancer patients identified during the 2016 calendar year based on data obtained from the Stratton VA Medical Center Tumor Registry. The purpose of this survey was to determine the percentage of patients identified with head and neck cancer that were screened, treated and/or followed by the Dental Service and/or referring VISN 2 Dental Services. The integration of CPRS (the VA computer patient record system) across VISN 2 allows us to view dental notes from other sites in our network.

The Dental Service receives consultations generated by the Head and Neck Pathway. The referring services send these patients to Dental Service for supportive care on a prn basis. Dental Service is represented at Tumor Board; consultations do get generated newly identified patients.

An interdisciplinary continuous quality improvement team had developed a head and Neck Clinical Pathway to insure timely notification and consultation with respective services. However, this pathway is set to notify us on presentation of a T2 or greater lesion, but not with a T1 lesion. We also depend upon ENT to set the clinical pathway in motion.

In short our examination rate of head and neck cancer patients has been as follows:

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</thead>
<tbody>
<tr>
<td></td>
<td>28/30</td>
<td>34/39</td>
<td>24/25</td>
<td>25/30</td>
<td>28/29</td>
<td>34/40</td>
<td>24/28</td>
<td>14/16</td>
<td>20/23</td>
<td>17/28</td>
<td>22/30</td>
</tr>
<tr>
<td></td>
<td>93%</td>
<td>87%</td>
<td>96%</td>
<td>83%</td>
<td>97%</td>
<td>85%</td>
<td>86%</td>
<td>87.5%</td>
<td>87%</td>
<td>60.7%</td>
<td>73.3%</td>
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</table>

The data was integrated into a table for an overview of patients identified and screened during 1983 – 2016. The data reflects an improvement with respect to the interdisciplinary approach of management of head and neck cancer patients compare with 2015 report. There is an increase of 12.6% on the amount of patient that were referred to the dental department prior to their cancer treatment. Tables have also been developed to illustrate the numbers of patients diagnosed by the site at the Stratton VA and numbers of these patients screened and/or treated by the Dental Service during 1983 - 2016. The Stratton VA Medical Center Dental Service should play an integral role in the treatment of such patients.

22 out of 30 patients were seen by the Stratton VAMC Dental Service. Of the eight patients not followed/cleared by the Dental Service, two refused cancer treatment one did not receive radiation therapy
just ENT f/u after surgery and five were never referred to the dental department for dental screening prior to their treatment. One is edentulous and the dental status of the other seven is unknown. Dental consultation was recommended at the tumor board discussion for one of that non followed/cleared patient presented by Radiation Oncology however; patient was not referred to the dental department. Cancer incidence by site of those not followed/cleared patients include: Two BOT, Two Tonsils, One Oropharynx, One Left Lateral Tongue, One Ventral Tongue and One Larynx Glottis. Discussions will be held with ENT, Radiation Oncology, and Hematology/Oncology service to reevaluate the multidisciplinary treatment approach.

### HEAD AND NECK CANCER PATIENTS 1983 – 2016

<table>
<thead>
<tr>
<th>Tumor Site</th>
<th>Number of Patient Identified</th>
<th>Number of Patients seen by Dental Svc.</th>
<th>% of Patient seen by Dental Svc.</th>
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</thead>
<tbody>
<tr>
<td>Tongue</td>
<td>200</td>
<td>179</td>
<td>89.5%</td>
</tr>
<tr>
<td>Salivary Glands</td>
<td>13</td>
<td>9</td>
<td>69.2%</td>
</tr>
<tr>
<td>Gingiva</td>
<td>20</td>
<td>17</td>
<td>85%</td>
</tr>
<tr>
<td>Floor of the Mouth</td>
<td>101</td>
<td>95</td>
<td>94%</td>
</tr>
<tr>
<td>Other Mouth</td>
<td>110</td>
<td>101</td>
<td>91.8%</td>
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<tr>
<td>Oropharynx</td>
<td>216</td>
<td>203</td>
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<tr>
<td>Nasopharynx</td>
<td>39</td>
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<tr>
<td>Hypopharynx</td>
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<tr>
<td>Nasal Cavity</td>
<td>44</td>
<td>40</td>
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</tr>
<tr>
<td>Larynx</td>
<td>478</td>
<td>409</td>
<td>86.4%</td>
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<td><strong>Total:</strong></td>
<td><strong>1359</strong></td>
<td><strong>1222</strong></td>
<td><strong>89.9%</strong></td>
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### HEAD AND NECK CANCER PATIENTS SCREENED AND/OR TREATED BY DENTAL SERVICE 1983 – 2016

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<td>0</td>
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<td>1</td>
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<td>F.O.M.</td>
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### HEAD AND NECK CANCER PATIENTS
#### 1983-2016
##### INCIDENCE BY SITE

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<tr>
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<td><strong>Total:</strong></td>
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<td><strong>276</strong></td>
<td><strong>211</strong></td>
<td><strong>199</strong></td>
<td><strong>168</strong></td>
<td><strong>124</strong></td>
<td><strong>67</strong></td>
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Quality Studies

Standard 4.7 Study of Quality– Dr. Pasquale: Up to Date Vaccinations Prior to Initial Chemotherapy

**BASELINE:** Most chemotherapy regimens are immunosuppressive and result in a higher risk for infections. The immunosuppression will also decrease response to any vaccinations. We believe there are an inordinate number of patients who start chemotherapy without having the appropriate vaccinations. If this is found to be a valid assumption, then a plan to improve the vaccination status will be drafted and a quality improvement initiative (4.8) will be planned.

**DATA SOURCE:** Cancer patients who have started chemotherapy for the first time will be identified from the tumor registrar. We will start with a 1-quarter time frame for the most-recent full quarter where chemotherapy data is available from the tumor registrar. If number of new chemotherapy patients is low, we will also collect data from the previous quarter.

**PLAN FOR ACHIEVEMENT:** Patients’ electronic medical record who received initial chemotherapy will be reviewed to obtain vaccination status prior to initiation of chemotherapy. We will emphasize pneumococcal vaccine but will collect data if available regarding other vaccinations such as DPT and H. zoster vaccine.

**PERFORMANCE MEASURES:**
- March-2016: Obtain patient list from the tumor registrar --- Completed March 2, 2016
- March/April 2016: Review EMR and obtain vaccination data --- Completed June 1, 2016
- May-2016: Analyze data --- Completed June 21, 2016
- May-2016: Report preliminary analysis to Cancer Committee--- This report completes this - June-21-2016
- May/June-2016: Draft a plan to promote improved vaccination compliance prior to starting chemotherapy.
- Aug-2016: Draft a Cancer Quality improvement initiative (4.8) for completion in either later 2016 or early 2017.

**RESULTS:**
Between June and September 2015 (most-recent timeframe with completed abstracts), there were 155 new cancer patients. Thirty-one (31) of the 155 (20%) started chemotherapy.

<table>
<thead>
<tr>
<th>June 2015 through September 2015</th>
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<tbody>
<tr>
<td><strong>Total New Cancer Patients:</strong></td>
</tr>
<tr>
<td><strong>Total New Chemotherapy:</strong></td>
</tr>
<tr>
<td>Chemo+</td>
</tr>
<tr>
<td>XRT</td>
</tr>
<tr>
<td>XRT+Surgery</td>
</tr>
<tr>
<td>Surgery</td>
</tr>
<tr>
<td>Hormones</td>
</tr>
<tr>
<td>Surg/BRM</td>
</tr>
<tr>
<td>BRM/Hormone</td>
</tr>
<tr>
<td>Alone</td>
</tr>
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</table>
Patients’ vaccination history was compared with the 2016 vaccination recommendations from the Center for Disease Control (CDC). The CDC publishes vaccination guidelines that are national standards. Benchmark ideally should be 100% vaccination status.

### CDC 2016 Vaccine Recommendations: immunocompetent patients:

<table>
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<tr>
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<th>27--&gt;64</th>
<th>60--&gt;64</th>
<th>≥65</th>
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</thead>
<tbody>
<tr>
<td>Td/Tdap</td>
<td>Q10-Years</td>
<td>Q10-Years</td>
<td>Q10-Years</td>
</tr>
<tr>
<td>Varicella</td>
<td>2-doses</td>
<td>2-doses</td>
<td>2-doses</td>
</tr>
<tr>
<td>Zoster</td>
<td>No</td>
<td>No</td>
<td>1-dose</td>
</tr>
<tr>
<td>PCV13</td>
<td>1-dose</td>
<td>1-dose</td>
<td>1-dose</td>
</tr>
<tr>
<td>PPSV23</td>
<td>1-2 doses</td>
<td>1-dose</td>
<td>1-dose</td>
</tr>
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</table>

### Compliance with 2016 CDC vaccination recommendations

<table>
<thead>
<tr>
<th></th>
<th>DT/TDap</th>
<th>Zoster</th>
<th>PN*</th>
<th>PCV13+</th>
<th>ALL</th>
<th>PN/DT</th>
<th>PN/PCV13</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=</td>
<td>31</td>
<td>31</td>
<td>31</td>
<td>31</td>
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<td>10</td>
<td>21</td>
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<td>11</td>
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<tr>
<td>LATE=</td>
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<td>0</td>
<td>0</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliant*#</td>
<td>74%</td>
<td>58%</td>
<td>87%</td>
<td>32%</td>
<td>32%</td>
<td>52%</td>
<td>65%</td>
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<tr>
<td>Comp-L##</td>
<td>74%</td>
<td>58%</td>
<td>87%</td>
<td>68%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* PN = Pneumococcal Vaccine PPSV23 (23 valent)
+ PCV13 = Pneumococcal 13 valent
# Compliant = Individuals who received vaccine PRIOR to onset of chemotherapy.
## Comp-L = Individuals who received vaccine but not prior to onset of chemotherapy.

### SUMMARY:

Overall, only 32% of new cancer patients starting chemotherapy had completed vaccinations as recommended by the CDC. This percentage (including patients vaccinated after starting chemotherapy) was 65% for Pneumococcal vaccine alone, 75% for DT/TDap alone, and 52% for Pneumococcal and DT/TDap combined.

### RECOMMEND:

Based on this study, we believe there is opportunity for improvement to improve the immunization status of cancer patients who are will be receiving chemotherapy.

Pending review and approval by the cancer committee, we plan (4.8: corrective action plan) to post in the cancer patient waiting area a flyer regarding importance of vaccinations being up to date prior to starting chemotherapy, so that patients will help remind providers to be certain vaccinations are current. We also plan to provide these study results to our cancer providers, and to provide them with a small poster to post in the exam rooms as a reminder to our cancer physicians to be attentive to vaccination status. Following instituting of those actions, we plan to obtain names of cancer patients who will be starting chemotherapy for the quarter subsequent to the corrective actions and review vaccination status to determine if there is improvement in the vaccination status compared with data in this report.
Standard 4.8 Quality Improvement - Regina LaTourette: Development of a Post XRT Head & Neck Outpatient Nutrition Clinic to monitor patients until weight stabilization of 3 months is achieved.

**Definition:** Each Calendar year, the cancer committee, under the guidance of the Quality Improvement Coordinator, implements two cancer care improvements. One improvement is based on the results of a Quality Study (4.7) completed by the cancer program that measures the quality of cancer care and outcomes. One improvement can be based on a completed study from another source. Quality improvements are documented in the cancer committee minutes and shared with medical staff and administration.

**Sources for quality improvement may include:**

1. *Actions based on analysis and finding of a quality study under Standard 4.7*
   Analysis conducted from a quality study under 4.7 to determine if a decrease in calorie intake 4-6 weeks after XRT for H&N Cancer is a contributing factor in post treatment weight loss.

2. The action to address substandard patient care or process performance is the addition of a Nutrition clinic (Post XRT Head & Neck Outpatient Nutrition Clinic). This clinic will monitor patients by face to face and phone call appointments. This clinic will be set up for 4 hours per week.

3. Changes to improve upon acceptable patient care or process performance.
   Changes to improve care of patients who are s/p XRT for the treatment of head and neck cancer will be monitored weekly for the first 2 months and then biweekly to monthly until weight stabilization (stable weight or weight gain for 3 consecutive months) is achieved.
   Appointments to address continued supplement use (Ensure Plus or other), monitoring of changes in LBM and fat stores and weight through Nutrition Focused Physical Assessment.
   If patient requires continued use of feeding tube, patient monitoring in this clinic will continue until patient transitions to oral diet and demonstrates weight stabilization x 3 months or if FT use is indefinite then monitoring will follow same process (3 months weight stabilization). Tube feeding patients are followed monthly thereafter.

**05/20/16 Progress Report second quarter:**
A follow up clinic Post XRT Head & Neck Outpatient Nutrition Clinic was set up for 4 hours per week. This clinic is monitoring patients weekly as they complete XRT for head and neck cancer until weight stabilization is achieved for 3 months. There are currently 7 patients being monitored in this clinic. Four patients were previously being monitored monthly but were not able to achieve weight stabilization. They are now being monitored weekly. Three patients have finished XRT in the past month and are now being monitored weekly in this clinic. Five of the 7 patients have Feeding tubes to meet all or the majority of their nutritional needs. None have achieved weight stabilization defined as stable weight for 3 consecutive months.

**08/26/16 Progress Report third quarter:**
A follow up clinic Post XRT Head & Neck Outpatient Nutrition Clinic was set up for 4 hours per week. This clinic is monitoring patients weekly as they complete XRT for head and neck cancer until weight stabilization is achieved for 3 months. There are currently 12 patients being monitored in this clinic. Four hours has not been enough time to monitor each patient weekly. Patients have been monitored every 1-2 weeks. Two patients have been monitored monthly as they are called but do not return calls. They are seen when they have appointments in Oncology. 3 Patients had PEG tube removed have stable weight or weight gain noted. 2 patients have PEG in place but have been exclusively oral for past 5 weeks; weight is stable plan in near future for PEG removal.
2 patients are PEG dependent with stable weight or weight gain noted for past 3 months

2 patients are in transition to oral intake but are still receiving the majority of nutrition via PEG weight is stable.

2 patients with PEG and 1 patient without PEG continue to demonstrate significant weight loss. Of the three, two are pleased with weight loss, and disregard recommendations. Weight maintenance is not their end point, they continue to desire weight loss.

**Conclusion:**
The formation of a 4 hour block of time exclusively for post treatment head & neck cancer patients confirmed that frequent evaluation of nutrition status contributes to weight stabilization.

The improvement in promoting weight stabilization post XRT demonstrates a need in continuing frequent monitoring. The 4 hours of clinic time devoted to this population is not adequate to meet the growing number of patients.

<table>
<thead>
<tr>
<th>Baseline 2015</th>
<th>Increased frequency of Nutrition Follow up 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average 11 lb. weight loss post treatment</td>
<td>Weight Stabilization</td>
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</table>
Freelite for Measurement of Urine-Free Light Chains in Monoclonal Gammopathies

Montgomery Lobe, MD, and Donald Pasquale, MD

Abstract

Monoclonal gammopathies are characterized by production of monoclonal immunoglobulin heavy or light chains. Historically, the standard for measuring monoclonal light chains was indirect, requiring 24-hour urine collection, measurement of total protein, and extrapolation of light chain concentration using electrophoresis. In 2001, Freelite was developed allowing direct detection of serum-free light chains (FLCs) with sensitivity >2-log higher than immunofixation electrophoresis (IFE), and became standard for diagnosis and monitoring of these disorders. However, cases are missed when urine FLCs are not measured. We studied 23 individuals with monoclonal gammopathies to determine whether Freelite could be used to measure urine FLCs from a spot urine. We concurrently measured serum and urine FLCs using Freelite and serum heavy chains. Monoclonal urine and serum FLCs correlated in 39% of patients. Both urine and serum monoclonal FLCs correlated with clonal serum heavy chains in 25%, serum in only 30%, and urine in only 10%. We conclude that measurement of spot urine FLCs using Freelite may replace 24-hour urine total protein and IFE. While serum FLCs are adequate in most patients, we found a small number of patients for whom urine FLCs outperformed serum FLCs.

Methods

This study was approved by the Albany VA Medical Center Institutional Review Board. We identified individuals with the diagnosis of MGUS, smoldering MM (SMM), or MM, who had multiple concurrent measurements of serum and urine FLCs using Freelite, and serum heavy chains (quantitative immunoglobulins). Urine and serum FLCs were measured using Freelite (Binding Site Ltd, Birmingham, UK) by a reference laboratory (Lab Corp, Burlington, NC). All analyses were performed using the involved/monoclonal FLC levels and involved/monoclonal heavy chain levels, when affected. Serum immunoglobulins (immunonephelometry) along with other serum and urine parameters were measured using standard and widely available
### TABLE 1. Patients Age, Diagnosis, Mean Serum Creatinine, Number of Paired Data Points, and Number of Months Between Obtaining First and Last Paired Samples.

<table>
<thead>
<tr>
<th>Disease Type</th>
<th>Age at Diagnosis</th>
<th>Mean Serum Creatinine mg/dL (N)</th>
<th>Urine/Serum Light Chain Matched Points</th>
<th>Months Between First and Last Paired Samples</th>
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<tbody>
<tr>
<td>IgG κ Active MM</td>
<td>72</td>
<td>1.6 (20)</td>
<td>20</td>
<td>24</td>
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<tr>
<td>IgG κ Active MM*</td>
<td>62</td>
<td>0.9 (7)</td>
<td>7</td>
<td>29</td>
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<tr>
<td>IgG κ Active MM</td>
<td>84</td>
<td>1.1 (6)</td>
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<td>6</td>
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<tr>
<td>IgG κ Active MM</td>
<td>65</td>
<td>1.2 (18)</td>
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<td>IgG κ Active MM</td>
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<td>IgG κ Active MM</td>
<td>82</td>
<td>1.1 (6)</td>
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<tr>
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<td>74</td>
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<td>31</td>
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<tr>
<td>IgG κ Active MM</td>
<td>53</td>
<td>1.3 (8)</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>IgG λ Active MM</td>
<td>67</td>
<td>1.3 (13)</td>
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<td>55</td>
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<td>23</td>
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<tr>
<td>(\lambda) LC Active MM</td>
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<tr>
<td>(\lambda) LC Active MM</td>
<td>56</td>
<td>1.0 (18)</td>
<td>18</td>
<td>14</td>
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<tr>
<td>IgG κ SMM</td>
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<td>1.0 (4)</td>
<td>4</td>
<td>6</td>
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<td>IgG κ SMM</td>
<td>87</td>
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<td>10</td>
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<tr>
<td>IgG κ SMM +</td>
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<td>IgA κ SMM</td>
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<td>87</td>
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<td>IgA κ MGUS</td>
<td>67</td>
<td>1.1 (5)</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>IgA κ MGUS</td>
<td>62</td>
<td>1.4 (4)</td>
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<td>13</td>
</tr>
<tr>
<td>Mean ± SD</td>
<td>71 ± 10.6</td>
<td>1.2 ± 0.4</td>
<td>9.2 ± 5.9</td>
<td>17.9 ± 8.4</td>
</tr>
</tbody>
</table>

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*Prior MGUS.
+ Insufficient heavy chain data for comparisons.
IgA indicates immunoglobulin A; IgG κ, immunoglobulin G; IgG λ, immunoglobulin G lambda; \(\lambda\) LC, lambda light chain; MGUS, monoclonal gammopathy of undetermined significance; MM, multiple myeloma; SD, standard deviation; and SMM, smoldering multiple myeloma.

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Techniques by our ‘American College of Pathologists–accredited medical center chemistry laboratory. Data were analyzed for correlation between parameters using Pearson product-moment correlation. P values < 0.05 were considered significant.\(^{11}\)

**Results**

Characteristics of the study population are illustrated in Table 1. We identified 23 individuals (all male, consistent with our veteran patient population) with mean (± standard deviation (SD)) age of 71 ± 10.6 years at diagnosis. Five individuals had MGUS, 4 had SMM, and 14 had MM.\(^{11}\) Two of the 14 patients with MM progressed from MGUS. Twenty-one of 23 patients had intact monoclonal disease, and FLCs were measurable in all 21 of these patients. Two of the 13 patients with MM had light-chain-only disease. A mean (SD) of 9.2 ± 5.9 matched serum and urine FLC determinations per patient (range 4–21) was obtained over a mean 17.9 ± 8.4 months. Mean (SD) serum creatinine of the patients was 1.2 ± 0.4 mg/dL (range, 0.7-2.5). One individual with SMM was excluded from the heavy chain correlations due to insufficient serum FLC data.
FIGURE 1. Comparisons Between Abnormal Monoclonal Urine and Serum FLCs with Abnormal Monoclonal Serum Heavy Chain. Panels A and B illustrate 2 patients for whom both Serum and Urine FLCs Correlate with Serum Heavy Chain. Panel C illustrates a Patient for whom Only the Serum FLC Correlates with the Serum Heavy Chain. Panel D illustrates a Patient for Whom Only the Urine FLC Correlates With the Serum Heavy Chain.

A. Free Kappa vs Serum IgG
- Urine Kappa: $R^2=0.522; p=0.006; N=12$
- Serum Kappa: $R^2=0.949; p<0.001; N=12$

B. Free Lambda versus Serum IgG
- Urine Lambda: $R^2=0.874; p<0.001; N=14$
- Serum Lambda: $R^2=0.978; p<0.001; N=14$

C. Free Kappa versus Serum IgG
- Urine Kappa: $R^2=0.057; p=0.53; N=7$
- Serum Kappa: $R^2=0.302; p<0.001; N=7$

D. Free Lambda versus Serum IgA
- Urine Lambda: $R^2=0.398; p<0.001; N=50$
- Serum Lambda: $R^2=0.634; p<0.001; N=50$

FLC indicates free light chain; IgA, immunoglobulin A; and IgG, immunoglobulin G.

Results of comparisons between immunoglobulin parameters are illustrated in Table 2. Overall, the urine FLCs correlated with serum FLCs in 9 (39%) individuals, including both patients with light-chain MM. Both urine and serum FLCs correlated with heavy chain in 5 (25%) patients. Serum FLCs, but not urine FLCs, correlated with serum heavy chain in 6 (30%) patients. Urine FLCs, but not serum FLCs, correlated with heavy chain in 2 (10%). There was no correlation between urine or serum FLCs with serum heavy chain in 7 (35%) patients. Use of FLC ratio instead of FLCs and “normalization” of urine FLCs based on concurrent urine and serum creatinine determinations did not change any of the correlations in any of the 23 participants (data not shown).

Figure 1 illustrates comparisons between urine and serum FLCs with serum heavy chains in 4 patients. Panels A and B illustrate patients for whom both urine and serum FLCs correlate with serum heavy chain; Panel C illustrates an individual for whom only the serum FLCs correlated with the serum heavy chain; and Panel D illustrates an individual for whom only the urine FLCs correlated with the serum heavy chain. Figure 1 illustrates 2 patients for whom the urine FLCs correlated with the serum FLCs.

Discussion
Due to its greater sensitivity in the detection of monoclonal immunoglobulins, serum FLCs have become important for diagnosis, prognosis, and management of plasma-cell disorders. This method is incorporated into current guidelines for...
assessing patients with monoclonal gammopathies. However, measurement of urine FLCs continues to be required because a small number of individuals are detected only by measurement of urine FLC excretion.

Methodology for measuring urine FLCs continues to be collecting 24-hour urine specimens and extrapolating the quantity of light chains excreted based on urine IFE. This process is subject to error when collection is incomplete, and the sensitivity of IFE is about 34.5% less than the Freelite assay. Use of Freelite for measurement of urine FLCs has not been promoted because of a paucity of data using this method, and because of concern regarding using a spot urine due to variability in renal function and tubular handling of light chains, with prior studies failing to show association between urine FLCs and serum FLCs.

We also failed to show association with aggregated data. However, there was a clear association in 39% of patients between the serum and urine FLCs, and clear associations in 25% of patients between urine FLCs and serum heavy chain. We did not specifically compare head-to-head measurement of spot urine FLCs using Freelite with 24-hour collection quantitation via IFE; however, we feel that with the 24 hour increased sensitivity of Freelite, Freelite will outperform IFE. We also observed a small but defined minority of patients for whom urine FLCs outperformed serum FLCs.

Use of Freelite as an assay for immunoglobulin light chains does not substitute for urinalysis to screen for albuminuria, which may be an indication of renal light-chain amyloid. If proteinuria is indicated on the screening urinalysis, a 24-hour urine collection should be considered to determine the quantity of albumin as a part of an evaluation for amyloid disease.

We feel that due to the increased (4.5 log) sensitivity of Freelite over IFE, the ability to quantitate the kappa-lambda light chain ratio as an indication of clonality, and the convenience of a spot urine over a 24-hour collection, this assay is a valid alternative to the currently promoted methodology.

Conclusion
The measurement of urine FLCs from a single urine collection using the Freelite assay is a convenient and valid tool, and in a minority of patients with monoclonal gammopathies, it adds unique information about disease activity.

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Author disclosures: The authors report no relevant conflicts of interest.

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Author contributions: Dr. Pasquale designed the study. Dr. Lobe collected data. Drs. Pasquale and Lobe analyzed the data and wrote the manuscript.

Supported by: Department of Veterans Affairs

References
Advance Colorectal Ca Patients With Mutated Kirsten Rat Sarcoma-2 Virus Oncogene and Elevated Carcinoembryonic Antigen Levels Have Poor Survival

Author(s): Koutroumpakis E., Assi H., Rahman H, Ashamalla M., Wazir A., Elshouri A. and Mehdi S

**Background:** Prognostic biomarkers are increasingly important in the management of advanced colorectal cancer (ACRC). The aim of the present study was to evaluate the correlation of Kirsten rat sarcoma-2 virus oncogene (KRAS) mutation status with elevated carcinoembryonic antigen (CEA) levels in ACRC patients and their association with patients’ survival.

**Methods:** Patients with metastatic colorectal cancer were identified by a retrospective review of the Albany Medical Center cancer registry data from January 2006 to December 2014. Demographic, clinical, laboratory, and treatment data were retrieved after a manual review of patients’ electronic medical records. Only patients with complete data on CEA levels and KRAS mutation status were included in our analysis. Elevated CEA levels were defined as more than 3 ng/mL.

**Results:** Sixty-one patients with complete data were identified. Mean age was 58 years (SD 13.7, range 26-87), and 33 of them (54.1%) were male. In 23 out of 61 patients (37.7%), the rectum was involved. The pathologic diagnosis for all the patients was adenocarcinoma. Thirty-nine of 61 patients (63.9%) had wild-type KRAS (wKRAS) and 22 (36.1%) mutated KRAS (mKRAS). Out of 22 patients with mKRAS, 21 (95.5%) had elevated CEA levels prior to first treatment compared to 26 out of 39 (66.7%) with wKRAS (P = 0.011). The median CEA levels prior to treatment for patients with mKRAS was 57.5 ng/mL (IQR 12.6-79.8, range 1.8-16,512) compared to 7.8 ng/mL (2.13-17.7, 0.2-2,027; P = .037) in patients with wKRAS. Among patients with mKRAS and elevated CEA levels, the 1- and 5-year survival rates were 61.9% (13/21) and 0%, respectively, while the mean survival was 16.5 months (SD 10.6, range 1-42). The 1- and 5-year survival rates as well as mean survival for patients with wKRAS and elevated CEA levels were 84.6% (22/26), 3.8% (1/26), and 29.1 months (17.9, 8-84; P = .005) while for those with wKRAS and normal CEA levels were 91.7% (11/12), 25% (3/12), and 43.6 months (29.8, 1-108; P = .14), respectively.

**Conclusion:** Almost all ACRC patients with mKRAS have elevated CEA levels prior to first systemic therapy. ACRC patients with mKRAS and elevated CEA levels have lower survival rates.
Hepatocellular Carcinoma – A Cancer like No Other
Maithao Le, MD PHD
Surgical Oncologist
The Stratton VAMC, Albany, New York
Standard 4.6

Hepatocellular Carcinoma (HCC) – Age-Adjusted Incident per 100,000 – Global, Mittal et al, 2013

HCC – Age-Adjusted Incident per 100,000 - the US, Mittal et al, 2013
HCC - Incidence and Mortality - the US, Altekruse et al, 2014

SEER 18 HCC Incidence, 2000-2010

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>Trend 1</th>
<th>95% CI</th>
<th>Trend 2</th>
<th>95% CI</th>
<th>Joinpoint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>5.4*</td>
<td>(4.3, 6.6)</td>
<td>2.3</td>
<td>(-1.2, 5.8)</td>
<td>2007</td>
</tr>
<tr>
<td>35-49</td>
<td>-1.4</td>
<td>(-3.1, 0.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-64</td>
<td>9.6*</td>
<td>(7.1, 12.1)</td>
<td>5.2*</td>
<td>(2.0, 8.6)</td>
<td>2006</td>
</tr>
<tr>
<td>65+</td>
<td>3.6*</td>
<td>(2.9, 4.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

U.S. Liver Cancer Mortality, 2000-2010

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>Trend</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>2.1*</td>
<td>(-1.9, 2.3)</td>
</tr>
<tr>
<td>35-49</td>
<td>-3.2*</td>
<td>(-4.0, -2.4)</td>
</tr>
<tr>
<td>50-64</td>
<td>5.6*</td>
<td>(5.2, 6.0)</td>
</tr>
<tr>
<td>65+</td>
<td>1.1*</td>
<td>(0.8, 1.4)</td>
</tr>
</tbody>
</table>

Hepatocellular Carcinoma – A Cancer Like No Other: Cause

- Not a disease of old age
- Disease of CIRRHOTIC liver
- Causes (US specific):
  - Hepatitis B, C
  - EtOH
  - NASH (diabetes, obesity, lipid disorders)
Hepatocellular Carcinoma – A Cancer Like No Other

- TNM staging
- NCCN guideline
- Nodal disease predicts the need for systemic therapy
- Metastatic disease predicts poor prognosis

- The Barcelona clinic liver cancer (BCLC) staging system:
  - Tumor:
    - Single versus multiple
    - Vascular invasion vs extrahepatic disease
  - Liver function:
    - Child-Pugh
    - Portal hypertension
  - Patient’s performance status

---

The Barcelona Clinic Liver Cancer (BCLC) Staging System

[Diagram showing the BCLC staging system, including stages 0, A, B, C, and D, with associated treatments and survival outcomes.]
## Patients With Liver Cancer 2006 - 2016

<table>
<thead>
<tr>
<th>Cohort</th>
<th>% (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100 (139)</td>
</tr>
<tr>
<td>Not HCC</td>
<td>5.6 (8)</td>
</tr>
<tr>
<td>Treated Outside</td>
<td>10.8 (15)</td>
</tr>
<tr>
<td>Died Without Treatment</td>
<td>24.5 (34)</td>
</tr>
<tr>
<td>Treated Here</td>
<td>59 (82)</td>
</tr>
</tbody>
</table>

## Characteristics of the Treated Cohort

<table>
<thead>
<tr>
<th>Age</th>
<th>% (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 49</td>
<td>0</td>
</tr>
<tr>
<td>50 - 59</td>
<td>20.7 (17)</td>
</tr>
<tr>
<td>60 - 69</td>
<td>56.1 (46)</td>
</tr>
<tr>
<td>≥ 70</td>
<td>23.2 (19)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cause of Cirrhosis</th>
<th>% (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>1.2 (1)</td>
</tr>
<tr>
<td>C</td>
<td>63.4 (52)</td>
</tr>
<tr>
<td>EtOH</td>
<td>17.1 (14)</td>
</tr>
<tr>
<td>NASD</td>
<td>0</td>
</tr>
<tr>
<td>Combination</td>
<td>18.3 (15)</td>
</tr>
</tbody>
</table>
### Characteristics of the Treated Cohort (cont)

<table>
<thead>
<tr>
<th>Child-Pugh</th>
<th></th>
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</tr>
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<tbody>
<tr>
<td>A</td>
<td>67.1 (55)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>29.3 (24)</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>3.6 (3)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage (AJCC)</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown</td>
<td>8.5 (7)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>42.7 (35)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>28 (23)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>13.4 (11)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>9.8 (8)</td>
<td></td>
</tr>
</tbody>
</table>

### Treatments

<table>
<thead>
<tr>
<th>Treatment</th>
<th>% (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transplant</td>
<td>1.2 (1)</td>
</tr>
<tr>
<td>Resection</td>
<td>7.3 (6)</td>
</tr>
<tr>
<td>Ablation</td>
<td>9.8 (8)</td>
</tr>
<tr>
<td>TACE/TARE</td>
<td>15.9 (13)</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>12.2 (10)</td>
</tr>
<tr>
<td>Radiation</td>
<td>7.3 (6)</td>
</tr>
<tr>
<td>Combination</td>
<td>45.1 (37)</td>
</tr>
<tr>
<td>Single</td>
<td>54.9 (45)</td>
</tr>
<tr>
<td>Multiple (2-7)</td>
<td>45.1 (37)</td>
</tr>
</tbody>
</table>
Figure 4 Barcelona Clinic Liver Cancer staging system and treatment strategy.
CONTRIBUTORS

The Cancer Committee would like to extend appreciation to the following contributors to this year's Cancer Program Annual Report. The scope of this information would not have been as extensive without their contributions and support.

Linda Carpinello-Dillenbeck, R.T. (R) (M) (ARRT) Quality Control Mammographer  
Alison Petro, M.A., CCC-SLP – Speech Pathology  
Bruce Swingle - Chaplain Service

The Comprehensive Cancer Committee would like to dedicate this Annual Report to  
Lori Hoffman-Hogg, MS RN CNS AOCN® (NCP)  
for her continuous commitment to the Veterans, Cancer Program and to the staff of the Stratton VAMC.