

Section of Hematology-Oncology

Annual Report 2009

OVERVIEW

The Section of Hematology-Oncology continued its growth trajectory in FY2009. With the addition of five new physician and NP faculty, the Section at the end of the 2008-2009 academic year included 44 faculty, of which 39 are MDs and/or PhDs and 5 are NPs. Of the 39, 1 has her primary practice at East Boston Neighborhood Health Center and 6 have their primary practice at the VAMC, where 4 additional Harvard faculty also practice in hematology and oncology. Of the 32 BUMC faculty, 26 have their primary appointments in Hematology-Oncology and 6 in the Cancer Center at BUSM. Of the 26 primary Heme-Onc faculty, 24 are full-time. Twelve are primarily clinical/clinical research faculty, 8 are laboratory research faculty, and 6 are both attending physicians and laboratory PIs. Two Cancer Center faculty are also attending physicians at BMC. The affiliated Clinical Trials and Cancer Support Service Office is overseen by an MD and an RN/NP and has 12 additional full-time staff. There are 13 clinical fellows in training and more than 16 postdocs, graduate students, and technicians carrying out research in the Hematology-Oncology labs, with additional laboratory personnel in the Cancer Center.

CLINICAL

The Hematology-Oncology Section and affiliated programs in Radiation Oncology, Surgery, Otolaryngology, Urology, Gynecology, Dermatology, and other medical specialties provide the majority of the cancer care to the underserved, underinsured, and minority population of Boston and the surrounding area. The Section's clinical activity has grown steadily over the last several years. In 2008-2009, there were approximately 25,700 outpatient visits to the outpatient Solomont Center for Cancer and Blood Diseases on Moakley 3; Ken Zaner MD, PhD, MBA serves as Clinic Director and Kathy Gere RN is the Nurse Manager. There were more than 780 hematology-oncology inpatient admissions and more than 620 consults seen. The Section operates a combined Hematologic Malignancies/Stem Cell Transplant Service, a solid tumor Oncology Service, a combined Hematology and Oncology Consult Service, and a Sickle Cell Inpatient Service.

To deliver state-of-the-art cancer care to the unique patient population at Boston Medical Center, many effective strategies are employed. Each patient receives individualized attention from an oncology nurse with support from social services and patient navigators to assist with transportation and other needs. In 2008, the Medical-Legal Partnership began to provide *pro bono* legal services to adults seen in the Solomont Center and in the other cancer programs at BMC. To provide state-of-the-art cancer care and capture as many patients as possible for clinical trials, the physicians in the Hematology-Oncology Section participate in a general multidisciplinary tumor board and in focused tumor boards dedicated to breast cancer, lung cancer, head and neck cancer, GYN oncology, hepatobiliary cancer, amyloidosis, and stem cell transplantation. Patients with these diseases are seen in

the Multispecialty Center on Moakley 3 and cared for by physicians from Medical Oncology, Surgical Oncology, Radiation Oncology, Thoracic Oncology, Skin Oncology, GYN Oncology, and other departments as appropriate.

The Autologous Stem Cell Transplant Program at BMC is internationally recognized as a leader in the treatment of AL amyloidosis, and also treats patients with multiple myeloma, lymphoma, and leukemia. In collaboration with the Amyloid Treatment and Research Program (clinical director Dr. John Berk), the Stem Cell Transplant Program, under the direction of Vaishali Sanchorawala, MD, provides a multidisciplinary approach for the evaluation and treatment of amyloidosis patients. The Stem Cell Transplant Program is accredited by the Foundation for the Accreditation of Cellular Therapy (FACT) and the state of Massachusetts. The Program has been an approved transplant facility through the Southwest Oncology Group since 1996. In 2009, the Program was provisionally recognized by Blue Cross/Blue Shield as a Transplant Program of Excellence.

The Sickle Cell Center directed by Martin Steinberg MD oversees both the sickle cell research and clinical programs. The clinical services include an inpatient program, outpatient clinics, and a Sickle Cell “Day Hospital” unique in New England, which provides extended outpatient care to patients with sickle cell anemia and painful crises. Only about 10% of patients seen in the Day Hospital end up being admitted to the hospital. In 2008, the Sickle Cell Program began a Transition Clinic for adolescents, staffed by Lillian McMahon MD from adult hematology and Philippa Sprinz MD from pediatric hematology.

RESEARCH

The Hematology-Oncology Section research programs include an extensive portfolio of clinical trials in all areas of hematology and oncology as well as diverse laboratory programs and unique centers of excellence. Extramural grant funding totaled approximately \$7,048,400 in FY2009 for the Section with an additional \$2,225,000 of funding in hematology and oncology research going to the Cancer Center. Major sources of funding include NIH, the American Cancer Society, the Leukemia and Lymphoma Society, the Department of Defense, the American Heart Association, and private foundations including Avon, Komen, and others.

The clinical research programs are overseen by the Clinical Trials Office, directed by Kathy Finn RN NP; in 2008 Timothy Cooley MD was recruited to Boston Medical Center to serve as Physician Director of the CTO. Also in 2008, Robert David was appointed Support Services Coordinator. The clinical trials program includes cooperative group trials through the Southwest Oncology Group (SWOG), the National Surgical Adjuvant Bowel and Breast Research Program (NSABP), the American College of Surgery Oncology Group (ACOSOG), and the Radiation Therapy Oncology Group (RTOG). The Clinical Trials Program was reviewed and given a commendation by the ACOSOG Commission on Cancer in 2009. The Clinical Trials Office also oversees the Cancer Support and Outreach Services and the oncology navigation program. These programs have continued to expand, with a dozen patient support groups, annual cancer screening days and Survivors Celebration, and many mind-body activities for cancer patients. The Oncology Navigation program is supported by

the Kohlberg Foundation and has made great strides in helping patients navigate through complex multidisciplinary cancer care, is developing formal clinical pathways for common cancers, and helps patients access appropriate clinical trials. A major focus in FY2009 was to increase enrollment onto clinical trials through early identification of patients as well as expanding the portfolio of suitable prevention, symptom management, and treatment trials; enrollments are on the rise.

Particular programs of research excellence include the Sickle Cell Center, the Hemoglobin Reference Laboratory, and the Amyloidosis Treatment and Research Program. The Sickle Cell program directed by Dr. Steinberg has extensive laboratory and translational research programs in sickle cell genetics and pathophysiology of sickle cell disease, with extensive internal and external collaborations; it is the only Sickle Cell Center in Boston funded by NHLBI. The Hemoglobin Reference Laboratory, directed by David Chui MD is a national and international reference laboratory for the diagnosis of unusual hemoglobinopathies. The Amyloid Treatment and Research Program, directed by Dr. Seldin, is an international referral center for laboratory and clinical research and multidisciplinary care of patients with systemic amyloidoses.

EDUCATION

The Hematology-Oncology Section provides teaching and training in all aspects of hematology and oncology, at all levels of pre- and post-graduate education. Kevan Hartshorn MD oversees an integrated fellowship training program operated in coordination with faculty at the Boston VAMC, as well as a unique fellowship pathway offering combined training in Geriatric Oncology in collaboration with the Geriatrics Section. In addition, fellows have the opportunity to carry out laboratory research in Hematology under the aegis of a T32 grant for which Adam Lerner MD is the PI. About four fellows each year enter these programs. Fellows also have the opportunity to receive formal training in clinical research through the Clinical Research Training (CREST) Program. Graduates have obtained excellent academic and private practice positions.

Residents as well as students are trained in the inpatient setting on the Hematology-Oncology inpatient service on 7E. Gretchen Gignac MD oversees the operation of the service and its teaching program, which consistently receives excellent reviews. Residents can also do an outpatient elective, rotating through various sub-specialty clinics, or on the consult service.

Medical students learn hematology as part of the Diagnosis and Therapy (DRx) longitudinal course in BUSMII. Nancy Andrea MD organizes a highly regarded lecture and laboratory experience for that course.

MAJOR ACCOMPLISHMENTS IN FY2009

New Faculty

- Timothy Cooley, MD, Physician-Director of the Clinical Trials Office: HIV malignancies; lung and esophageal cancer

- Amy Fallon, MD: breast and gastrointestinal cancer
- George Murphy, PhD: stem cell biology
- Emily Parker NP: breast and GYN oncology
- Mark Sloan, MD: benign and malignant hematology and stem cell transplantation

New Grant Awards (N) and Renewals (R)

Title: CLL/PDE4 Inhibitor (N)

Grant#: N/A

PI: Adam Lerner, MD

Current Grant Year: 07/01/09-06/30/10

Source: Celgene Corporation

Title: Collectins and Innate Defense against Inhaled Pathogens (N)

Grant#: 1 P01 AI083222-01A2

PI: Kevan Hartshorn, MD (Subcontract PI), Barbara Seaton, PhD, (Project PI) Current Grant

Year: 09/01/09-08/31/10

Source: NIH

Title: Effects of Thymic Infiltration of B Cells on Central Immune Tolerance in a Murine Lupus Model (N)

Grant#:UL1RR025771

PI: Xuemei Zhong, PhD

Source: Department of Medicine and BU Bridge Pilot Grant

Title: Genetic Diversity of Sickle Cell Anemia (ARRA) (N)

Grant #: 1RC2HL101212-01

PI: M.Steinberg

Year: 09/30/09 - 08/31/09

Source: NIH

Title: Genetic Modulation of Sickle Cell Disease (Supplement) (N)

Grant #: 3R01HL068970-09S1

PI: M.Steinberg

Year: 08/01/09 - 07/31/10

Source: NIH

Title: Structural Basis of Antiviral Activity of Collectins (N)

Grant#: 1 P01 AI083222-01A2

PI: Kevan Hartshorn, MD (Subcontract PI), Barbara Seaton, PhD, (Project PI) Current Grant

Year: 09/01/09-08/31/10

Source: NIH

Promotions, Awards, and Other Significant Accomplishments

- George Murphy, PhD, and collaborators, received an ARRA RC2 grant for research on iPS cells

- Carol Rosenberg, MD was appointed to the editorial board of the *Journal of Clinical Oncology*
- Vaishali Sanchorawala, MD, was an invited speaker at the XIIth International Myeloma Workshop, in Washington DC on the topic of “Refining therapy for AL Amyloidosis” and also gave medical grand rounds at St. Elizabeth’s Medical Center
- Martin Steinberg, MD, received an ARRA RC2 grant for research on sickle cell genetics, and edited the second edition of the major hemoglobin textbook "Disorders of Hemoglobin: Genetics, Pathophysiology, Clinical Management, 2nd ed. Cambridge University Press.