

## Upstate Cancer Center Rotation Curriculum

The Medical Oncology and Hematology section at the Upstate Cancer Center is responsible for providing specialized care to patients with cancer and blood disorders in 13 Upstate New York counties located around Syracuse, NY. It is an outpatient rotation and is comprised of clinics supervised by attending physicians of the hematology/oncology division of the Department of Medicine. These physicians are supported by nurse practitioners, physician assistants, pharmacists, social workers, case managers, specially trained registered nurses and other support staff.

The section is staffed by the following physicians:

Stephen Graziano, MD – Chief, Division of Hematology/Oncology  
Diana Gilligan, MD – Program Director, Fellowship Program  
Sam Benjamin, M.D. – Associate Program Director, Fellowship Program  
Ajeet Gajra, MD – Cancer Center Medical Director, Division of Hematology/Oncology  
Dorothy Pan, M.D. – Director of Bone Marrow Transplant  
Mijung Lee, MD  
Teresa Gentile, MD  
Bernard Poiesz, MD  
Muhammad Naqvi, MD  
Abirami Sivapiragasam, MD  
Rahul Seth, D.O.  
Amishi Desai, MD

### I. Educational Purpose

A general internist must learn hematology and should be competent in 1) the detection of abnormal physical, laboratory, and radiologic findings relating to the lymphohematopoietic system; 2) recognizing the indications for bone marrow aspirate and biopsy and lymph node biopsy; 3) the initial diagnostic evaluation and management of the hemostatic and clotting systems; 4) indications for transfusion of blood and its separate components; 5) the management of therapeutic and prophylactic anticoagulation; 6) the diagnosis and management of common anemias and; 7) be familiar with the administration, side effects and drug interactions of therapeutic agents commonly used for the treatment of hematologic disorders.

A general internist should also have a wide range of competencies in the evaluation and management of neoplastic disease. Residents must be able to 1) identify patients at risk for malignancy and counsel them regarding risk reduction and screening; 2) recognize and expedite rapid intervention in hematologic and oncologic emergencies; 3) manage neutropenia and immunosuppression; 4) diagnose malignancies promptly, identify neoplasms with a potential for cure and expedite referral of affected patients to the appropriate centers or providers; 5) understand the pharmacology, typical complications and uses of common chemotherapies and newer targeted agents; and 6) understand and participate in the palliative care of patients with common solid and hematologic tumors;

The diagnosis and management of malignancies and hematological conditions is often a complex process. The broad educational goals of this rotation are to refine the understanding of the basic mechanisms of

carcinogenesis, epidemiology, and natural history of malignancies, and to become familiar with the key aspects of the treatment of malignancies. Similarly, the service will contribute to the resident's understanding of the pathogenesis, diagnosis, and treatment of a broad range of common hematological and malignant conditions. An emphasis is placed on practice based learning during this rotation. Many patients participate in clinical trials, and residents will be exposed to both the ethical and pragmatic dimensions that medical research adds to patient care. The residents will have the opportunity to observe the hematologist/oncologist's approach to patient care that is both therapeutic and humanistic. The need for compassion, respect for the patient and family, a "listening spirit", and end of life care are exceptionally modeled in this rotation.

## II. Learning Venue

A. Rotation Description – The residents will see patients ages 18 or greater at the Upstate Cancer Center Monday through Friday with different attendings. On some days certain faculty may see patients with unique or very sub-specialized problems. This affords the resident learner the opportunity to learn about unusual diseases. Residents will see patients in conjunction with the attending and will be expected to present the relevant history, PE and diagnostics of the case.

Educational Goals for PGY-1, 2 and 3's – the goals of this rotation are for residents to: 1) perfect data acquisition skills including history taking with the patient and the family 2) review past medical records and demonstrate an understanding of the importance of primary information, physical examination, pertinent cost effective laboratory and ancillary studies; 3) develop the knowledge base required to systematically approach the management of Heme/Onc outpatients and to be able to improve judgment about when they should be admitted; and 4) participate in the diagnosis, treatment, and long-term management of major oncologic diagnoses, particularly breast malignancy, intrathoracic neoplasms, aerodigestive cancer, head and neck malignancies, melanoma, lymphoma and genitourinary disease.

### B. Teaching Methods

1) Clinical activities – The Upstate Cancer Center is a great learning venue for different hematology/oncology related conditions. The residents get a chance to work with a sub-group of attendings like specialists in lung cancer, breast cancer, colon cancer, malignancies involving the bone marrow, etc. Here they interact with a totally different population of patients who already have these diagnoses and present for either active treatment like chemotherapy or long-term follow-up, which gives the residents a fair idea of how to perform surveillance of these patients. The residents typically see the patients on their own first and then discuss the case and see the patient with the attending again. This gives them a unique opportunity to learn counseling skills and surveillance of these patients as demonstrated by the attending physician.

### 2) Recommended Reading

The residents are referred to the primary texts in these areas:

- Harrison's Textbook of Medicine, 19<sup>th</sup> Edition, sections on cancer and blood disorders
- DeVita, Hellman, and Rosenberg's: Cancer Principles and Practices of Oncology. Ninth Edition. Philadelphia, Lippincott, Williams & Wilkins 2011.
- Abeloff: Clinical Oncology. Fourth Edition. Churchill Livingstone, 2008
- Williams Hematology, Ninth Edition. McGraw-Hill, Inc. 2016.
- Hoffman: Hematology: Basic Principles and Practice. Churchill Livingstone, 2013
  
- Additionally residents are expected to review the MKSAP for Hematology and Oncology
- Access electronic databases for the latest therapeutic recommendations:  
<http://www.cancer.gov>
- <http://www.uptodate.com>

The residents are directed to specific articles of recent interest as the need arises. They also have access to the many hematologic and oncologic clinical research protocols currently under investigation in the division. Residents are introduced to the Hematology/Oncology division's research trial website where they can review available protocols at [www.upstate.edu/medicine/cancertrial](http://www.upstate.edu/medicine/cancertrial)

3. Unique Learning Opportunities

- Tumor Board: An hour-long monthly institutional conference that addresses a specific disease questions and involves medical oncologists, radiation oncologists, pathologists, radiologist and the pertinent surgical specialists. They include GU, Head and Neck, Melanoma, GI, Breast and Thoracic Oncology Program (TOP).
- Hematology/Oncology Lecture Series: Didactic conference held twice a week at 4 pm each Tuesday and Wednesday, attended by hematology/oncology attendings, hematology/oncology fellows, radiation oncology attendings, radiation oncology residents, internal medicine residents and medical students.
- Hematopathology Conference: An hour long conference, held at 4 pm every Monday, provides an interface between medical oncologists and hematopathologists. Bone marrow aspirates, biopsies and flow cytometry findings in various hematologic malignancies are discussed. Patients with complex coagulopathies and benign hematologic diseases are discussed as well.
- Oncology-Pathology Conference: A monthly conference held every last Wednesday of each month at 4 pm. Attended by medical oncologists and pathologists. Tissues obtained as a result of biopsies, surgical resection specimen, fine needle aspirates etc. are discussed. When pertinent results of immunostaining, FISH testing, molecular profiling and gene testing are also shown and briefly discussed.
- Bimonthly Research Meeting: This meeting is held every two months in which clinical trials (including intergroup trials), and research protocols are discussed.
- Clinical research and national randomized trials: As described above.

**III. Educational Content**

Advance planning and management of end-of-life issues
Breast cancer (pre- and postmenopausal)
<i>Dermatologic</i>
Actinic keratosis (see also Dermatology)
Basal cell carcinoma (see also Dermatology)
Melanoma (see also Dermatology)
Squamous cell carcinoma (see also Dermatology)
<i>Gastrointestinal</i>
Cancer of the anus
Cancer of the colon, rectum
Cancer of the esophagus
Cancer of the gallbladder, bile ducts
Cancer of the pancreas
Cancer of the stomach
Hepatoma
Metastatic disease to various sites

<i>Genitourinary</i>
Cervical dysplasia and cancer
Endometrial cancer
Kidney cancer
Ovarian cancer
Prostate cancer
Testicular cancer
Ureter, bladder cancer
<i>Head and neck</i>
Cancer of the head, neck
Cancer of the parathyroid
Cancer of the thyroid
<i>Hematologic malignancies and lymphoma</i>
Chronic lymphocytic leukemia
Hodgkin's and non-Hodgkin's lymphomas
Leukemia, acute
Multiple myeloma
Myelodysplastic syndrome
Management of pain, emesis, and nutrition
<i>Neurologic</i>
CNS lymphoma
Metastatic disease to the CNS
Primary brain tumors
Nutrition in malignancy
<i>Oncologic emergencies</i>
Depressed CNS function due to brain malignancy
Hypercalcemia
Pericardial tamponade
Renal failure due to uteral obstruction
Spinal cord compression
Tumor lysis syndrome
<i>Pulmonary</i>
Bronchial carcinoid
Cancer of the lung
Mediastinal tumors
Pleural malignancy
Superior vena cava syndrome
Hemochromatosis
Hemostasis and thrombosis
Abnormal coagulation (abnormal prothrombin and partial thromboplastin times)
Anticardiolipin antibody syndrome
Anticoagulation, fibrinolysis (therapeutic)
Disseminated intravascular coagulation
Hypercoagulable state
Hyperviscosity syndrome
Platelet disorders

Platelet dysfunction  
Thrombocytopenia  
Thrombocytosis  
Leukocyte disorders  
Leukemoid reaction  
Immunosuppression  
Neutropenia  
Myeloproliferative disorders  
Chronic myelogenous leukemia  
Polycythemia vera  
Primary Thrombocytosis  
Neoplasia (see also Oncology)  
Hodgkin's and non-Hodgkin's lymphomas  
Leukemia, acute  
Myelodysplastic syndrome  
Myeloid metaplasia  
Polycythemia, secondary  
Red Cell Disorders  
Anemia  
Hemoglobinopathy (e.g. sickle cell)  
Transfusion therapy

**IV. Method of Evaluation** – Evaluations are based on the six core competencies. All team members are expected to complete formal evaluations at the end of each rotation using our web based E-value evaluation software. Residents are evaluated by the attendings.

**V. Rotation Specific Competency Objectives – see link to competencies document**

Patient care - A unique opportunity to provide specialized care to often seriously ill patients. It is very important to be able to decide if the patient can still be managed as an outpatient or needs to be admitted for further management, being too unstable to remain an outpatient.

Medical Knowledge - This is a valuable opportunity for residents to review classic literature in the management of common hematologic and malignant conditions.

Professionalism - Underscores the values of humanism in medicine and need for respect and compassion towards patients and families.

Interpersonal and communication skills - A great opportunity to establish effective therapeutic relationships with patients and families in an environment where concern and involvement are typically high; An opportunity to build on listening and non-verbal skills; Opportunity to gain experience with the “bad news discussion” through role modeling by faculty.

Practice-based learning – Hematology/oncology is one of the fastest changing specialties and challenges residents to be proficient in literature searches and evidence based medicine. In addition residents will participate in the care of patients on research trials. Residents have the opportunity to familiarize themselves with the use of web-based resources to obtain the latest information regarding treatment and available clinical trials since the field is constantly evolving.

System based practice – Residents are expected to work for safe and appropriate follow up in this patient population that often has multiple different medical/surgical disciplines involved in their care. There is also increased collaboration with nursing staff especially in the areas of chronic pain management, coordination of care and close observation of treatment side effects.

Reviewed and Revised by: Sam Benjamin, MD  
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