

CURRICULUM ON HEMATOLOGY AND ONCOLOGY

Internal Medicine Residency Program St. Vincent Charity Hospital/ CWRU

Faculty representatives: Jon Reisman, MD, Emmanuel Elueze, MD, Srinivas Merugu, MD
Resident representative: Manju Pillai, MD

Revision Date: 07/24/2008

Approval Date: 07/24/2008

I. Educational Purpose and Goals

Cancer is the second leading cause of death in the US, and hematologic abnormalities are frequent in medical patients. Internists must therefore be familiar with the diagnosis and care of hematologic and oncologic conditions. Through this mandatory rotation, residents will become familiar with common elements of the history, physical, differential diagnosis, and evaluation of hematology/oncology patients. Internists must be comfortable with prevention, screening, initial diagnostic evaluation and management, indications for prompt referral, and appropriate co-management of a plethora of hematologic and oncologic conditions. They must also be knowledgeable regarding indications for transfusion of blood components, management of neutropenia and immunosuppression, care for treatment-related side effects and palliative care.

II. Principal Teaching Methods

- 1) Supervised Direct Patient Care Activities:
 - a) The resident will evaluate outpatient continuity cancer patients, hospitalized hematology-oncology continuity patients, and hospitalized patients in need of hematology-oncology consultation. All patients will be presented to the attending physician who will fully supervise the resident's care decisions. With faculty guidance as necessary, the resident will construct a differential diagnosis and plan further diagnostic studies and treatment. Residents perform as consultants in both the inpatient and outpatient setting, with full supervision of the consultative plan by the attending physician.
 - b) Residents will also attend outpatient chemotherapy infusion center activities and assist with patient care activities but will not write chemotherapy orders.
 - c) Residents will perform diagnostic and therapeutic procedures and studies, as appropriate, with the guidance and supervision of the Hematology/Oncology and Pathology faculty. Residents may perform supervised interpretation of diagnostic studies, including peripheral blood smears, bone marrows, and biopsy specimens.
- 2) Didactic Lectures: Residents will participate in monthly blood rounds and tumor conference.

- 3) Independent study: Residents are recommended to independently review reading materials, journal articles and other relevant standard medical texts.

III. Educational Content

a. Mix of diseases

- i. The resident will learn the pathophysiology, prevention, evaluation and management of common hematology problems including: anemia and abnormalities of peripheral blood smear, hemoglobinopathies, bleeding, bruising, petechiae, family history of anemia or bleeding disorder, lymphadenopathy, pallor or fatigue, recurrent infections, fever/neutropenia, splenomegaly, venous or arterial thrombosis, polycythemia, neutropenia, leukocytosis, thrombocytopenia, thrombocytosis, coagulopathy, and common hematologic malignancies.
- ii. The resident will learn the pathophysiology, prevention, evaluation and management of common oncology problems including: ascites, bleeding, bowel obstruction, cough, hoarseness, hemoptysis, lymphadenopathy, soft tissue mass, organ enlargement, pleural or peritoneal effusion of unknown cause, sensory polyneuropathy, superior vena cava syndrome, weight loss, lung cancer, breast cancer, colorectal cancer, prostate cancer, pancreatic cancer, urinary tract malignancies, uterine (including cervical) cancer, lymphoma, gastric cancer, ovarian cancer, skin cancer (including melanoma), head and neck cancers, and esophageal cancer.

b. Patient characteristics: Adult patients from diverse socioeconomic backgrounds with a predominance of African-Americans with limited income.

c. Learning venues: Type of clinical encounters, procedures and services

- i. Location: The resident will see patients at St. Vincent charity hospital for inpatient consults. Ambulatory hematology -oncology care, chemotherapy infusion, and outpatient procedures all occur at the medical office building in SVCH. Residents have meaningful patient care responsibilities throughout.
- ii. Procedures learned: approach to interpreting peripheral blood smears, electrophoresis and bone marrow biopsy, including demonstration of normal findings and common abnormalities.
- iii. Ancillary services interacted with: oncologic nurse specialists.

d. Structure of rotation:

- i. Residents are expected to be present for standard weekday clinical duties as noted on the weekly schedule below, with no weekend rounds or night call for oncology. They may have to work one night in the month as night float.

- ii. First Day Protocol: Page Dr Reisman after morning report, discuss your expectations and curriculum.
- iii. A standard weekly schedule is as noted:

Day		Assignment
Monday	7:30 - 8:30 AM 8:30 AM (1 st week only) 9 AM – noon 12 - 1 PM 1 - 5 PM	Morning report Meet with Dr Reisman to review the curriculum and schedule inpatient/outpatient clinical assignments. Clinical assignments Noon Conference: 6W auditorium Clinical assignments [oncology clinic, consults, or continuity clinic]
Tuesday	8:30 AM – 11:30 Noon - 1 1 - 5:00 PM	Clinical assignments /Chemotherapy Noon Conference Clinical assignments [oncology clinic, consults, or continuity clinic]
Wednesday	8:30 - Noon Noon - 1 Pm 1PM - 5PM	Clinical assignments /Chemotherapy Medicine Grand Rounds Clinical assignments [oncology clinic, consults, or continuity clinic]
Thursday	8:30 AM – 11:30 Noon – 1 PM 1PM - 5PM	Clinical assignments Noon conference/Tumor conference/blood rounds Clinical assignments [oncology clinic, consults, or continuity clinic]
Friday	8:30AM - Noon Noon - 1PM 1PM - 5PM	Clinical assignments /Chemotherapy Morbidity & mortality conference Clinical assignments [consults or continuity clinic]
Weekend	No assigned duties	

IV. Principal Ancillary Educational Materials:

- a) Oxford handbook of clinical haematology, 2nd edition 2004.
- b) Clinical Hematology, Theory and procedures, 4th edition, Mary Louise Turgeon. 2004
- c) Williams Hematology, 6th edition 2001.
- d) UpToDate online
- e) Handbook of clinical hematology-Griffin P. Rodgers MD, Neal S. Young (Return to Dr Reisman at the end of rotation)
- f) Hematology clinical principles and applications, 3rd edition. 2007
- g) Wintrob's clinical Hematology, volume 1&2, 10th edition 1998.

V. Methods of Evaluation

- a. **Resident Performance** - Faculty complete competency-based electronic resident evaluation forms provided by the Residency office. The evaluation is

shared with the resident, is available for on-line review by the resident at his/her convenience, and is sent to the residency office for internal review. The evaluation is part of the resident file and is incorporated into semiannual performance reviews for directed resident feedback.

- b. **Program and Faculty Performance** - Upon completion of the rotation, residents complete a service evaluation form commenting on the faculty, facilities, and service experience. These evaluations are sent to the residency office for review and the attending faculty physician receives anonymous copies of aggregated evaluation results when sufficient evaluations are present to protect resident confidentiality. The Training and Evaluation Committee reviews results annually.

VII. Rotation Specific Competency Objectives - By the completion of the rotation, the resident will be able to:

a. Patient Care:

- i. Develop a thorough and reliable database for patients with a variety of hematologic and oncologic problems. Depending on the database, residents will develop a complete and accurate problems list for each patient, including relevant psychosocial problems.
- ii. Construct a complete differential diagnosis for a wide variety of medical problems encountered by patients in the hematology/oncology practice.
- iii. Select appropriate hematologic/oncologic diagnostic studies and understand the significance of their results.
- iv. Perform common diagnostic studies and, as appropriate, appreciate their difficulty, the impact on patients, and advantages and shortcomings of the studies.
- v. Correctly interpret peripheral blood smears demonstrating normal findings and common abnormalities.

b. Medical Knowledge

- i. Reflect satisfactory understanding of the common hematologic and oncologic conditions noted above under the Educational Content.
- ii. Understand the indications and limitations as well as technical aspects of common diagnostic procedures including:
 - 1. Bronchoscopy and mediastinoscopy
 - 2. Open lung biopsy and mediastinotomy
 - 3. Mammography

4. Needle aspiration (breast and others)
 5. Breast biopsy and axillary node dissection
 6. Bone marrow aspiration and biopsy
 7. Upper and lower GI endoscopy
 8. Prostatic ultrasound and biopsy (transrectal and TUR)
 9. Nuclear imaging studies, including PET
- iii. Understand the indications, limitations, and technical aspects (lab and clinical) of transfusion of blood products.
- iv. Understand the basic principles of major modalities of cancer treatment including:
1. Chemotherapy
 2. Surgical treatment
 3. Radiation therapy
 4. Immunotherapy
- vi. Understand the importance of adequate symptom management and demonstrate knowledge of specific techniques for control of pain, nausea, and anxiety.
- vii. Medical decision making and medical management: By completion of the rotation, residents should:
1. Integrate history, physical exam, and diagnostic studies to formulate a differential diagnosis, diagnostic plan, and initial management plan for common hematologic and oncologic syndromes:
 - a. anemia and other cytopenias
 - b. disorders of homeostasis and clotting
 - c. newly diagnosed common tumors (breast, colon, prostate, lung, and hematologic malignancies)
 2. Under supervision, properly order transfusion of blood products
 3. Under supervision, provide appropriate palliative care

c. Interpersonal and Communication Skills

- i. Demonstrate satisfactory communication skills necessary for the care of the dying patient and his/her family.
- ii. Demonstrate clear and effective communication in the role of consultant.

d. Professionalism

- i. Exhibit consistently responsible, sensitive, and ethical behaviors.
- ii. Demonstrate punctuality and personal responsibility for attendance at learning opportunities.
- iii. Competently work with patients regarding advanced directives, DNR status, futility, and withholding or withdrawing therapy.

e. Practice Based Learning and Improvement

- i. Understand the design of oncologic trials and the implications for clinical practice.
- ii. Demonstrate a commitment to continuous improvement, both in personal development and in a constructive approach to the clinical curriculum and clinical operations.
- iii. Demonstrate critical appraisal of literature relating to hematology-oncology care, and constructively participate in small group discussions, including journal club.
- iv. Demonstrate active case-based reading.

f. Systems Based Practice

- i. Demonstrate satisfactory knowledge of systems of care available for the care of the dying patient and his/her family, including the use of advance directives and hospice care.
- ii. Integrate care with nurses, ancillary staff, infusion staff, social workers and faculty to contribute to efficient and effective clinic care.
- iii. Demonstrate understanding of the circumstances under which the general internist should consult other health care professionals, including hematology-oncology subspecialists, surgeons, radiation oncologists, nutritionists, etc.