

HEMATOLOGY-ONCOLOGY CURRICULUM

TARGET: PGY 1-3

Updated January 2012

A. EDUCATIONAL GOALS AND OVERVIEW: Inpatient Hematology-Oncology Ward Service

The overall purpose of the Hematology-Oncology Inpatient Ward Rotation is to train residents to competently care for complicated, hospitalized patients presenting with acute signs and symptoms of leukemia or aggressive lymphoma, undergoing treatment with inpatient treatment protocols, or experiencing cancer treatment-related side effects. They will learn to recognize the common presenting signs and symptoms of oncologic emergencies, to perform the standard diagnostic evaluation to better define the causative disorder and implement early intervention and longer-term management, to provide supportive care for malignancies and common toxicities of chemotherapy and radiation therapy, and to participate in the team approach to the transition of terminal patients to palliative care.

Areas of particular importance include:

- Diagnosis and staging of common solid tumors, leukemias and lymphomas as a basis for determining therapeutic intervention.
- Basic principles of cancer therapy including **chemotherapy, surgery and radiation therapy**, and their combination, particularly for treatment with curative intent.
- The specific mode of action of anti-cancer therapy, including cytotoxic chemotherapy, hormonal, biologic, and targeted therapy.
- Specific goals of cancer therapy, e.g. curative or palliative.
- Supportive care for disease-specific and chemotherapy complications including myelosuppression, infection, hemorrhage, nausea and vomiting, mucositis, diarrhea, renal and cardiac failure, transfusion component support.
- Basic principles of tumor biology.
- Diagnosis and treatment of hematologic and oncologic emergencies.
- Social, psychological and financial impact of a diagnosis and/or terminal prognosis of cancer.
- Long-term complications of cancer and its therapy.
- Principles of management of chronic pain and the use of narcotic analgesics and adjunctive
- Chemotherapy and biologic agents, including management of toxicities associated with the use of these treatments.
- Principles of terminal care of patients, including hospice programs and the medical and ethical issues associated with fatal diseases.

B. ROTATION DESCRIPTION AND STRUCTURE

Training will take place at the Olive View-UCLA Medical Center. On the inpatient Hematology-Oncology Ward service, housestaff will be responsible for the care of patients with malignancies requiring inpatient administration of chemotherapy, biologic agents, or chemoradiation therapy, treatment and supportive care of patients with acute leukemias and lymphomas, management of acute toxicities resulting from the underlying malignancy or its treatment, and end of life care. Trainees will be supervised by 1 faculty member from Hematology-Oncology, and 1 Hematology-Oncology fellow, and interact with our collaborating palliative care faculty, Dr. Katherine Yu. They will attend weekly bone marrow rounds to review all bone marrows performed on patients on service with a Pathology Faculty. Attendance at division teaching conferences such as Multidisciplinary Lymphoma Conference (monthly) and Tumor Board (weekly), Journal Club (monthly), Hematology-Oncology Curricular Review Conference (weekly), and fellow teaching conferences (biweekly), is recommended as clinical duties permit.

C. OBJECTIVES (By RRC competency and PGY level)

At the completion of this Hematology-Oncology curriculum the resident will be able to demonstrate the following competencies:

1. Medical Knowledge

Note: The Medical Knowledge objectives of this curriculum are comprehensive. It is understood that residents will focus their study on the medical conditions of the patients they are exposed to during the rotation. They will receive didactics from the supervising attendings 2-4 times weekly, on topics pertinent to service patients. Residents should also enhance their medical knowledge in the other areas listed below. Exposure to additional patients and conditions, supplemented by individual study, should take place on other Hematology and Oncology rotations during the residency. Competency with all of the Medical Knowledge objectives is not expected until the end of the 3-year training program.

At the end of their training, residents will demonstrate an appropriate knowledge of the basic and clinical sciences underlying the practice of Hematology and Oncology, understand complex relationships and mechanisms of disease, and recommend appropriate diagnostic and basic treatment options for the following medical conditions (*PGY 1 – basic knowledge; PGY 2/3 – advancing knowledge; by the end of the 3rd year, a resident should be able to independently implement an effective diagnostic and treatment plan or know how and when to appropriately refer*):

a) HEMATOLOGY DISORDERS:

1. General concepts:

- Molecular biology of cancer: gene regulation, oncogenes, growth factors, chromosomal abnormalities
- Principles of diagnosis including bone marrow biopsy, flow cytometry and cytogenetics.
- Staging and prognosis
- Choice of treatment modalities and administration of chemotherapy.
- Evaluation of response to therapy.
- Indications for stem cell transplantation
- Indications for blood product transfusion

2. Clinical conditions

- Acute myeloid leukemia
- MDS
- Acute promyelocytic leukemia
- Acute lymphoblastic leukemia
- Chronic lymphocytic leukemia
- Hairy cell leukemia
- Non-Hodgkin Lymphoma e.g. diffuse large B cell lymphoma, Burkitt's lymphoma, lymphoblastic lymphoma, primary CNS lymphoma, follicular lymphoma
- Hodgkin Lymphoma
- T cell lymphoma
- Waldenstrom's macroglobulinemia
- Multiple Myeloma
- Amyloidosis
- HIV associated malignancies
- Benign disorders: Hemophilia and von Willebrand Disease, disseminated intravascular coagulation, autoimmune hemolytic anemia, immune thrombocytopenia, aplastic anemia

b) ONCOLOGY DISORDERS

1. Oncologic Emergencies

- Tumor lysis syndrome
- Hypercalcemia
- Spinal cord compression
- Brain metastasis
- Superior vena cava syndrome
- Pericardial tamponade
- Hyperviscosity

2. Solid tumors requiring inpatient therapies: General treatment approach, conveying goals and risks of therapy, and management of anticipated complications (e.g. febrile neutropenia, thrombocytopenia, anemia).

- Head and Neck Cancer: Inpatient chemotherapy protocols, concurrent chemoradiation therapy, nutritional support, management of nausea, vomiting, pain, mucositis
- Testicular cancer: Inpatient chemotherapy, complication management
- Esophageal cancer: Tri-disciplinary treatment approach combining chemotherapy, radiation therapy, surgery, concurrent chemoradiation therapy
- Anal cancer: Tri-disciplinary treatment approach, disease staging including CT/PET/EUS, Gynecologic Cancers: Ovary, Gestational Trophoblastic Disease: Role of surgical debulking, intraperitoneal administration of chemotherapy
- Sarcoma: Tri-disciplinary treatment approach, inpatient chemotherapy protocols

c) Supportive Care of Cancer Patients

- Use of bisphosphonates
- Management of effusions, ascites
- Approach to Pain Management
- Management of chemotherapy induced emesis, diarrhea, and constipation
- Appropriate use of hematopoietic growth factor therapy
- Management of febrile neutropenia
- Management of anemia, thrombocytopenia
- Anticipate late complications of cancer treatment e.g. cardiac, pulmonary, secondary malignancies, gonadal dysfunction

d) End of Life Management: Defining intervention goals, educating patient and family on symptom management, ensuring safety and comfort during transition to home or facility, appropriate documentation including POLST form.

2. PATIENT CARE

- Complete an interview, physical exam, and patient data review which is accurate and appropriate for the patient (PGY 1-3)
- Generate differential diagnosis to explain the presenting findings and symptoms.
- Create appropriate assessment and plan therapeutic intervention based on interpretation of available data (PGY 1 – basic skills, with assistance; PGY 2/3 – advancing skills, towards independence as appropriate).
- Demonstrate sound judgment, insight and prioritization skills (PGY 1-3).

- Safely and proficiently perform medical procedures (lumbar puncture, arterial puncture, paracentesis, thoracentesis) that minimize patients' discomfort and maintain sterility (PGY 1-3).

3. INTERPERSONAL AND COMMUNICATION SKILLS

- Communicate effectively with the primary outpatient provider and consultants contributing to the patient's care, verbally and in writing (PGY 1-3).
- Work effectively within a multidisciplinary team including nursing specialists and social workers.
- Communicate effectively with the patients and their families specifically with regard to patient's Hematologic or Oncologic diagnosis in order to educate and counsel (PGY 1-3).
- Collaborate with patient to complete POLST documentation.

4. PROFESSIONALISM

- Demonstrate respect, compassion, integrity, and honesty (PGY 1-3) to colleagues, nursing and professional staff, and patients and their families.
- Model responsible and ethical behavior, including acknowledgement of errors (PGY 1-3).
- Consider the needs of the patient/family, primary provider, colleagues and hospital staff (PGY 1-3).
- Show sensitivity to different cultural and socioeconomic backgrounds (PGY 1-3).
- Avoid judgmental behaviors (PGY 1-3).

5. PRACTICE-BASED LEARNING AND IMPROVEMENT

- Demonstrate a commitment to self-assessment and improvement by listening to and incorporating feedback (PGY 1-3)
- Effectively use information technology (e.g. computer or PDA resources) and an EBM approach.
- Research and discuss relevant literature with the team or consulting service (PGY 1-3).

6. SYSTEMS-BASED PRACTICE

- Effectively access hospital/clinic resources; appropriately coordinate inpatient care with subsequent outpatient f/u care (PGY 1-3).
- Delineate clear relationships between the consult service and the primary team (PGY 1-3).

- Complete charting requirements and procedure notes (date/time/sign all notes, write legibly, no unapproved abbreviations) (PGY 1-3).
- Understand roles of other DHS facilities and Medi-Cal facilities in providing tertiary services not available at OVMC (PGY 1-3) such as stem cell transplantation, Omayya reservoir placement, acute neurosurgical, cardiothoracic, or orthopedic interventions.

D. TEACHING METHODS

- Attendings and fellows will be responsible for teaching housestaff during the rotation, during daily teaching rounds where the diagnosis, common complications of cancer, and the therapeutic modalities used to treat these patients will be addressed as part of the care plan.
- Attending rounds will include case-based didactic discussions and bedside teaching of physical examination and interview skills.
- Housestaff are expected to supplement their learning with additional reading on the diseases encountered.
- Housestaff will attend teaching conferences: Bone Marrow Rounds, Surgical Tumor Board, Gynecologic Oncology Tumor Board, Lymphoma Conference, Multidisciplinary Breast Conference, Hematology-Oncology Journal Club, Hematology-Oncology Curriculum Review Conference, as permitted by patient care responsibilities.
- Internal Medicine Noon Conference attendance is mandatory.

E. EDUCATIONAL RESOURCES

- Topic-specific, electronic, pdf-based library maintained in the Heme/Onc fellow's office.
- Library of textbooks and monographs maintained in the Heme/Onc fellow's office.
- Web-based resources maintained by professional societies for hematological and oncologic disorders.
- Internet access to major journals in the fields on Hematology and Oncology.
- Online EBM resources are available in the Library and the housestaff lounge.
- Dual headed microscope in Heme/Onc fellows' office.
- Multi-headed microscope for review of peripheral blood smear and bone marrow studies

F. MONITORING AND EVALUATION

- Attending physicians will give continuous verbal feedback on the resident's performance during the rotation.
- Attendings and fellows will directly observe interaction with patients and their families, colleagues, and support staff.
- The attending and fellow(s) will submit a written evaluation on housestaff performance on the aforementioned objectives and competencies at the end of the rotation.
- A supervising physician will complete a computerized evaluation form after each procedure performed to document satisfactory competency.
- Yearly in-service examinations will evaluate medical knowledge.