

DEPARTMENT OF PEDIATRICS  
NATIONAL CAPITAL CONSORTIUM PEDIATRIC RESIDENCY PROGRAM

**PEDIATRIC HEMATOLOGY/ONCOLOGY ROTATION**

Sept 1, 2020

1. DURATION OF ROTATION: One (1) block/four (4) weeks.

2. ELIGIBILITY: PL-2, or 3, MS4

3. POSITION: One rotator per block unless authorized.

4. FACILITIES USED:

Pediatric Hematology/Oncology Clinic, WRNMMC; 4<sup>th</sup> Floor America Building (Building 19)  
Pediatric Clinic, Ft Belvoir; 1<sup>st</sup> Floor

5. TEACHING STAFF:

- a. COL Dina Parekh MD  
Chief, Pediatric Hematology/Oncology Service, WRNMMC  
Staff, Pediatric Hematology/Oncology, WRNMMC
- b. COL(ret) Kip R. Hartman, MD  
Staff, Pediatric Hematology/Oncology, WRNMMC
- c. COL Ken Lieuw MD PhD  
Staff, Pediatric Hematology/Oncology, WRNMMC
- d. LtCol Allen Stering MD  
Staff, Pediatric Hematology/Oncology, WRNMMC
- e. LtCol Susan Whiteway MD  
Staff, Pediatric Hematology/Oncology, WRNMMC  
Program Director, Pediatric Heme/Onc Fellowship
- f. Maj Rebecca Clark  
Staff, Pediatric Hematology/Oncology, WRNMMC
- g. Maj Rich Zanetti MD MPH  
Staff, Pediatric Hematology/Oncology, WRNMMC  
Associate Program Director, Pediatric Residency
- h. LCDR Matthew Gianferante MD  
Staff, National Institutes of Health  
Staff, Pediatric Hematology/Oncology, WRNMMC

6. DIDACTICS:

- a. Morning Report and Lecture
- b. Monthly Department Journal Club
- c. Twice Monthly Department Tumor Board
- d. Fellow Didactics (board review, lectures)
- e. Informal lectures and presentations (chalk-talks)

7. ENTRUSTABLE PATIENT ACTIVITIES:

EPAs are activities that providers are trusted with being able to diagnose and manage independently at the end of their training. Rotation EPAs are the conditions which residents should gain competence in managing in order to be trusted to manage independently by the end of their graduation from residency.

Provide Consultation to Other Health Care Providers Caring for Children (ABP EPA 1)

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SUBJECT: Pediatric Hematology/Oncology Rotation

- Through new consult patients the resident will be instructed in/demonstrate the following:
  - Clarifying and focusing clinical question to be addressed
- Gathering essential information from referring physicians
- Communicating findings and recommendations to the patient, family and source of the referral

Provide Recommended Pediatric Health Screening (ABP EPA 2)

- Through seeing new consult and follow up patients with anemia the resident will be instructed in/demonstrate the following:
  - Apply knowledge in selection and interpretation of screening tools and tests

Manage Patients with Acute, Common Diagnoses in an Ambulatory, Emergency, or Inpatient Setting (ABP EPA 4)

- Through management of acute visits for hematology and oncology patients, the resident will be instructed in/demonstrate the following:
  - Assessing the severity of illness and using judgment as to whether or not immediate or emergency actions, stabilization, or transfer to a higher acuity facility are necessary for treatment of urgent or life-threatening problems
  - Gathering essential information through history, physical examination and initial laboratory evaluation
  - Communicating and documenting the therapeutic plan and clinical reasoning in a manner that is transparent to all members of health care team
- Examples include but are not limited to: Cough, dehydration, febrile illness, headache, medication adverse effects, musculoskeletal pain, rash, serious or life threatening infections, oncologic conditions

Provide a Medical Home for patients with complex, chronic, or special health care needs (ABP EPA 6)

- Through routine follow up of patients with the following conditions: sickle cell disease, congenital anomalies, and oncology patients; and through engagement with embedded psychosocial supports the resident will be instructed in/demonstrate the following:
  - Demonstrating knowledge of key community services and agencies, to facilitate appropriate referral of patients with identified needs and skill to diagnose, refer as needed, counsel and provide health maintenance for medically complex patients
  - Facilitating patient and family centered care in a medical home model in order to emphasize collaboration with an interprofessional team that insures optimal care and empowerment of the patient/family

Manage Information from a Variety of Sources for Both Learning and Application to Patient Care (ABP EPA 11)

- Through independent and directed readings on patients seen in clinic as well as end of rotation presentation, the resident will be instructed in/demonstrate the following:
  - Evaluating the quality of the information retrieved for informing patient care practice or one's own professional development
  - Assessing relevant information in a timely manner to facilitate patient care in the clinical setting
  - Performing queries or searches of appropriate data resources to facilitate timely retrieval of relevant information
  - Interpreting and applying information in the context of clinical practice or one's own professional development
  - Recognizing and managing the ambiguity often inherent in data itself or its interpretation
  - Developing and maintaining proficiency with technology to facilitate patient care

Demonstrate the Ability to Effectively Perform the Common Procedures of the General Pediatrician (ABP EPA 17)

- During rotation will have the opportunity to work on the following skills: lumbar puncture, venipuncture, peripheral IV placement the resident will be instructed in/demonstrate the following:
  - Knowing and understanding the clinical indications for procedures

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SUBJECT: Pediatric Hematology/Oncology Rotation

- Demonstrating the ability to perform the psychomotor skills necessary to safely and effectively perform procedures
- Engage in post procedure management

## 8. COMPETENCY-BASED GOALS AND OBJECTIVES:

### Goal 1: **MEDICAL KNOWLEDGE**

**Normal Versus Abnormal (Hematology/Oncology).** Understand how to determine the difference between normal and pathologic states related to the hematologic and lymphatic systems.

Objectives:

- a. Discuss the changes that occur over time in the hematologic indices in the normal child (e.g., hemoglobin, hematocrit, MCV, etc.).

**Conditions Generally Referred (Hematology/Oncology).** Understand how to diagnose and initiate management of hematologic/oncologic disorders which generally need referral.

Objectives:

- a. Discuss the differential diagnosis and clinical presentation of these conditions:
  1. Anemia (exclusive of common iron deficiency or transient erythropenia)
  2. Abnormal bruising or bleeding (inherited and acquired)
  3. Major complications of inherited bleeding disorders
  4. Hemoglobinopathies (sickle cell and other sickling disorders), including severe pain crisis, fever, stroke, sequestration, and aplastic crises
  5. Urgent conditions in children under treatment for cancer, including fever while on chemotherapy, chicken pox exposure or illness, bleeding
  6. Neutropenia
  7. Thrombocytopenia
  8. An abdominal mass
  9. Increased intracranial pressure due to a suspected brain tumor
  10. Conditions that may predispose to malignancy (e.g., neurofibromatosis, Beckwith-Wiedeman syndrome, retinoblastoma, and familial cancer)

**Common Malignancies.** Understand the presentation, pathophysiology, and prognosis of important malignancies in children and adolescents.

Objectives:

- a. Identify the presenting complaints, principles of current therapy, prognosis, and long term complications due to the disease or therapy for these conditions:
  1. Leukemia (ALL, AML)
  2. Brain tumor
  3. Hodgkin's and Non-Hodgkin's lymphoma
  4. Neuroblastoma
  5. Wilms tumor
- b. For these common pediatric signs and symptoms, describe clinical findings that would warrant screening for malignancy:
  1. Adenopathy
  2. Headache
  3. Limb pain
  4. Hepatomegaly and/or splenomegaly
  5. Persistent fever and malaise
  6. Seizures

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SUBJECT: Pediatric Hematology/Oncology Rotation

7. Weight loss
  - c. Describe common acute side effects of commonly used chemotherapeutic drugs (e.g., cyclophosphamide, vincristine, doxorubicin, and methotrexate).
  - d. Describe common late complications of childhood cancer treatment that may present in childhood or adolescents (e.g., learning disabilities, endocrine suppression, second cancers).

**Iron Disorders.** Understand the appropriate methods of diagnosis and management of a child with disorders relating to iron.

Objectives:

- a. Describe the normal requirements, absorption, and metabolism of iron from birth through adolescence.
- b. Describe and use appropriately laboratory tests to screen for, treat, and follow the therapy of iron deficiency.

**Blood Products.** Understand indications and complications related to the use of blood products.

Objectives:

- a. List the appropriate indications and potential risks of various blood products (red blood cell products, platelet concentrates, coagulation factors).
- b. Be aware of alternatives to blood transfusions, e.g., erythropoietin and other cytokines.
- c. Discuss the reasons for leukofiltration and/or irradiation of blood products.

## Goal 2: **PATIENT CARE**

Demonstrate a family-centered, compassionate, effective, and age appropriate approach toward the evaluation and management of children referred to the pediatric hematology/oncology service.

**Common Conditions Not Referred (Hematology/Oncology).** Understand how to diagnose and manage hematological disorders which generally do not need referral.

Objectives:

- a. Recognize, evaluate, and manage without referral these conditions:
  1. Iron deficiency
  2. Thalassemia trait
  3. Transient erythropenia of infancy or childhood
  4. Minor, common reactions to blood transfusions
  5. Sickle cell trait

**Conditions Generally Referred (Hematology/Oncology).** Understand how to diagnose and initiate management of hematologic/oncologic disorders which generally need referral.

Objectives:

- a. Diagnose, provide initial evaluation and management, and provide appropriate referral of the child presenting with these conditions:
  1. Anemia (exclusive of common iron deficiency or transient erythropenia)
  2. Abnormal bruising or bleeding (inherited and acquired)
  3. Major complications of inherited bleeding disorders
  4. Hemoglobinopathies (sickle cell and other sickling disorders), including severe pain crisis, fever, stroke, sequestration, and aplastic crises
  5. Urgent conditions in children under treatment for cancer, including fever while on chemotherapy, chicken pox exposure or illness, bleeding
  6. Neutropenia

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SUBJECT: Pediatric Hematology/Oncology Rotation

7. Thrombocytopenia
8. An abdominal mass
9. A mediastinal mass
10. Conditions that might predispose to malignancy (e.g., neurofibromatosis, Beckwith-Wiedeman syndrome, retinoblastoma, and familial cancer)

**Iron Disorders.** Understand the appropriate methods of diagnosis and management of a child with disorders relating to iron.

Objectives:

- a. Identify the features of iron deficiency including anemia.
- b. Manage iron deficiency appropriately (e.g., dietary management, replacement therapy, parent education, and follow-up).

**Prevention (Hematology/Oncology).** Understand the pediatrician's role in the prevention of hematologic/oncologic disorders.

Objectives:

- a. Provide dietary counseling to parents about the prevention of iron deficiency.
- b. Counsel patients who have a sickle hemoglobinopathy about the importance of antibiotic prophylaxis and urgency of evaluation for fever.

### Goal 3: **INTERPERSONAL SKILLS AND COMMUNICATION**

Demonstrate effective communication skills with families and patients referred to the pediatric hematology-oncology service. Demonstrate effective communication skills during interactions with nurses and other doctors involved in the care of each patient. Maintain comprehensive and concise written consultations and notes on each patient seen.

### Goal 4: **PROFESSIONALISM**

Demonstrate a commitment to patient care and learning by timeliness, responsibility for patients seen on the service, and sensitivity to cultural diversity.

### Goal 5: **PRACTICE BASED LEARNING AND IMPROVEMENT**

Demonstrate the ability to use the medical literature effectively and cogently in order to evaluate pediatric hematology and oncology conditions and/or symptoms, as well as to modify management plans appropriately based upon the information obtained from the literature. Demonstrate receptiveness to feedback provided during the rotation with appropriate modification of behavior to improve performance.

### Goal 6: **SYSTEMS-BASED PRACTICE**

Demonstrate understanding of cost issues related to pediatric hematology-oncology imaging studies, lab tests, medications and hospitalizations. Demonstrate understanding of health care prevention and maintenance related to pediatric hematology and oncology disease.

### 9. INSTRUCTIONAL PLAN:

The house officer will be given reading assignments on topics related to the individual objectives outlined above. The majority of these topics will be covered in brief didactic sessions.

### 10. REFERENCES:

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- a. Residents will have access to the Pediatric Hematology-Oncology Clinic reference text collection.

11. RESIDENT RESPONSIBILITIES:

The house officers will be responsible for the initial evaluation of outpatient consults, and selected established patients in the pediatric hematology/oncology clinic. They are expected to obtain pertinent history, perform complete physical examinations, and obtain appropriate laboratory/imaging information. They will then present their findings as well as their interpretations of the available data to include a differential diagnosis and treatment plan.

The house officer will be responsible for reading the assigned material, and to discuss the illustrative cases with the clinic staff. The reading material and corresponding cases will be divided into four weekly blocks:

- a. Anemias
- b. Platelet Disorders and Coagulation
- c. Transfusion and Leukemia
- d. Solid Tumors and Chemotherapy

12. METHOD OF EVALUATION:

The resident's proficiency in physical diagnosis, laboratory interpretation, and knowledge will be evaluated during patient encounters in clinic and during case discussions. A formal, prepared case discussion using primary literary sources will also be assessed. Pre and post-tests will be used for learning. During the didactic sessions the residents will be asked to describe the physical diagnosis and interpret lab data relevant to the material being covered. Verbal feedback will be given mid-rotation, and a formal written evaluation will be completed at the end of the rotation. Observations regarding the resident's professionalism, interpersonal skills and communication, and patient care will be obtained from the pediatric hematology-oncology staff, fellows, and nurses.

POC for overall coordination of rotation is Maj Rich Zanetti, MD, MPH.

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Maj Rich Zanetti, MD, MPH  
Pediatric Hematology/Oncology Service

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