

Standard Rotation: Inpatient Pediatrics at UHB NS 42 – Junior Resident

Residents: Pediatric residents at the PL1 level, residents in Family Medicine at the PGY 1 or 2 level.

Prerequisites: none

Primary Goals for this Rotation

GOAL: Common Signs and Symptoms. Evaluate and manage common signs and symptoms associated with acute illness and hospitalization.

Evaluate and manage, with consultation of indicated, patients with signs and symptoms that commonly present to the Inpatient Unit (examples below).

1. General: acute life-threatening event (ALTE), constitutional symptoms, hypothermia, failure to thrive, fatigue, fever without a source, hypothermia, weight loss
2. Cardiorespiratory: apnea, chest pain, cough, cyanosis, dyspnea, heart murmur, hemoptysis, hypertension, hypotension, inadequate respiratory effort, shortness of breath, stridor, syncope, tachypnea, respiratory failure, wheezing
3. Dermatologic: ecchymoses, edema, petechiae, purpura, rashes, urticaria
4. EENT: acute visual changes, conjunctival injection, edema, epistaxis, hoarseness, nasal discharge, stridor, trauma
5. Endocrine: heat/cold intolerance, polydipsia, polyuria
6. GI/Nutrition/Fluids: abdominal masses or distention, abdominal pain, ascites, dehydration, diarrhea, dysphagia, hematemesis, inadequate intake, jaundice, melena, rectal bleeding, regurgitation, vomiting
7. Genitourinary/Renal: change in urine color, dysuria, edema, hematuria, oliguria, scrotal mass or edema
8. GYN: abnormal vaginal bleeding, pelvic pain, vaginal discharge
9. Hematologic: abnormal bleeding, bruising, hepatosplenomegaly, lymphadenopathy, masses, pallor
10. Musculoskeletal: arthritis/arthralgia, bone and soft tissue trauma, limb pain, limp
11. Neurologic: ataxia, diplopia, headache, hypotonia, head trauma, lethargy, seizure, vertigo, weakness
12. Psychiatric/Psychosocial: child abuse or neglect, conversion symptoms

GOAL: Common Conditions. Recognize and manage common childhood conditions presenting to the Inpatient Unit.

Evaluate and manage, with consultation as indicated, patients with conditions that commonly present to the Inpatient Unit (examples below).

1. General: failure to thrive, fever of unknown origin
2. Allergy/Immunology: acute drug allergies/reactions, anaphylaxis, immunodeficiencies (e.g. HIV), recurrent pneumonia, serum sickness, angioedema
3. Cardiovascular: bacterial endocarditis, cardiomyopathy, congenital heart disease, congestive heart failure, Kawasaki disease, myocarditis, rheumatic fever
4. Endocrine: diabetes (including DKA), electrolyte disturbances secondary to underlying endocrine disease
5. GI/Nutrition: appendicitis, bleeding, cholangitis, cholelithiasis, complications of inflammatory bowel disease, gastroenteritis, gastroesophageal reflux, hepatic dysfunction, bowel obstruction, pancreatitis, severe malnutrition

**COMPETENCY BASED CURRICULUM FOR PEDIATRIC RESIDENCY EDUCATION
INPATIENT UNIT JUNIOR RESIDENT AT UHB NS42**

6. GU/Renal: electrolyte and acid-base disturbances, glomerulonephritis, hemolytic-uremic syndrome, nephrotic syndrome, urinary tract infection/pyelonephritis, end-state renal dis.
7. Gynecologic: genital trauma, pelvic inflammatory disease, sexual assault
8. Hematologic/Oncologic: abdominal and mediastinal mass, common malignancies, fever and neutropenia, thrombocytopenia, severe anemia, vaso-occlusive crises and other complications of sickle cell disease
9. Infectious Disease: cellulitis (including periorbital and orbital), cervical adenitis, dental abscess, encephalitis, HIV, infections in immunocompromised hosts, PID/laryngotracheobronchitis, line infections, meningitis (bacterial and viral), osteomyelitis, pneumonia (viral and bacterial), sepsis/bacteremia, septic arthritis, tuberculosis
10. Pharmacology/Toxicology: common drug poisoning or overdose
11. Neurology: acute neurologic conditions (acute cerebellar ataxia, Guillain Barre syndrome, movement disorders), seizures, shunt infections
12. Respiratory: airway obstruction, asthma exacerbation, bacterial tracheitis, bronchiolitis, croup, epiglottitis
13. Rheumatologic: Henoch Schonlein purpura (HSP), juvenile rheumatoid arthritis (JRA), systemic lupus erythematosus (SLE)
14. Surgery: pre- and post-op consultation and evaluation of surgical patients (general, ENT, orthopedics, urology, neurosurgical, etc.), special needs of technology-dependent children (blocked trachea, gastric tube dysfunction)

GOAL: Diagnostic and Screening Procedures. Utilize common diagnostic tests and imaging studies appropriately in the inpatient setting.

1 : Demonstrate an understanding of the common diagnostic tests and imaging studies used in the inpatient setting, by being able to:

1 : Explain the indications for and limitations of each study.

2 : Know or be able to locate age-appropriate normal ranges (lab studies).

3 : Apply knowledge of diagnostic test properties, including the use of sensitivity, specificity, positive predictive value, negative predictive value, false-positive and negative results, likelihood ratios, and receiver operating characteristic curves, to assess the utility of tests in various settings.

4 : Recognize cost and utilization issues.

5 : Interpret test results in the context of the specific patient.

6 : Discuss therapeutic options for correction of abnormalities.

2 : Use common laboratory studies when indicated for patients in the inpatient setting.

1. CBC with differential, platelet count, RBC indices
2. Blood chemistries: electrolytes, glucose, calcium, magnesium, phosphate
3. Renal function tests
4. Tests of hepatic function (PT, albumin) and damage (liver enzymes, bilirubin)
5. Serologic tests for infection (e.g., hepatitis, HIV)
6. C-reactive protein, erythrocyte sedimentation rate
7. Therapeutic drug concentrations
8. Coagulation studies
9. Arterial, capillary, and venous blood gases
10. Detection of bacterial, viral, and fungal pathogens
11. Urinalysis
12. Cerebrospinal fluid analysis
13. Gram stain
14. Stool studies
15. Other fluid studies (e.g. pleural fluid, joint fluid)

**COMPETENCY BASED CURRICULUM FOR PEDIATRIC RESIDENCY EDUCATION
INPATIENT UNIT JUNIOR RESIDENT AT UHB NS42**

16. Electrocardiogram

3 : Use common imaging or radiographic studies when indicated for patients on the inpatient unit.

1. Plain radiographs of the chest, extremities, abdomen, skull, sinuses
2. Other imaging techniques such as CT, MRI, angiography, ultrasound, nuclear scans, contrast studies (interpretation not expected)
3. Echocardiogram

GOAL: Monitoring and Therapeutic Modalities. Understand how to use physiologic monitoring and special technology in the general inpatient setting, including issues specific to care of the chronically ill child.

1 : Demonstrate understanding of the monitoring techniques and special treatments commonly used in the inpatient setting, by being able to:

1. Discuss indications, contraindications and complications.
2. Demonstrate proper use of technique for children of varying ages.
3. Determine which patients need continuous monitoring or special monitoring (e.g., neurological checks).
4. Interpret and respond appropriately to results of monitoring based on method used, age and clinical situation.

2 : Use appropriate monitoring techniques in the inpatient setting.

1. Monitoring of temperature, blood pressure, heart rate, respirations
2. Cardiac monitoring
3. Pulse oximetry

3 : Use appropriately the treatments and techniques used in the inpatient setting.

1. Universal precautions
2. Nasogastric tube placement
3. Administration of nebulized medication
4. Injury, wound care
5. Oxygen delivery systems
6. I.V. fluids
7. I.V. pharmacotherapy (antibiotics, antiepileptics, etc.)
8. Transfusion therapy

4 : Describe key issues in the inpatient and home management of the technology-dependent child with the following care needs:

1. Tracheostomy
2. Chronic mechanical ventilation
3. Chronic parenteral nutrition
4. Gastrostomy tube for feedings
5. Permanent central venous catheter

5 : Recognize normal and abnormal findings at tracheostomy, gastrostomy, or central venous catheter sites, and demonstrate appropriate intervention or referral for problems encountered.

**COMPETENCY BASED CURRICULUM FOR PEDIATRIC RESIDENCY EDUCATION
INPATIENT UNIT JUNIOR RESIDENT AT UHB NS42**

6 : Demonstrate the skills for assessing and managing pain.

1. Use age-appropriate pain scales in assessment.
2. Describe indications for use and side effects of common narcotic and non-narcotic analgesics.
3. Administer medications to control pain in appropriate dose, frequency and route.
4. Describe indications for and use of behavioral techniques and supportive care, and other non-pharmacologic methods of pain control.

GOAL: Pediatric Competencies in Brief: Demonstrate high standards of professional competence while working with patients on the Inpatient Service.

Competency 1: Patient Care.

PGY 1 Pediatric residents on the in-patient rotation should be able to do the following with close supervision:

a) Provide family-centered patient care that is development- and age-appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

b) Use a logical and appropriate clinical approach to the care of hospitalized patients, applying principles of evidence-based decision-making and problem-solving, demonstrating:

1. Careful data collection and synthesis
2. Appropriate orders for vital signs, I & Os, medications, nutrition, activity
3. Well thought-out daily care plans
4. Good clinical judgment and decision-making
5. Execution of careful discharge plans (orders, patient education, followup)

c) Provide sensitive support to patients with acute and chronic illnesses and to their families, and arrange for ongoing support and preventive services at discharge.

Competency 2. Medical Knowledge.

PGY 1 pediatric residents should

a) Understand the scope of established and evolving biomedical, clinical, epidemiological and social-behavioral knowledge needed by a pediatrician; demonstrate the ability to acquire, critically interpret and apply this knowledge in patient care.

b) Demonstrate a commitment to acquiring the base of knowledge needed to care for children in the inpatient setting.

c) Learn to access medical information efficiently, learns to evaluate it critically, and apply it to inpatient care appropriately.

Competency 3: Interpersonal Skills and Communication.

With close supervision, residents should:

a) Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

b) Learn to provide effective patient education, including reassurance, for condition commonly seen on the inpatient service.

c) Participate and communicate effectively as part of an interdisciplinary team, as both the primary provider and the consulting pediatrician (e.g., patient presentations, sign-out rounds, communication with consultants and primary care physicians).

d) Develop effective strategies for teaching students, colleagues, other professionals and laypersons.

e) Maintain accurate, legible, timely and legally appropriate medical records.

Competency 4: Practice-based Learning and Improvement.

With close supervision, residents should

a) Demonstrate knowledge, skills and attitudes needed for continuous self-assessment, using scientific methods and evidence to investigate, evaluate and improve one's patient care practice.

b) Use scientific methods and evidence to investigate, evaluate and improve one's patient care practice

**COMPETENCY BASED CURRICULUM FOR PEDIATRIC RESIDENCY EDUCATION
INPATIENT UNIT JUNIOR RESIDENT AT UHB NS42**

in the inpatient setting.

c) Identify personal learning needs, systematically organize relevant information resources for future reference, and plan for continuing acquisition of knowledge and skills.

Competency 5: Professionalism.

Residents should:

a) Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.

b) Demonstrate personal accountability to the well being of patients (e.g., following-up on lab results, writing high quality notes, and seeking answers to patient care questions).

c) Demonstrate a commitment to professional behavior in interactions with staff and professional colleagues.

d) Adhere to ethical and legal principles, and sensitivity to diversity while providing care in the inpatient setting.

Competency 6: Systems-Based Practice.

Residents should

a) Learn to practice high-quality health care and advocate for patients within the context of the health care system.

b) Identify key aspects of health care systems and cost control in the inpatient setting.

c) When providing care in the inpatient setting, consider cost and resource allocation without compromising quality of care.

d) Take steps to avoid medical errors; work with the health care team to recognize and address systems errors.

Procedures

GOAL: Technical and therapeutic procedures. Describe the following procedures, including how they work and when they should be used; competently perform those commonly used by the pediatrician in practice.

Anesthesia/analgesia: pain management

Arterial puncture

Bladder: catheterization

Central line: use/care

Chest physiotherapy

Intravenous line placement

Lumbar puncture

Medication delivery: IM/SC/ID, inhaled, IV, rectal

PPD: placement

Pulmonary function tests: peak flow meter

Pulse oximeter: placement

Rectal swab

Sterile technique

Suctioning: nares, oral pharynx, tracheostomy

Venipuncture

GOAL: Diagnostic and screening procedures. Describe the following tests or procedures, including how they work and when they should be used; competently perform those commonly used by the pediatrician in practice.

ECG: emergency interpretation

ECG: perform

Electroencephalogram (EEG)

pH probe (Tuttle test)

**COMPETENCY BASED CURRICULUM FOR PEDIATRIC RESIDENCY EDUCATION
INPATIENT UNIT JUNIOR RESIDENT AT UHB NS42**

PPD: interpretation
Monitoring interpretation: cardiac, Holter, Pulse oximetry
Radiologic interpretation: abdominal ultrasound/X-ray, CXR, CT head
Radiologic interpretation: extremity X-ray
Radiologic interpretation: GI contrast study
Radiologic interpretation: MRI of head
Radiologic interpretation: nuclear medicine GI scanning
Radiologic interpretation: renal ultrasound
Radiologic interpretation: skeletal X-ray (incl. abuse)
Radiologic interpretation: skull film for fracture
Radiologic interpretation: sinus films
Source Adapted from Kittredge, D., Baldwin, C. D., Bar-on, M. E., Beach, P. S., Trimm, R. F. (Eds.). (2004). APA Educational Guidelines for Pediatric Residency. Ambulatory Pediatric Association Website.

METHODS

- a. Serve as the primary caretaker for patients admitted or transferred to the Child/Adolescent Unit at KCHC.
 - a. Daytimes weekdays
 - b. Short calls every 3rd to 4th night
 - c. Weekend days and overnight calls several times per month
 - d. Night shift
- b. Attend and participate in departmental conferences
 - a. Resident's Conferences
 - b. Grand Rounds
 - c. Patient Management Conferences
 - d. Radiology Conferences
 - e. Morning Report
 - f. Morbidity and Mortality Conferences
- c. Attend rounds and present and discuss patients
 - a. Work Rounds
 - b. Attending Rounds
 - c. Subspecialty service rounds and consultations
 - d. Chief Resident Rounds
 - e. Sign-out Rounds
- d. Self-directed learning activities and literature search
- e. Small group learning activities with the unit team
- f. Documentation in the medical record

EVALUATION

There will be ongoing formative feedback throughout all activities by all supervisory staff. At the end of the rotation, the attending physician will

*COMPETENCY BASED CURRICULUM FOR PEDIATRIC RESIDENCY EDUCATION
INPATIENT UNIT JUNIOR RESIDENT AT UHB NS42*

constructively discuss the final summative evaluation with the resident. Both the attending and the resident are expected to sign the written evaluation form attesting to the fact its content were discussed. The supervising faculty will subsequently discuss the resident's performance at the monthly house staff affairs committee meeting attended by the program director (or designee) and representative faculty.

- a. Observation for attainment of objectives by:
 - a. Resident peers
 - b. Senior residents
 - c. Chief residents
 - d. Supervising attending faculty
- b. Review of medical records by:
 - a. Senior residents
 - b. Chief residents
 - c. Supervising attending faculty
- c. Presentations during various rounds and conferences
- d. Participation in discussions during rounds and small-group activities
- e. Demonstration of attributes of professionalism
- f. In-training examination performance
- g. Successful performance of procedures and documentation
- h. Nursing, patient and family member comments including compliments and complaints and use of 360 evaluations
- i. Structured clinical observations
- j. Patient outcomes
- k. Involvement in total quality management: performance improvement (QA) trending files, incident reports, risk management reports
- l. Completion of a performance improvement project under the supervision of a pediatric hospitalist and presented at the conclusion of the rotation

The resident is expected to complete and submit an evaluation of the rotation, peers and teaching faculty at the conclusion of the rotation. This evaluation may be submitted anonymously and confidentially.