MARSHALL UNIVERSITY SCHOOL OF MEDICINE
PEDIATRIC RESIDENCY TRAINING PROGRAM

LETTER OF AGREEMENT FOR THE COOPERATIVE TRAINING OF RESIDENTS/FELLOWS FROM MARSHALL UNIVERSITY JOAN C. EDWARDS SCHOOL OF MEDICINE (MUSOM) AND CABELL HUNTINGTON HOSPITAL (Participating Site)

This letter of agreement is an educational statement that sets forth important points of agreement between Marshall University School of Medicine (MUSOM) and Cabell Huntington Hospital. This statement of educational purpose does not affect current contracts and institutional affiliation agreements between the two institutions.

This Letter of Agreement is effective from July 1, 2012, and will remain in effect for three (3) years, or until updated, changed, or terminated by the Pediatric Residency Program and/or Cabell Huntington Hospital. Such changes must be communicated with the MUSOM Office of Graduate Medical Education.

Persons Responsible for Education and Supervision

At MUSOM: Susan Flesher, M.D., Program Director

At Cabell Huntington Hospital:

Joe Evans, MD
Norman Cottrill, DO
Chris Dewese, MD
Jenna Dolan, MD
Brian Dunlap, MD
Pippa Lambros, MD
Amy Lochow, MD
Patricia Lutz, MD
Chaundra Maddox, MD
Sherrie Miranda, MD
Jay Naegele, MD
Jackie Ray, MD
Jessie Shields, MD
Sara Walker, MD
Mark Wippel, MD
Mahmood Heydarian, MD
Jack Stines, MD
The above mentioned people are responsible for the education and supervision of the residents/fellows while rotating at the Participating Site.

1. Responsibilities

The faculty at the Participating Site must provide appropriate supervision of residents/fellows in patient care activities and maintain a learning environment conducive to educating the residents/fellows in the ACGME competency areas. The faculty must evaluate resident performance in a timely manner during each rotation or similar educational assignment and document this evaluation at completion of the assignment.

2. Content and Duration of the Educational Experiences

The content of the educational experiences has been developed according to ACGME Residency/Fellowship Program Requirements and are delineated in the attached goals and objectives for each rotation.

As program director, Dr. Susan Flesher is ultimately responsible for the content and conduct of the educational activities at all sites, including Cabell Huntington Hospital. The program director, Participating Site director and the faculty are responsible for the day-to-day
activities of the residents/fellows to ensure that the outlined goals and objectives are met during the course of the educational experiences.

Rotations may be in two (2) week blocks, but generally rotations are a month in duration.

The day-to-day supervision and oversight of resident/fellow activities will be determined by the specialty service where they are assigned. Debra Chapman, Program Coordinator, is responsible for oversight of some resident/fellow activities, including coordination of evaluations, arrangements of conferences, sick leave, annual leave and benefits.

3. Assignments

MUSOM will provide to Cabell Huntington Hospital, the name of the resident(s)/fellow(s) assigned to the site, the service they will be training on and other relevant information. Residents/fellows will remain on MUSOM’s payroll; remain eligible for all resident benefits, including annual leave, sick leave, and health insurance, etc. Resident’s will be covered under MUSOM’S malpractice policy in the amount of one million dollars per occurrence. The policy also provides tail coverage and legal defense.

4. Responsibility for supervision and evaluation of residents

Residents will be expected to behave as peers to the faculty, but be supervised in all their activities commensurate with the complexity of care being given and the resident’s own abilities and level of training. Such activities include, but are not limited to the following:

- Patient care in clinics, inpatient wards and emergencies
- Conferences and lectures
- Interactions with administrative staff and nursing personnel
- Diagnostic and therapeutic procedures
- Intensive Care unit or Ward patient care

The evaluation form will be developed and administered by the Pediatric Residency Program. Residents will be given the opportunity to evaluate the teaching faculty, clinical rotation and Participating Site at the conclusion of the assignment.

5. Policies and Procedures for Education

During assignments to Cabell Huntington Hospital, residents/fellows will be under the general direction of MUSOM’s Graduate Medical Education Committee’s and the Pediatric Residency Program’s Policy and Procedure Manual as well as the policies and procedures of the Participating Site for patient confidentiality, patient safety, medical records, etc.
7. Authorized Signatures

Cabell Huntington Hospital

Susan Flesher, M.D., Site Director

Hoyt Burdick, MD
VP Medical Affairs

Brent Marsteller
President/CEO

MUSOM

Susan Flesher, MD
Program Director

Paulette S. Wehner, MD, DIO
Senior Associate Dean for GME

Joseph Shapiro, MD
Dean

Date

8/29/12
9/13/12
9/14/12
8/29/12
8/21/12
9/25/12
Goals and Objectives for the
MUSOM Pediatric Residency Program

Inpatient Pediatrics

Description:
The resident will gain experience, knowledge, and skills related to the care of children in the inpatient setting. Patients will be admitted from the University Peds outpatient departments, CHH ED, PICU transfer, private office settings, and transports from referring hospitals.

The residents will evaluate and prioritize the care of these patients, perform history and physicals, and provide appropriate care plans through discharge including follow-up outpatient management plans. PL-1 residents will initiate contact and forward their assessment and plan to the senior resident. The senior residents supervise care and complete discussion of patient care including differential diagnosis and treatment plan with attendings on admission and during daily attending rounds.

Note:
The goals and objectives described in detail below are not meant to be completed in a single one month block rotation but are meant to be cumulative, culminating in a thorough and complete inpatient experience at the end of residency.

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, excessive crying, failure to thrive, fatigue, fever without localizing signs, hypothermia, weight loss

2. Cardiorespiratory: apnea, chest pain, cough, cyanosis, dyspnea, heart murmur, hemoptysis, hypertension, hypotension, inadequate respiratory effort, rhythm disturbance, shock, 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/Oncologic: abnormal bleeding, bruising, hepatosplenomegaly, lymphadenopathy, masses, pallor
10. Musculoskeletal: arthritis/arthritis, bone and soft tissue trauma, limp pain, limp

11. Neurologic: ataxia, coma, delirium, diplopia, headache, hypotonia, head trauma, lethargy, seizure, vertigo, weakness

12. Psychiatric/Psychosocial: acute psychosis, child abuse or neglect, conversion symptoms, depression, suicide attempt

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, including graft vs. host disease, recurrent pneumonia, serum sickness, severe angioedema

3. Cardiovascular: bacterial endocarditis, cardiomyopathy, congenital heart disease, congestive heart failure, Kawasaki disease, myocarditis, rheumatic fever

4. Endocrine: diabetes (including diabetic ketoacidosis), electrolyte disturbances secondary to underlying endocrine disease

5. GI/Nutrition: appendicitis, bleeding, cholangitis, complications of inflammatory bowel disease, complications of liver transplantation, cystic fibrosis, gastroenteritis (with/without dehydration), gastroesophageal reflux, hepatic dysfunction (including alpha-1-antitrypsin disease), bowel obstruction, pancreatitis, severe malnutrition

6. GU/Renal: electrolyte and acid-base disturbances, glomerulonephritis, hemolytic-uremic syndrome, nephrotic syndrome, urinary tract infection/pyelonephritis

7. Gynecologic: genital trauma, pelvic inflammatory disease, sexual assault

8. Hematologic/Oncologic: abdominal and mediastinal mass, common malignancies, fever and neutropenia, thrombocytopenia, severe anemia, tumor lysis syndrome, vaso-occlusive crises and other complications of sickle cell disease

9. Infectious Disease: cellulitis (including periorbital and orbital), cervical adenitis, dental abscess with complications, encephalitis, HIV, infections in immunocompromised hosts, laryngotracheobronchitis, late presentation of congenital infections (CMV, syphilis, tuberculosis, abscesses), line infection, meningitis (bacterial or viral), osteomyelitis, pneumonia (viral or bacterial), sepsis/bacteremia (including newborns), septic arthritis, tuberculosis

10. Pharmacology/Toxicology: common drug poisoning or overdose, dose adjustment for special conditions or serum drug levels

11. Neurology: acute neurologic conditions (acute cerebellar ataxia, Guillain Barre syndrome, movement disorders), developmental delay with acute medical conditions, seizures, shunt infections

12. Respiratory: airway obstruction, asthma exacerbation, bacterial tracheitis, bronchiolitis, croup, cystic fibrosis, 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
GOAL: Diagnostic and Screening Procedures. Utilize common diagnostic tests and imaging studies appropriately in the inpatient setting.

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 clinical 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.

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)
16. Electrocardiogram

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.

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.

Use appropriate monitoring techniques in the inpatient setting:

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

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 and burn care
5. Oxygen delivery systems
6. I.V. fluids
7. I.V. pharmacotherapy (antibiotics, antiepileptics, etc.)
8. Transfusion therapy

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 (HAL)
4. Gastrostomy tube for feedings
5. Permanent central venous catheter

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

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: Demonstrate high standards of professional competence while working with patients on the Inpatient Service.

Competency 1: Patient Care. 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.

1. 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. Careful discharge plans (orders, patient education, followup)

2. 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. 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.

1. Demonstrate a commitment to acquiring the base of knowledge needed to care for children in the inpatient setting.
2. Know and/or access medical information efficiently, evaluate it critically, and apply it to inpatient care appropriately.

Competency 3: Interpersonal Skills and Communication. Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

1. Provide effective patient education, including reassurance, for condition(s) commonly seen on the inpatient service.
2. 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 of hospitalized patients).
3. Develop effective strategies for teaching students, colleagues, other professionals and laypersons.
4. Maintain accurate, legible, timely and legally appropriate medical records.

Competency 4: Practice-based Learning and Improvement. 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.

1. Use scientific methods and evidence to investigate, evaluate and improve one’s patient care practice in the inpatient setting.
2. Identify personal learning needs, systematically organize relevant information resources for future reference, and plan for continuing acquisition of knowledge and skills.

Competency 5: Professionalism. Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensivity to diversity.

1. Demonstrate personal accountability to the well being of patients (e.g., following-up on lab results, writing comprehensive notes, and seeking answers to patient care questions).
2. Demonstrate a commitment to professional behavior in interactions with staff and professional colleagues.
3. Adhere to ethical and legal principles and sensitivity to diversity while providing care in the inpatient setting.

Competency 6: Systems-Based Practice. Understand how to practice high-quality health care and advocate for patients within the context of the health care system.

1. Identify key aspects of health care systems, cost control, billing and reimbursement in the hospital inpatient setting.
2. When providing care in the inpatient setting, consider cost and resource allocation without compromising quality of care.
3. Take steps to avoid medical errors by recognizing the limits of one's knowledge and expertise; work with the health care team to recognize and address systems errors.

**Level Specific Competencies**

**INTERN (PL-1)**

**Patient Care:**
1. Prioritizes a patient's problems
2. Prioritizes a day of work
3. Gathers essential/accurate information via interviews and physical exams in a manner that is respectful of patients and families
4. Can provide an organized and precise patient presentation
5. Works with all health care professionals to provide family centered care
6. Able to obtain informed consent
7. Competently understands/performs/interprets procedures:
   - Physiologic Monitoring: Cardiac, Resp, and Oximetry
   - Capillary Blood Collection
     - Conjunctival Swab
     - Lumbar Puncture (Some Successful)
     - NG/OG tube placement
     - Bladder Catheterization
     - Intravenous Line Placement
     - Medication Delivery: IV, Inhaled, rectal
     - Skin Scraping
     - Wound Care

**Medical Knowledge:**
1. Uses written and electronic references and literature to learn about patient diseases
2. Demonstrates knowledge of basic and clinical sciences
3. Applies knowledge to therapy

**Interpersonal Skills and Communication:**
1. Writes pertinent and organized notes
2. Updates and maintains the ongoing patient data sheets
3. Uses effective listening, narrative, and non-verbal skills to elicit and provide information
4. Works effectively as a member of the health care team

**Practice-based Learning and Improvement:**
1. Understands his or her limitations of knowledge
2. Asks for help when needed
3. Is self motivated to acquire knowledge
4. Accepts feedback and develops self-improvement plans

**Professionalism:**
1. Is honest, reliable, cooperative, and accepts responsibility
2. Shows regard for opinions and skills of colleagues
3. Is responsive to needs of patients and society, which supersedes self-interest
4. Acknowledges errors and works to minimize them
Systems Based Practice:
1. Is a patient advocate
2. Works within the system based model to optimize and ensure quality patient care

SECOND YEAR (PL-2)

Patient Care:
1. Understands and weighs alternatives for diagnosis and treatment
2. Elicits subtle findings on physical examination
3. Is able to manage multiple problems at once
4. Develops and carries out management plans
5. Competently understands/perform/interprets procedures:
   ____ Physiologic Monitoring: Cardiac, Resp, and Oximetry
   ____ Capillary Blood Collection
   ____ Conjunctival Swab
   ____ Lumbar Puncture (Mostly Successful)
   ____ NG/OG tube placement
   ____ Bladder Catheterization
   ____ Intravenous Line Placement
   ____ Medication Delivery: IV, Inhaled, rectal
   ____ Skin Scraping
   ____ Wound Care
   ____ Radiology Interpretation: CXR, AXR, CT scans
   ____ Abscess: Aspiration and I&D

Medical Knowledge:
1. Is aware of indications, contraindications, and risks of commonly used medications and procedures
2. Applies the basic science, clinical, epidemiologic, and social-behavioral knowledge to the care of the patient

Interpersonal Skills and Communication:
1. Creates and sustains therapeutic and ethically sound relationships with patients and families
2. Provides education and counseling to patients, families, and colleagues
3. Works effectively as a member of the health care team

Practice-based Learning and Improvement:
1. Undertakes self-evaluation with insight and initiative
2. Facilitates the learning of students and other health care professionals

Professionalism:
1. Displays initiative and leadership
2. Is able to delegate responsibility to others
3. Is responsive to needs of patients and society, which supersedes self-interest

Systems Based Practice:
1. Applies knowledge of how to partner with health care providers to assess, coordinate, and improve patient care
2. Uses systematic approach to reduce errors
Third Year (PL-3)

Patient Care:
1. Makes informed decisions about diagnosis and therapy after analyzing clinical data
2. Includes the family when making medical decisions
3. Reasons well in ambiguous situations
4. Obtains a precise, logical, and efficient history
5. Spends time appropriate to the complexity of the problem
6. Competently understands/perform/interprets procedures:
   - ______ Physiologic Monitoring: Cardiac, Resp, and Oximetry
   - ______ Capillary Blood Collection
   - ______ Conjunctival Swab
   - ______ Lumbar Puncture (Mostly Successful)
   - ______ NG/OG tube placement
   - ______ Bladder Catheterization
   - ______ Intravenous Line Placement
   - ______ Medication Delivery: IV, Inhaled, rectal
   - ______ Skin Scraping
   - ______ Wound Care
   - ______ Radiology Interpretation: CXR, AXR, CT scans
   - ______ Abscess: Aspiration and I&D

Medical Knowledge:
1. Is aware of indications, contraindications, and risks of commonly used medications and procedures
2. Demonstrates an investigatory and analytic approach to clinical situations

Interpersonal Skills and Communication:
1. Creates and sustains therapeutic and ethically sound relationships with patients and families
2. Provides education and counseling to patients, families, and colleagues
3. Works effectively as a member of the health care team

Practice-based Learning and Improvement:
1. Analyzes personal practice patterns and looks to improve
2. Compares personal practice patterns to larger populations
3. Facilitates the learning of students and other health care professionals

Professionalism:
1. Demonstrates commitment to ongoing professional development
2. Is effective as a consultant
3. Is responsive to needs of patients and society, which supersedes self-interest

Systems Based Practice:
1. Demonstrates ability to adapt to change
2. Provides cost effective care
3. Practices effective allocation of health care resources that does not compromise the quality of care
Pediatric Critical Care

Description:

The Pediatric Critical Care rotation will give the pediatric resident exposure to acute emergencies, airway management, and complete the process of disease progression from emergency department and clinic to PICU and the pediatric floor.

By managing these patients one-on-one with the pediatric intensivist, the resident will gain an appreciation of physiology, anatomy, respiratory mechanics, and hemodynamics. In addition, the resident will acquire the ability to stabilize acutely ill patients and give anticipatory guidance to the families of critically ill children and adolescents.

The pediatric residents will be required to master technical procedures including vascular access, airway, and ventilator management.

Note:
The goals and objectives described in detail below are not meant to be completed in a single one month block rotation but are meant to be cumulative, culminating in a thorough and complete Pediatric Critical Care experience at the end of residency.

Primary Goals for this Rotation

GOAL: Resuscitation and Stabilization. Recognize the critically ill patient and initiate appropriate stabilization and/or resuscitative measures.

- Explain and perform steps in resuscitation and stabilization, particularly airway management, volume replacement and resuscitative pharmacology.
- Describe the common causes of acute deterioration in the previously stable patient in the PICU.
- Function appropriately in codes and resuscitations as part of the PICU team.

GOAL: Common Signs and Symptoms. Evaluate and manage, under the supervision of an intensivist, common signs and symptoms seen in critically ill infants, children and adolescents in the intensive care setting.

Evaluate and manage, under supervision of an intensivist, patients with signs and symptoms that present commonly to the intensive care unit (examples below):

1. Cardiovascular: acute life-threatening event, bradycardia, cardiopulmonary arrest, congestive heart failure, cyanosis, hypertension, hypotension, poor capillary perfusion, rhythm disturbances, tachycardia
2. Endocrine: signs and symptoms suggestive of hypo- and hyperglycemia and adrenal insufficiency/crisis
3. GI: abdominal distension, hematemesis and melena, icterus, peritoneal signs, vomiting
4. Hematologic: pallor, petechiae, purpura, uncontrolled bleeding
5. Infectious Diseases: endotoxic shock, fever
6. Neurologic: acute weakness, altered mental status, coma, delirium, encephalopathy, seizures, tetany, thermoregulatory abnormalities

7. Renal: anuria, hematuria, oliguria, polyuria, severe electrolyte disturbance

8. Respiratory: apnea, cyanosis, dyspnea, hemoptysis, hypercarbia, hyperpnea, hypoxemia, increased or decreased respiratory effort, poor air movement, pulmonary edema, respiratory failure, stridor, tachypnea, wheezing

GOAL: Common Conditions. Recognize and manage, under the supervision of an intensivist, conditions that commonly present to the intensive care unit, using consultation when appropriate. Evaluate and manage, under the supervision of an intensivist, patients with conditions that present commonly to the intensive care unit (examples below).

1. General: burns (thermal, electrical), common intoxications, drug overdose, shock (cardiogenic, hypovolemic, distributive, toxic), inhalation injury, malignant hyperthermia, non-accidental trauma, submersion injury, toxic or caustic ingestion or inhalation injury, toxic shock syndrome

2. Allergy Immunology: anaphylaxis, life-threatening angioedema, Stevens Johnson Syndrome

3. Cardiovascular: arrhythmias, cardiac tamponade, congestive heart failure, cyanotic congenital heart disease, malignant hypertension, myocarditis/cardiomyopathy

4. Endocrine: diabetes insipidus and adrenal insufficiency/crises, diabetic ketoacidosis, hypo- and hyperglycemia, syndrome of inappropriate antidiuretic hormone (SIADH)

5. Fluids, electrolytes, metabolic: inborn errors of metabolism, severe dehydration (hyper-, normo-, or hypotonic), severe acid-base disturbances, severe electrolyte disturbance

6. GI/Surgery: abdominal trauma (blunt/penetrating), acute abdomen, acute GI bleeding, fulminating hepatic dysfunction, hepatic dysfunction, pancreatitis, pre- and post-operative management, stress ulcer

7. Hematologic: anemia (severe), disseminated intravascular coagulopathy (DIC), Deep venous thrombosis (DVT), neutropenia, sickle crisis, polycythemia, thrombocytopenia, tumor lysis syndrome

8. Infectious disease: encephalitis, infant botulism, meningitis, nosocomial infections, sepsis

9. Neurologic: acute increased intracranial pressure, brain death, cerebral edema, cerebrovascular accident (CVA), coma, encephalopathy, Guillain-Barre, head injury, spinal muscle atrophy, status epilepticus

10. Pulmonary: acute respiratory distress syndrome (ARDS), epiglottitis, pulmonary edema, pneumothorax, respiratory failure/impending respiratory failure, severe croup and bacterial tracheitis, status asthmaticus, upper airway obstruction (infectious, structural, foreign body)

11. Renal: acute renal failure, hemolytic uremic syndrome

GOAL: Diagnostic Testing. Utilize common diagnostic tests and imaging studies appropriately in the intensive care unit, obtaining consultation as indicated for interpretation of results. Demonstrate understanding of common diagnostic tests and imaging studies used in the PICU by being able to:

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

2. Know or be able to locate readily 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, likelihood ratios, and receiver operating characteristic curves, to assess the utility of tests in various clinical settings.

4. Discuss cost and utilization issues.
5. Interpret the results in the context of the specific patient.
6. Discuss therapeutic options for correction of abnormalities.

Use appropriately the following laboratory and imaging studies when indicated for patients in the PICU 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 (ammonia, bilirubin, liver enzymes)
5. Serologic tests for infection (e.g., hepatitis, HIV)
6. C-reactive protein, erythrocyte sedimentation rate
7. Therapeutic drug concentrations
9. Arterial, capillary, and venous blood gases
10. Detection of bacterial, viral, and fungal pathogens
11. Urinalysis
12. CSF analysis
13. Gram stain
14. Stool studies
15. Toxicologic screens/drug levels
16. Other fluid studies (e.g., pleural fluid, joint fluid)
17. Chest X-ray
18. Abdominal series
19. Skeletal survey
20. Cervical spine films
21. CT scans of abdomen, chest and head
22. MRI scans
23. Basic concepts of cerebral blood flow studies

**GOAL:** Monitoring and Therapeutic Modalities. Understand how to use the physiologic monitoring, special technology and therapeutic modalities used commonly in the intensive care setting.

Demonstrate understanding of the monitoring techniques and special treatments commonly used in the PICU by being able to:

1. Discuss the indications, contraindications and complications
2. Have a basic understanding of the general techniques (e.g., Seldinger technique for central venous line placement)
3. Interpret the results of monitoring

Use appropriately the following monitoring techniques in the intensive care unit under supervision of an intensivist:

1. Central venous pressure monitoring
2. Invasive arterial blood pressure monitoring
3. Intracranial pressure monitoring
4. Pulse oximetry
5. End-tidal carbon dioxide monitoring

Use appropriately or be familiar with the following treatments and techniques in the intensive care unit, including monitoring effects and anticipating potential complications specific to each therapy:

1. Oxygen administration by cannula, masks, hood
2. Positive pressure ventilation, including non-invasive modalities such as nasal/mask BiPAP/CPAP, bag and mask ventilation
3. Principles of ventilator management, intubation and extubation procedures and criteria
4. Analgesics, sedatives, and paralytics
5. Enteral and parenteral nutrition
6. Blood and blood product transfusions
7. Vasoactive drugs (pressors and inotropes)

GOAL: Pediatric Competencies: Demonstrate high standards of professional competence while working with patients in the Pediatric Intensive Care Unit.

Competency 1: Patient Care. 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.
1. Use a logical and appropriate clinical approach to the care of critically ill patients, applying principles of evidence-based decision-making and problem-solving.
2. Provide sensitive support to patients with serious illness and to their families, and arrange for ongoing support or preventive services if needed.

Competency 2: Medical Knowledge. 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.
1. Demonstrate a commitment to acquiring the knowledge base expected of general pediatricians caring for seriously ill children under the guidance of an intensivist.
2. Know and/or access medical information efficiently, evaluate it critically, and apply it appropriately to care of patients in the PICU.

Competency 3: Interpersonal Skills and Communication. Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.
1. Provide effective and sensitive communication with patients and families in the intensive care setting.
2. Participate effectively as part of an interdisciplinary team in the intensive care unit to create and sustain information exchange, including communication with the primary care physician.
3. Maintain accurate, timely and legally appropriate medical records on complex and critically ill children.

Competency 4: Practice-based Learning and Improvement. 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.
1. Use scientific methods and evidence to investigate, evaluate and improve one's patient care practice in PICU setting.

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

**Competency 5: Professionalism.** Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to diversity.

1. Demonstrate a commitment to carrying out professional responsibilities while providing care in the PICU setting.

2. Adhere to ethical and legal principles, and be sensitive to diversity in the care of critically ill children.

**Competency 6: Systems-Based Practice.** Understand how to practice high quality health care and advocate for patients within the context of the health care system.

1. Identify key aspects of health care systems, cost control, and mechanisms for payment as they relate to the intensive care setting.

2. Recognize the limits of one's knowledge and expertise and take steps to avoid medical errors.

## Level Specific Competencies

### Second Year (PL-2)

**Patient Care:**

1. Understands and weighs alternatives for diagnosis and treatment
2. Elicits subtle findings on physical examination
3. Is able to manage multiple problems at once
4. Is able to prioritize patient problems
5. Develops and carries out management plans
6. Competently understands/performs/interprets procedures:
   - Physiologic Monitoring: Cardiac, Resp, & Oximetry
   - Radiologic Evaluation: CXR, AXR, CT Scans
   - Abscess: Aspiration
   - Pain Management: Conscious Sedation & Analgesia
   - Arterial Puncture
   - Burn Management: 1st & 2nd Degree
   - Resuscitation: BLS, PALS, ACLS
   - Ventilation: BVM
   - Central Line: Use & Care
   - Thoracentesis (Attempts)
   - Chest Tube Placement (Need and Management)
   - Intubation (Attempts)
   - Intubation (Rapid Sequence - Attempts)
   - OG/NG placement
   - Bladder Catheterization
   - Gastric Lavage
   - Intravenous Line Placement
   - Intravenous Line Placement (during PALS course)
   - Lumbar Puncture
   - Tracheostomy Care
   - Ventilator Management: Initiation
   - Trauma Care: Stabilization
   - Peripheral Arterial Line Placement
   - Able to Direct Transport of Critical Ill Patients

**Medical Knowledge:**

1. Is aware of indications, contraindications, and risks of commonly used medications.
and procedures in PICU
2. Applies the basic science, clinical, epidemiologic, and social-behavioral knowledge to the care of the patient
3. Appropriate use of sedatives, analgesics and neuromuscular blockers as well as their risks and complications.

Interpersonal Skills and Communication:
1. Creates and sustains therapeutic and ethically sound relationships with patients and families
2. Provides education and counseling to patients, families, and colleagues
3. Works effectively as a member of the health care team

Practice-based Learning and Improvement:
1. Undertakes self-evaluation with insight and initiative
2. Facilitates the learning of students and other health care professionals

Professionalism:
1. Displays initiative and leadership
2. Is able to delegate responsibility to others
3. Is responsive to needs of patients and society, which supersedes self-interest

Systems Based Practice:
1. Applies knowledge of how to partner with health care providers to assess, coordinate and improve patient care
2. Uses systematic approach to reduce errors

Third Year (PL-3)

Patient Care:
1. Makes informed decisions about diagnosis and therapy after analyzing clinical data
2. Includes the family when making medical decisions
3. Reasons well in ambiguous situations
4. Spends time appropriate to the complexity of the problem
5. Competently understands/perform/interprets procedures:
   - Physiologic Monitoring: Cardiac, Resp. & Oximetry
   - Radiologic Evaluation: CXR, AXR, CT Scans
   - Abscess: Aspiration, I&D
   - Pain Management: Procedural, Conscious Sedation & Analgesia
   - Arterial Puncture
   - Burn Management: 1st & 2nd Degree
   - Resuscitation: BLS, PALS, ACLS
   - Ventilation: BVM
   - Central Line: Use & Care
   - Thoracentesis (Successful)
   - Chest Tube Placement (Participation)
   - Intubation (Mostly Successful)
   - Intubation (Rapid Sequence - Mostly Successful)
   - OG/NG placement
   - Bladder Catheterization
   - Gastric Lavage
   - Intravenous Line Placement (Mostly Successful)
   - Intravenous Line Placement (during PALS course)
   - Lumbar Puncture
Medical Knowledge:
1. Is aware of indications, contraindications, and risks of commonly used medications and procedures
2. Demonstrates an investigatory and analytic approach to clinical situations

Interpersonal Skills and Communication:
1. Creates and sustains therapeutic and ethically sound relationships with patients and families
2. Provides education and counseling to patients, families, and colleagues
3. Works effectively as a member of the health care team

Practice-based Learning and Improvement:
1. Analyzes personal practice patterns and looks to improve
2. Compares personal practice patterns to larger populations
3. Facilitates the learning of students and other health care professionals

Professionalism:
1. Demonstrates commitment to on-going professional development
2. Is effective as a consultant
3. Is responsive to needs of patients and society, which supersedes self-interest

Systems Based Practice:
1. Demonstrates ability to adapt to change
2. Provides cost effective care
3. Practices effective allocation of health care resources that does not compromise the quality of care

References:
2. Ambulatory Pediatric Association
3. Association of Pediatric Program Directors
4. Pediatric RRC, January 2006
NIGHT FLOAT

Description:

The resident will gain experience, knowledge, and skills related to the care of children in the inpatient setting. Patients will be admitted from the University Peds outpatient departments, CHH ED, PICU transfer, private office settings, and transports from referring hospitals.

As the night float resident, you are responsible for receiving an adequate and systematic check-out on each individual patient. You are responsible for supervising all PL-1 work-ups on all new admissions to the floor as well as any new admissions to the PICU. All assessments and plans should be discussed with the general floor attending or pediatric intensivist.

Note:

The goals and objectives described in detail below are not meant to be completed in a single one month block rotation but are meant to be cumulative, culminating in a thorough and complete inpatient experience at the end of residency.

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).

13. General: acute life-threatening event (ALTE), constitutional symptoms, hypothermia, excessive crying, failure to thrive, fatigue, fever without localizing signs, hypothermia, weight loss

14. Cardiorespiratory: apnea, chest pain, cough, cyanosis, dyspnea, heart murmur, hemoptysis, hypertension, hypotension, inadequate respiratory effort, rhythm disturbance, shock, shortness of breath, stridor, syncope, tachypnea, respiratory failure, wheezing

15. Dermatologic: ecchymoses, edema, petechiae, purpura, rashes, urticaria

16. EENT: acute visual changes, conjunctival injection, edema, epistaxis, hoarseness, nasal discharge, stridor, trauma

17. Endocrine: heat/cold intolerance, polydipsia, polyuria

18. GI/Nutrition/Fluids: abdominal masses or distention, abdominal pain, ascites, dehydration, diarrhea, dysphagia, hematemesis, inadequate intake, jaundice, melena, rectal bleeding, regurgitation, vomiting

19. Genitourinary/Renal: change in urine color, dysuria, edema, hematuria, oliguria, scrotal mass or edema

20. GYN: abnormal vaginal bleeding, pelvic pain, vaginal discharge

21. Hematologic/Oncologic: abnormal bleeding, bruising, hepatosplenomegaly, lymphadenopathy, masses, pallor

22. Musculoskeletal: arthritis/arthralgia, bone and soft tissue trauma, limb pain, limp

23. Neurologic: ataxia, coma, delirium, diplopia, headache, hypotonia, head trauma, lethargy, seizure, vertigo, weakness
24. Psychiatric/Psychosocial: acute psychosis, child abuse or neglect, conversion symptoms, depression, suicide attempt

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).

15. General: failure to thrive, fever of unknown origin

16. Allergy/Immunology: acute drug allergies/reactions, anaphylaxis, immunodeficiencies, including graft vs. host disease, recurrent pneumonia, serum sickness, severe angioedema

17. Cardiovascular: bacterial endocarditis, cardiomyopathy, congenital heart disease, congestive heart failure, Kawasaki disease, myocardiitis, rheumatic fever

18. Endocrine: diabetes (including diabetic ketoacidosis), electrolyte disturbances secondary to underlying endocrine disease

19. GI/Nutrition: appendicitis, bleeding, cholangitis, complications of inflammatory bowel disease, complications of liver transplantation, cystic fibrosis, gastroenteritis (with/without dehydration), gastroesophageal reflux, hepatic dysfunction (including alpha-1-antitrypsin disease), bowel obstruction, pancreatitis, severe malnutrition

20. GU/Renal: electrolyte and acid-base disturbances, glomerulonephritis, hemolytic-uremic syndrome, nephrotic syndrome, urinary tract infection/pyelonephritis

21. Gynecologic: genital trauma, pelvic inflammatory disease, sexual assault

22. Hematologic/Oncologic: abdominal and mediastinal mass, common malignancies, fever and neutropenia, thrombocytopenia, severe anemia, tumor lysis syndrome, vaso-occlusive crises and other complications of sickle cell disease

23. Infectious Disease: cellulitis (including periorbital and orbital), cervical adenitis, dental abscess with complications, encephalitis, HIV, infections in immunocompromised hosts, laryngotracheobronchitis, late presentation of congenital infections (CMV, syphilis, tuberculosis, abscesses), line infection, meningitis (bacterial or viral), osteomyelitis, pneumonia (viral or bacterial), sepsis/bacteremia (including newborns), septic arthritis, tuberculosis

24. Pharmacology/Toxicology: common drug poisoning or overdose, dose adjustment for special conditions or serum drug levels

25. Neurology: acute neurologic conditions (acute cerebellar ataxia, Guillain Barre syndrome, movement disorders), developmental delay with acute medical conditions, seizures, shunt infections

26. Respiratory: airway obstruction, asthma exacerbation, bacterial tracheitis, bronchiolitis, croup, cystic fibrosis, epiglottitis

27. Rheumatologic: Henoch Schonlein purpura (HSP), juvenile rheumatoid arthritis (JRA), systemic lupus erythematosus (SLE)

28. 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.
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 clinical 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.

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

17. CBC with differential, platelet count, RBC indices
18. Blood chemistries: electrolytes, glucose, calcium, magnesium, phosphate
19. Renal function tests
20. Tests of hepatic function (PT, albumin) and damage (liver enzymes, bilirubin)
21. Serologic tests for infection (e.g., hepatitis, HIV)
22. C-reactive protein, erythrocyte sedimentation rate
23. Therapeutic drug concentrations
24. Coagulation studies
25. Arterial, capillary, and venous blood gases
26. Detection of bacterial, viral, and fungal pathogens
27. Urinalysis
28. Cerebrospinal fluid analysis
29. Gram stain
30. Stool studies
31. Other fluid studies (e.g. pleural fluid, joint fluid)
32. Electrocardiogram

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

4. Plain radiographs of the chest, extremities, abdomen, skull, sinuses
5. Other imaging techniques such as CT, MRI, angiography, ultrasound, nuclear scans, contrast studies (interpretation not expected)
6. 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.

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

5. Discuss indications, contraindications and complications.
7. Determine which patients need continuous monitoring or special monitoring (e.g., neurological checks).
8. Interpret and respond appropriately to results of monitoring based on method used, age and clinical situation.

Use appropriate monitoring techniques in the inpatient setting.
4. Monitoring of temperature, blood pressure, heart rate, respirations
5. Cardiac monitoring
6. Pulse oximetry

Use appropriately the treatments and techniques used in the inpatient setting.
9. Universal precautions
10. Nasogastric tube placement
11. Administration of nebulized medication
12. Injury, wound and burn care
13. Oxygen delivery systems
14. I.V. fluids
15. I.V. pharmacotherapy (antibiotics, antiepileptics, etc.)
16. Transfusion therapy

Describe key issues in the inpatient and home management of the technology-dependent child with the following care needs:
6. Tracheostomy
7. Chronic mechanical ventilation
8. Chronic parenteral nutrition (HAL)
9. Gastrostomy tube for feedings
10. Permanent central venous catheter

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

Demonstrate the skills for assessing and managing pain.
5. Use age-appropriate pain scales in assessment.
6. Describe indications for use and side effects of common narcotic and non-narcotic analgesics.
7. Administer medications to control pain in appropriate dose, frequency and route.
8. Describe indications for and use of behavioral techniques and supportive care, and other non-pharmacologic methods of pain control.

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

Competency 1: Patient Care. 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.

1. Use a logical and appropriate clinical approach to the care of hospitalized patients, applying principles of evidence-based decision-making and problem-solving, demonstrating:
   6. Careful data collection and synthesis
   7. Appropriate orders for vital signs, I & Os, medications, nutrition, activity
   8. Well thought-out daily care plans
   9. Good clinical judgment and decision-making
   10. Careful discharge plans (orders, patient education, followup)

2. 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.** 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.

1. Demonstrate a commitment to acquiring the base of knowledge needed to care for children in the inpatient setting.
2. Know and/or access medical information efficiently, evaluate it critically, and apply it to inpatient care appropriately.

**Competency 3: Interpersonal Skills and Communication.** Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

1. Provide effective patient education, including reassurance, for condition(s) commonly seen on the inpatient service.
2. 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 of hospitalized patients).
3. Develop effective strategies for teaching students, colleagues, other professionals and laypersons.
4. Maintain accurate, legible, timely and legally appropriate medical records.

**Competency 4: Practice-based Learning and Improvement.** 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.

1. Use scientific methods and evidence to investigate, evaluate and improve one's patient care practice in the inpatient setting.
2. Identify personal learning needs, systematically organize relevant information resources for future reference, and plan for continuing acquisition of knowledge and skills.

**Competency 5: Professionalism.** Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.

1. Demonstrate personal accountability to the well being of patients (e.g., following-up on lab results, writing comprehensive notes, and seeking answers to patient care questions).
2. Demonstrate a commitment to professional behavior in interactions with staff and professional colleagues.
3. Adhere to ethical and legal principles and sensitivity to diversity while providing care in the inpatient setting.

**Competency 6: Systems-Based Practice.** Understand how to practice high-quality health care and advocate for patients within the context of the health care system.

1. Identify key aspects of health care systems, cost control, billing and reimbursement in the hospital inpatient setting.
2. When providing care in the inpatient setting, consider cost and resource allocation without compromising quality of care.
3. Take steps to avoid medical errors by recognizing the limits of one's knowledge and expertise; work with the health care team to recognize and address systems errors.
Level Specific Competencies

SECOND YEAR (PL-2)

Patient Care:
1. Understands and weighs alternatives for diagnosis and treatment
2. Elicits subtle findings on physical examination
3. Is able to manage multiple problems at once
4. Develops and carries out management plans
5. Competently understands/perform/interprets procedures:
   ~ Physiologic Monitoring: Cardiac, Resp, and Oximetry
   ~ Capillary Blood Collection
   ~ Conjunctival Swab
   ~ Lumbar Puncture (Mostly Successful)
   ~ NG/OG tube placement
   ~ Bladder Catheterization
   ~ Intravenous Line Placement
   ~ Medication Delivery: IV, Inhaled, rectal
   ~ Skin Scraping
   ~ Wound Care
   ~ Radiology Interpretation: CXR, AXR, CT scans
   ~ Abscess: Aspiration and I&D

Medical Knowledge:
1. Is aware of indications, contraindications, and risks of commonly used medications and procedures
2. Applies the basic science, clinical, epidemiologic, and social-behavioral knowledge to the care of the patient

Interpersonal Skills and Communication:
1. Creates and sustains therapeutic and ethically sound relationships with patients and families
2. Provides education and counseling to patients, families, and colleagues
3. Works effectively as a member of the health care team

Practice-based Learning and Improvement:
1. Undertakes self-evaluation with insight and initiative
2. Facilitates the learning of students and other health care professionals

Professionalism:
1. Displays initiative and leadership
2. Is able to delegate responsibility to others
3. Is responsive to needs of patients and society, which supersedes self-interest

Systems Based Practice:
1. Applies knowledge of how to partner with health care providers to assess, coordinate and improve patient care
2. Uses systematic approach to reduce errors

Third Year (PL-3)

Patient Care:
1. Makes informed decisions about diagnosis and therapy after analyzing clinical data
2. Includes the family when making medical decisions
3. Reasons well in ambiguous situations
4. Obtains a precise, logical, and efficient history
5. Spends time appropriate to the complexity of the problem
6. Competently understands/performes/interprets procedures:
   - Physiologic Monitoring: Cardiac, Resp, and Oximetry
   - Capillary Blood Collection
   - Conjunctival Swab
   - Lumbar Puncture (Mostly Successful)
   - NG/OG tube placement
   - Bladder Catheterization
   - Intravenous Line Placement
   - Medication Delivery: IV, Inhaled, rectal
   - Skin Scraping
   - Wound Care
   - Radiology Interpretation: CXR, AXR, CT scans
   - Abscess: Aspiration and I&D

**Medical Knowledge:**
1. Is aware of indications, contraindications, and risks of commonly used medications and procedures
2. Demonstrates an investigatory and analytic approach to clinical situations

**Interpersonal Skills and Communication:**
1. Creates and sustains therapeutic and ethically sound relationships with patients and families
2. Provides education and counseling to patients, families, and colleagues
3. Works effectively as a member of the health care team

**Practice-based Learning and Improvement:**
1. Analyzes personal practice patterns and looks to improve
2. Compares personal practice patterns to larger populations
3. Facilitates the learning of students and other health care professionals

**Professionalism:**
1. Demonstrates commitment to on-going professional development
2. Is effective as a consultant
3. Is responsive to needs of patients and society, which supersedes self-interest

**Systems Based Practice:**
1. Demonstrates ability to adapt to change
2. Provides cost effective care
3. Practices effective allocation of health care resources that does not compromise the quality of care

**References:**
Neonatal ICU

Description:

This rotation is designed to provide the resident exposure to and experience with a variety of neonatal conditions and complications. Residents will admit and manage a core group of patients appropriate to their level of training. They will complete history and physical exams and then review them with the attending neonatologist. They will be expected to initiate treatment at a level appropriate for their training. With each successive rotation, the resident will be expected to increase the complexity and responsibility of their patient care as well as increase their supervision and teaching of junior members of the NICU team. The will also be required to achieve “Code Pink” status. The resident will participate in multidisciplinary rounds and patient care planning, prenatal counseling, family conferences and ethical discussions.

The goals and objectives described in detail below are not meant to be completed in a single one month block rotation but are meant to be cumulative, culminating in a thorough and complete NICU experience at the end of residency.

Primary Goals for this Rotation

GOAL: Perinatal Prevention. Understand the pediatrician’s role in and become an active advocate for programs to reduce morbidity and mortality from high-risk pregnancies.

Identify and describe strategies to reduce fetal and neonatal mortality, including use of group B strep prophylaxis, perinatal steroids.

Understand and know how to access:
1. Basic vital statistics that apply to newborns (neonatal and perinatal mortality, etc)
2. Prenatal services available in one’s region
3. Tests commonly used by obstetricians to measure fetal well-being
4. Neonatal transport systems

Describe effective intervention programs for teens and other high-risk mothers.

Recognize potential adverse outcomes for the fetus and neonate of common prenatal and perinatal conditions, and demonstrate the pediatrician’s role in assessment and management strategies to minimize the risk to the fetus and/or newborn in the following situations:

1. Maternal infections/exposure to infection during pregnancy
2. Fetal exposure to harmful substances (alcohol, tobacco, environmental toxins, medications, street drugs)
3. Maternal insulin-dependent diabetes and pregnancy-induced glucose intolerance
4. Multiple gestation
5. Placental abnormalities (placenta previa, abruption, abnormal size, function)
6. Pre-eclampsia, eclampsia
Neonatal ICU

Description:

This rotation is designed to provide the resident exposure to and experience with a variety of neonatal conditions and complications. Residents will admit and manage a core group of patients appropriate to their level of training. They will complete history and physical exams and then review them with the attending neonatologist. They will be expected to initiate treatment at a level appropriate for their training. With each successive rotation, the resident will be expected to increase the complexity and responsibility of their patient care as well as increase their supervision and teaching of junior members of the NICU team. The will also be required to achieve “Code Pink” status. The resident will participate in multidisciplinary rounds and patient care planning, prenatal counseling, family conferences and ethical discussions.

The goals and objectives described in detail below are not meant to be completed in a single one month block rotation but are meant to be cumulative, culminating in a thorough and complete NICU experience at the end of residency.

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1. Basic vital statistics that apply to newborns (neonatal and perinatal mortality, etc)
2. Prenatal services available in one's region
3. Tests commonly used by obstetricians to measure fetal well-being
4. Neonatal transport systems

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Recognize potential adverse outcomes for the fetus and neonate of common prenatal and perinatal conditions, and demonstrate the pediatrician’s role in assessment and management strategies to minimize the risk to the fetus and/or newborn in the following situations:

1. Maternal infections/exposure to infection during pregnancy
2. Fetal exposure to harmful substances (alcohol, tobacco, environmental toxins, medications, street drugs)
3. Maternal insulin-dependent diabetes and pregnancy-induced glucose intolerance
4. Multiple gestation
5. Placental abnormalities (placenta previa, abruptio, abnormal size, function)
6. Pre-eclampsia, eclampsia
7. Chorioamnionitis
8. Polyhydramnios
9. Oligohydramnios
10. Premature labor, premature ruptured membranes
11. Complications of anesthesia and common delivery practices (e.g., Caesarian, vacuum, forceps assisted, epidural, induction of labor)
12. Fetal distress during delivery
13. Postpartum maternal fever or infection
14. Maternal blood group incompatibilities
15. Other common maternal conditions having implications for the infant's health such as lupus, HELLP syndrome, maternal thrombocytopenia

**GOAL: Resuscitation and Stabilization. Assess, resuscitate and stabilize critically ill neonates.**

Explain and perform steps in resuscitation and stabilization, particularly airway management, vascular access, volume resuscitation, indications for and techniques of chest compressions, resuscitative pharmacology and management of meconium deliveries.

Describe the common causes of acute deterioration in previously stable NICU patients.

Function appropriately in codes and neonatal resuscitations as part of the NICU team by:

1. Participating in resuscitations
2. Completing Neonatal Resuscitation Program (NRP) or comparable training
3. Using neonatal resuscitation drugs appropriately

**GOAL: Common Signs and Symptoms. Evaluate and manage, under the supervision of a neonatologist, common signs and symptoms of disease in premature and ill newborns.**

Under supervision, evaluate and manage patients with the signs and symptoms that present commonly in the NICU (examples below).

1. General: feeding problems, history of maternal infection or exposure, hyperthermia, hypothermia, intrauterine growth failure, irritability, jitteriness, large for gestational age, lethargy, poor post-natal weight gain, prematurity (various gestational ages)
2. Cardiorespiratory: apnea, bradycardia, cyanosis, dehydration, heart murmur, hypertension, hypotension, hypovolemia, poor pulses, respiratory distress (flaring, grunting, tachypnea), shock
3. Dermatologic: birthmarks, common skin rashes/conditions, discharge and/or inflammation of the umbilicus, hyper- and hypopigmented lesions, proper skin care for extreme prematures
4. GI/surgical: abdominal mass, bloody stools, diarrhea, distended abdomen, failure to pass stool, gastric retention or reflux, hepatosplenomegaly, vomiting
5. Genetic/metabolic: apparent congenital defect or dysmorphic syndrome, metabolic derangements (glucose, calcium, acid-base, urea, amino acids, etc.)
6. Hematologic: abnormal bleeding, anemia, jaundice in a premature or seriously ill neonate, neutropenia, petechiae, polycythemia, thrombocytopenia
7. Musculoskeletal: birth defects and deformities, birth trauma and related fractures and soft tissue injuries, dislocations
8. Neurologic: birth trauma related nerve damage, early signs of neurologic impairment, hypotonia, macrocephaly, microcephaly, seizures, spina bifida
9. Parental stress and dysfunction: anxiety disorders, child abuse and neglect, poor attachment, postpartum depression, substance abuse, teen parent
10. Renal/urologic: abnormal genitalia, edema, hematuria, oliguria, proteinuria, renal mass, urinary retention

**GOAL:** Common Conditions. Recognize and manage, under the supervision of a neonatologist, the common conditions in patients encountered in the NICU.

Under supervision, evaluate and manage patients with conditions that present commonly in the NICU (examples below):

1. General: congenital malformations

2. Cardiovascular: cardiomyopathy, congenital heart disease (cyanotic and acyanotic—e.g., common disorders such as patent ductus artherosus, ventricular septal defect, tetralogy of Fallot, transposition of the great arteries), congestive heart failure, dysrhythmias (e.g. supraventricular tachycardia, complete heart block, pericarditis)

3. Genetic, endocrine disorders: abnormalities discovered from neonatal screening programs as they affect the premature infant, common chromosomal anomalies (Trisomy 13, 18, 21, Turner's), inborn errors of metabolism, infant of a diabetic mother, infant of a mother with thyroid disease (e.g. maternal Graves Disease), uncommon conditions such as congenital adrenal hyperplasia, hypothyroidism, hyperthyroidism

4. GI/nutrition: biliary atresia, breast feeding support for mothers and infants with special needs (high risk premature, maternal illness, multiple birth, etc.), complications of umbilical catheterization, gastroesophageal reflux, growth retardation, hepatitis, hyperbilirubinemia, meconium plug, necrotizing enterocolitis, nutritional management of high risk neonates or those with special needs (cleft lip/palate, other facial anomalies, etc.)

5. Hematologic conditions: coagulopathy of the newborn, erythroblastosis fetalis, hemophilia, hydrops fetalis, hyperbilirubinemia, splenomegaly

6. Infectious disease: central line infections, Group B Streptococal infections, hepatitis, herpes simplex, immunization of the premature neonate, infant of mother with HIV, intrauterine viral infections, neonatal sepsis and meningitis, nosocomial infections in the NICU, syphilis, ureaplasma, varicella exposure

7. Neurologic disorders: central apnea, CNS malformations (e.g. encephalocele, porencephaly, holoprosencephaly), drug withdrawal, hearing loss in high risk newborns (prevention and screening), hydrocephalus, hypoxic-ischemic encephalopathy, intraventricular hemorrhage, retinopathy of prematurity, seizures, spina bifida

8. Pulmonary disorders: atelectasis, bronchopulmonary dysplasia, meconium aspiration, persistent pulmonary hypertension of the newborn, pneumonia, pneumothorax, respiratory distress syndrome, transient tachypnea of the newborn

9. Renal: acute and chronic renal failure, hematuria, hydronephrosis, oliguria, proteinuria

10. Surgery [assess and participate in management under supervision of a pediatric surgeon or cardiac surgeon]: congenital heart disease, (cyanotic, patent ductus artherosus, obstructive left-sided cardiac lesions, pre- and post-operative care), diaphragmatic hernia, esophageal or gut atresia, gastrochisis, omphalocele, intestinal obstruction, necrotizing enterocolitis, perforated viscus, Pierre Robin syndrome, volvulus

**GOAL:** Diagnostic Testing. Under the supervision of a neonatologist, order and understand the indications for, limitations of, and interpretation of laboratory and imaging studies unique to the NICU setting.

Demonstrate understanding of common diagnostic tests and imaging studies used in the NICU by being able to:

1. Explain the indications for and limitations of each study.
2. Know or be able to locate readily gestational 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, likelihood ratios, and receiver operating characteristic curves, to assess the
utility of tests in various clinical settings.
4. Recognize cost and utilization issues.
5. Interpret the results in the context of the specific patient.
6. Discuss therapeutic options for correction of abnormalities.

Use appropriately the following evaluations that may have specific application to neonatal care:

1. Serologic and other studies for transplacental infection
2. Direct and indirect Coomb’s tests
3. Neonatal drug screening
4. Cranial ultrasound for intraventricular hemorrhage
5. Abdominal X-rays for placement of umbilical catheter
6. Chest X-rays for endotracheal tube placement, air leak, heart size, and vascularity

Use appropriately the following laboratory tests when indicated for patients in the neonatal intensive care 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. CRP, ESR
7. Therapeutic drug concentrations
8. Coagulation studies: platelets, PT/PTT, fibrinogen, fibrin split products, D-dimers, DIC screen
9. Arterial, capillary, and venous blood gases
10. Detection of bacterial, viral, and fungal pathogens
11. Urinalysis
12. CSF analysis
13. Gram stain
14. Stool studies
15. Toxicologic screens/drug levels
16. Other fluid studies (e.g., pleural fluid, joint fluid)
17. Newborn screening tests

Appropriately use the following imaging or radiographic or other studies when indicated for patients in the NICU setting:

1. Chest X-ray
2. Abdominal series
3. Skeletal survey
4. CT scans
5. MRI
6. Nuclear medicine scans
7. Electrocardiogram and echocardiogram
8. Cranial ultrasonography

GOAL: Monitoring and Therapeutic Modalities. Understand how to use the physiologic monitoring, special technology and therapeutic modalities used commonly in the care of the fetus and newborn.

Demonstrate understanding of the monitoring techniques and special treatments commonly used in the NICU by being able to:
1. Discuss the indications, contraindications and complications.
2. Describe the general technique for use in infants.
3. Interpret the results of monitoring.

Use appropriately the following monitoring and therapeutic techniques in NICU:
1. Physiologic monitoring of temperature, pulse, respiration, blood pressure
2. Pulse oximetry
3. Neonatal pain and drug withdrawal scales

Demonstrate understanding of the following techniques and procedures used by obstetricians and perinatal specialists:
1. Fetal ultrasound for size and anatomy
2. Fetal heart rate monitors
3. Scalp and cord blood sampling
4. Amniocentesis
5. Cardiocentesis
6. Intrauterine transfusion including exchange transfusions
7. Chorionic villus sampling

Use appropriately the following treatments and techniques in the neonatal intensive care unit under supervision by the attending neonatologist, monitoring effects and anticipating potential complications specific to each procedure. (The degree of supervision should take into consideration the skill required, acuity of the patient, and relative risk of the procedure.)
1. Oxygen administration by hood, CPAP or assisted ventilation
2. Endotracheal intubation
3. Administration of surfactant therapy
4. Positive pressure ventilation and basic ventilator management
5. Extracorporeal membrane oxygenation/nitric oxide therapy
6. Phototherapy
7. Umbilical arterial and venous catheterization
8. Central hyperalimentation and parenteral nutrition
9. Enteral nutrition
10. Analgesic, sedatives and paralytics
11. Blood and blood product transfusions, including exchange transfusion
12. Vasoactive drugs (pressors and inotropes)
13. Judicious use of antibiotics
14. Administration of medications specific to the needs of the newborn (e.g., Vitamin K)
15. Arterial puncture
16. Venous access by peripheral vein
17. Umbilical artery and vein catheterization
18. Chest tube placement
19. Paracentesis

Describe home medical equipment and services needed for oxygen-dependent and technology-dependent graduates of the NICU (oxygen, apnea monitor, ventilator, home hyperalimentation, etc.).

Use appropriate resources to facilitate the transition to home of the technology-dependent neonate.

4.24.7: Guide mothers in the use of electric and manual breast pumps.

GOAL: Pediatric Competencies: Demonstrate high standards of professional competence while working with patients in the Neonatal Intensive Care Unit.

Competency 1: Patient Care. 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.
1. Use a logical and appropriate approach to the assessment and daily management of seriously ill neonates and their families, under the guidance of a neonatologist, using evidence-based decision-making and problem-solving skills.
2. Provide emotional, social, and culturally sensitive support to families of NICU infants, including those at home.

Competency 2: Medical Knowledge. 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.
1. Demonstrate a commitment to acquiring the knowledge base expected of general pediatricians caring for seriously ill neonates under the guidance of a neonatologist.
2. Know and/or access medical information efficiently, evaluate it critically, and apply it appropriately to the care of ill newborns.

Competency 3: Interpersonal Skills and Communication. Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.
1. Provide effective and sensitive communication with families of infants in the NICU setting.
2. Function effectively as part of an interdisciplinary team member in the NICU to create and sustain information exchange and teamwork for patient care.
3. Maintain accurate, timely, and legally appropriate medical records in the critical care setting of the NICU.
Competency 4: Practice-based Learning and Improvement. 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.

1. Use scientific methods and evidence to investigate, evaluate, and improve one's patient care practice in NICU setting.
2. Identify personal learning needs, systematically organize relevant information resources for future reference, and plan for continuing acquisition of knowledge and skills.

Competency 5: Professionalism. Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to diversity.

1. Demonstrate a commitment to carrying out professional responsibilities while providing care in the NICU setting.
2. Adhere to ethical and legal principles, and be sensitive to diversity in caring for critically ill newborns.

Competency 6: Systems-Based Practice. Understand how to practice high-quality health care and advocate for patients within the context of the health care system.

1. Identify key aspects of health care systems, cost control and mechanisms for payment in the NICU setting.
2. Recognize the limits of one's knowledge and expertise and take steps to avoid medical errors.

Level Specific Competencies

First Year (PL-1)

Patient Care:
1. Prioritizes a patient's problems
2. Prioritizes a day of work
3. Gathers essential/accurate information via interviews and physical exams in a manner that is respectful of patients and families
4. Can provide an organized and precise patient presentation
5. Works with all health care professionals to provide family centered care
6. Competently understands/perform/interprets procedures:
   - Physiologic Monitoring: Cardiac, Resp, and Oximetry
   - Capillary Blood Collection
   - Neonatal Resuscitation (as team member)
   - Use/Care of Central Lines (PICC/Umbilical Lines)
   - Conjunctival Swab
   - Lumbar Puncture
   - Umbilical Line Placement (attempts)
   - Endotracheal Intubation (attempts)
   - NG/OG tube placement
   - Inguinal Hernia (simple reduction)
   - Breast Pump Use
   - Modes of Ventilation
   - Initiation of TPN

Medical Knowledge:
1. Uses written and electronic references and literature to learn about patient diseases
2. Demonstrates knowledge of basic and clinical sciences
3. Applies knowledge to therapy

Interpersonal Skills and Communication:
1. Writes pertinent and organized notes
2. Updates and maintains the ongoing patient data sheets
3. Uses effective listening, narrative, and non-verbal skills to elicit and provide information
4. Works effectively as a member of the health care team

**Practice-based Learning and Improvement:**
1. Understands his or her limitations of knowledge
2. Asks for help when needed
3. Is self-motivated to acquire knowledge
4. Accepts feedback and develops self-improvement plans

**Professionalism:**
1. Is honest, reliable, cooperative, and accepts responsibility
2. Shows regard for opinions and skills of colleagues
3. Is responsive to needs of patients and society, which supersedes self-interest
4. Acknowledges errors and works to minimize them

**Systems Based Practice:**
1. Is a patient advocate
2. Works within the system based model to optimized and ensure quality patient care

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**Second Year (PL-2)**

**Patient Care:**
1. Understands and weighs alternatives for diagnosis and treatment
2. Elicits subtle findings on physical examination
3. Is able to manage multiple problems at once
4. Develops and carries out management plans
5. Competently understands/perform interprets procedures:
   - ______ Physiologic Monitoring: Cardiac, Resp, and Oximetry
   - ______ Capillary Blood Collection
   - ______ Neonatal Resuscitation (as team leader)
   - ______ Use/Care of Central Lines (PICC/Umbilical Lines)
   - ______ Conjunctival Swab
   - ______ Lumbar Puncture
   - ______ Umbilical Line Placement (some successful)
   - ______ Endotracheal Intubation (some successful)
   - ______ NG/OG tube placement
   - ______ Inguinal Hernia (simple reduction)
   - ______ Breast Pump Use
   - ______ Radiology Interpretation: AXR, CXR
   - ______ Arterial Puncture
   - ______ Initiation of Mechanical Ventilation
   - ______ Modes of Ventilation (NCPAP, HFOV, Conventional)
   - ______ Initiation/Ongoing management of TPN
   - ______ Thoracentesis

**Medical Knowledge:**
1. Is aware of indications, contraindications, and risks of commonly used medications and procedures in NICU
2. Applies the basic, clinical, epidemiologic, and social-behavioral science knowledge to the care of the patient

**Interpersonal Skills and Communication:**
1. Creates and sustains therapeutic and ethically sound relationships with patients and families
2. Provides education and counseling to patients, families, and colleagues
3. Works effectively as a member of the health care team

**Practice-based Learning and Improvement:**
1. Undertakes self-evaluation with insight and initiative
2. Facilitates the learning of students and other health care professionals

**Professionalism:**
1. Displays initiative and leadership
2. Is able to delegate responsibility to others
3. Is responsive to needs of patients and society, which supersedes self-interest

**Systems Based Practice:**
1. Applies knowledge of how to partner with health care providers to assess, coordinate and improve patient care
2. Uses systematic approach to reduce errors

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**Third Year (PL-3)**

**Patient Care:**
1. Makes informed decisions about diagnosis and therapy after analyzing clinical data
2. Includes the family when making medical decisions
3. Reasons well in ambiguous situations
4. Spends time appropriate to the complexity of the problem
5. Competently understands/perform/interprets procedures:
   - Physiologic Monitor, Cardiac, Resp, and Oximetry
   - Capillary Blood Collection
   - Neonatal Resuscitation (as team leader)
   - Use/Care of Central Lines (PICC/Umbilical Lines)
   - Conjunctival Swab
   - Lumbar Puncture
   - Umbilical Line Placement (mostly successful)
   - Endotracheal Intubation (mostly successful)
   - NG/OG tube placement
   - Inguinal Hernia (simple reduction)
   - Breast Pump Use
   - Radiology Interpretation: AXR, CXR, HUS
   - Arterial Puncture
   - Ongoing Management of Mechanical Ventilation
   - Modes of Ventilation (NCPAP, HFOV, Conventional)
   - Ongoing Management of TPN
   - Thoracentesis
   - Chest Tube (understand need/management)
   - Independent and Competent at Resuscitation (Code Pink Status)

**Medical Knowledge:**
1. Is aware of indications, contraindications, and risks of commonly used medications and procedures in the NICU
2. Demonstrates an investigatory and analytic approach to clinical situations
**Interpersonal Skills and Communication:**
1. Creates and sustains therapeutic and ethically sound relationships with patients and families
2. Provides education and counseling to patients, families, and colleagues
3. Works effectively as a member of the health care team

**Practice-based Learning and Improvement:**
1. Analyzes personal practice patterns and looks to improve
2. Compares personal practice patterns to larger populations
3. Facilitates the learning of students and other health care professionals

**Professionalism:**
1. Demonstrates commitment to ongoing professional development
2. Is effective as a consultant
3. Is responsive to needs of patients and society, which supersedes self-interest

**Systems Based Practice:**
1. Demonstrates ability to adapt to change
2. Provides cost-effective care
3. Practices effective allocation of health care resources that does not compromise the quality of care

**References:**
2. Ambulatory Pediatric Association
3. Association of Pediatric Program Directors
4. Pediatric RRC, January 2006

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**Newborn Nursery**

**Description:**
First year residents will do a one month block rotation in the Newborn Nursery at Cabell Huntington Hospital. Interns are expected to see all patients on the University Pediatric service. They should round on patients with the assigned attending physician. Residents should discuss the patient with the family on a daily basis. All discharge planning and follow-up arrangement should be made by the resident physician.

When there is not a resident assigned to the newborn nursery for the month, residents assigned to the Outpatient clinic will see newborns in the nursery prior to going to the outpatient clinic. Any problems or concerns should be addressed with the attending physician as early as possible.

**Note:**
The goals and objectives described in detail below are not meant to be completed in a single one month block rotation but are meant to be cumulative, culminating in a thorough and complete newborn nursery experience at the end of residency.

**Primary Goals for this Rotation**

**GOAL:** Comprehensive Care in Level I Nursery. Provide comprehensive care in a level I nursery.
Explain the role of the primary care pediatrician in the level I nursery and how it relates to the continuum of office health supervision care.

Effectively communicate with the mother's obstetrician during the hospital stay and her primary care provider prior to the infant's discharge.

Describe normal physiologic changes in neonatal transition, signs of abnormal responses and strategies for their management.

Describe the rationale behind various nursery and delivery routines and how these affect the health and well-being of families and newborns (e.g., rooming in, on-demand feeding, 24 hour discharge of the newborn, glucose water feeds).

Function as a pediatric consultant to health professionals in the newborn nursery, obstetrical ward, and delivery room for routine, normal pregnancies, deliveries and newborn care.

Identify the role and scope of practice of general pediatricians, neonatologists, perinatologists, obstetricians, family physicians, nurse midwives, lactation consultants, primary care nurses for OB/Newborn, and social workers in relation to the normal nursery; and work collaboratively with these professionals in the care of newborns.

**GOAL: Assessment, Screening and Prevention.** Assess newborns, using history, physical exam and routine screening procedures, and provide preventive counseling and intervention as indicated.

Obtain and interpret information relevant to newborn health including:

1. Maternal medical, prenatal and obstetric history
2. Family history
3. Results of maternal screening tests (e.g., Rh, rubella, hepatitis B and C, serology for syphilis, HIV, tuberculosis, illicit drugs, blood type, group B streptococcus, herpes simplex virus, gonorrhea, and chlamydia)
4. Maternal medication use or substance use/abuse
5. Results of prenatal ultrasound testing

Obtain and interpret a social history to assess the physical and psychosocial environment in the infant's home.

Understand and demonstrate appropriate timing for newborn exams and define the key reasons for doing the exams (e.g., determine state of transition, assess risks, identify abnormalities, and demonstrate normal findings and behaviors to parents).

Perform a neonatal physical examination and identify normal and abnormal findings related to:

1. Gestational age assessment and growth category (AGA, SGA, LGA)
2. Vital signs and measurements
3. General appearance and identification of anomalies
4. HEENT (red reflex, intact palate, short frenulum, caput, cephalohematoma)
5. Neck and clavicles
6. Neurologic system (symmetry, tone, reflexes, suck, behavioral state, head size and shape, spine)
7. Respiratory effort
8. Skin
9. Chest and breasts
10. Heart
11. Lungs
12. Abdomen (including umbilical cord)
13. Genitalia
14. Femoral and brachial pulses
15. Hips (Ortolani and Barlow maneuvers)
16. Extremities

Describe current standards for newborn screening, including:
1. National (AAP) recommendations for universal newborn hearing screening
2. State neonatal blood-screening program, including diseases screened for, timing, testing procedures and process for notification of abnormal results
3. Current recommendations for maternal Group B Streptococcus screening and the evaluation of exposed neonates
4. Appropriate use of other screening tests or protocols and their indications (e.g., blood type and Coombs, glucose, hematocrit)
5. Appropriate use of testing to identify prenatal exposure to substances of abuse

Communicate effectively with parents and family in a professional and caring manner that honors family values and enhances their parenting skills and confidence.

Provide anticipatory guidance and prevention counseling throughout hospital stay and at time of discharge, according to recommended guidelines (e.g., AAP, Bright Futures).

**GOAL: Common Signs and Symptoms. Evaluate and appropriately treat or refer newborns with these commonly presenting signs and symptoms.**

Recognize, describe clinical significance of, and develop a strategy to evaluate, manage and/or refer newborns with these common newborn signs and symptoms:

1. Large birth marks (mongolian spots, hemangiomas, port wine spots)
2. Rashes and markings secondary to birth trauma
3. Papular and pustular rashes (erythema toxicum, pustular melanosis, staph. Pustulosis, milia)
4. Peripheral and central cyanosis
5. High or low temperature
6. Tachypnea
7. Heart murmur-asymptomatic and symptomatic
8. Abdominal distension and masses
9. Two vessel umbilical cords
10. Abnormal findings on the Barlow or Ortolani
11. Swollen breasts
12. Vaginal bleeding
13. Subconjunctival hemorrhages
14. Corneal opacities or absent red reflex
15. Facial palsy
16. Fractured clavicle
17. Brachial plexus injury
18. Cephalohematoma or caput
19. Ear tags, pits
20. Palate abnormalities (cleft, submucous cleft)
21. Polyductyly
22. Syndactyly
23. Plethora
24. Pallor
25. Respiratory distress
26. Abdominal mass
27. Genitourinary abnormalities (ambiguous genitalia, hypospadias, undescended testicle)
28. Microcephaly
29. Macrocephaly
30. Sacral dimple, pit, hair tuft

**GOAL: Common Conditions.** Evaluate and appropriately treat or refer newborns with these commonly presenting conditions.

Recognize, describe clinical significance of, and develop a strategy to evaluate, manage and/or refer newborns with the following common newborn clinical situations:

1. Large and/or small for gestational age babies
2. Infant of a diabetic mother
3. Infant of substance abusing mother
4. Child with ABO/Rh incompatibility
5. Polycythemia
6. Premature/postmature infant
7. Jitteriness
8. Transient metabolic disturbances (hypoglycemia, etc.)
9. Delayed urination
10. Delayed stooling
11. Vomiting feeds/bilious emesis
12. Poor/delayed suck
13. Respiratory distress with feedings
14. Jaundice
15. Infant with risk factor for DDH (girl breech, +family hx)
16. Infant with abnormalities on prenatal ultrasound (pyelectasia, hydronephrosis, choroids plexus cyst)
17. Dysmorphic infant or infant with known chromosomal abnormality (e.g., Trisomy 21)
18. Multiple births (near and at term)
19. Eye discharge
20. Abnormal newborn hearing screen results
21. Infant born to a mother with a significant medical condition (lupus, seizure disorder, obstetrical condition such as HELLP syndrome)

Use and/or interpret clinical tests commonly used in Newborn Nursery setting, such as:
1. Physiologic monitoring (HR, RR, pulse oximetry, blood gas, doppler BP measurement)
2. Ballard exam for gestational age assessment, premature and term infant growth curves
3. CBC, ABO typing and Coombs testing, blood glucose/glucometer, bilirubin (serum and transcutaneous), maternal cord blood antibodies
4. Xray of chest, abdomen
5. Ultrasound of kidneys/bladder, head, hips, lower spine

Be familiar with common assessment tools and studies used by obstetricians to assess normal pregnancies and infant well-being close to term and during the labor and delivery process.

Discuss common post-delivery obstetrical issues that mothers face, and how these affect their recovery and ability to care for their newborn:
1. C-section delivery
2. Tubal ligation
3. Retention of placenta
4. Post-partum hemorrhage
5. Post-partum depression
6. Post-partum infections
7. Hypertension

Discuss care and communication issues for an infant being placed for adoption (including both birth and adoptive parents).

**GOAL:** Nutrition. Manage breast- and bottle-feeding in the newborn period.
Assess a newborn's nutritional status based on maternal medical and obstetrical history and infant's history (e.g., illness, feeding, stools, urination) and physical exam (e.g., weight expected for gestational age, subcutaneous fat, hydration, neurologic or oral/facial anomalies) and implement appropriate feeding plans.

Counsel parents about feeding choices and assess for potential risks/difficulties.

Encourage and support mothers who are breastfeeding.

Counsel and support mothers who are formula feeding.

Refer mothers to WIC and other resources for assistance with food purchase, nutrition education, and breastfeeding support equipment.

Recognize and manage these conditions:

1. Common problems for breastfeeding infants and mothers
2. Maternal use of medications that are transmitted via breast milk
3. Maternal infections and risk of transmission (Hepatitis B, Hepatitis C, HIV)
4. Preserving breastfeeding while managing jaundice
5. Newborn who is a poor feeder
6. Feeding plans for the SGA or premature infant
7. Feeding plans for the infant of a diabetic mother
8. Feeding plans for the infant with a cleft palate
9. Feeding plans for neurologically depressed/abnormal newborn

**GOAL: Infections. Assess and manage common infections in the normal newborn nursery.**

Identify common and important perinatal infections.

Discuss methods for screening and, where appropriate, preventive treatment of mother and infant (chlamydia, CMV, gonorrhea, group B strep, hepatitis B, hepatitis C, HSV, HIV, tuberculosis, HPV, parvovirus, rubella, syphilis, toxoplasmosis, and varicella).

Identify newborns at risk for bacterial sepsis by history, physical exam, and laboratory studies.

Practice the AAP/ACOG accepted policies for infection reduction in the newborn nursery.

Describe why umbilical cord care is routinely performed and what methods are available.

Counsel parents about recommendations on routine Hepatitis B vaccination, including risks, benefits, alternatives, and common side effects.

Recognize and manage:

1. Newborn with signs of sepsis (e.g., fever, poor feeding, tachypnea, low temperature)
2. Infant born to mother with fever
3. Infant born to mother with a history of a perinatal infectious disease (e.g., group B strep, chlamydia, syphilis, HSV)
4. Infant born to mother with prolonged rupture of membranes
5. Infant born to mother who received antibiotic during delivery

**GOAL: Jaundice. Recognize and manage jaundice in the newborn period.**

Interpret maternal history for factors contributing to jaundice (Rh, blood type, gestational age, infection, family history of jaundice in infants, etc.).

Interpret infant's history for possible etiologies of jaundice (e.g., infrequent or ineffective feeding, poor urine or stool output, acholic stool, blood type, risk factors for infection, metabolic disease).

Perform a physical exam to assess for jaundice or other evidence of hepatic dysfunction (e.g., skin color, sclerae,
bruising, cephalhematoma, organomegaly).

Demonstrate use and interpretation of transcutaneous bilirubin monitoring.

Obtain laboratory tests judiciously for management of the jaundiced infant (blood type/Coombs, total, fractionated bilir, Hct, peripheral blood smear).

Correctly interpret test results to evaluate jaundice in the clinical setting.

Counsel parents about types of jaundice (physiologic, insufficient breastfeeding, breast milk, hemolytic, etc.) and their natural history.

Counsel parents about when to be concerned about jaundice (e.g., icterus beyond the face and chest, poor feeding, fever, irritability).

Discuss the current AAP practice parameters regarding diagnosis and management of the jaundiced infant.

Interpret the significance of a total serum bilirubin level in the context of early discharge of newborns, with reference to normative data based on age in hours.

Describe indications for phototherapy and exchange transfusions.

Describe the use of phototherapy in both the hospital and the home and explain risks (e.g., dehydration, eye injury, and disruption of breastfeeding routines).

Counsel parents about ways to improve jaundice at home (e.g., frequent feedings, exposure to sunlight, etc.).

GOAL: Anticipatory Guidance at Nursery Discharge. Provide anticipatory counseling at nursery discharge that relates to newborn behavior, family adjustment, injury prevention, and access to medical services.

Discuss priorities for anticipatory counseling, especially in face of time constraints due to "early discharge."

List resources that can be used to supplement counseling by the physician.

Provide routine counseling on topics such as:

1. Routine follow-up appointment time (e.g., 3-5 days of age for early discharge and breastfeeding infants)

2. How and when to contact the office for advice or earlier appointment

3. For infants discharged early: warning signs of jaundice, infection, dehydration, and feeding problems; interaction with visiting nurse, need to do repeat newborn screening blood tests

4. Needed medical, social, and WIC services

5. Normal infant behaviors related to crying, sleep, and wakefulness and how to deal with common problems (hiccups, sneezes, vaginal bleeding, breast masses/discharge, care of umbilical cord, care of penis)

6. Postpartum adjustment including the need for rest and support, and the potential for postpartum "blues" (e.g., depression, anxiety, feelings of inadequacy, fear, resentment)

7. Uniqueness of each infant's temperament and how to identify and respond to this

8. Potential for sibling rivalry and ways to handle this

9. Injury prevention (e.g., car seat for discharge, crib safety, water temperature settings, smoke alarm, constant supervision of newborn with siblings or pets, sleep position, environmental exposures like cigarette smoke)

10. Significance of increasing jaundice, feeding problems or fever in this age group and the rapidity with which medical care should be sought

Provide written discharge instructions, documentation of immunization (HBV) given, and results of hearing screen.

GOAL: Pediatric Competencies. Demonstrate high standards of professional competence while working with patients in the normal newborn nursery.

Competency 1: Patient Care. 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.
1. Use a logical and appropriate clinical approach to the care of newborns, applying principles of evidence-based decision-making and problem-solving.

2. Provide sensitive support to patients and their families in the delivery room and level 1 and 2 newborn nursery.

**Competency 2: Medical Knowledge.** 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.

1. Demonstrate a commitment to acquiring the knowledge needed for the care of newborns in the delivery room and level 1 and 2 nursery.

2. Know and/or access medical information efficiently, evaluate it critically, and apply it to newborn care appropriately.

**Competency 3: Interpersonal Skills and Communication.** Demonstrate interpersonal and communication skills that result in information exchange and partnering with patients, their families and professional associates.

1. Provide effective patient education, including reassurance, for condition(s) common to the newborn nursery.

2. Communicate and work effectively with staff, health professionals, specialists, referring and primary care providers to create and sustain information exchange and teamwork for patient care.

3. Develop effective strategies for teaching students, colleagues and other professionals.

4. Maintain accurate, legible, timely, and legally appropriate medical records for newborns (summary of maternal record, labor and delivery note, admission note, daily progress notes, consultant notes and discharge summaries).

**Competency 4: Practice-based Learning and Improvement.** 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.

1. Use scientific methods and evidence to investigate, evaluate, and improve patient care practice in the nursery setting.

2. Identify standardized guidelines for diagnosis and treatment of conditions common to the newborn nursery, and adapt them to the individual needs of specific patients.

3. Identify personal learning needs, systematically organize relevant information resources for future reference, and address plans for lifelong learning about newborn care.

**Competency 5: Professionalism.** Demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diversity.

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

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

3. Adhere to ethical and legal principles, and be sensitive to diversity.

**Competency 6: Systems-Based Practice.** Understand how to practice high-quality health care and advocate for patients within the context of the health care system.

1. Demonstrate sensitivity to the costs of clinical care in the nursery, and take steps to minimize costs without compromising quality.

2. Recognize and advocate for families who need assistance during the hospital stay and after discharge.

3. Recognize one's limits and those of the system; take steps to avoid medical errors.

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**Rotation Specific Competencies**

**First Year (PL-1)**

**Patient Care:**

1. Prioritizes a day of work
2. Gathers essential/accurate information via interviews and physical exams in a manner that is respectful of patients and families
3. Can provide an organized and precise patient presentation
4. Works with all health care professionals to provide family centered care
5. Competently understands/perform/interprets procedures:
   - Capillary Blood Collection
   - Breast Pump Use
   - Circumcision: Able to discuss with parents

**Medical Knowledge:**
1. Uses written and electronic references and literature to learn about patient diseases
2. Demonstrates knowledge of basic and clinical sciences
3. Applies knowledge to therapy

**Interpersonal Skills and Communication:**
1. Writes pertinent and organized notes
2. Updates and maintains the ongoing patient data sheets
3. Uses effective listening, narrative, and non-verbal skills to elicit and provide information
4. Works effectively as a member of the health care team

**Practice-based Learning and Improvement:**
1. Understands his or her limitations of knowledge
2. Asks for help when needed
3. Is self-motivated to acquire knowledge
4. Accepts feedback and develops self-improvement plans

**Professionalism:**
1. Is honest, reliable, cooperative, and accepts responsibility
2. Shows regard for opinions and skills of colleagues
3. Is responsive to needs of patients and society, which supersedes self-interest
4. Acknowledges errors and works to minimize them

**Systems Based Practice:**
1. Is a patient advocate
2. Works within the system based model to optimize and ensure quality patient care

**Suggested Textbooks:**

**References:**
2. Ambulatory Pediatric Association
3. Association of Pediatric Program Directors
4. Pediatric RRC, January 2006