NEONATAL INTENSIVE CARE UNIT
GOALS, OBJECTIVES AND TEACHING

The rotation in the Neonatal Intensive Care Unit is intended to promote the compassionate, effective, and developmentally appropriate assessment and treatment of critically ill newborns by enhancing the residents’ knowledge of physiology, pharmacology and evidence based medicine.

PART I: PATIENT CARE AND MEDICAL KNOWLEDGE

GOAL: The ongoing acquisition of knowledge regarding established and evolving biomedical, clinical and cognate sciences, with the resultant application of that knowledge to the compassionate, age appropriate, and effective treatment of critically ill newborns.

OBJECTIVES:

1. Resuscitation and Stabilization:
   - Understand the basic principles and perform appropriate steps in resuscitation and stabilization, with particular reference to airway management and pharmacology.
   - Function appropriately in newborn resuscitation and stabilization in the delivery suite as a member of the critical care team.

2. Information Gathering:
   - Gather essential and accurate maternal history.
   - Obtain a labor and delivery history.
   - Conduct a congenital defects screen
   - Perform an appropriate prenatal assessment of growth status (pre-term, AGA, etc…) by history of the mother.
   - Perform an appropriate physical examination
   - Explain the indications and limitations of laboratory and radiologic study abnormalities in the context of disease-specific pathophysiology and formulate a plan for therapeutic intervention, when appropriate

3. Common signs and symptoms: (see table 1):
   - Rapidly recognize signs and symptoms indicating the onset of life-threatening events in preterm and term newborns.
   - Formulate a gestational age-appropriate differential diagnosis with appropriate prioritization.
   - Discuss the indications for admission to, and discharge diagnosis from, the NICU, including indications for emergent intervention and stabilization prior to transport to the NICU.
Formulate and execute a plan of assessment and management based on physiology, pathophysiology, pharmacology and evidence based guideline.

4. Common conditions: (see table 2):
   - Discuss the pathophysiologic basis of the disease process or injury
   - Discuss disease specific considerations for resuscitation, stabilization, continued evaluation and management
   - Understand the potential complications and consequences of the disease and various treatment options; evaluate prognosis.

5. Monitoring and therapeutic modalities:
   - Integrate physiologic and pathophysiologic principles to determine appropriate use of common therapies (oxygen administration, positive pressure ventilation, analgesia, sedation, enteral and parenteral nutrition, blood product transfusions, vasoactive medications), monitor their effects and describe potential complications

6. Management and decision making:
   - Develop and maintain a detailed list of tasks with accurate prioritization
   - Coordinate with multiple consultants involved in the care of the patient
   - Coordinate orderly transfer of care under another provider when NICU care is no longer required
   - Recognize the limits of one’s knowledge, skills, and tolerance for stress levels.

7. Medical ethics and legal issues;
   - Discuss concepts of futility, withdrawal and withholding of care.
   - Define brain death.
   - Describe hospital policy on “Do not resuscitate” order.

PART II: INTERPERSONAL AND COMMUNICATION SKILLS

GOAL: Understand and demonstrate effective communication and interpersonal skills with parents, patients and professional associates.

OBJECTIVES:

1. Develop and maintain a therapeutic and ethically sound relationship with patients and their families.
2. Listen effectively
3. Elicit and provide information using effective nonverbal, informative, interrogative, and writing skills
4. Communicate and work effectively with other residents, attendings, consultants, nurses and ancillary staff as part of the critical care team.
5. Communicate effectively with surgeons and subspecialists whose patients are being managed in the NICU.
6. Communicate frequently and effectively with referring and primary care physicians.
7. Consistently maintain accurate, timely and legally appropriate medical records.

PART III: PROFESSIONALISM

GOAL: Understand and demonstrate commitment to carrying out professional responsibilities, adherence to ethical principles and sensitivity to a diverse patient population.

OBJECTIVES:

1. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest; accountability to patients, society and the profession and a commitment to excellence and on-going professional development
2. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent and clinical practices
3. 

PART IV: TEACHING METHODS

To achieve the objectives of the Neonatal Critical Care rotation, the resident physician will participate in the following educational activities:

1. Teaching rounds:
   a. Prior to the start of daily teaching rounds, it is expected that the resident will:
      i. Examine each patient
      ii. Collect and review all bedside data
      iii. Review all radiographic studies
      iv. Develop a concise, system-based treatment plan.

   b. Teaching rounds will start at 0930 am daily and will continue until all patients have been discussed.
2. Neonatal Critical Care teaching conference:
   
a. Formal didactic teaching conferences will be held as part of the core curriculum schedule of the pediatric residency program and will include the following topics:
   i. Mechanical ventilation
   ii. Nutrition

**Table 2: Common conditions:**

**General:**
Congenital abnormalities
Prematurity

**Cardiovascular:**
Persistent pulmonary hypertension of the Newborn
Congenital heart disease
Patent ductus arteriosus

**Respiratory:**
Respiratory Distress Syndrome
Hyaline Membrane disease
Pneumothorax
Meconium aspiration
Congenital Pneumonia

**Neurologic:**
Hydrocephalus
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<th>Hypoxic-ischemic injury</th>
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<td>Intraventricular hemorrhage</td>
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<td>Neonatal asphyxia</td>
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**Hematologic:**
- Neonatal coagulopathy
- ABO incompatibility
- Hemolytic disease
- Anemia/polycythemia
- Neutropenia
- Thrombocytopenia

**Gastrointestinal:**
- Necrotizing enterocolitis
- Bowel obstruction
- Abdominal wall defects

**Infectious Diseases:**
- Neonatal infections caused by bacteria, virus and parasites
- Congenital acquired infections (HIV, CMV, toxoplasmosis, syphilis, and rubella)

**Fluids, electrolytes and metabolic:**
- Hypoglycemia
- Inborn errors of metabolism