**Neonatal Skills Lab Curriculum for the Pediatric Residents**

The skills lab curriculum will be implemented for each resident rotating through the NICU and will occur typically on Tuesdays and/or Thursdays. Each resident will participate weekly and will be exposed to the basic Neonatal Resuscitation Program as well as the 3 requirements as listed by the ACGME:

* Airway Management
* Endotracheal Intubation
* Umbilical Line Placement

The curriculum will focus on:

* Problem identification and general needs assessment
* Goals and Objectives (focusing on all competencies)
* Educational Strategies
* Medical Knowledge
* Teamwork
* Assessments with Implementation
* Evaluations and Feedback
* Outcomes and Credentialing / Competency at bedside

**Airway Management**

**Goals & Objectives:** To demonstrate airway management adhering to NRP guidelines.

* Review of transition to extra-uterine life
* Understanding the difference between primary and secondary apnea
* Identify when resuscitation is needed
* Review of NRP guidelines
* Demonstrate how to assemble and check equipment
* Describe different ways to provide positive pressure ventilation using:

1. Bag-Mask Ventilation
2. NeoPIP / T-piece Resuscitator

* Understand the differences between Bag-Mask Ventilation and NeoPIP including the benefits of each, how to assemble the equipment, and proper technique using the equipment
* Describe how to assess for effective ventilation
* Use of Pulse Oximetry during airway management

**Strategies:** The following will be used to learn the technique.

* Reading assignment: Neonatal Resuscitation Textbook, Sixth Edition:

Lessons 1-3

* Review video demonstration from the Atlas of Procedures in Neonatology
* Apply techniques on task trainer using Baby Ann

**Assessment:** Each resident will be assessed using the following:

* Checklist
* Feedback/Debriefing session

**Endotracheal Intubation**

**Goals & Objectives:** To demonstrate endotracheal intubation skills adhering to NRP standards in the neonate.

* Identify need for endotracheal intubation
* Equipment assembly
* Learn and demonstrate the technique
* Identify correct size ETT and blade needed for intubation
* Identify and demonstrate an understanding of the expected complications related to endotracheal intubation
* Understand how to use a meconium aspirator
* Understand use of Pulse Oximetry and Pedi-Cap during airway management
* Demonstrate proper x-ray interpretation of endotracheal tube position

**Strategies:** The following will be used to learn the technique:

* Reading assignment: Atlas of Procedures in Neonatology, Fifth Edition: Chapter 36, p 236-248
* Review video demonstration from the Atlas of Procedures in Neonatology
* Apply techniques on an intubation head task trainer

**Assessment:** Each resident will be assessed using the following:

* Checklist
* Feedback/Debriefing session

**Umbilical Line Placement**

**Goals & Objectives:** To demonstrate proper placement of umbilical catheters in the neonate adhering to unit policy.

* Identify situations during which umbilical line placement is needed including the differences between the need for an umbilical artery and/or umbilical vein catheter
* Understand contraindications for umbilical line placement
* Identify umbilical arteries and umbilical veins on inspection of an umbilical cord
* Preparation and proper assembly of equipment using sterile technique
* Understand how to determine the length of the catheter to be inserted into the neonate
* Learn and demonstrate the technique including proper positioning and stabilization
* Identify and demonstrate an understanding of the expected complications related to umbilical line placement
* Demonstrate proper xray interpretation of umbilical line positioning

**Strategies:** The following will be used to learn the technique:

* Reading assignment: Atlas of Procedures in Neonatology, Fifth Edition:

Chapter 29 (Umbilical Artery Catheterization); p 156-170

Chapter 30 (Umbilical Vein Catheterization); p 173-180

* Review New England Journal of Medicine demonstration <http://www.nejm.org/doi/full/10.1056/NEJMvcm0800666>
* Apply techniques on task trainer using Baby Ann and/or cord specimen

**Assessment:** Each resident will be assessed using the following:

* Checklist
* Feedback/Debriefing session