Curricular Components for Neonatology EPA

<table>
<thead>
<tr>
<th>1. EPA Title</th>
<th>Provide resuscitation and stabilization of neonates and infants that aligns care with severity of illness.</th>
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<td>2. Description of the activity</td>
<td>Managing neonates and infants in the delivery room or hospital environment that require resuscitation is a core activity of a neonatologist. The specific functions which define this EPA include:</td>
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<td>- Anticipate and recognize the sick neonate and infant requiring resuscitation. This activity includes provision of effective counseling to parents with a fetus at risk, both before and after delivery.</td>
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<td>- Understand the medical evidence for Neonatal Resuscitation Program (NRP) and maintain NRP provider status.</td>
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<td>- Prioritize and implement management in an expeditious fashion, particularly when procedures such as airway management and vascular access are indicated.</td>
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<td>- Effectively lead an inter-professional team before, during, and after resuscitation. Reflect on one’s own behaviors and provide feedback to other learners to improve future resuscitations.</td>
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| 3. Judicious mapping to domains of competence | X Patient Care  
| | Medical Knowledge  
| | Practice-based Learning and Improvement  
| | X Interpersonal & Communication Skills  
| | Professionalism  
| | X Systems-based Practice  
| | X Personal and Professional Development |
| 4. Competencies within each domain critical to entrustment decisions | PC 13: Supervision  
| | ICS 2: Insight into emotion  
| | SBP 5: Interprofessional teams  
| | PPD 6: Provide leadership  
| | PPD 7: Self-confidence |
| 5. Curricular Components that support the functions of the EPA (knowledge, skills and attitudes needed to execute this EPA safely): | Rationale: Ten percent of newborns require some assistance to breath at the time of birth, and 1% will require extensive cardiopulmonary resuscitation to survive. After birth, many neonates admitted to the neonatal intensive care unit (NICU) will require cardiopulmonary resuscitation at some point during their hospital stay. Therefore, neonatologists must be able to provide resuscitation and stabilization of neonates and infants that aligns care with severity of illness. |
| | Scope of Practice: The resuscitation and stabilization of neonates and infants involves the |

emergent management of cardiorespiratory failure and includes, but is not limited to, airway management, chest compressions, establishing emergency vascular access and the provision of intravenous fluids and medications. The cardiopulmonary resuscitation guidelines applied to neonates and infants are developed by the International Liaison Committee on Resuscitation (ILCOR) and the American Heart Association (AHA) and are taught through the Neonatal Resuscitation Program (NRP) and Pediatric Advanced Life Support (PALS) programs. It is beyond the scope of this document to consider the variety of contexts in which the neonatologist will practice. This document is intended to address the scope of knowledge and skills for which a neonatologist working in the delivery room, newborn nursery, or NICU needs to be competent, with a specific focus on neonatal resuscitation and stabilization.

Curricular components that support the functions of the EPA:

Anticipate and recognize the sick neonate and infant requiring resuscitation. This activity includes provision of effective counseling to parents with a fetus at risk, both before and after delivery.

- Recognizes prenatal risk factors and conditions that will likely result in cardiopulmonary compromise at birth.
- Seeks and employs evidence, when available, when counseling families about resuscitation, especially regarding limits of viability.
- Considers and offers parents the choice to pursue comfort measures alone in lieu of intensive resuscitation when appropriate.
- Projects confidence, fosters trust, and provides effective counseling of parents of premature infants, and infants with congenital anomalies and medical conditions requiring neonatal care.
- Reviews medical records and engages in closed loop communication with obstetric and relevant subspecialty services in order to anticipate and plan neonatal resuscitation.
- Seeks information regarding resources, services, practices and practitioners within catchment area.
- Effectively counsels’ parents/families, including determining previous experience with infant care, examining available support systems, inviting questions, and fostering shared decision making.

Understand the medical evidence for NRP and maintain NRP Provider status.

- Reviews and understands current American Heart Association (AHA) Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care and incorporates new recommendations into practice as they become available.
- Interprets AHA guidelines in light of the grade of the evidence.
- Applies an evidence-based approach to neonatal and infant resuscitation given the particular context for that patient.
- Maintains NRP Provider, or Instructor, status and considers maintaining PALS Provider, or Instructor, status, depending on the context of the care environment.

Prioritize and implement management in an expeditious fashion, particularly when
procedures such as airway management and vascular access are indicated.

Skills and procedures generally within the scope of a neonatologist (based on prevalence and potential morbidity) where the role of the neonatologist is to recognize, evaluate and treat:

Delivery Room Care:
- Assess gestational age and estimate or establish birth weight
- Initiate strategies for maintaining normal body temperature
- Suctioning of mouth and nose
- Proper administration of supplemental oxygen guided by pulse oximetry
- Assignment of Apgar scores
- Provision of positive pressure ventilation via self-inflating bag, flow-inflating bag, or T-piece resuscitator
- Provision of continuous positive airway pressure (CPAP)
- Placement of laryngeal mask
- Tracheal intubation – oral or nasal route
- Provision of chest compressions
- Emergency venous access (umbilical catheter or intraosseous)
- Intravascular fluid volume replacement
- Administration of drugs used for neonatal resuscitation
- Administration of surfactant
- Needle thoracentesis
- Chest tube placement
- Emergency abdominal paracentesis

Newborn nursery/NICU Care (in addition to the skills delineated above):
- Administration of therapeutic hypothermia
- Management of mechanical ventilation
- Emergency pericardiocentesis
- Interpretation of neonatal cardiac dysrhythmias
- Administration of dysrhythmia medications
- Medical cardioversion
- Electrocardioversion
- Defibrillation
- Initiation of inhaled nitric oxide
- Indication for, or referral for, Extracorporeal membrane oxygenation (ECMO)

Skills and procedures that generally require consultation/collaboration with other subspecialists and where the role of the neonatologist is to recognize, provide preliminary evaluation and refer, or seek additional consultation (this list depends greatly on context in which one practices. Neonatologists practicing in areas where access to appropriate subspecialists is limited will likely provide more of the care and may do so with advice from a subspecialist as needed. In many settings, a neonatologist will never confront these problems):
- Management of severe airway anomalies
- Management of severe cardiac lesions or refractory dysrhythmias
- Ex utero intrapartum treatment (EXIT) procedure
- Extra-corporeal cardiopulmonary resuscitation (ECPR)
- Emergency tracheotomy
- Placement of jugular or femoral venous lines
- Non-emergent pericardiocentesis

Effectively lead an inter-professional team before, during, and after resuscitation. Reflect on one’s own behaviors and provide feedback to other learners to improve future resuscitations.

- Leads effective pre-resuscitation briefing in order to determine roles and responsibilities of team members, confirms that all needed equipment and resources are available and ready, and plans resuscitation approach in order to optimize care.
- Knows and applies the appropriate treatment guidelines.
- Effectively practices the key behavioral skills of resuscitation.
  - Application of knowledge of the environment
  - Anticipation of problems and planning
  - Assumption of leadership role
  - Communication among team members
  - Distribution of workload
  - Attention allocation
  - Dissemination and utilization of information
  - Utilization of resources
  - Engagement in help seeking behaviors when needed
  - Role modeling of professional behavior
- Effectively leads post-event debriefing to identify areas of optimal and suboptimal team performance with the intent to improve subsequent team performance and patient care.
- Accurately documents the events of the resuscitation and the care provided.