



# Entrustable Professional Activities

## EPA 4 for Neonatal-Perinatal Medicine

### EPA 4: Provide Resuscitation and Stabilization of Neonates and Infants That Aligns Care with Severity of Illness

#### Supervision Scale for This EPA

1. Trusted to observe only
2. Trusted to execute with direct supervision and coaching
3. Trusted to execute with indirect supervision for most simple and some complex cases
4. Trusted to execute with indirect supervision but may require discussion of information conveyed for a few complex cases
5. Trusted to execute without supervision

#### Description of the Activity

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:

1. Anticipating and recognizing the sick neonate and infant requiring resuscitation. This activity includes providing effective counseling to parents with a fetus at risk, both before and after delivery.
2. Understanding the medical evidence for Neonatal Resuscitation Program (NRP) and maintain NRP provider status
3. Prioritizing and implementing management in an expeditious fashion, particularly when procedures such as airway management and vascular access are indicated
4. Effectively leading an interprofessional team before, during, and after resuscitation. Reflecting on one's own behaviors and providing feedback to other learners to improve future resuscitations

#### Judicious Mapping to Domains of Competence

- Patient Care
- Medical Knowledge
- Practice-Based Learning and Improvement
- Interpersonal and Communication Skills
- Professionalism
- Systems-Based Practice
- Personal and Professional Development

#### Competencies Within Each Domain Critical to Entrustment Decisions

PC 13:	Providing supervision
ICS 2:	Demonstrating insight into emotion
SBP 5:	Working in interprofessional teams
PPD 6:	Providing leadership to improve care
PPD 7:	Demonstrating self-confidence



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### Context for the EPA

**Rationale:** Ten percent of newborns require some assistance to breathe 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 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

1. Anticipating and recognizing the sick neonate and infant requiring resuscitation is an activity that includes providing 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, in 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
2. Understanding the medical evidence for NRP and maintaining NRP Provider status
  - Reviews and understands current 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



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3. Prioritizing and implementing 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 (performs as needed):
      - Assesses gestational age and estimates or establishes birth weight
      - Initiates strategies for maintaining normal body temperature
      - Suctions the mouth and nose
      - Properly administers supplemental oxygen guided by pulse oximetry
      - Assigns Apgar scores
      - Provides positive pressure ventilation via self-inflating bag, flow-inflating bag, or T-piece resuscitator
      - Provides continuous positive airway pressure (CPAP)
      - Places laryngeal mask airway
      - Performs tracheal intubation
      - Provides chest compressions
      - Establishes venous access (umbilical catheter or intraosseous)
      - Replaces intravascular fluid volume
      - Administers drugs used for neonatal resuscitation
      - Administers surfactant
      - Performs needle thoracentesis
      - Places a chest tube
      - Performs abdominal paracentesis
    - Newborn nursery/NICU Care (in addition to the skills delineated above, demonstrates the ability to do the following as needed):
      - Initiates therapeutic hypothermia
      - Manages mechanical ventilation
      - Interprets routine imaging
      - Performs pericardiocentesis
      - Interprets neonatal cardiac dysrhythmias
      - Administers dysrhythmia medications
      - Performs medical cardioversion
      - Performs electro cardioversion
      - Performs defibrillation
      - Initiates administration of inhaled nitric oxide
      - Recognizes indications for Extracorporeal membrane oxygenation (ECMO) and mobilizes in-house team or transfers infant to a center that can perform this procedure
  - 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



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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 complex 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

#### 4. Effectively leading an interprofessional team before, during, and after resuscitation. Reflecting on one's own behaviors and providing 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.
  - Applying knowledge of the environment
  - Anticipating problems and planning accordingly
  - Assuming a leadership role
  - Communicating with team members
  - Distributing workload
  - Prioritizing attention, tasks, and resource allocation
  - Disseminating and utilizing information
  - Identifying and utilizing needed resources
  - Engaging in help seeking behaviors when needed
  - Role modeling of professional behavior
- Engages parents about their wishes during resuscitation when appropriate
- 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

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### Curricular Components Author

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