



Entrustable Professional Activities

EPA 4 for Pediatric Pulmonology

EPA 4: Manage the Use of Supplemental Respiratory Equipment Such as Oxygen, Ventilators, and Airway Clearance Devices

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 and discussion of information for most simple and some complex cases
4. Trusted to execute with indirect supervision but may require discussion of information for a few complex cases
5. Trusted to execute without supervision

Description of the Activity

Care of the patient with chronic respiratory illnesses requires the pulmonologist to understand the indications for, complications of, contraindications to, and appropriate follow up for the use of respiratory durable medical equipment. This includes but is not limited to supplemental oxygen, invasive and noninvasive ventilators, tracheostomies, inhalational devices, and airway clearance devices. The pulmonologist should be able to manage this equipment in the inpatient and outpatient settings. Overseeing use of this equipment requires coordination and collaboration among other health care professionals (home health nurses, respiratory therapists, etc.), home health, and insurance companies.

The specific functions which define this EPA include:

1. Selecting the appropriate oxygen delivery device, flow, and fraction of inspired oxygen according to patient needs
2. Distinguishing the indications of different interfaces, settings, and modes in various models of invasive and noninvasive ventilator support
3. Interpreting testing that assesses ventilation and oxygenation status, such as physical exam, blood gas, pressure and volume ventilator readings, pulse oximetry, and polysomnography
4. Selecting appropriate airway clearance devices to improve mucociliary clearance
5. Assessing and documenting ongoing need for supplemental respiratory equipment and developing weaning plans when appropriate
6. Communicating and coordinating care with health care professionals, home health, and insurance personnel

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



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Competencies Within Each Domain Critical to Entrustment Decisions

PC 6:	Using optimal clinical judgment
PC 7:	Developing management plans
MK 1:	Demonstrating knowledge
ICS 3:	Communicating with health professionals
ICS 4:	Working as a member of a health care team
SBP 1:	Working in care delivery settings and systems
SBP 2:	Coordinating care

Context for the EPA

Rationale: Pediatric pulmonologists must be able to provide acute and chronic care for patients requiring various types of durable medical equipment. This involves not only the knowledge and skills of supplemental oxygen, ventilators, tracheostomies, and other devices but also the coordination of care among the patient, hospital, home health, and insurance companies. Therefore, the pediatric pulmonologist must have the knowledge and skills to wean, discontinue, maintain, change, or escalate support as appropriate.

Scope of Practice: The patient population includes all age ranges in the pediatric population from infants to adolescents/young adults. Patients are often medically complex with multiple comorbid conditions necessitating effective communication with a team of different subspecialists and care providers. Care as outlined in this EPA is initiated when durable medical equipment such as oxygen devices, ventilators, tracheostomies, and airway clearance devices are indicated and prescribed. This document is intended to address the knowledge and skills of a pediatric pulmonologist functioning in the inpatient and/or outpatient settings including times of transition from acute inpatient to chronic outpatient care.

Curricular Components That Support the Functions of the EPA

1. Selecting the appropriate oxygen delivery device, flow, and fraction of inspired oxygen according to patient needs
 - Distinguishes between flow and fraction of inspired oxygen
 - Critiques the indications for nasal cannula, high flow nasal cannula, and face masks including simple, venturi, and nonrebreather masks
2. Distinguishing the indications of different interfaces, settings, and modes in various models of invasive and noninvasive ventilator support
 - Applies invasive and noninvasive modes of ventilator support as clinically appropriate
 - Recognizes physiologic implications of changes in ventilator settings
 - Employs troubleshooting techniques related to mechanical ventilation
 - Assesses interfaces for invasive and noninvasive ventilator support
 - Implements ventilator changes to improve ventilation and oxygenation



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3. Interpreting testing that assesses ventilation and oxygenation status, such as physical exam, blood gas, pressure and volume ventilator waveforms, pulse oximetry, and polysomnography
 - Synthesizes a constellation of signs from noninvasive methods such as physical exam, pulse oximetry, and end tidal CO₂
 - Interprets results from blood gases accurately
 - Analyzes ventilator waveforms to assess physiologic parameters
 - Determines clinically significant vs. insignificant findings on polysomnography
4. Selecting appropriate airway clearance devices to improve mucociliary clearance
 - Recognizes the appropriate uses of high frequency oscillatory devices, Intermittent Positive Pressure Ventilation, and Cough Assist Device
 - Recommends the use of handheld airway clearance devices appropriately
 - Prescribes inhaled medications to facilitate mucolysis
5. Assessing and documenting ongoing need for supplemental respiratory equipment and developing weaning or escalating plans when appropriate
 - Describes the considerations when weaning or escalating ventilator support
 - Formulates management plans to wean or escalate oxygen and ventilator support
 - Engages with the patient/family and other team members to explain considerations for altering ventilator support and shares decision-making regarding changes in management plans with them
 - Understanding the indications for tracheostomy, care of patients with a tracheostomy, and indications for decannulation
6. Communicating and coordinating care with health care professionals, home health, and insurance personnel
 - Writes appropriate home health orders
 - Prescribes equipment and supplies with cost consideration
 - Communicates effectively with staff across inpatient and outpatient settings and home health agencies

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