



Entrustable Professional Activities

EPA 3 for Pediatric Emergency Medicine

EPA 3: Demonstrate Competence in Performing Common Procedures Associated with the Practice of Pediatric Emergency Medicine

Supervision Scale for This EPA

1. Trusted to observe or assist
2. Trusted to execute with direct supervision and coaching
3. Trusted to execute with indirect supervision for most simple cases and some complex cases
4. Trusted to execute with indirect supervision but may require discussion or direct supervision at critical portions for a few complex cases
5. Trusted to execute without supervision

Description of the Activity

Pediatric emergency medicine physicians need to perform procedures necessary for the practice of this subspecialty. PEM physicians must also recognize the need for and consult subspecialty services when patients require procedures that fall outside their scope of practice.

The specific functions which define this EPA include:

1. Employing technical (motor) skills for performing PEM procedures
2. Demonstrating knowledge of the anatomy, physiology, indications, contraindications, risks, benefits, alternatives, and potential complications of the procedure being performed
3. Planning and implementing required pre-procedural setup to maximize successful performance of the procedure
4. Managing procedural and post-procedural complications
5. Managing pain and sedation for the procedure
6. Assessing outcome of the procedure and diagnostic results as indicated
7. Demonstrating confidence that puts patients and their caregivers at ease
8. Optimizing communication with the patient and their caregivers that ensures informed consent and provision of post-procedural explanation and instructions

Procedures commonly performed in the practice of pediatric emergency medicine include but are not limited to the following:

- Abscess incision and drainage
- Airway and artificial ventilation management
 - Bag-valve-mask ventilation
 - Endotracheal intubation with direct or indirect laryngoscopy
 - Mechanical ventilation
 - Noninvasive ventilation
 - Supraglottic device insertion



Entrustable Professional Activities

EPA 3 for Pediatric Emergency Medicine

- Cardiopulmonary resuscitation in all of the following groups:
 - Pediatric medical resuscitation <2 years
 - Pediatric medical resuscitation >2 years
 - Pediatric trauma resuscitation <2 years
 - Pediatric trauma resuscitation >2 years
- Foreign body removal
- Gastrostomy tube replacement
- Intraosseous access
- Laceration repair
- Lumbar puncture
- Orthopedic procedures: closed reduction of simple fractures/dislocations and splint placement
- Rapid sequence induction for emergent intubation
- Regional anesthesia
- Procedural sedation
- Supraventricular tachycardia conversion

The following procedures are uncommon in the daily practice of PEM, but physicians should have working knowledge of how to perform them. Simulation training may be the primary method for PEM physicians to learn and practice these procedures:

- Arterial catheterization
- Arthrocentesis
- Cardiac pacing, external
- Cardioversion and defibrillation
- Central venous catheterization
- Cricothyrotomy and translaryngeal ventilation
- Pericardiocentesis
- Resuscitation of adults (medical and trauma) >21 years
- Tracheostomy tube replacement
- Tube thoracostomy and needle decompression
- Umbilical vessel catheterization
- Vaginal delivery

The above list of procedures is not meant to be all-inclusive and given the changing nature of medicine and practice within PEM, this list should be reviewed and revised periodically. For example, point of care ultrasound (POCUS) is an established practice in general emergency medicine and is being increasingly used in PEM but is not yet standard of care.

Judicious Mapping to Domains of Competence

- Patient Care
- Medical Knowledge
- Practice-Based Learning and Improvement
- Interpersonal and Communication Skills



Entrustable Professional Activities

EPA 3 for Pediatric Emergency Medicine

- Professionalism
- Systems-Based Practice
- Personal and Professional Development

Competencies Within Each Domain Critical to Entrustment Decisions

- *Bold competencies labeled in the format used on the Pediatric Emergency Medicine Milestone Project.*
- *Nonbolded competencies labeled in the format used on the Pediatric Subspecialty Milestone Project.*

PC 7:	Observation and reassessment – Reevaluate patients undergoing ED observation (and monitoring) and using appropriate data and resources, determine the differential diagnosis, treatment plan, and disposition
PC 9:	General approach to procedures – Perform the indicated procedure on all appropriate patients (including those who are uncooperative, hemodynamically unstable and those who have multiple comorbidities, poorly defined anatomy, high risk for pain or procedural complications, sedation requirement), take steps to avoid potential complications, and recognize the outcome and/or complications resulting from the procedure
PC 10:	Anesthesia and acute pain management – Provide safe acute pain management, anesthesia, and procedural sedation to patients of all ages regardless of the clinical situation
PROF 1:	Self-awareness of one’s own knowledge, skill, and emotional limitations that leads to appropriate help-seeking behaviors
PROF 5:	Demonstrate self-confidence that puts patients, families, and members of the health care team at ease
Pediatric Subspecialty PROF 2:	Not an ACGME required milestone for PEM: Trustworthiness that makes colleagues feel secure when one is responsible for the care of patients
ICS 1:	Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds

Context for the EPA

Rationale: Pediatric emergency medicine physicians need to perform procedures necessary for the practice of this subspecialty. PEM physicians must also recognize the need for and consult subspecialty services when patients require procedures that fall outside their scope of practice.

Scope of Practice: Procedures commonly performed in the practice of pediatric emergency medicine are listed in the “Description of the Activity” section of this EPA.

Curricular Components That Support the Functions of the EPA

1. Employing technical (motor) skills necessary for performing PEM procedures
 - Successfully performs and/or supervises trainee performance of procedures common to the daily practice of PEM
 - Demonstrates working knowledge of how to perform rare but critical procedures uncommon to the daily practice of PEM



Entrustable Professional Activities

EPA 3 for Pediatric Emergency Medicine

2. Demonstrating knowledge of the anatomy, physiology, indications, risks, benefits, alternatives, and potential complications of procedures being performed
 - Identifies pertinent anatomy and explains physiology as it relates to the procedure being performed.
 - Applies knowledge regarding indications, contraindications, and potential complications associated with the procedure to determine the
 - Who: Practitioner appropriately skilled to perform the procedure
 - Where: Best setting for the procedure to be performed
 - How: Procedural performance plan (i.e., the methodology and approach to be employed)
3. Planning and implementing required pre-procedural set up to maximize successful performance of the procedure
 - Plans key steps needed to perform the procedure in the ED
 - Obtains informed consent or assent when applicable and available
 - Ensures necessary pain and anxiety control is in place (procedural sedation, distraction technique, physical restraint)
 - Ensures monitoring equipment is in place in accordance with patient safety standards
 - Gathers all necessary equipment and personnel to perform the procedure
 - Plans strategies to address complications
 - Identifies back-up strategies to implement if initial procedural attempts are unsuccessful
4. Managing procedural and post-procedural complications
 - Recognizes complications if they occur during or after the procedure
 - Implements planned and/or back-up strategies to address complications
 - Recognizes imminent patient safety threats and aborts the procedure safely
5. Managing pain and sedation for the procedure
 - Performs patient assessment and selects plan for procedural sedation and/or pain management that will achieve the level of anesthesia needed while minimizing patient risk, distress, and recovery time
 - Performs pre-sedation assessment that includes the intentional evaluation of the airway
 - Uses restraint techniques in conjunction with distraction techniques, pain/anxiolytic medications (oral, intranasal, or intravenous), local or regional anesthesia, and/or nitrous oxide administration. Describes indications, contraindications, pitfalls, and complications associated with each of these techniques
 - When using procedural sedation, describes indications, contraindications, potential complications, and appropriate medications/doses to use
 - Obtains informed consent or assent
 - Orders appropriate medications and ensures availability of necessary monitoring equipment
 - Ensures appropriate monitoring of patients during and after procedural sedation
 - Recognizes and addresses sedation-related complications if they occur
 - Ensures adequate patient recovery appropriate for planned disposition from the ED



Entrustable Professional Activities

EPA 3 for Pediatric Emergency Medicine

6. Assessing outcome of the procedure and diagnostic results as indicated
 - Assesses procedural outcome
 - Sends obtained specimen for necessary diagnostic testing if applicable. When necessary, prioritizes testing based on quantity of specimen obtained
 - Interprets and communicates procedural results to patients, their caregiver(s), and other members of the health care team as appropriate
 - Recognizes personal limitations in procedural skills and designs self-improvement plan
7. Demonstrating confidence that puts patients and their caregivers at ease
 - Demonstrates self-confidence while being aware of personal limitations
 - Allays patient and caregiver concerns through effective communication and supportive approach
8. Optimizing communication with the patient and their caregiver(s), ensures informed consent and provision of post-procedural explanation and instructions
 - Communicates effectively with patients and their caregivers, ensuring that they are
 - Informed of the risks, benefits, and alternatives to all procedures
 - Given the opportunity to voice their concerns
 - Allowed to share in the decision-making of patient care plans when appropriate
 - Informed of medical decision-making processes and plans of care
 - Supported and appropriately counseled for their (family) presence during procedures
 - Counsels patients and their caregivers to ensure their understanding of all instructions, addresses language, socioeconomic, religious, and cultural barriers as necessary
 - Displays humanism, compassion, integrity, and respect for others; is responsive to the needs of patients and their families

References

- American Board of Pediatrics Subboard of Pediatric Emergency Medicine. Content Outline Pediatric Emergency Medicine Subspecialty In-training, Certification, and Maintenance of Certification Examinations. <https://www.abp.org/content/content-outlines-subspecialties>
- American Board of Emergency Medicine Core Content Task Force II. 2013 Model of the Clinical Practice of Emergency Medicine. <https://www.abem.org/public/publications/em-model/reference>
- American Board of Emergency Medicine Initial Certification Task Force. KSAs and Standards 2015.
- Hockberger R, La Duca A, Orr N, Reinhart M, and Sklar D. Creating the model of a clinical practice: the case of emergency medicine. Acad emerg med. 10(2) 2003. 161-168
- Fleisher & Ludwig's Textbook of Pediatric Emergency Medicine 7th edition. Wolters Kluwer 2016
- Pediatric Emergency Medicine 3rd edition. Strange, et al. McGraw-Hill 2009
- ACGME Program Requirements for Graduate Medical Education in Pediatric Emergency Medicine.
- ACGME Program Requirements for Graduate Medical Education in Emergency Medicine.



Entrustable Professional Activities

EPA 3 for Pediatric Emergency Medicine

Pediatric Emergency Medicine Subspecialty Specific
Entrustable Professional Activities (EPAs)
March 2016

Identification of PEM EPAs conducted by:

Hsu D, Nypaver M, Kou M,
Dahl-Grove D, House J, Klasner A, Santen S, Stankovic C, Titus MO

Descriptions of PEM EPAs developed by:

Hsu D, Nypaver M, Kou M,
Chang T, Chapman J, Eldridge C, Fein DM, Heffner V, Herman B, Kennedy C,
Langhan M, Lumba-Brown A, Madhok M, McAneney C, Nagler J,
Ramirez J, Reynolds S, Roskind C, Zaveri P, Zuckerbraun N

Competencies mapped to PEM EPAs by:

Hsu D, Chang T, Dahl-Grove D, Fein DM, Jacobs E, Klasner A, Kou M, Langhan M,
Lumba-Brown A, Madhok M, McAneney C, Mittiga M, Nagler J, Nypaver M,
Ramirez J, Reynolds S, Stankovic C, Thompson T, Zaveri P, Zuckerbraun N

Curricular components written by:

Hsu D, Chang T, Chapman J, Dahl-Grove D, Fein DM, Klasner A,
Kou M, Langhan M, McAneney C, Mittiga M, Nagler J,
Nypaver M, Ramirez J, Reynolds S, Roskind C, Zuckerbraun N

Pediatric emergency medicine subspecialty representatives to ABP EPAs for Subspecialties Meeting, March 2013:

Deborah Hsu, Chris Kennedy, and Richard Bachur

The authors of this work would like to thank the American Academy of Pediatrics Section on Emergency Medicine (AAP SOEM) Executive Committee for their support of this project as well as all members of the AAP SOEM Fellowship Subcommittee for their input and review of this project.



Entrustable Professional Activities

EPA 3 for Pediatric Emergency Medicine

Project Contributors

Deborah Hsu, MD MEd Project Leader Baylor College of Medicine Texas Children's Hospital Houston, TX	Michele M. Nypaver, MD Project Co-Leader University of Michigan Ann Arbor, MI	Maybelle Kou, MD Project Co-Leader Inova Children's Hospital Falls Church, VA
Todd P Chang, MD, MAcM University of Southern California Children's Hospital of Los Angeles Los Angeles, CA	Jennifer Chapman, MD Children's National Medical Center Washington, DC	Deanna Dahl-Grove, MD Rainbow Babies and Children's Hospital Cleveland, OH
Charles Eldridge, MD Washington University in St. Louis St Louis Children's Hospital St. Louis, MO	Daniel M. Fein, MD Albert Einstein College of Medicine Children's Hospital at Montefiore Bronx, NY	Viday Heffner, MD Children's Hospital of Wisconsin Wauwatosa, WI
Bruce Herman, MD University of Utah Primary Children's Hospital Salt Lake City, UT	Joseph B. House, MD University of Michigan Ann Arbor, MI	Elizabeth Jacobs, MD Rhode Island Hospital/Hasbro Children's Hospital Alpert Medical School of Brown University Providence, RI
Ann Klasner, MD, MPH University of Alabama Birmingham, AL	Chris Kennedy, MD Children's Mercy Hospital Kansas City, MO	Melissa Langan, MD, MHS Yale University School of Medicine New Haven, CT
Angela Lumba-Brown, MD Washington University in St. Louis St. Louis Children's Hospital St. Louis, MO	Manu Madhok, MD MPH Children's Hospitals and Clinics of Minnesota/Health Partners Institute of Education and Research Minneapolis, MN	Constance McAnaney, MD Cincinnati Children's Hospital Medical Center Cincinnati, OH
Matthew Mittiga, MD Cincinnati Children's Hospital Medical Center Cincinnati, OH	Joshua Nagler, MD, MHPEd Boston Children's Hospital Boston, MA	Jose Ramirez, MD Arnold Palmer Hospital for Children Orlando Health Program Orlando, FL
Stacy Reynolds, MD Carolinas Medical Center Levine Children's Hospital Charlotte, NC	Cindy Ganis Roskind, MD Columbia University Medical Center Children's Hospital of New York- Presbyterian New York, NY	Sally Santen, MD, PhD University of Michigan Ann Arbor, MI
Curt Stankovic, MD Children's Hospital of Michigan Detroit, MI	M. Olivia Titus, MD Medical University of South Carolina Charleston, SC	Tonya Thompson, MD, MA University of Arkansas for Medical Sciences Arkansas Children's Hospital Little Rock, AK
Pavan Zaveri, MD, MEd Children's National Medical Center Washington, DC	Noel Zuckerbraun, MD, MPH Children's Hospital of Pittsburgh Pittsburgh, PA	