



# Entrustable Professional Activities

## EPA 2 for Pediatric Emergency Medicine

### EPA 2: Recognize and Provide Care for Medically and Technologically Complex Pediatric Patients in the ED

#### 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 for a few complex cases
5. Trusted to execute without supervision

#### Description of the Activity

Children with complex chronic illness who present with acute problems and require emergent evaluation pose a challenging but critical activity for the ED physician. The focal components of this professional activity build on those of managing the healthy ED patient with acute illnesses (see Pediatric Emergency Medicine EPA 1).

The specific functions which define this EPA include:

1. Developing a diagnostic and management plan that takes into consideration the interaction between the acute problem and the underlying chronic illness with its associated comorbidities
2. Recognizing the cumulative risks associated with these interactions
3. Recognizing that illness may present with subtle or atypical historical or physical exam findings in these patients
4. Assessing and managing problems with medical equipment
5. Communicating and partnering with the patient's interdisciplinary health care teams to coordinate ED care
6. Managing uncertainty (individual practitioner's, patient's, and patient caregiver's) when evidence to help direct care is sparse

#### 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

- *Bolded competencies labeled in the format used on the Pediatric Emergency Medicine Milestone Project.*
- *Nonbolded competencies labeled in the format used on the Pediatric Subspecialty or Pediatrics Milestone Projects.*



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<b>PC 1:</b>	Gather essential and accurate information about the patient – Abstract current findings in a patient with multiple chronic medical problems and, when appropriate, compare with a prior medical record and identify significant differences between the current presentation and past presentations
<b>PBLI 1:</b>	Use information technology to optimize learning and care delivery
Pediatric Subspecialty SBP 3:	Not an ACGME required competency for PEM: Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate
<b>PROF 2:</b>	The capacity to accept that ambiguity is part of clinical medicine and to recognize the need for and to utilize appropriate resources in dealing with uncertainty
Pediatrics PROF 1:	Not an ACGME required competency for PEM: Humanism, compassion, integrity, and respect for others; based on the characteristics of an empathetic practitioner
<b>ICS 1:</b>	Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds
<b>ICS 3:</b>	Act in a consultative role to other physicians and health professionals
Pediatric Subspecialty ICS 1:	Not an ACGME required milestone for PEM: Communicate effectively with physicians, other health professionals, and health-related agencies

\* The competencies for EPA 1 are complementary competencies also relevant to EPA 2.

### Context for the EPA

**Rationale:** Children with complex chronic illnesses who present with acute problems and require emergent evaluation pose a challenging but critical activity for the ED physician.

**Scope of Practice:** The PEM physician must be prepared to provide care for any patient presenting with any complaint. Secondary to their highly specialized health care needs, children with complex chronic illnesses, especially those who are technologically dependent, preferentially seek acute care in the ED. Care of the patient begins either in the pre-hospital setting through online medical direction or upon arrival to the ED. Practice sites (academic versus community) may differ in terms of availability of subspecialty support and patient acuity, complexity, and volume. A comprehensive set of skills is required to implement careful decision-making/management and demonstrate patient centeredness, communication, and clinical capabilities for these complex patients.

### Curricular Components That Support the Functions of the EPA

1. Developing a diagnostic and management plan that takes into consideration the interaction between the acute problem and the underlying chronic illness with its associated comorbidities
  - Demonstrates sufficient knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences pertaining to the care of medically and technologically complex pediatric patients. Identifies and applies key evidence-based guidelines (if available) for development of differential diagnoses and care plans
  - Orders diagnostic testing based on the probability of disease and likelihood of test results altering management, taking into account how the patient's chronic medical problems may affect probability of disease



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- Recognizes that these patients are more fragile and have a higher pre-test probability for disease than otherwise well children
    - Utilizes testing to gather information that may not be obtained from patients with limited ability to communicate symptoms
    - Utilizes information technology to optimize patient care
  - Ensures diagnostic test and medication orders are timely and accurately written
  - Appropriately interprets diagnostic tests. Uses previously collected data for comparison to determine acuteness of the presenting problem
  - Performs comprehensive medication reconciliation. Uses appropriate medications and therapeutic measures, being cognizant of dose/procedural adjustments for use in patients with chronic medical problems
  - Assesses, treats, and reassesses pain, taking into account that different pain assessment tools may be needed for the medically complex child
  - Performs procedures for urgent and emergent conditions (see Pediatric Emergency Medicine EPA 3 for details)
    - Prepares for additional monitoring and/or service support for ED procedures
    - Identifies patients for whom the threshold for safe ED procedural capability is exceeded and facilitates performance of the procedure in another setting outside of the ED
  - Coordinates a multidisciplinary team to implement management plans
  - Communicates effectively with consulting services and facilitates care delivered by consultants to optimize patient care during the ED stay
2. Recognizing the cumulative risks associated with the interaction between the acute problem and the underlying chronic illness
- Recognizes that common pediatric illnesses and injuries can afflict chronically ill children
  - Acknowledges that evidence available to inform decision-making for otherwise healthy patients may not be applicable or must be modified when delivering care to these patients
  - Evaluates for presence of indwelling devices such as venous catheters, cerebrospinal fluid shunts, tracheostomy tubes, as well as other devices that add complexity to the care of these patients
  - Identifies factors that contribute to acute symptoms (e.g., recent hospitalization or surgery) that puts patients at increased risk
3. Recognizing that illness may present with subtle or atypical historical or physical exam findings in these patients
- Evaluates the medically and technologically complex patients who arrive to the ED with complaints known to be associated with their chronic illness or with new undifferentiated chief complaints. Determines likely etiologies organized under key categories of medical, surgical, psychiatric, or socially related issues
  - Recognizes that mental health issues may confound presentation of acute illnesses in patients with chronic health problems
  - Differentiates between stable, chronic findings and acutely worsening findings



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- Considers input from patient caregivers in their knowledge of the specific illness, disease presentations, and equipment of their child. Recognizes that most home caregivers of these children are experts in their care and are sensitive to subtle changes in their health conditions
4. Assessing and managing problems with medical equipment
    - Demonstrates knowledge of how indwelling devices, anatomic diversions (e.g., colostomy, ileostomy, ureterostomy, vesicostomy, nephrostomy, and ileal conduits), and their accompanying equipment function. Often encountered devices include, but are not limited to, tracheostomy tubes, home ventilators, cerebrospinal fluid shunts, indwelling venous access catheters, enteral feeding tubes, pacemakers, vagal nerve stimulators, and implantable cardioverter defibrillators
    - Troubleshoots the various issues (equipment malfunction, necessary temporizing measures, predisposition for infection) associated with these devices, diversions, and equipment. Maintains awareness of resources available for assessing and managing problems
    - Maintains awareness of new technologies that may be used by this patient population
  5. Communicating and partnering with the patient's interdisciplinary health care teams to coordinate ED care
    - Involves home caregivers in the patient's ED care and encourages them to play an integral role in the evaluation, management, and disposition of the patient
    - Recognizes that a multiplicity of subspecialists may be involved in the patient's care
    - Provides efficient ED care for these patients through timely involvement of interdisciplinary health care team members
    - Communicates effectively with consulting physicians, other health professionals and health-related agencies
    - Partners with the interdisciplinary team to provide care that is comprehensive, coordinated, accessible, and patient-centered, meeting the medical, social, developmental, behavioral, mental health, educational, and financial needs of the patient and family
    - When applicable, establishes resuscitation needs of the patient by determining the presence of an advance directive, delineating the extent to which the advance directive sets limits to care that should be provided in the ED. In cases where an advance directive is nonexistent, discusses with the patient's caregiver(s) the extent to which the patient should be resuscitated in the ED
  6. Managing uncertainty (individual practitioner's, patient's, and patient caregiver's) when evidence is sparse to help direct care
    - Accepts that ambiguity is part of clinical medicine and may be amplified in medically complex children
    - Recognizes the need for and utilizes medical and nonmedical resources in dealing with uncertainty
    - Alters usual criteria for disposition from the ED when managing the medically and/or technologically complex patient
      - Home caregivers of these children often have sufficient equipment and trained personnel available in the home setting to manage exacerbations of chronic issues or acute problems. While an otherwise healthy patient with similar presenting problems may require admission for inpatient treatment, the medically and/or technologically complex patient may be managed at home with close outpatient follow up by their primary care physicians and/or subspecialists



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- Conversely, home caregivers may bring the chronically ill patient to the ED for management of acute problems that create stressful situations at home. These psychosocial issues must be addressed and may lower the practitioner threshold for admitting these patients for inpatient treatment of acute problems

### References

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- 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>
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- 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
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- ACGME Program Requirements for Graduate Medical Education in Emergency Medicine.



# Entrustable Professional Activities

## EPA 2 for Pediatric Emergency Medicine

Pediatric Emergency Medicine Subspecialty Specific  
Entrustable Professional Activities (EPAs)  
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### 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

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### 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	