



Entrustable Professional Activities

EPA 5 for Pediatric Hematology-Oncology

EPA 5: Demonstrate Competence in Performing and Interpreting Common Procedures of a Pediatric Hematologist/Oncologist

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 only
5. Trusted to execute without supervision

Description of the Activity

All pediatric hematology/oncology specialists need to be able to perform and interpret results from the following procedures: bone marrow aspiration, bone marrow biopsy, and lumbar puncture with administration of intrathecal chemotherapy. [Some programs may require training in additional procedures (e.g., bone marrow harvest, ommaya tap). Determination of competency in these procedures will be left to the discretion of local fellowship programs and are not addressed as part of this EPA.] All pediatric hematology/oncology specialists need also to be able to interpret peripheral blood smears and common diagnostic laboratory tests.

The specific functions which define this EPA include:

1. Applying medical knowledge that includes the anatomy, physiology, indications, risks, benefits, alternatives, and potential complications of each procedure
2. Managing pre-procedural process for patients who require a procedure
3. Demonstrating the requisite technical skills to safely and effectively perform the procedure
4. Managing post-procedural complications
5. Managing pain and sedation for the procedure
6. Interpreting results of the procedure as indicated
7. Communicating with the patient and family before the procedure to ensure informed consent and after the procedure to convey instructions for care and explanation of the results as indicated; clearly documents a procedure note in the medical record
8. Demonstrating confidence that puts patients and families at ease

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 8:	Performing procedures
PC 9:	Counseling patients and families
MK 1:	Demonstrating knowledge
ICS 1:	Communicating with patients/families
ICS 2:	Demonstrating insight into emotion
ICS 6:	Maintaining medical records
SBP 3:	Incorporating cost awareness into care
PPD 7:	Demonstrating self-confidence

Context for the EPA

Rationale: The care of children with hematologic and oncologic illnesses frequently requires the use of bone marrow aspiration, bone marrow biopsy, and lumbar puncture. These procedures are important tools in both evaluation and treatment of many diagnoses. In addition to selecting the appropriate procedure and performing it, the pediatric hematologist/oncologist must interpret results and communicate with families confidently; thus, it is critical that trainees have a comprehensive knowledge of all aspects of these procedures.

Scope of Practice: Scope of practice would involve any child from birth to young adulthood who is under the care of a pediatric hematology/oncology subspecialist. Such patients would include those being evaluated for hematology or oncology diagnoses requiring bone marrow or spinal fluid analysis, as well as those undergoing therapy and requiring bone marrow or spinal fluid analysis or the administration of intrathecal chemotherapy. In order to safely perform these procedures, the institution must be able to provide the necessary support, including adequate space for procedures, pediatric anesthesia or sedation services, and nursing support. In addition, it will also be important that the institution has appropriate laboratory support for the processing of specimens and laboratory and pathology specialists who may perform further testing such as flow cytometry and assist in the interpretation of results. Medical knowledge necessary for the attainment of this EPA includes anatomy, physiology, indications, risks, benefits, alternatives, and potential complications of each procedure.

Curricular Components That Support the Functions of the EPA

1. Applying medical knowledge that includes the anatomy, physiology, indications, risks, benefits, alternatives, and potential complications of each procedure
 - Knows the appropriate anatomy and physiology for the prescribed procedure
 - Knows the indications and alternatives for the prescribed procedure
 - Knows the potential complications of each procedure
 - Knows the cost of the prescribed procedures, including proper billing practices
2. Management of pre-procedural process for patients who require a procedure
 - Recognizes laboratory results that could influence anesthesia or procedural risk
 - Identifies medications or herbal substances that could impact safety concerns (e.g., anticoagulants) or impact interpretation of testing (e.g., steroids)
3. Demonstrating the requisite technical skills to safely and effectively perform the procedure



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- Knows the appropriate anatomy and physiology for the prescribed procedure
 - Identifies the purpose and differences of various equipment options and selects appropriate tools for procedure
 - Follows institutional guidelines for performing “time outs” and other safety checks prior to beginning procedures
 - Demonstrates technical skills required to perform prescribed procedure
 - Assures proper specimen handling and delivery to appropriate laboratories
4. Managing post-procedural complications
- Recognizes complications such as infection, bleeding, and headache as potential complications
 - Prescribes appropriate management to mitigate complications
5. Managing pain and sedation for the procedure
- Recognizes the need for sedation and analgesic control for prescribed procedures
 - Prescribes appropriate local and systemic analgesia
 - Works with sedation providers when indicated
6. Interpreting results of the procedure as indicated
- Prescribes appropriate testing for the given clinical situation
 - Recognizes normal and abnormal features on bone marrow aspiration, bone marrow biopsy, and cerebrospinal fluid analyses
 - Knows definitions of M1, M2, M3 in acute leukemias
 - Knows definitions of CNS1, CNS2, CNS3 in acute leukemias
 - Understands prognostic and clinical significance of CNS status
7. Communicating with the patient and family before the procedure to ensure informed consent and after the procedure to convey instructions for care and explanation of the results as indicated. Clearly documents a procedure note in the medical record
- Explains pre-procedure NPO status and recommendations for administration or withholding of medications as clinically indicated
 - Explains to the patient and family the indications for the procedure as well as the risks and benefits of the procedure to ensure informed consent
 - Communicates with other services, such as anesthesia, surgery, and medical subspecialists, to coordinate care
 - Ensures follow through on plans that have been delegated to the nursing staff or resident team
 - Supplies the patient and family with appropriate post-procedure care instructions
 - Effectively conveys results of the procedure to the patient and family in the context of the clinical situation
 - Documents the consent discussion, procedure note, and discussion of results in the medical record ensuring clarity and timeliness
 - Maintains a procedure log



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8. Demonstrating confidence that puts patients and families at ease
 - Using cultural- and age-appropriate language, explains the indications, complications, and results of the procedure
 - Engages in closed loop communication for serious concerns regarding prescribed procedures

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