



# Entrustable Professional Activities

## EPA 1 for Pediatric Hematology-Oncology

### EPA 1: Manage Patients with Hematology-Oncology Conditions, Whether Acute or Chronic, Simple or Complex, in an Ambulatory, Emergency, or Inpatient Setting

#### 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 conveyed 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

The practice of pediatric hematology-oncology involves a diverse array of diagnoses and clinical situations which the clinician must be prepared to manage.

The specific functions which define this EPA include:

1. Gathering and integrating available patient data and engaging in sound clinical reasoning to develop an appropriate differential diagnosis and workup
2. Developing the management plan
3. Placing the patient at the center of all management decisions by engaging in bidirectional communication with patients and parents (patient- and family-centered care)
4. Assessing the psychosocial needs of the patient and family and determining the impact of those needs on the management plan
5. Coordinating care that involves a large team of providers
6. Managing uncertainty (on the part of both the hematologist-oncologist and the patient and family) since some management decisions must be made in the absence of sufficient evidence

#### 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 2:	Organizing prioritizing responsibilities
PC 6:	Using optimal clinical judgment



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## EPA 1 for Pediatric Hematology-Oncology

PC 7:	Developing management plans
MK 2:	Practicing EBM
ICS 1:	Communicating with patients/families
ICS 3:	Communicating with health professionals
ICS 6:	Maintaining medical records
SBP 5:	Working in interprofessional teams
PPD 8:	Dealing with uncertainty

### Context for the EPA

**Rationale:** Myriad types of cancer or blood disorders may impact the pediatric population, and fellows in training to be pediatric hematologist-oncologists must become proficient in the diagnosis and management of these conditions both acutely and also in the years that follow diagnosis and treatment.

**Scope of Practice:** Management of these disorders involves not only children, but increasingly our field involves treatment of adolescent and young adult patients. This EPA, and the curricular components described here, is organized to follow the trajectory of a patient's care, from presentation and diagnosis to treatment and beyond. That said, there are also important elements of the subspecialty that transcend this temporal framework and are relevant across the continuum of care. Optimal clinical care within our specialty is:

- Comprehensive — The pediatric hematologist-oncologist must screen for, diagnose, and treat all diagnoses relevant to the subspecialty. Moreover, pediatric hematologists-oncologists must learn to recognize and manage both short-term and long-term complications of these diagnoses as well as their treatment. This requires a broad fund of knowledge including applicable principles of histology, biochemistry, anatomy, (patho) physiology, genetics, and pharmacology.
- Evidence-based — The pediatric hematologist-oncologist must incorporate the best available evidence into recommendations on screening/diagnosis, treatment, and surveillance of various diseases
- Collaborative/multidisciplinary/interprofessional — Care of our patients involves multiple disciplines such as radiology, radiation oncology, surgical subspecialties, laboratory medicine, blood banking, other medical subspecialties, and allied disciplines such as physical therapy and nursing. We must also collaborate well with social workers, psychologists, chaplains, and other providers to care holistically for patients and their families.
- Culturally sensitive — The pediatric hematologist-oncologist must communicate effectively with patients and parents, offer adequate psychosocial support, and center the delivery of care around the emotional/psychological/social/spiritual needs of the patient and his/her family. Awareness of the patient's culture, and that of his or her family, is essential. Beyond culture, other sources of diversity such as faith, gender/sexuality, race/ethnicity, and more should be explicitly considered in the therapeutic relationship.
- Cost-effective — The pediatric hematologist-oncologist must treat patients cognizant of the high cost of health care delivery. An emphasis on value should be the rule.

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

1. Gathering and integrating available patient data and engaging in sound clinical reasoning to develop an appropriate differential diagnosis and workup
  - Performing comprehensive hematology/oncology history and physical
  - Ordering and assessing initial laboratory/radiographic examinations



# Entrustable Professional Activities

## EPA 1 for Pediatric Hematology-Oncology

- Integrating data gathered with medical knowledge to create a differential diagnosis and recommend a definitive diagnostic workup
2. Developing the management plan which includes
  - Comprehensively addressing the primary problem
  - Attending to all relevant secondary problems and comorbidities
  - Seeking, critically appraising, and integrating published data from the medical literature
  - Documenting assessments, plans, and recommendations to allow safe and coordinated care
3. Placing the patient at the center of all management decisions by engaging in bidirectional communication with patients and parents (patient- and family-centered care)
  - Discusses clinical situation with patient and family on an ongoing basis
  - Utilizes an appropriate setting considering the sensitivity of the conversation (e.g., conference room)
  - Uses language appropriate to the family's level of understanding
  - Ensures the presence of appropriate support staff (e.g. social worker)
  - Elicits and integrates feedback from the family
  - Considers cultural factors in discussion/management plan
4. Assessing the psychosocial needs of the patient and family and determining the impact of those needs on the management plan
  - Uses systems-based approach including input of social work and psychology as necessary
  - Considers cultural factors in evaluation
5. Coordinating care that involves a large team of providers
  - Partnering with physicians such as primary care providers, surgeons, radiation oncologists, and other subspecialists
  - Partnering with members of the interdisciplinary health care team such as nutritionists, pharmacists, case managers, social workers, etc.
6. Managing uncertainty (on the part of both the hematologist-oncologist and the patient and family) since some management decisions must be made in the absence of sufficient evidence
  - Performs literature searches to collect data available
  - Gets opinions from specialty leaders within and outside institution
  - Presents information and leads discussion(s) to determine recommended therapy in tumor board or other management conference

Problems **generally** within the scope of subspecialty practice for a pediatric hematologist/oncologist (based on prevalence and potential morbidity) where the role of the subspecialist is to recognize, evaluate, and treat

- Patients with inherited predisposition to cancer or blood disorder



# Entrustable Professional Activities

## EPA 1 for Pediatric Hematology-Oncology

- o Collaborate as needed with experts in genetics to offer appropriate genetic testing to patients and their families (refer to common EPA 1)
- o Use best available evidence to delineate a screening and surveillance strategy for the early detection of cancer or blood disorders when appropriate (refer to common EPA 6)
- o Provide additional diagnostic evaluation as needed should cancer or a blood disorder be detected (see below)
- Patients with new or suspected diagnosis of cancer or a blood disorder
  - o Screen for, promptly recognize, and urgently respond to emergent complications accompanying new diagnoses such as but not limited to
    - Anterior mediastinal mass
    - Spinal cord compression
    - Life or limb-threatening thrombosis
    - Dactylitis
  - o Articulate a thorough differential diagnosis including diagnostic entities salient to pediatric hematology-oncology but also considering diagnoses outside of the subspecialty
  - o Systematically narrow the differential diagnosis using history, physical examination, rational use of radiographic imaging, and appropriate laboratory studies and pathologic evaluation
    - Seek help from relevant experts such as radiologists, pathologists, and surgeons to acquire diagnostic data and interpret results (refer to common EPA 1)
    - Obtain and interpret testing that may contribute to the overall treatment plan or patient prognosis including but not limited to cytogenetics, relevant fluorescent in situ hybridization (FISH), and molecular testing
  - o Determine the optimal initial treatment for patients newly diagnosed with cancer or a blood disorder (refer to common EPA 6)
    - Incorporate best available evidence into recommendations on treatment which may include standard regimens or clinical trial participation (refer to Hematology-Oncology EPA 2 as well as common EPA 6).
    - Consult as needed with other clinicians, whether from other pediatric hematology-oncology centers or from other specialties at one's own center, to inform treatment plans (refer to common EPA 1)
    - Recommend and prescribe chemotherapy to appropriate patients with malignancy
    - Recommend and prescribe biologic and targeted therapies to appropriate patients with cancer or blood disorders
    - Counsel patients and families about new diagnoses, treatment, and prognosis including clear communication about the goals of care
    - Manage hereditary and sporadic nonmalignant hematologic conditions, including but not limited to
      - Disorders of hemostasis
      - Cytopenias
      - Cytoses



# Entrustable Professional Activities

## EPA 1 for Pediatric Hematology-Oncology

- Qualitative hematologic cellular dysfunction
  - Refer patients with malignant conditions for local control treatments (e.g., radiotherapy, surgery) when indicated
  - Refer patients with cancer or blood disorders for stem cell transplant or other cellular therapies when indicated
- Preparing patient for treatment
  - Obtain baseline organ function studies as needed to ensure safe administration of recommended therapies such as, but not limited to:
    - Assessing renal function before initiation of enoxaparin, cyclosporine, or other nephrotoxic agents
    - Obtaining an echocardiogram before administering cardiotoxic chemotherapy
  - Anticipate and when possible preempt acute or chronic complications of recommended treatment, including but not limited to
    - Fertility preservation
    - Dental extractions for teeth with substantial caries
- Patients receiving initial treatment for cancer or a blood disorder
  - Recognize and manage complications of treatment which may include, but are in no way limited to
    - Infections and sepsis in immunocompromised patients
    - Electrolyte disturbances in patients receiving chemotherapy
    - Iron overload in chronically transfused patients
    - Vaso-occlusive disease in the setting of stem cell transplant
    - Radiation-induced somnolence
  - Provide appropriate supportive care interventions
    - Identify and meet supportive care needs related to patient symptoms, including but not limited to nausea, vomiting, deconditioning, and pain
    - Adopt supportive care strategies needed to prevent complications such as but not limited to Pneumocystis jiroveci Pneumonia prophylaxis, vaccination against influenza or meningococcal disease, acid blockade in patient receiving high dose steroids
    - Develop a sound approach to the use of blood products and growth factors in children with cancer or blood disorders. Examples include but are not limited to the use of IVIG, prevention of transfusion reactions and allosensitization, decisions about the use of filgrastim and percutaneous endoscopic gastrostomy filgrastim
  - Anticipate and intervene to mitigate whenever possible the anticipated consequences of treatment (e.g., recognize when an intervention such as dexrazoxane may be indicated to prevent late cardiotoxicity from treatment with anthracyclines, offer sperm banking to teenage and young adult males prior to chemotherapy treatment, or monitor iron stores and provide chelation therapy for iron overload in patients on chronic transfusion therapy)
  - Perform routine health care maintenance or refer as appropriate for children with hematology/oncology conditions (refer to Hematology-Oncology EPA 6)



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## EPA 1 for Pediatric Hematology-Oncology

- Patients receiving treatment for relapsed or refractory cancer or blood disorder
  - See “Patients with new or suspected diagnosis of cancer or a blood disorder” on page 4 of this EPA for issues related to emergent presentations, diagnostic evaluation, and differential diagnosis of relapsed/refractory cancer and blood disorders
  - Identify potential psychological distress and provide appropriate care and referrals
  - Collaborate with other specialists (e.g., disease-specific experts) and treatment centers as well as the patient and family to determine goal-concordant and, when possible, evidence-based treatment plans. See previous bullet and Hematology-Oncology EPA 2 for activities related to possible clinical trial enrollment.
  - Continue to carefully monitor for symptom distress and provide supportive care (see “Patients receiving initial treatment for cancer or a blood disorder” on page 5 of this EPA). If palliative care services are available, and not yet integrated into this patient’s care, consider integration of a palliative care team (refer to Hematology-Oncology EPA 4).
- Effectively manage patients following discontinuation of treatment for cancer or a blood disorder
  - Refer to and appropriately utilize evidence-based guidelines to screen for and treat chronic complications of illness and treatment (e.g., use Children’s Oncology Group long term follow-up guidelines for patients who were treated for childhood cancer). Refer to common EPA 6.
  - Identify potential psychological late effects of treatment (e.g., post-traumatic stress disorder, depression), and provide appropriate care and referrals. Refer to Hematology-Oncology EPA 3.
  - Facilitate re-establishment of a therapeutic relationship between off-therapy patients and their primary care pediatricians. Similarly, as former patients transition into adulthood, provide a smooth transition of care to adult medicine care providers who are aware of and can manage late effects of treatment and disease (refer to Hematology-Oncology EPA 6).
  - For patients who are dying of advanced disease, provide effective palliative and/or end-of-life care, including effective pain control, comfort measures, and psychosocial support (refer to Hematology-Oncology EPA 4).
- Share the care of patients, through care coordination and ongoing communication, with relevant specialists. Examples include partnerships with orthopedic surgery in the case of bone tumors, neurosurgeons in the case of central nervous system tumors, neurologists in the case of stroke, and solid organ transplant teams in the case of post-transplant lymphoproliferative syndrome.

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