



Entrustable Professional Activities

EPA 4 for Pediatric Gastroenterology

EPA 4: Care of Infants, Children, and Adolescents with Nutritional Issues, Deficiencies, and Obesity

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

Pediatric gastroenterologists must be able to perform comprehensive nutritional assessments and provide counseling for families and primary care providers for patients with a variety of conditions leading to nutritional deficiencies/imbbalances.

The specific functions which define this EPA include:

1. Performing a complete nutritional assessment that includes dietary history, relevant medical history, anthropometrics, and any relevant laboratory evaluation
2. Performing necessary calculations for recommended daily intake of calories (including breakdown of protein, fat, and carbohydrates), vitamins, macronutrients, and micronutrients
3. Demonstrating application of nutritional principles to patients with chronic diseases and obesity considering pathophysiology and epidemiology in the care of patients
4. Managing children/adolescents with diseases for which nutritional/dietary therapy is a mainstay of treatment including managing enteral/parenteral home feeding regimens, gastrostomy tubes, and jejunal tubes
5. Educating parents and children on nutritional aspects of diseases as well as daily living and lifestyle
6. Leading and coordinating care in conjunction with other health care professionals including registered dietitians, speech therapists, and occupational therapists for the management of nutrition and feeding disorders

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 13:	Supervision
MK 1:	Demonstrate knowledge
PBLI 9:	Educating others
ICS 4:	Member or leader of a team
P 4:	Cultural competence
SBP 2:	Coordinate care
PPD 6:	Leadership

Context for the EPA

Rationale/Scope of Practice: Nutrition and growth are essential components of standard pediatric care, which pediatricians monitor from the newborn into young adulthood. Pediatric gastroenterologists serve as key role models and as expert consultants in this field, establishing guidelines for general practitioners including standardized growth curves, recommended daily allowances for diet, vitamins and calories, and initial interventions for malnutrition and obesity. Gastroenterologists are often asked to see patients with failure to thrive, food allergies, celiac disease, and obesity in their clinics. Often, a pediatric gastroenterologist and registered dietician will work together to counsel families on nutritional interventions (including diet and lifestyle changes) and follow these patients to track progress of their recommendations. Additionally, pediatric gastroenterologists must provide longitudinal care for patients with complex nutrition issues receiving nutritional support, including oral supplementation, home tube feeding, and/or home parenteral nutrition. These patients include, but are not limited to, infants and children with short bowel syndrome, pseudo-obstruction, developmental delay with associated feeding difficulties, and protein losing enteropathy. Gastroenterologists provide nutritional consultation for patients throughout the general inpatient setting in the midst of both acute and chronic illness, making recommendations for both enteral and parenteral nutrition on the inpatient floors, in the nursery, and in the intensive care units.

Nutritional assessments, whether in an ambulatory, inpatient, or intensive care setting, rely on a complete dietary history from the patient (or main caretaker), relevant medical history and examination, and a list of active medications. From this starting point, anthropometrics can be obtained, and relevant labs can be gathered and synthesized to complete the full assessment. Understanding of appropriate calculations for recommended daily intake of calories (including breakdown of protein, fat, and carbohydrates), vitamins, and micronutrients is used to formulate initial recommendations, which often vary based on the patient's acuity of illness and chronicity of disease. Subsequently, these recommendations must be skillfully related back to the patient (or caretakers) in language that they can understand and translate into practice.

Pediatric gastroenterologists must have a basic, broad understanding of all that goes into a comprehensive nutritional assessment, including obtaining a history of dietary/nutritional intake, plotting of past and current growth/anthropometrics on relevant and appropriate growth charts, reviewing existing laboratory studies, and identification of malnutrition and other nutritional deficiencies. A variation of this framework can then be applied to all clinical settings, ranging from the outpatient consultation clinic to the inpatient setting. An understanding of the pathophysiology of common gastrointestinal diseases that lead to malnutrition, including celiac disease, short bowel syndrome, and inflammatory bowel disease, is utilized in the creation of diagnostic and therapeutic management plans, which can then be set into motion and revised as clinically indicated.



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Pediatric gastroenterologists must understand the socioeconomic and cultural issues that influence nutritional choices and should take care to avoid stigmatizing patients who are underweight and overweight. Pediatric gastroenterologists must be able to apply nutritional knowledge while balancing many key factors including underlying disease process, patient/caretaker understanding, socioeconomic status, cultural beliefs, etc.

Curricular Components That Support the Functions of the EPA

1. Performing a complete nutritional assessment that includes dietary history, relevant medical history, anthropometrics, and any relevant laboratory evaluation
 - Gathers essential and accurate nutritional information about the patient
 - Interviews patients and families to obtain a complete picture of nutritional intake, including psychosocial, economic, environmental, and cultural influences on dietary intake
 - Makes informed decisions in diagnostic workup for malnutrition
 - Initiates initial therapeutic recommendations for nutritional deficiencies/imbances in the clinic and inpatient setting
 - Provides anticipatory guidance for expected course of treatment plan
 - Counsels patients and families on common issues that are likely to be encountered with recommended diet and medication changes
 - Considers socioeconomic and cultural issues as they relate to nutritional choices
2. Performing necessary calculations for recommended daily intake of calories (including breakdown of protein, fat, and carbohydrates), vitamins, macronutrients, and micronutrients
 - Demonstrates knowledge of common measurements used in nutritional assessment, including recommended daily caloric allowances for growth (including carbohydrates, fat, protein), plotting on relevant growth curves, and metrics (Z-scores)
 - Shows facility with calculations for parenteral nutrition, including management of glucose infusion rate, electrolytes, and fluids
3. Demonstrating application of nutritional principles to patients with chronic diseases and obesity considering pathophysiology and epidemiology in the care of patients
 - Demonstrates knowledge of the pathophysiology of short bowel syndrome and associated issues, such as dumping syndrome, malabsorption, small intestinal bacterial overgrowth, and D-lactic acidosis
 - Knows and recommends the basic evaluation for common nutritional and vitamin deficiencies and toxicities
 - Describes common nutritional issues faced by children with common gastrointestinal disorders, including but not limited to inflammatory bowel disease (IBD), celiac disease, cystic fibrosis, lactose intolerance, eosinophilic and other allergic intestinal disorders, and chronic liver disease
 - Demonstrates comprehensive knowledge and understanding of hypercholesterolemia and hyperlipidemia/hypertriglyceridemia, including prognosis and therapeutic options
 - Knows and understands nutritional principles associated with obesity, including screening for complications (non-alcoholic fatty liver disease [NAFLD], metabolic syndrome, diabetes, etc.) and pursues a multidisciplinary team approach to treatment, including dietary changes and lifestyle changes, and considers referral for bariatric surgery when appropriate



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4. Managing children/adolescents with diseases for which nutritional/dietary therapy is a mainstay of treatment including managing enteral/parenteral home feeding regimens, gastrostomy tubes, and jejunal tubes
 - Demonstrates use of available evidence to evaluate and optimize the care of patients with nutritional disorders
 - Applies principles of evidence-based medicine to the management of nutritional deficiencies and disorders
 - Utilizes the concept of cost-benefit analysis, for both outpatient clinic management and intensive inpatient therapy
 - Knows that clinical practice guidelines are suggestions for clinical care and may be flexible and evolve with time
 - Interacts with faculty and colleagues to discuss evaluations of complex patients (such as home TPN patients) and incorporates feedback into promoting professional growth and practice improvement
 - Manages nutrition in children including children on total parental nutrition and tube feeds, including gastrostomy and jejunal tube feeds
 - Able to manage complications of gastrostomies/enterostomies, including site breakdown and tube displacement

5. Educating parents and children on nutritional aspects of diseases as well as daily living and lifestyle
 - Effectively communicates disease information, treatment plans, and outcomes to patients and their families
 - Ensures patients understand the rationale for recommended nutritional changes, including reframing misconceptions the patient and family may have about which foods are truly “healthy” foods
 - Enables patients to be comfortable asking questions and presenting their own ideas regarding nutrition
 - Creates a comfortable environment where parents can share an honest history about eating habits and dietary history
 - Provides emotional, social, and culturally sensitive support to patients and families during nutritional assessment
 - Avoids stigmatization of patients who are underweight or overweight
 - Demonstrates self-confidence that puts patients, families, and members of the health care team at ease

6. Leading and coordinating care in conjunction with other health care professionals including registered dietitians, speech therapists, and occupational therapists for the management of nutrition and feeding disorders
 - Effectively communicates with other medical professionals involved in the care of the patient
 - Works effectively as a member or leader of a health care team coordinating care of the patient
 - Demonstrates trustworthiness that makes colleagues feel secure when one is responsible for the care of their patients
 - Provides leadership skills that enhance the health care delivery system with the ultimate intent of improving care of patients



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Problems that **generally** require further consultation where the role of the subspecialist is to recognize, provide preliminary evaluation, and refer/co-manage

- Referral to mental health services for eating disorders once medical clearance and refeeding has been initiated
- Referral to surgery/interventional radiology for surgical placement of gastrostomy when percutaneous endoscopic gastrostomy (PEG) is not indicated or in centers where PEG tubes are not performed by the GI team
- Referral to surgery for central venous line placement for total parenteral nutrition

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