CME

North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition Position Paper on Entrustable Professional Activities: Development of Pediatric Gastroenterology, Hepatology, and Nutrition Entrustable Professional Activities

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ABSTRACT

Quality training in pediatric gastroenterology, hepatology, and nutrition is essential for the future of our specialty from advancing the science through research to providing clinical care for children with gastrointestinal, hepatic and nutritional disorders. As educational theory has developed, both the American Board of Pediatrics (ABP) and the Accreditation Council for Graduate Medical Education (ACGME) have commissioned projects to better define training including core competencies, and milestones with the goal of competency-based assessment. Seeking to provide a clinical context for these competencies and milestones, the ABP commissioned a project for each pediatric subspecialty to develop entrustable professional activities (EPA) while at the same time developing EPAs that are common to all pediatric subspecialties. North American Society for Pediatric Gastroenterology, Hepatology, Nutrition (NASPGHAN) commissioned an EPA Task Force to develop the pediatric gastroenterology, hepatology and nutrition EPAs. This document serves as an introduction to EPAs, including their historical background, underlying educational theory, and the process used to develop the pediatric gastroenterology, hepatology and nutrition EPAs in the United States of America.

Key Words: activities, entrustable, professional, training

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Competency-based medical education (CBME) seeks to assess knowledge and skills in a construct other than strict time-based medical education. Thus, CBME is centered on the learner, rather than time or an institution. Although this does not remove time as a defining aspect of training, it does focus the training to specific competencies required. Medical education is in a transition period towards true CBME in Europe, Canada, and the United States of America.

Entrustment to perform activities is encountered throughout one's life in personal and professional activities. For instance, a parent will entrust a child to swim without a floating device once the child has demonstrated the ability to perform the activity (swim) without needing assistance. The process to attain this entrustment to swim likely includes formative feedback and direct coaching through lessons, similar to professional activities. Applying these basic principles to the medical profession, entrustable professional activities (EPAs) are assessed by specific knowledge, skills, and behaviors to entrust someone to perform these professional activities without direct oversight. Entrustment by a supervisor suggests competency in the activity, whether professional activities or personal activities.

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EPAs are a novel construct in competency-based assessment (CBA), which may serve to bridge the gap between educational theory and real-life clinical practice (1). In 1999, the Accreditation Council for Graduate Medical Education (ACGME) introduced 6 domains of competence (also referred to as core competencies), with a seventh added in 2007. In 2012, the American Board of Pediatrics (ABP) published The Pediatric Milestones Project (*https://www.abp.org/sites/abp/files/pdf/milestones.pdf*, accessed 9/16/2016) that further divided the domains of competence into 52 pediatric competencies and developed a continuum of achievement (milestones) for each from level 1 (beginner) to level 5 (expert). Current practice of CBA entails 7 domains of competence, 52 competencies, and within each competency a framework to assess progression across a continuum of practice.

EPAs can provide a clinical context for the ACGME's domains of competence and the ABP's milestones, and thus serve as an important instrument in CBA for trainees and supervising physicians (2). A group of EPAs are meant to define a profession. They can be used to develop curriculum, guide didactic teaching, and as a basis to assess trainees' level of entrustment in unsupervised clinical practice (3). EPAs common to all pediatric subspecialties together with those specific to pediatric gastroenterology, hepatology and nutrition, can provide a basis for training infrastructure and tool development to assess competence.

This NASPGHAN report by the EPA Task Force introduces and defines the Pediatric Gastroenterology, Hepatology and Nutrition EPAs, including the specific curricular elements of each EPA. Herein, we report the historical background of CBA in our subspecialty, the educational theory behind EPAs, the EPA development process, and the working versions of the 10 NASPGHAN EPAs developed by the Task Force.

HISTORICAL BACKGROUND

In 1998, the ACGME initiated the Outcome Project, which introduced 6 domains of competence (core competencies): patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. These domains of competence were to serve as the backbone for considering trainee's progression through training towards competence for unsupervised practice in the United States medical system (4,5). In 2007, the domains of competence were updated to include a seventh domain, entitled personal and professional development.

In the decade following the announcement of the Outcome Project, training programs translated these 6 domains of competence into specialty-specific curricula, including competency-related learning objectives. In addition, training programs reacted to the competency-based education shift by developing local assessment methods for trainees, using guidance from the ACGME assessment ''toolbox,'' which included a variety of assessment methods for each of the domains of competence, at widely variable cost and ease of administration (6,7). To that end, defining or measuring outcomes in the domains of competence proved difficult and assessment tools were often focused on the medical knowledge and patient care domains and limited to a global rating questionnaire or brief observed clinical encounters (8,9).

The drawbacks to assessment of broad domains of competence in trainee assessment are numerous. Competencies can be abstract and difficult to observe and measure. A key issue identified was that competencies were developed without a clinical context, making them difficult to apply to trainee's work in the real world, which remains based on an apprenticeship model of supervised clinical training with formative feedback from an expert clinical mentor. Further, the abstract nature of competencies resulted in some to consider them dichotomous, either attained or not attained in training, with very little consideration for a continuum along the competency. Although they proved difficult to formally assess, domains of competence remain important aspects of medical education theory and continue to serve as the building blocks for CBA.

Understanding the issues with assessment of the core competencies, the ACGME together with the specialty boards, including the ABP, partnered to develop the Pediatrics Milestone Working Group. The goal of the working group was to develop narrative descriptions of behaviors within each domain of competence, to offer more reliable, rigorous assessment of, and feedback to, individual trainees. Within each domain of competence, the working group identified a multitude of individual competencies, resulting in 52 total competencies (10). By developing a spectrum of practice behaviors for each competency, trainees could be placed along the continuum of the competence and receive formative feedback on how to improve specific areas of weakness (11,12). Furthermore, the working group broke down each competency into developmental milestones from the beginner to the expert. These milestones are stages in the development of specific competencies along a developmental continuum. However, although each group of developmental milestones focused on an individual competency within the larger domain of competence, they still lacked the clinical practice context that allowed supervisors and learners to directly apply the assessment constructs at the site where their interactions occur.

Both core competencies and milestones continued to face roadblocks in the process of turning competency-based educational theory into meaningful assessments in the clinical setting. Therefore, the logical next step was placing competencies and milestones within a clinical context, to allow for adequate competency-based assessment in making the key determination of when a trainee is competent for unsupervised clinical practice in their field. EPAs fill this void by translating competencies into clinical practice in a construct that is defined in competency-based educational terms, allowing for assessment to take place in the day-to-day clinical realm, an environment that is more easily understood by trainees, faculty, and the general public (13) (Table 1).

Recognizing significant overlap between the different pediatric subspecialties, the ABP and the Council on Pediatric Subspecialties (CoPS) developed and published 7 EPAs that are common to all pediatric subspecialists. Meanwhile, the NASPGHAN Training Committee commissioned a Task Force to develop the Pediatric Gastroenterology, Hepatology, and Nutrition-specific EPAs.

ENTRUSTABLE PROFESSIONAL ACTIVITIES

Olle ten Cate (14) first described the concept of work-based competency assessment in 2005, at which time the term ''Entrustable Professional Activities (EPAs)'' was coined. EPAs are essential work within a medical discipline that can be assessed and approved of (or entrusted) to trainees before progression to unsupervised practice. These activities require knowledge, skills, and attitudes that are acquired through training, are executable during a specific timeframe by appropriately qualified personnel (ie, residency/fellowship training), are independently done and are able to be observed and assessed—leading to an overall conclusion on adequacy of performance (15).

EPAs integrate the larger domains of competence and individual milestones within the context of clinical care, with each EPA often reflecting multiple underlying domains of competence and milestones. EPAs are units of work that taken together define a profession and can be observed and measured. They serve to document a trainee's progression of accomplishment across a continuum with a goal of determining the true outcome of training (1).

EPAs are designed to be ''units of work,'' but can range from large concepts (eg, care of common outpatient gastrointestinal

TABLE 1. Definitions of terms

Term	Definition	Description	Example
Entrustable professional activity (EPA)	An observable and measurable task, which an individual can be trusted to perform	Descriptor of work, which includes multiple domains of competence	Care of infants, children and adolescents with liver disease
Domain of competence	A group of competencies	Descriptor of trainee	Patient care
Competency	Knowledge, skills, behaviors and attitudes of trainee	Descriptor of trainee	Patient care 1: gather essential and accurate information about the patient
Milestone	Developmental step within a competency from beginner (level 1) to expert (level 5)	Descriptor of developmental step	Patient care 1: level 1 either gathers too little information or exhaustively gathers information following a template regardless of the patient's chief complaint, with each piece of information gathered seeming as important as the next

disorders) to smaller units of work (eg, treatment of constipation) to more clearly defined specific behaviors (eg, performing an endoscopy). Although all meet the above EPA criteria, choosing large concept EPAs is a more realistic proxy for overall competence, as opposed to attempting to assess several hundred smaller EPAs. Through an iterative process between the ACGME, Association of Pediatric Program Directors, ABP, CoPS and Association of American Medical Colleges, 16 EPAs have been identified for the specialty of Pediatrics. For pediatric subspecialists, 7 EPAs common to all pediatric subspecialists were developed, and each subspecialty was commissioned to develop a set of EPAs that defines their subspecialty.

The NASPGHAN Guidelines for Training in Pediatric Gastroenterology (16), published in 2013 developed guidelines for training and introduced the application of competencies to clinical care by providing examples of competencies, recommended experiences, and means of assessment for each area of expertise. In addition, the training guidelines first introduced the concept of EPAs to the pediatric gastroenterology subspecialty. The NASPGHAN training guidelines, in conjunction with the Pediatric Milestones (12), create a foundation for the development of EPAs, which are not designed to replace the NASPGHAN training guidelines.

Rather, EPAs are meant to develop a set of clearly defined work products (EPAs) that can be easily assessed, highlighting the process by which trust is conferred from a supervisor to a trainee based on their clinical performance (17). Ultimately, entrustment decisions for each EPA will serve as a by-proxy assessment of the other constructs they constitute—such that by accomplishing an EPA, the trainee also demonstrates an understanding of the training guidelines provided by NASPGHAN and abilities within the competencies provided by the ACGME (1). Thus, EPAs combine specialty-specific guidelines with medical education theory to provide a group of measurable tasks.

The advantages of EPAs are numerous but perhaps first among a long list is that they are a competency-based assessment construct that is no longer abstract to faculty and trainees. The fact that they are rooted in clinical experience enables organic evaluation, based on the familiar process of clinical observation, assessment and decision-making about how much supervision the trainee requires on each EPA. This is especially useful for the faculty member who may not be well-versed in educational theory, who may be wary to engage in assessments that are overly abstract and remote from the typical clinical realm. EPAs may also be more advantageous to trainees, who will now have a clearer picture of the clinical experiences that will be assessed, leading to grounded expectations for their educational experience and an appreciation of being entrusted to complete these clinically based EPAs (18).

Faculty and trainees who are more comfortable at the bedside tend to think in terms of concrete clinical situations. For example, a gasterentology (GI) attending can easily provide an excellent assessment of a trainee's management of a patient with inflammatory bowel disease, an example of an EPA. This includes evaluating the trainee's ability to explain the evolving pathophysiology, integrate evidence from the medical literature in decision-making, counsel the family on the expected clinical course, and manage team members and available resources around patient care. Therefore, in assessing the trainee's performance on this EPA, the assessor is also inherently considering the multiple competencies (medical knowledge, patient care, interpersonal communication, systems-based practice, professionalism) and milestones constituted within this EPA. Further, consideration of the various aspects of an EPA allows faculty to explain exactly which aspects of performance were lacking, using specific clinical examples and scenarios, information that can be subsequently utilized by trainees, their advisors and training program directors. Although assessment on the milestones helps with specific competency-based skills, evaluation on work-based EPA output allows trainees to get concrete, applicable feedback, which can be specifically addressed and applied as they progress through their training.

EPAs bring competency-based medical trainee curricula into the context of clinical care, allowing for assessment of competencies and milestones in the training environment and making them more relevant to learners and supervising faculty members. Further development of practice-specific EPAs and EPA assessment tools are essential as we continue to reimagine medical education and assessment.

ENTRUSTABLE PROFESSIONAL ACTIVITIES FOR ALL PEDIATRIC SUBSPECIALTIES (COMMON ENTRUSTABLE PROFESSIONAL ACTIVITIES)

The ABP developed a set of 7 EPAs common to all subspecialties and separated these EPAs into those that cross the generalist to specialist role and those that are common to all subspecialties.

Entrustable Professional Activities That Cross the Generalist to Subspecialist Role

1. Apply public health principles and improvement methodology to improve care for populations, communities, and systems
2. Provide for and obtain consultation from other health care providers caring for children

3. Contribute to the fiscally sound and ethical management of a practice (eg, through billing, scheduling, coding, and record-keeping practices).
4. Facilitate handovers to another healthcare provider.
5. Lead and work within interprofessional health care teams.

Entrustable Professional Activities That Are Common to All Subspecialties

1. Engage in scholarly activities through the discovery, application, and dissemination of new knowledge (broadly defined).
2. Lead within the subspecialty profession.

NORTH AMERICAN SOCIETY FOR PEDIATRIC GASTROENTEROLOGY, HEPATOLOGY, AND NUTRITION SUBSPECIALTY ENTRUSTABLE PROFESSIONAL ACTIVITY DEVELOPMENT PROCESS

Brainstorming

The first step undertaken by the NASPGHAN EPA Task Force in the EPA development process was the listing of common and rare conditions and diseases treated by pediatric gastroenterologists and hepatologists. The committee reviewed the ACGME Program Requirements for the educational program in pediatric gastroenterology, the NASPGHAN Training Guidelines and the ABP Board Specific Content for Pediatric Gastroenterology, to add additional conditions treated by gastroenterologists and hepatologists. A long list of diseases and disorders primarily diagnosed and managed by pediatric gastroenterologists and hepatologists was generated and ranged from the common to the very esoteric.

In addition, members of the NASPGHAN EPA Task Force attended adult gastroenterology working sessions of the Oversight Working Network (OWN). The OWN published a set of 13 EPAs for adult gastroenterology and hepatology, based on guidelines from the American Board of Internal Medicine (19).

Grouping

Subsequently, the comprehensive list was grouped into larger categories with the understanding that only a limited number of EPAs that could be developed and assessed within the course of training. Careful attention was paid to developing EPAs that were neither too limited nor cumbersome. The group did consider that there are many observable practice activities in training that meet EPA criteria (20,21); however, only those that are most essential to training practice, and are reliably assessed during fellowship training, made the final cut. For example, while the Task Force considered a large grouping of disease processes, such as liver, biliary and liver transplantation together, it was deemed too large of an EPA to adequately assess. Similarly, as many gastrointestinal diseases are considered mucosal diseases, the committee decided it was best to separate these into multiple EPAs. The final 10 EPAs included the following:

1. Common outpatient GI/liver issues (eg, constipation, reflux, hepatomegaly)
2. Procedures
3. Nutrition
4. Inflammatory bowel disease
5. Other mucosal diseases (eg, celiac disease, eosinophilic gastrointestinal disorders)
6. Congenital issues, infections, and short bowel syndrome (including intestinal failure)
7. Liver diseases
8. Pancreas diseases
9. Biliary diseases
10. Liver transplantation

Combining

The EPA Task Force then combined the 10 EPAs further, arriving at 5 major categories: outpatient care, procedures, GI, liver/biliary/pancreas, and nutrition. Having 5 subspecialty-specific EPAs with the 7 common EPAs for pediatric subspecialists was deemed an appropriate overall number.

With assessment in mind, the EPA Task Force decided that all 10 EPAs should still be developed separately, as assessing large EPAs would be difficult and may yield an inadequate determination. Therefore, ''smaller'' EPAs were nested under the very large GI and liver/biliary/pancreas categories.

Specifically, care of children with IBD, other mucosal diseases, and congenital/short bowel syndrome were nested within 1 large EPA termed ''care of acute and chronic GI disorders.'' Likewise, the Task Force nested the EPAs for liver, pancreas, biliary, and liver transplantation into a large EPA termed ''care of acute and chronic hepatobiliary and pancreatic disorders.'' Therefore, the group of EPAs includes 10 total, but grouped within 5 large EPAs as follows.

1. Outpatient GI/liver (including motility disorders)
2. Procedures
3. Nutrition
4. Acute and chronic gastroenterology disorders
   a. Inflammatory bowel diseases
   b. Mucosal diseases
   c. Congenital issues and short bowel syndrome (SBS)/intestinal failure
5. Acute and chronic hepatobiliary and pancreatic disorders
   a. Liver
   b. Biliary
   c. Liver transplantation
   d. Pancreas

Description of Entrustable Professional Activities

After deciding on the 10 NASPGHAN EPAs, the EPA Task Force sought to describe each EPA in more detail. Using guidelines from the ABP based on 10 Cate's described process of systematic EPA definition (15), a standard EPA template was developed to include a brief description of the EPA and specific functions required of the EPA. This description includes an overview and general functions necessary to perform the EPA.

Mapping of Entrustable Professional Activities

Following EPA description and definition, the EPA was judiciously mapped to specific competencies within each domain of competence. Understanding that each EPA could be mapped to most competencies, care was taken to map to only the competencies most clearly encompassed by the EPA. Further, to ensure that completion of EPAs could truly serve as by-proxy assessment of competence, care was taken to show that the 10 EPAs covered the 7 domains of competency and all 52 competencies therein.

Curricular Element Development

Once a brief description and mapping to competencies was completed, a more exhaustive list of curricular elements, including specific knowledge, skills, and attitudes necessary to perform the EPA, was created. The EPA curricular elements were separated by the domains of competence and within each domain (ie, medical knowledge) specific key tasks were identified.

Finalizing and Partnering With the American Board of Pediatrics

The NASPGHAN EPA Task Force partnered with the ABP to review the 5 EPAs that, when taken together with the 7 common subspecialty EPAs, would define the pediatric gastroenterology, hepatology and nutrition subspecialty. On the basis of discussions, it was agreed that 2 of the 5 EPAs would remain divided and have smaller ''nested'' EPAs within the larger category. Nesting EPAs results in smaller and more manageable EPAs for assessment and curriculum development. Each EPA was vetted with ABP educational experts, and NASPGHAN content experts before being posted for general review. Comments were reviewed and the EPAs were finalized, including development of curricular elements and language that was similar to all pediatric subspecialties.

FINAL LIST OF ENTRUSTABLE PROFESSIONAL ACTIVITIES

After the multiple year process of developing the EPAs, developing curricular elements, and collaborating with the ABP and NASPGHAN members, the final list of EPAs for pediatric gastroenterology, hepatology and nutrition are listed below. Appendix (Supplemental Digital Content, *http://links.lww.com/MPG/B806*) includes the 5 EPAs and the additional nested EPAs that are up to date as of publication. Understanding that EPAs are fluid documents, as the EPAs continue to evolve the most updated documents will be found on the NASPGHAN website under the Training heading.

1. Care for infants, children, and adolescents with *common outpatient* GI, motility, liver/biliary, pancreatic, and nutritional issues
2. *Perform medical procedures* related to gastrointestinal and liver disease for screening, diagnosis, and intervention
3. Care of infants, children, and adolescents with acute and chronic gastrointestinal disorders
   a. Care of infants, children, and adolescents with *inflammatory bowel disease*
   b. Care of infants, children, and adolescents with other *mucosal diseases*
   c. Care of infants, children, and adolescents with congenital issues, infections, and intestinal failure
4. Care of infants, children, and adolescents with acute and chronic hepatobiliary disorders, pancreatic disorders, and those requiring liver transplantation
   a. Care of infants, children, and adolescents with *acute and chronic liver disorders*
   b. Care of infants, children, and adolescents with biliary tract disorders, cholestatic liver disorders, and metabolic disorders
   c. Care of infants, children, and adolescents with *pancreatic disorders*
   d. Care of infants, children, and adolescents with requiring *liver transplantation*
5. Care of infants, children, and adolescents with *nutritional issues*, deficiencies, and obesity

ENTRUSTABLE PROFESSIONAL ACTIVITY DISCUSSION

Each of the 5 major EPAs is discussed below with some brief notes on the thought process, discussions, and debates that took place not only within the EPA Task Force but also with members and leaders from NASPGHAN, other pediatric subspecialties and the ABP. The NASPGHAN EPA development process is described to better understand not only the educational theory and utility of EPAs but to also understand the process of developing these new units of work categorization and assessment. As with almost anything new, understanding the thought process behind the product, in this case, EPAs, is the first step to adoption and integration into the training program. In addition, optimization, improvement, and alterations in EPAs will without a doubt be necessary to continue to encompass our training process and our specialty as a whole.

As a general rule, the NASPGHAN EPA Task Force approached the development of EPAs with assessment in mind. Perhaps more important than the development of EPAs, is the ability to assess EPAs, and their use in formative feedback to our trainees and improvement of their training and assessment.

Common Outpatient

This EPA specifically focuses on common outpatient diagnoses, and is meant to be distinctly different from the acute/chronic GI and liver EPAs. Although many common outpatient GI/liver conditions are chronic in nature, the components of this EPA include common outpatient visits, such as constipation, reflux, toddler's diarrhea, functional abdominal pain, poor weight gain, feeding difficulty, hepatomegaly, elevated liver enzymes as well as other similar conditions. When evaluating these patients, the gastroenterologist performs a thorough consultation and offers expertise to the patient and family as well as to the referring provider. This EPA is in many ways the largest EPA, and thus the task force decided to keep it as its own EPA rather than nest a common outpatient EPA in the GI and liver/pancreas EPAs. It should be noted, that this EPA is not the entirety of ambulatory pediatric gastroenterology, as disorders that fit in other EPAs are managed predominantly in the ambulatory clinic. The predominant reason the Task Force separated this EPA from the acute and chronic GI/liver and nutrition EPAs was to create an EPA that was smaller, and thus could be more easily assessed. Separating common clinical disorders, which can sometimes be managed by general pediatricians from acute and chronic diseases managed by gastroenterologists creates a defined EPA that can be assessed more easily.

Endoscopy/Procedures

This EPA focuses on the required procedures as delineated in the NASPGHAN Training Guidelines (16). The EPA was written in general terms encompassing both diagnostic and therapeutic endoscopy and procedures including a variety of different types of endoscopy (ie, esophagogastroduodenoscopy, colonoscopy or even enteroscopy/ERCP if trained) and the performance and/or knowledge of performance of different types of procedures including interpretation (eg, liver/rectal biopsy, impedance, motility studies, capsule endoscopy, etc). The purpose of this EPA is not to define the number of medical procedures required to attain procedural competency but rather to elucidate additional aspects of endoscopy that

require attention in judging procedural competency as a whole, while assembling curricular elements that will apply to all endoscopy/procedures in which a pediatric gastroenterologist is trained.

Acute and Chronic Gastrointestinal Disorders

This EPA focuses on many of the diseases that pediatric gastroenterologists primarily manage, where presentation is often acute in nature, but the disease itself becomes chronic. This EPA includes diseases, such as IBD, eosinophilic esophagitis, celiac disease, and short bowel syndrome, amongst many others. While the EPA Task Force recognizes that some outpatient visits and common complaints may be because of these disease processes, the separation between common outpatient and acute and chronic GI disorders/diseases was deemed necessary.

As this EPA includes a large number of diseases, the Task Force divided this EPA into smaller ''nested'' EPAs that are more easily assessed and addressed with current and future curricula. Considerable discussion focused on the nested EPAs, with a decision to nest 3 different EPAs: IBD, mucosal diseases (other than IBD), and congenital issues/short bowel syndrome (SBS)/infections. Grouping IBD and other mucosal diseases resulted in too large an EPA, and thus, IBD was placed as its own nested EPA. The nested EPA mucosal diseases include celiac disease, eosinophilic esophagitis, and other diseases of the mucosa. Meanwhile, the Task Force decided to group congenital issues, SBS, and infections as they can be associated, although admittedly GI infections can be unrelated.

Acute and Chronic Hepatobiliary and Pancreatic

This EPA focuses on liver diseases, biliary diseases, and pancreatic diseases. Similar to acute and chronic GI diseases, many of these diseases present acutely and often with hospitalization, followed by continued primary management of the chronic disease diagnosed. Thus, the EPA focuses on the predominant liver, biliary, and pancreatic diseases that are managed by the pediatric gastroenterologist, as well as liver transplantation, managed primarily by a transplant hepatologist, that may occur in response to one of these hepatobiliary disorders. Again, the Task Force realizes that many of these are managed predominantly in the outpatient arena. Similar to the acute and chronic GI EPA, this EPA is very large, and thus was further divided with smaller ''nested'' EPAs. The Task Force decided to divide this EPA into 4 smaller EPAs that include primarily hepatology disorders, biliary and metabolic disorders, liver transplantation, and pancreatic disorders.

Nutrition

A major component of all pediatric conditions/diseases is nutrition, and thus, the Task Force decided to devote an entire EPA to this topic. Although nutrition could have been considered as a component of each of the other EPAs, the Task Force felt strongly that a separate EPA addressing nutrition was warranted. The nutrition EPA focuses not only on primary nutritional disorders (eg, vitamin deficiencies, malnutrition, and feeding difficulties) and their therapies (eg, enteral and/or parenteral nutrition) but also the use of nutrition as therapy and the effect of nutrition on the many diseases and conditions cared for by the pediatric gastroenterologist. This EPA also highlights that the gastroenterology trainee will obtain expertise in common nutritional disorders managed predominantly in the primary care setting, counseling paediatricians, and leading outreach education efforts to disseminate best practices to physicians in their regional communities.

Overlap Between Entrustable Professional Activities

Admittedly, there can be significant overlap in many of these EPAs, and in fact patients may fit into multiple EPAs. For instance, a single patient may present with abdominal pain and diarrhea, undergo endoscopy, be diagnosed with IBD and primary sclerosing cholangitis and be placed on primary nutritional therapy, thus encompassing all 5 NASPGHAN EPAs. This example emphasizes the fact that these EPAs must be taken as a ''whole.'' Most importantly, these EPAs are designed with the pediatric gastroenterologist in mind, assessing large aspects of care across a continuum of commonly managed diseases; EPAs are not designed to categorize patients or create a training checklist for every skill to be learned and mastered. It should be noted that the pediatric gastroenterologist is expected to obtain competence in all of these EPAs, and the pediatric gastroenterology trainee will see patients that fit into each of these EPAs weekly. The practicing pediatric gastroenterologist must be adept at all EPAs which when taken together, encompass our subspecialty.

Comparison to Other Pediatric Subspecialties

Other pediatric subspecialties had a variety of approaches to the development of EPAs. Most subspecialties developed 3–6 EPAs. Some specialties chose to develop a separate EPA for acute diseases and chronic diseases. Acute and chronic GI disorders encompass many of the disorders/diseases that pediatric gastroenterologists treat both in the acute setting and in the chronic/clinic setting and for which many training programs have ''super-specialty'' clinics and disease-focused faculty members. For example, the acute presentation of IBD becomes the chronic IBD patient and a flare can again be considered an acute issue. Although other pediatric specialties have separate EPAs for acute disorders and chronic disorders, the Task Force preferred to combine these as they relate directly to each other. Likewise, an acute presentation of liver disease becomes the chronic liver patient and occasionally the chronic liver transplantation patient, with some acute events and multiple outpatient visits as a chronic disease. Given this, the Task Force chose to combine acute and chronic into 1 EPA but to separate these into subcategories by the classic luminal versus solid organ (liver, pancreas) aspects of pediatric gastroenterology.

Some specialties developed a separate EPA for coordination of care, provision of a medical home, and/or transition to an adult provider. We decided that while these are very important aspects of care, they deserved to be intertwined into the EPAs that were developed rather than a stand-alone EPA. Thus, inherent in each EPA is care coordination, such as working in a team and system and working with our dietician, psychology, and other medical specialty colleagues. Furthermore, a medical home and transition are important to the management of all of the chronic GI disorders that we care for, and thus have been incorporated into each EPA.

Some specialties included a quality improvement, outcome, or research as separate EPAs. Again, the Task Force intertwined each of these important aspects into the individual EPAs. Caring for children and managing chronic diseases includes life-long learning techniques to stay in step with current evidence-based medicine practices and to continue to evaluate outcomes and focus on improvement of quality of care. Thus, although these aspects of care could be separated, the Task Force chose to incorporate these aspects in all EPAs.

In summary, the EPA Task Force, similar to other subspecialties, chose to separate EPAs based on large groups of disorders treated or procedures understanding that coordination of care,

medical home, transition, quality, outcome, research, and many other common aspects of medical care are part of each large group of disorders that we treat.

Comparison to Adult Gastroenterology

The adult gastroenterology and hepatology subspecialty published a white paper describing their development of EPAs and created 13 total EPAs. Comparison of the adult GI EPAs to the pediatric GI EPAs identifies very similar groups. The adult GI EPAs have 2 procedural EPAs, 4 gastroenterology EPAs, 5 hepatobiliary and pancreas EPAs, 1 nutrition EPA, and 1 malignancy EPA.

Comparison to Pediatric Gastroenterology Canadian Entrustable Professional Activities

The Canadian EPAs are also quite similar to the NASPGHAN EPAs, although grouped somewhat differently. The Canadian EPAs include acute conditions (emergencies), management of uncomplicated patients, management of complex patients, management of stable conditions, management of exacerbations, providing inpatient care, nutrition, procedures, referring patients, and patient safety. These are included in the larger over-arching 5 EPAs created, and confirm the validity of the NASPGHAN EPAs as a group of EPAs that define the subspecialty.

THE FUTURE OF ENTRUSTABLE PROFESSIONAL ACTIVITIES

The development of specialty-specific EPAs is only the first step in a journey to competency-based medical education. The NASPGHAN EPA Task Force fully understands that this is only the beginning and there are many aspects of EPAs still need to be addressed that are beyond the scope of this project: how to apply EPAs to curriculum and training programs, the use of EPAs for reporting to the ACGME and ABP, the development of EPA assessment tools and their application to training, and the potential for the application of EPAs to maintenance of certification. The future holds the keys to the true utility of EPAs. Participation from stakeholders, including learners, supervising clinicians and training programs in the development of curriculum and assessment tools will be vital. Even today, however, there are simple steps that can be taken that can aid in EPA adoption and utility.

Trainee Development

Current trainees are at best only vaguely familiar with the concept of milestones, competencies, and EPAs. Although they receive spontaneous, face-to-face daily feedback from supervisors on a daily basis, the feedback generated from competency-based assessment on competencies and milestones is often more vague, and hence may be difficult to comprehend and apply to practice improvement (22). In the future, as EPAs are used by residency programs, fellows in training programs will at a minimum understand this basic concept. Trainee development around conceptual understanding of EPAs will be integral, as EPAs were created with trainees in mind. Most importantly, as they review and become familiar with EPAs on which they are being assessed on throughout the course of training, trainees can use feedback to develop self-directed learning plans based on areas of identified deficiency within specific EPA curricular elements.

Faculty Development

Likewise, many faculty members are only vaguely familiar with milestones, competencies, and EPAs, and their use in assessment and feedback. As with other major changes in medical education, faculty development is crucial, as clinical supervisors are on the front lines ensuring that EPAs are adequately discussed, observed, and assessed over the course of training. Although faculty that supervise trainees may be growing wary of rapid changes in the methods of competency-based assessment, EPAs are likely to be a welcome addition, as EPAs allow for supervisors to observe and assess trainees on concrete clinical care delivery in the supervisor's field of expertise, valuing the clinical relationship and partnership of trust between the supervisor and trainee. Members of the clinical competency committee, as well as all faculty members, will be tasked to understand how EPAs fit into the current CBA landscape, as assessment of EPAs will supplement, not replace, assessment of milestones and competencies. Perhaps most importantly is the use of these tools to provide formative feedback to trainees and remediation when necessary. Identifying areas of deficiency is essential to provide trainees with specific areas on which to focus additional learning and experiences.

A major hurdle for faculty development is time. Although milestones and competencies have always been difficult for faculty to understand, the placement of EPAs within clinical context will likely provide improved understanding by faculty as EPAs are rooted in clinical care. Meanwhile, members of clinical competency committees and program directors will need protected time by institutions to provide oversight in understanding of EPAs and their application to assessing trainees on competence. Therefore, we suggest institutions, national subspecialty organizations, such as NASPGHAN, as well as the ACGME and ABP provide and advocate for opportunities for faculty development.

Entrustable Professional Activity Curriculum

Curriculum, both at a training program level, and at a national level, may need to be refined with a focus on EPAs, and with specific attention to measurable completion of such a curriculum. With a basis for all training programs being rooted in EPAs, curriculum can be shared between programs, and resources can be developed at a NASPGHAN organizational level to support programs and trainees to obtain entrustment, or suitability for independent practice, in these 10 NASPGHAN EPAs.

Entrustable Professional Activity Assessment

Current CBA methods at institutions vary from simple to complex evaluations that may or may not include the evaluations of specific competencies. Many evaluations at institutions provide little formative feedback to trainees, and do not have specific guidelines for completion of CBAs. Thus, the inter-rater and intra-rater reliability are likely poor. EPAs can address this issue by defining specific knowledge and skills that can be observable within an EPA, and thus can provide specific criteria by which faculty members assess all fellows with consistency. Although EPAs can provide a basis for assessment, assessment tools based on EPAs will need to be developed.

Use by Clinical Competency Committees

EPAs may be of great utility to Clinical Competency Committees (CCCs), as EPAs were developed to allow supervisors to comment on the degree of supervision needed by trainees on

specific clinical tasks, with the goal underlying all EPAs being for trainees to attain a statement of awarded responsibility for independent practice. CCCs can use trainee progression across EPAs to accomplish their commissioned goal: to evaluate trainees objectively and provide a recommendation on the trainee's clinical competence for independent practice. Competence in all of the EPAs could confirm that the trainee is ready to practice in an unsupervised fashion. This would mark a notable accomplishment in CBA, tying readiness for independent practice to earning entrustment and displaying suitability for unsupervised practice across key clinical areas in the field.

CONCLUSIONS

The development of EPAs marks another step in a long journey to improve medical education and development of competency-based training and assessment. As the pediatric gastroenterology community embarks on this journey, it is important to embrace that competency-based training is the future of reimagined medical education, strive to continue to improve training of our future colleagues, and continue to partner with the ACGME, ABP, and CoPS on medical education reform.

The NASPGHAN EPA Task Force created 5 primary EPAs with additional smaller nested EPAs to improve assessment of and curriculum development for trainees in pediatric gastroenterology, hepatology and nutrition. Taken together, this group of EPAs defines our specialty. The road ahead includes the development of curriculum and assessment tools based on these EPAs and in trainee and faculty development around EPAs. The journey to competency-based medical training has begun and collaboration between the ABP and NASPGHAN will be essential to the advancement of medical education for our future trainees.

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