Purpose of this report

The purpose of this report is to provide feedback to the pediatric gastroenterology community regarding content areas of strength and weakness, information which may be useful for identifying potential gaps in knowledge and guiding the development of educational materials. Using data from the American Board of Pediatrics' (ABP) Maintenance of Certification Assessment for Pediatrics (MOCA-Peds), this report summarizes diplomate performance on the questions within each of the 49 content areas assessed in 2022.
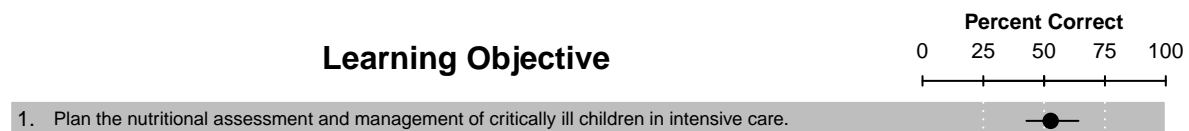
MOCA-Peds content areas

In 2022, *MOCA-Peds—Pediatric Gastroenterology* consisted of questions from a total of 49 content areas, broken down as follows:

- *45 learning objectives*[1] — Each diplomate initially received one question from each of the 45 specific content areas drawn from the pediatric gastroenterology content outline.

- *Four featured readings*[1] — Each diplomate also received two questions per featured reading (eg, clinical guidelines, journal articles) for a total of eight featured reading questions.

A pool of questions was developed for each learning objective and for each featured reading. Questions were then drawn from the pool and administered to diplomates throughout 2022 according to the specifications described in the bulleted list above.

Understanding this report

This report provides a graphical summary of diplomate performance on each of the 49 content areas assessed in 2022. Within the graphic and in the example below, the point (•) reflects the average percent correct for all questions within that learning objective or featured reading. The bar (—) reflects the range of percent correct values for the questions within that learning objective or featured reading. More specifically, the bar's lower endpoint indicates the most difficult question (ie, answered correctly by the lowest percentage of diplomates) and the bar's upper endpoint indicates the easiest question (ie, answered correctly by the highest percentage of diplomates).

Learning Objective	Percent Correct
	0 25 50 75 100
1. Plan the nutritional assessment and management of critically ill children in intensive care.	•—

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[1]Each diplomate also received 15 "repeat" questions selected from their original subset of learning objective and featured reading questions. Performance on the repeat administrations is not included in this report.

A note of caution

Many factors (eg, specific content of the question, wording of the question, plausibility of the incorrect answers) can impact diplomate performance on any question. It is thus difficult to determine if poor performance on a single question, or small set of questions, within a given content area reflects a true gap in diplomate knowledge or if the question(s) associated with that content area were difficult for other reasons (or some combination of both). Collectively, the entire set of MOCA-Peds questions (across all content areas) constitutes a psychometrically valid assessment of the diplomate's overall level of knowledge. Performance within a given content area is based on fewer questions, however, and is therefore less useful for making inferences about diplomate knowledge in that specific content area.

It is important to note again that for security reasons, a pool of questions was developed for each content area so that each diplomate received a unique set of questions. In addition, the number of questions can vary from one content area to the next. In cases where a content area had a relatively large pool of questions, the number of diplomates who answered each question was reduced, which diminished the statistical precision of each question's percent correct value. In cases where a content area had a relatively small number of questions, each question was answered by a larger number of diplomates, but the overall breadth of the content being assessed within that content area was constrained, which limits the generalizability of the results.

In other words, MOCA-Peds was designed to assess individual diplomates with respect to their overall level of knowledge in pediatric gastroenterology. It was not designed to provide the pediatric community with diagnostic feedback pertaining to specific content areas within pediatric gastroenterology. The results within this report may be informative and useful for that secondary purpose, but they should be interpreted with a degree of caution.

Additional notes

- To protect the security of the content of the assessment, the questions themselves, along with information about the number of questions in the pool for any particular learning objective or featured reading, are not provided in this report.

- This report contains data aggregated across many diplomates participating in the MOCA-Peds program and cannot be used to make inferences or draw conclusions regarding any particular diplomate.

2022 Content Area Feedback Report
Pediatric Gastroenterology

Learning Objective — **Percent Correct** (scale: 0, 25, 50, 75, 100)

1. Plan the nutritional assessment and management of critically ill children in intensive care.
2. Plan the nutritional management for catch–up growth of a child with failure to thrive, including determination of protein and energy requirements.
3. Know the indications of magnetic resonance cholangiopancreatography (MRCP) in children with pancreaticobiliary diseases.
4. Develop a differential diagnosis and diagnostic evaluation for children with chronic liver failure.
5. NASPGHAN position paper on the evaluation and management for patients with very early–onset inflammatory bowel disease (VEO–IBD) (Featured Reading)
6. Understand the basis of pancreatic enzyme replacement therapy in exocrine pancreatic insufficiency, factors that can affect the efficacy, and criteria for optimizing therapy.
7. Understand nutritional requirements of children with neurological impairment.
8. Understand the ethical principles that require an intervention against religious practices.
9. European Society Paediatric Gastroenterology, Hepatology and Nutrition guidelines for diagnosing coeliac disease 2020 (Featured Reading)
10. Know the underlying pathophysiologic mechanisms associated with vomiting, including metabolic, anatomic, infectious, inflammatory, and neuromuscular.
11. Identify acute gallbladder hydrops, understand its associated illnesses and clinical presentation, and formulate a management plan.
12. Know the mechanism of action of various laxatives.
13. Nutrition support of children with chronic liver diseases: a joint position paper of the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition and the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition (Featured Reading)
14. Know the common extraintestinal manifestations of functional gastrointestinal disorders.
15. Know the adverse effects of products used for constipation, including bulking agents, stool softeners, and laxatives.
16. Understand indications of endoscopic ultrasound in children with gastrointestinal illnesses.
17. Be familiar with causes, evaluation, and management of pediatric malnutrition, including z–scores.
18. Recognize the risk factors, diagnostic criteria, management, and natural history of focal nodular hyperplasia, hepatic adenoma, and hepatocellular carcinoma.
19. Recognize radiologic findings of vascular anomalies causing dysphagia.
20. The roles of endoscopic ultrasound and endoscopic retrograde cholangiopancreatography in the evaluation and treatment of chronic pancreatitis in children: a position paper from the North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition Pancreas Committee (Featured Reading)
21. Describe the genesis and genetics of Hirschsprung disease.
22. Recognize the age–related presentations of gastroesophageal reflux disease.
23. Know the medical management options for both perforated and unperforated appendicitis, including the use of antibiotics before and after operation.
24. Plan the management of morbid obesity, including indications for and complications of bariatric surgery.
25. Know the potential complications of Helicobacter pylori infection including gastritis, ulcer, gastric carcinoma, and mucosa–associated lymphoid tissue (MALT).
26. Understand gastrointestinal endoscopic techniques, including appropriate patient preparation and proper use of personal protective equipment.
27. Identify and manage complications of cirrhosis and portal hypertension, including ascites, cardiopulmonary manifestations, and variceal hemorrhage.
28. Recognize the distinctions in presentation and management between omphalocele and gastroschisis in the newborn.
29. Know the roles of excitatory and inhibitory neurotransmitters in the context of clinical motility disorders, including acetylcholine, norepinephrine, serotonin, cholecystokinin, nitric oxide, somatostatin, and vasoactive intestinal peptide.
30. Be able to interpret esophageal manometry studies.
31. Recognize the radiographic appearance of acute and chronic pancreatitis by abdominal computed tomography (CT) scan, abdominal ultrasound, magnetic resonance cholangiopancreatography (MRCP), and endoscopic retrograde cholangiopancreatography (ERCP).
32. Understand and interpret laboratory tests used for the diagnosis and monitoring of patients with inflammatory bowel disease.
33. Recognize oral findings in vitamin deficiencies.
34. Know the age–related differential diagnosis for chronic abdominal pain in a pediatric patient.
35. Know the risk factors and modes of transmission for hepatitis A and E.
36. Understand the role of Helicobacter pylori in peptic ulcer disease.
37. Know which kinds of parasites are likely to be found in patients from around the world.
38. Diagnose and treat infectious esophagitis.
39. Be able to recognize symptoms and findings of gastric perforation.
40. Know the extraintestinal anomalies commonly associated with omphalocele and gastroschisis.
41. Know the appropriate use of mean, median, mode, standard deviation, and standard error of the mean.
42. Recognize the features of secretory tumors affecting the gut, including multiple endocrine neoplasia syndromes.
43. Know the endoscopic and histologic features of eosinophilic esophagitis.
44. Describe the mechanisms protecting the gastric mucosa from acid injury and disturbances in these that cause peptic ulcer disease.
45. Plan the diagnostic evaluation for gastroesophageal reflux disease recognizing the limitations of available diagnostic tests.
46. Recognize psychological or behavioral problems in children having gastrointestinal illnesses.
47. Understand the role of cytokines in the pathophysiology of intestinal inflammation.
48. Identify underlying conditions associated with villous atrophy, dysmotility, bacterial overgrowth, and immunodeficiency syndromes that cause malabsorption.
49. Know the epidemiology and risk factors for nonalcoholic fatty liver disease (NAFLD).

Sample: Included in the sample were all diplomates who have answered at least one question in 2022 (N = 968).