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Original article

Delphi Consensus on Quality Indicators for Pediatric Digestive Endoscopy by the Latin American Society of Pediatric Gastroenterology, Hepatology, and Nutrition

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Abstract

Introduction: There is a global concern regarding the need to improve performance in endoscopic procedures, and Latin America is no exception. A high-quality endoscopic study requires appropriate indications, accurate diagnosis and therapy, and minimal risks. The PEnQuIN consensus, developed by experts from North America and Europe, established standard quality indicators for pediatric endoscopy across three phases: pre-procedure, intra-procedure, and post-procedure. This study aims to develop a consensus among experts on quality indicators for pediatric digestive endoscopy in Latin America. **Methodology:** Based on the available scientific evidence, statements were defined and subjected to real-time Delphi consensus rounds. The process continued until an agreement of at least 80% was reached among participants, with a Cronbach's alpha exceeding 0.8. The panel comprised 24 pediatric gastroenterologists selected using a modified questionnaire similar to that employed in the California cohort studies. **Results:** Of the 44 initial statements, consensus was reached on 36, which were established as quality indicators for pediatric digestive endoscopy. Eight indicators achieved unanimous agreement. The Cronbach's alpha for this Delphi questionnaire was 0.85. The indicators were categorized into 13 pre-procedure measures, 20 intra-procedure measures, and 3 post-procedure measures. **Conclusions:** The quality indicators developed through the Delphi Consensus are applicable to any pediatric endoscopy unit. They are easy to implement and align with established healthcare quality and endoscopy standards. These indicators can be measured and, when applied, help reduce disparities in human and material resources among countries.

Keywords

Healthcare quality management, endoscopy, consensus, quality indicators, health care.

INTRODUCTION

Quality in gastrointestinal endoscopy requires the use of indicators through which performance can be evaluated, leading to improvements, reduced risks, and fewer complications[1]. Globally, there is growing concern about delivering high-quality medical care, with increasing interest in improving performance in endoscopic procedures. This performance is evaluated by healthcare quality institutions[1,2]. A high-quality endoscopic procedure aims to ensure that the patient undergoes a properly indicated endoscopy, with an accurate diagnosis, performed by an experienced professional using appropriate equipment, technique, and preparation. It also requires a comprehensive endoscopy report that is suitable for both the patient and caregivers[1–3].

In the evaluation of digestive endoscopy, various indicators are considered, some related to the period before the procedure, and others to the intra- or post-procedural stages. These indicators are usually assessed through a checklist that includes characteristics describing whether the procedure was performed and the condition of the mucosa observed, which are incorporated by institutions as part of standardized checklists[4]. Guidelines on quality endoscopy in adult patients emphasize specific quality indicators in colonoscopy, such as a minimum cecal intubation rate of 90%, withdrawal time of at least nine minutes to detect signs of colorectal cancer, and an adenoma detection rate of at least 20%[5].

Another important aspect highlighted in adult endoscopy reports is the quality of bowel preparation (Boston scale), as well as information on reaching the cecum, visualization of the ileocecal valve, photographic documentation, recording of the number, location, and characteristics of polyps detected, and the management provided. These elements help determine recommended surveillance intervals in cases of colon cancer and inflammatory bowel disease [6,7]. Unlike in adults, these indicators are not as well established in children. However, in cases of inflammatory bowel disease, reports do include the performance of colonic mucosal biopsies, with the recommended number and distribution for this patient group, or biopsies from targeted sites using specialized imaging techniques. Colonic mucosal biopsies are also performed in patients with chronic diarrhea, and all colonoscopy-related complications are recorded [7,8].

In relation to upper gastrointestinal endoscopy, the presence of quality metrics has not experienced as much of an upturn as in colonoscopy. For example, a minimum of five gastric biopsies is recommended, along with retroversion to examine the gastric fundus; however, there is no standardized preparation scale for upper endoscopy. Most publications on adults regarding quality indicators in gastroscopy are disease-oriented, focusing on outcomes such as the detection of Barrett's esophagus, metaplasia follow-up, identification of *Helicobacter pylori*, gastric cancer, and the number of biopsies taken for celiac disease[9]. In pediatrics, quality indicators are more clearly defined for certain conditions, such as infectious gastritis or duodenitis caused by bacteria or parasites, as well as for gluten-related or allergic-related disorders.

This scenario has led to the use of adult endoscopic quality indicators as a starting point for reviewing stan-

dards in the pediatric population. However, without formal validation, in 2017 the Pediatric Endoscopy Quality Improvement Network (PEnQuIN) outlined international standards for gastrointestinal procedures in children. These indicators can be used to assess quality and are grouped into three phases: preprocedural, intraprocedural, and postprocedural[10].

There are public or private institutions in Latin America with inequalities that may condition differences in the conditions for performing endoscopic studies and limited available resources with basic technology that may influence the quality of endoscopic studies. According to statistics from the Economic Commission for Latin America and the Caribbean (ECLAC), poverty in Latin America reaches nearly 60% in parts of northern South America and Central America. In contrast, the southern region reports much lower poverty rates, around 15%, as seen in southern states of Brazil, Uruguay, and Chile[11]. A study conducted by Pierre et al. in 2017 identified 256 pediatric endoscopy centers (PECs) across 13 countries, 42% of which were public. The highest availability (69%) was found in Argentina, Brazil, and Venezuela, followed by 23% in Chile, Colombia, Mexico, and Peru, and the remainder distributed across Bolivia, Costa Rica, Ecuador, Uruguay, El Salvador, and Nicaragua. Regarding training centers in pediatric gastrointestinal endoscopy (CEEDP), a total of 39 centers were reported across the region, with 67% located in Argentina and Brazil, each having 13 centers. In contrast, Venezuela, Mexico, and Peru each reported three centers. In most cases, training in pediatric endoscopy is carried out within the specialty training programs[12].

The Endoscopy Working Group of the Latin American Society for Pediatric Gastroenterology, Hepatology and Nutrition (LASPGHAN), in view of the disparities in the number of centers, trained personnel, and available resources, has convened specialists in this field—those with expertise and training in pediatric gastrointestinal endoscopic procedures—to review quality standards in endoscopy. Drawing on their endoscopic, clinical, and academic experience, the group aims to establish consensus-based parameters that can bridge the differences among countries and be implemented during endoscopic procedures. The objective of this study was to develop an expert consensus on quality indicators for pediatric digestive endoscopy in Latin America.

MATERIALS AND METHODS

The Delphi process was carried out through an ad hoc platform, with face-to-face online discussions[13]. The 24 Delphi panelists were selected based on their expertise in the field, using a modified version of the criteria employed by the California courts in the United States to determine the qualifications of a legal medical expert witness[14]. All participants were able to comment on and rate each statement using a five-point Likert scale (1: strongly agree, 2: agree, 3: neutral, 4: disagree, 5: strongly disagree). Consensus was defined *a priori* as 80% agreement or disagreement among panelists on the Likert scale. In addition, according to established Delphi processes, text boxes appeared after panelists entered their responses to each statement, so that they could provide comments and suggest modifications, if desired. These were reviewed and used to modify statements in subsequent survey rounds. The study facilitator (CMT) was not allowed to vote or comment on the statements. Ethical approval was not required since the study did not use patient data or biological material.

Some of the authors independently conducted a systematic review of current literature. This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)[15]. The authors reviewed the literature currently published in the PubMed, Scopus, and Web of Science databases, searching for full-text articles in English and Spanish published between 2010 and 2023. The search included English and Spanish keywords such as: "colonoscopy quality, quality of digestive endoscopy in children, endoscopic preprocedure, endoscopic procedure, endoscopic postprocedure, endoscopy consensus, digestive endoscopy consensus, consenso (consensus), indicadores de calidad de la endoscopia (quality indicators of endoscopy), colonoscopia (colonoscopy), calidad de la endoscopia digestiva en niños y adultos (quality of digestive endoscopy in children and adults), endoscopia de preprocedimiento (preprocedure endoscopy), intraprocedimiento (intraprocedure), y postprocedimiento (postprocedure)". Additional important studies cited in the reference list of the selected articles were evaluated. The reviewers independently selected the articles. Based on all the documentation obtained, 44 statements or questions were prepared, divided into three categories: preprocedure, intraprocedure and postprocedure.

The Cronbach's alpha coefficient was used to determine the internal consistency of the assessment tool after each round[16]. The Cronbach's alpha value demonstrates how closely related a set of test items is as a group, and it ranges from 0 to 1, with 1 corresponding to 100% consistency. The final round of consensus was defined by achieving a Cronbach's alpha >0.80. Categorical variables were expressed as proportions.

RESULTS

A total of 24 panelists from 12 Latin American countries participated. Of the 44 initial statements drafted as quality indicators in pediatric digestive endoscopy, consensus was

reached on 36 statements. Unanimous agreement was reached on 8 of these indicators, representing 22.22%, and on the remaining 28 statements, 77.77%; agreement reached a level of 80% or higher after the fourth round.

In the adjustment process, considering the panelists' responses, consensus was not reached after the first round on 8 premises, which were reviewed, and two were corrected and merged. These premises addressed pre-existing conditions in patients, and only those findings potentially related to the endoscopic procedure would be mentioned in the endoscopy report. Other medical or surgical comorbidities would be described in the medical record. This statement reached an acceptance level of over 80% in the second round.

Four premises oriented to the preparation of the patient before the endoscopic study (previous diet, recommendations for preparation, medication and preparation time) were grouped in a statement as a protocol prior to the study, and this would be written in the medical record given the importance for the endoscopic procedure. The remaining two statements were removed due to their low acceptance: one suggested documenting in the medical record whether auxiliary support equipment is available, and the other referred to including the duration of the procedure in the report, with 47% and 62% acceptance, respectively.

The Cronbach's alpha achieved in this Delphi questionnaire was 0.85. Thirteen indicators were classified for the pre-procedure, numbered 1 to 13, and are aimed at documenting the identification of the patient, the endoscopist, the patient's complete clinical information regarding personal history, gastrointestinal pathologies, and comorbidities, as well as including informed consent and identification of endoscopic and anesthetic risks (**Figure 1**).

The 20 indicators included in the intraprocedural phase (from 14 to 33) are aimed at complying with the quality standards of the procedure, such as the description of the areas examined, the visualization of important areas like the gastric fundus (retroversion) and gastric antrum, biopsy (location and quantity), application of therapy, iconography (photodocumentation or video), classifications used, patient preparation for colonoscopy, and mentioning whether difficulties were encountered during the endoscopic study, as well as providing information to the patient and their family. The indicators agreed upon unanimously were located within the intraprocedural phase.

In the postprocedural phase, three key indicators for patient evaluation and follow-up are highlighted. **Table 1** shows the selected quality indicators.

DISCUSSION

This work is the first consensus in Latin America on quality indicators in pediatric endoscopy in which all reported

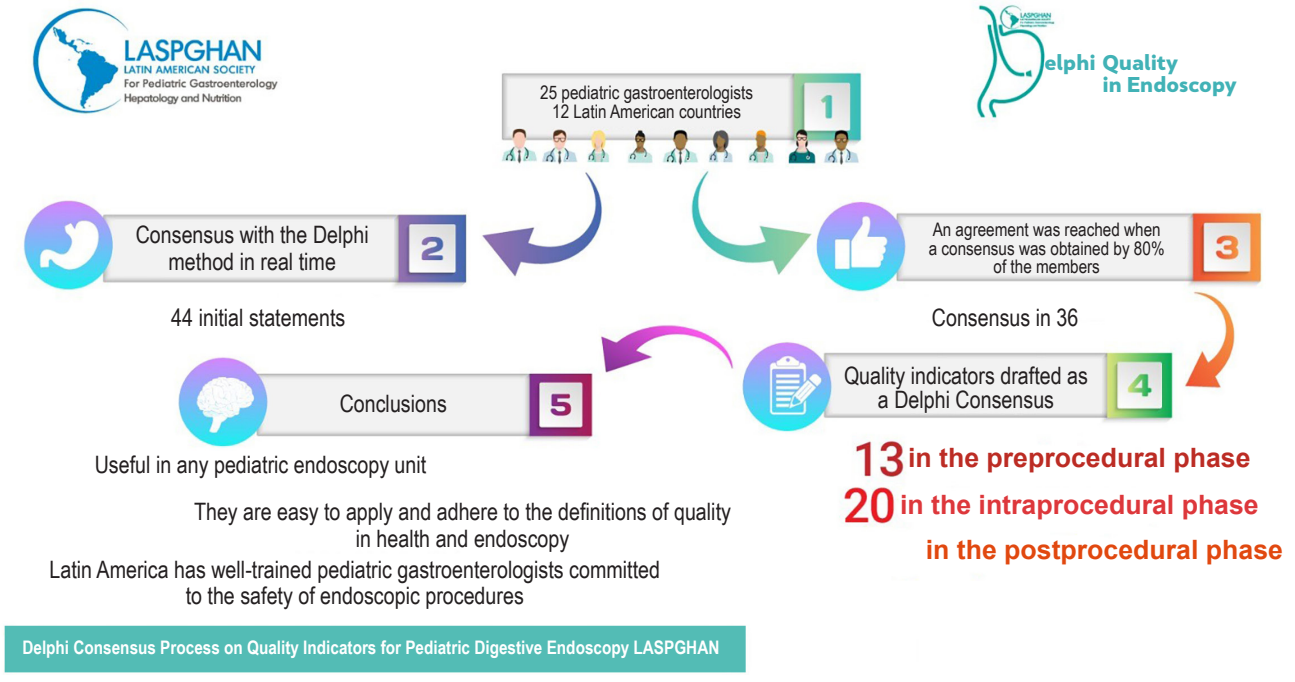

Figure 1. Delphi Consensus Process on Pediatric Digestive Endoscopy Quality Indicators of the Latin American Society of Pediatric Gastroenterology, Hepatology, and Nutrition (LASPGHAN) The image is the property of the authors.

Table 1. Agreement on Quality Indicators for Digestive Endoscopy Reached Through Consensus

Indicators	Agreement*
Preprocedural	
1. Include the patient's name in the report	95
2. Include patient identification data in the report	82
3. Include the patient's biological sex in the report	86
4. Describe the name of the person responsible for the procedure and whether he/she is a pediatric gastroenterologist, intern/resident/fellow in pediatric gastroenterology	91
5. Attach to the medical record the signed informed consent and assent document (according to age) prior to the procedure	90
6. Mention in the report any previous pathologies or surgical conditions that may be related to the endoscopic findings during the procedure	83
7. Register in the medical record the ASA anesthetic risk scale determined prior to the endoscopic procedure	85
8. Describe in the report the indication for the endoscopic procedure	95
9. Describe in the medical record the protocol and whether the patient showed tolerance to the indicated colonic preparation	82
10. Describe in the medical record the time in hours of fasting prior to the performance of upper and lower endoscopy	86
11. Mention in the medical record if medication was prescribed prior to the endoscopic procedure	95
12. Describe in the report the technical specifications of the type or characteristics of the equipment used	90
13. Describe in the report the type of anesthesia or sedation used	91
Intraprocedural	
14. Describe in the report the scale used in the evaluation of the quality of colonic preparation	96
15. Describe in the report each area examined during the procedure	100
16. Indicate in the report whether gastric retroversion was achieved	100
17. Describe in the report if the second portion of the duodenum is reached	100
18. Describe in the report details of the biopsy collection (anatomical site of collection, type of collection)	95
19. Describe the endoscopic diagnostic impression in the report	100
20. Describe in the report if there is control of digestive bleeding	95
21. Describe in the report the result of the therapy used	95
22. Mention in the report the classifications used according to the endoscopic findings	80
23. In the case of an ulcer, describe in the report the exact biopsy site (central or peripheral)	100
24. Describe in the report if a *Helicobacter pylori* test was performed	86
25. Describe in the report the collection of four biopsies from the second portion of the duodenum and at least one from the bulb when investigating celiac disease	100
26. Include segmental iconographic documentation (photographic or video) in the report	81
27. Describe the ileal intubation validation by photographic documentation in the report	95
28. Describe in the report the dosage and route of administration of drugs used by endoscopy.	86
29. Describe in the report if there was interruption or premature termination of the procedure due to a problem related to sedation/anesthesia	100
30. Describe in the report if there was an interruption or premature termination of the procedure due to an endoscopy-related problem	100
31. Describe in the report the complications before and during endoscopy	96
32. Document in the medical record that verbal or written information was provided regarding endoscopic findings, biopsy review scheduling, and follow-up	90
33. Describe in the report the findings of the examination on the day the colonoscopy or esophagogastroduodenoscopy was performed	96
Postprocedural	
34. Describe in the report the need for follow-up with the patient or their caregivers to review pathology reports	90
35. Describe in the medical record whether warning signs and post-endoscopy care instructions were explained or provided in writing	80
36. Describe in the medical record whether post-endoscopy complications were documented	90

*Blue indicates unanimity (100% agreement); yellow indicates more than 80% agreement. Table created by the authors.

aspects were considered and the selected indicators were adjusted to the definitions of quality in health and endoscopy. They were subdivided into three phases: 13 preprocedural phase indicators, 20 intraprocedural phase indicators, and 3 postprocedural phase indicators. This categorization was based on the importance of implementing actions that can influence the quality of the procedure not only during its performance, but also in the preparation and follow-up stages.

The World Health Organization (WHO) defines quality of care as the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge[17]. When considering this definition in relation to endoscopy quality, it encompasses the healthcare system, facilities, personnel, training, technical skills, clinical quality, and the experience of both the patient and the caregiver. In this regard, the PenQuIN consensus defines a quality indicator as a measure of the process, performance, or outcome of pediatric endoscopy services used to determine the quality of endoscopy[10].

In general, quality indicators have been divided into three categories: structural, process and outcome[18]. Structural measurement refers to the physical and functional infrastructure of the endoscopy room, disinfection processes, monitoring of procedure compliance, and measurement of prophylactic medication administration rates or adverse events, among others[10,19,20]. This consensus did not include the evaluation of hospital facilities or available resources due to differences in income, technological resources and quantity between public or private institutions, which would have made agreement difficult and could widen the gap between Latin American countries, nor did it include guidelines or position statements on safety indicators and accreditation for endoscopy[10,21].

The indicators drafted in this consensus were framed within the process measurement and evaluate the performance of endoscopic exploration. Some differences can be observed in the indicators written before, during and after the procedure with respect to reports in the literature[10,19,20]. However, these do not affect their application and can be implemented without inconveniences in all centers. This allows the individual or group performance of endoscopists, as well as the execution of a safe and quality endoscopic procedure. At the local level, these indicators can be implemented with the aim of standardizing high-quality endoscopy across all phases of the process, and they can also be applied in endoscopy programs regardless of the center.

In the preprocedural phase, 46.15% of the indicators reached the minimum consensus required, being between 80% and 86%. The main difficulty was the repetition in the report of data already recorded in the medical record, such as personal data, sex, American Society of Anesthesiologists (ASA) anesthesia score and history of surgical pathologies. In relation to the inclusion of informed consent as an indicator, this was considered a fundamental parameter of quality in endoscopy, in accordance with the recommendations of the different literatures[1-3,10,10,19,22]. In addition, it not only provides information to the patient or his caregiver about the procedure but also brings benefits to the doctor-patient relationship, protecting the patient and the endoscopist from future legal aspects[23,24]. Additionally, it ensures that the family has an adequate understanding of what will be performed, risks, benefits, diagnostic or therapeutic alternatives and complications, as well as when bowel preparation is indicated and the timeliness of the procedure.

Another important indicator voted during the preprocedural phase was the ASA score, which classifies health status and predicts operative risk. This score, along with the administration of medications during patient preparation for the endoscopic study, is considered essential. Different societies and authors recommend the use of ASA as a parameter with evidence; its inclusion in surgical or endoscopic safety checklists is suggested because it can prevent errors and, consequently, have a positive impact on patient morbidity and mortality[10,19,25]. Several studies emphasize that, in terms of safety, younger and smaller patients with higher ASA scores are at greater risk of experiencing complications during gastrointestinal procedures[26,27]. For this reason, the American Society for Gastrointestinal Endoscopy (ASGE) and the American Academy of Pediatrics (AAP) recommend adapting sedation plans according to the ASA score[28-30], as adopted in this consensus.

During the intraprocedural phase, unanimous agreement was reached on indicators related to the appropriate indication for endoscopy, which must be documented and closely linked to the endoscopic procedure itself, the areas examined, biopsy sampling, and reporting of adverse events such as interruption of the procedure. These elements are crucial and determine the effectiveness of the examination. These indicators are in accordance with what has been established in other consensuses, such as PenQuIN, which mentions among its standards and indicators that pediatric endoscopic procedures should be performed in their entirety, the review of all areas is relevant, the acquisition of adequate biopsies and performance of interventions are convenient, and all are related to the indication for endoscopy[10].

It has been mentioned that the indications for digestive endoscopy in adults and the endoscopic quality indicators are clear and serve as a reference, are widely available and evaluate the effectiveness or exploration, mostly directed to cancer surveillance and in colonoscopy to the detection of adenoma[18,19]. However, they are not applicable to the pediatric population due to significant differences in indications, possible diagnoses, distribution of biopsies, among others.

Therefore, indicators related to pediatric pathology, such as bleeding, detection of *Helicobacter pylori*, ulcers, celiac disease, and the validation of ileal intubation as an important metric in inflammatory bowel disease, were added to the intraprocedural phase, in alignment with the indications reported in the literature[31]. Similarly, biopsies obtained during pediatric endoscopic procedures are primarily aimed at assessing congenital disorders, autoimmune conditions, allergic reactions, and other inflammatory processes, in contrast to adult populations, where biopsies are more commonly performed for cancer detection[18,19].

The guidelines for young children, school-aged children, and adolescents developed by the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) and the European Society of Gastrointestinal Endoscopy (ESGE) include recommendations for both diagnostic and therapeutic esophagogastroduodenoscopy and ileocolonoscopy. These guidelines represent a consensus on best practices based on the evidence available at the time of writing. However, the authors noted that they may not be applicable in all cases and should be interpreted in the context of specific clinical situations and resource availability[31]. This observation is relevant and has been taken into account in this consensus, in which the selected indicators can be adapted to any basic clinical setting regardless of access to advanced technologies.

The PEnQuIN consensus defines the intraprocedural period as extending from the administration of sedation or insertion of the endoscope to the withdrawal of the instrument. This period includes all technical aspects of the procedure, including completion of the examination and therapeutic maneuvers[10]. This consensus also pointed out the inclusion in the endoscopy report of bleeding control and therapeutic maneuvers, as well as the classifications used as quality indicators similar to those defined in PEnQuIN.

Photo-documentation was another primary indicator considered in this consensus because of its recent appearance as proof of the endoscopic procedure, together with the use of video-documentation. Photodocumentation has been established as a quality indicator since 2008. In 2016, the European Society of Gastrointestinal Endoscopy (ESGE) began defining specific anatomical landmarks to be photographed, ranging from 10 to 21 images. The goals were to highlight key anatomical areas, document the extent of the examination, and capture mucosal characteristics, including cleanliness[32]. The PEnQuIN consensus specifies the importance of demonstrating with photographs or videos all the abnormal findings visualized[10]. Accurate and appropriate image documentation is an essential part of gastrointestinal endoscopy reports. It should be routinely performed in both upper and lower gastrointestinal endoscopies, and information systems must incorporate this relevant data[32].

It is known that the quality indicators for colonoscopy were the first to be described. These encompass various aspects, such as the total procedure time (integrity/extent of the examination), cecal and ileal intubation rates, quality of bowel preparation, and whether the colonoscopy was complete[10,19,30,33-37]. Only the quality of colonic preparation and validation of ileal intubation were included in the intraprocedural phase, as these are two parameters directly associated with the quality of the endoscopic study. This decision is supported by the report of the Endoscopy Committee of the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN), which considers the quality of bowel preparation and ileal intubation rate as the most important indicators among multiple metrics described[38]. A retrospective review of all colonoscopies performed from November 2011 to October 2015 at a tertiary pediatric center was added. Demographic data and characteristics such as the presence of training personnel were collected, and the reported quality data included procedure indication, quality of bowel preparation, extent of colonoscopy, and confirmation of location, with validation of ileal intubation through photography or histology[39].

An outstanding aspect in pediatrics is the validation of colon preparation scales, which are standardized and validated in adults, such as Ottawa, Chicago, Aronchick, and Boston[38]. A Latin American study used the Boston Bowel Preparation Scale in children in a prospective study and found that the overall cecal intubation rate, when associated with adequate bowel cleansing, increased from 65% to 91.30%, which constitutes a key factor in the quality of pediatric colonoscopy[40]. Although other aspects such as the ileal and cecal intubation rates and procedure time reflect the quality of the endoscopy, they also involve additional considerations such as the endoscopist's expertise and the learning curve. It is known that the average duration of colonoscopy can be influenced by resident participation, ileal and cecal intubation failure due to severe disease, technical difficulties, and inadequate bowel preparation[33,41]. It is also noted that the ileal intubation rate depends on the underlying pathology[30]. Therefore, these parameters should preferably be included in broader and more specific colonoscopy evaluation consensus guidelines.

The postprocedural indicators were framed around informing the patient or family about the need for follow-up, recognition and documentation of adverse events, assessment of patient satisfaction, and communication of histopathology results. They also included preventive indicators regarding the need to inform patients about potential complications and warning signs. These parameters reached an agreement level of 80%, similar to what was observed in the preprocedural parameters, particularly in one indicator that refers to documenting in the medical

record that instructions and warning signs were provided to the patient. In practice, this information is usually included in the discharge instructions and explained verbally. However, it is argued that it must also be recorded in the medical record, as it is a medico-legal document.

The postprocedural period begins at the moment the endoscope is withdrawn from the patient for subsequent follow-up[36,42]. High-quality endoscopic care is not only based on technical competence, but also encompasses elements related to the overall patient experience[1,10]. Postprocedural indicators, as a general metric of care quality, are important in assessing patient and caregiver satisfaction with the procedure. The PEnQuIN consensus[10] emphasizes the evaluation of the experience, whether through standardized telephone calls, email, or paper-based surveys. It is up to each Latin American institution to adopt the system that best fits its context.

Finally, another point of discussion focused on which quality indicators should be included in the medical record and which in the endoscopy report. It was agreed that nine indicators should be documented in the medical record, as it is a fundamental tool for comprehensive medical care, containing information on the patient's health status, preserving data over time, and providing details on risks, medications, and comorbidities. The remaining 27 quality indicators were included in the endoscopy report. Currently, several studies consider comprehensive endoscopy procedure reports to be a written communication tool for physicians, patients, or family members. These reports also serve as medico-legal documents of the endoscopic record and reflect adherence to quality standards and indicators with favorable outcomes[22,42-45].

Latin America has well-trained pediatric gastroenterologists who are committed to the safety of endoscopic procedures, and the development of a consensus was of great importance for advancing pediatric digestive endoscopy, as well as for optimizing diagnosis and therapy. The document outlining quality parameters for endoscopy is easy to implement and includes essential metrics that ensure safe digestive endoscopy in children, aligned with proper technique and in accordance with international standards. It can be applied in any Latin American country, regardless of disparities in healthcare, available resources, or whether the hospital is public or private, serving as a means to standardize the endoscopic procedure across its three phases: preprocedural, intraprocedural, and postprocedural. It is concluded that the quality indicators drafted as a Delphi Consensus can be used in any pediatric endoscopy unit, are easy to apply, and align with health and endoscopy quality definitions. These indicators are measurable and, when used, help to reduce disparities in human and material resources among countries.

RECOMMENDATIONS

- The dissemination of this endoscopy quality consensus in the Latin American region can promote the performance of responsible digestive endoscopy, with technique and control of execution and risks.
- Pediatric gastroenterologists in training can learn quality standards, apply them and contribute to the development of the specialty in the region.
- Considering the quality indicators, pediatric gastroenterologists can ask their staff to comply with all phases of the procedure (pre-, intra- and post-procedural) for a quality digestive endoscopy.
- The pediatric gastroenterologist, when preparing his work team, can ask the institutions for the indispensable resources to comply with all the indicators of the endoscopy quality consensus, given that they are adapted to public and private institutions with limited resources.
- Informed consent and ASA classification should be the responsibility of the pediatric gastroenterologist, with the latter not being solely the responsibility of the anesthesiologist.
- The use of the indicators drafted allows the preparation of a report that is equivalent throughout the region, which facilitates interinstitutional communication between countries and between scientific societies and can be used in research studies.
- Digestive endoscopy is constantly changing, technology is advancing, and the written indicators can be expanded and easily adapted to new situations.

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Conflicts of interest

The authors report no conflicts of interest in the preparation of this article

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