Quality indicators for EUS

EUS has become integral to the diagnosis and staging of GI and mediastinal mass lesions and conditions. EUS-guided FNA (EUS-FNA) allows the endoscopist to obtain tissue or fluid for cytologic and chemical analysis, adding to the procedure's utility. Furthermore, the recent development of EUS-guided core biopsy techniques enables histologic sampling in selected cases and for obtaining tissue for molecular analysis in neoadjuvant and palliative settings. The clinical effectiveness of EUS and EUS-FNA depends on the judicious use of these techniques.

The quality of health care can be measured by comparing the performance of an individual or a group of individuals with an ideal or benchmark.[1] The particular parameter that is being used for comparison is termed a quality indicator. Quality indicators often are reported as ratios between the incidence of correct performance and the opportunity for correct performance or as the proportion of interventions that achieve a predefined goal.[2] Quality indicators can be divided into 3 categories: (1) structural measures—these assess characteristics of the entire health care environment (eg, availability and maintenance of endoscopy equipment at a hospital), (2) process measures—these assess performance during the delivery of care (eg, diagnostic rates of malignancy in patients undergoing EUS-FNA of pancreatic masses), (3) outcome measures: these assess the results of the care that was provided (eg, frequency of infection after EUS with FNA of cystic lesions).

METHODOLOGY

In 2006, the American Society for Gastrointestinal Endoscopy (ASGE)/American College of Gastroenterology (ACG) Task Force on Quality in Endoscopy published the first version of quality indicators for EUS.[3] The present update integrates new data pertaining to previously proposed quality indicators and new quality indicators for performing EUS. We prioritized indicators that had wide-ranging clinical application, were associated with variation in practice and outcomes, and were validated in clinical studies. Clinical studies were identified through a computerized search of Medline followed by review of the bibliographies of all relevant articles. When such studies were absent, indicators were chosen by expert consensus. Although feasibility of measurement was a consideration, we hope that inclusion of highly relevant, but not yet easily measurable, indicators will promote their eventual adoption. Although a comprehensive list of quality indicators is proposed, we recognize that, ultimately, only a small subset might be widely used for continuous quality improvement, benchmarking, or quality reporting. As in 2006, current the task force concentrated its attention on parameters related solely to endoscopic procedures. Although the quality of care delivered to patients is clearly influenced by many factors related to the facilities in which endoscopy is performed, characterization of unit-related quality indicators was not included in the scope of this effort.

The resultant quality indicators were graded on the strength of the supporting evidence (Table 1). Each quality indicator was classified as an outcome or a process measure. Although outcome quality indicators are preferred, some can be difficult to measure in routine clinical practice, because they need analysis of large amounts of data and long-term follow-up and may be confounded by other factors. In such cases, the task force deemed it reasonable to use process indicators as surrogate measures of high-quality endoscopy. The relative value of a process indicator hinges on the evidence that supports its association with a clinically relevant outcome, and such process measures were emphasized.

The quality indicators for this update were written in a manner that lends them to be developed as measures. Although they remain quality indicators and not measures, this document also contains a list of performance targets for each quality indicator. The task force selected performance targets from benchmarking data in the literature when available. When no data were available to support establishing a performance target level, "N/A" (not available) was listed. However, when expert consensus considers failure to perform a given indicator a "never event," such as monitoring vital signs during sedation, then the performance target was listed as >98%. It is important to emphasize that the performance targets listed do not necessarily reflect the standard of care but rather serve as specific goals to direct quality improvement efforts.

Quality indicators were divided into 3 time periods: preprocedure, intraprocedure, and postprocedure. For each category, key relevant research questions were identified.

In order to guide continuous quality improvement efforts, the task force also recommended a high-priority subset of the indicators described, based on their clinical relevance and importance, evidence that performance

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TABLE 1. Grades of recommendation*

Grade of recommendation	Clarity of benefit	Methodologic strength supporting evidence	Implications
1A	Clear	Randomized trials without important limitations	Strong recommendation; can be applied to most clinical settings
1B	Clear	Randomized trials with important limitations (inconsistent results, nonfatal methodologic flaws)	Strong recommendation; likely to apply to most practice settings
1C+	Clear	Overwhelming evidence from observational studies	Strong recommendation; can apply to most practice settings in most situations
1C	Clear	Observational studies	Intermediate-strength recommendation; may change when stronger evidence is available
2A	Unclear	Randomized trials without important limitations	Intermediate-strength recommendation; best action may differ depending on circumstances or patients' or societal values
2B	Unclear	Randomized trials with important limitations (inconsistent results, nonfatal methodologic flaws)	Weak recommendation; alternative approaches may be better under some circumstances
2C	Unclear	Observational studies	Very weak recommendation; alternative approaches likely to be better under some circumstances
3	Unclear	Expert opinion only	Weak recommendation; likely to change as data become available

*Adapted from Guyatt G, Sinclair J, Cook D, et al. Moving from evidence to action. Grading recommendations—a qualitative approach. In: Guyatt G, Rennie D, editors. Users' guides to the medical literature. Chicago: AMA Press; 2002. p. 599-608.

varies significantly in clinical practice, and feasibility of measurement (a function of the number of procedures needed to obtain an accurate measurement with narrow confidence intervals [CI] and the ease of measurement). A useful approach for individual endoscopists is to first measure their performance with regard to these priority indicators. Quality improvement efforts would then move to different quality indicators if endoscopists are performing above recommended thresholds, or the employer and/or teaching center could institute corrective measures and remeasure performance of low-level performers.

Recognizing that certain quality indicators are common to all GI endoscopic procedures, such items are presented in detail in a separate document, similar to the process in 2006.[4] The preprocedure, intraprocedure, and postprocedure indicators common to all endoscopy are listed in Table 2. Those common factors will be discussed in this document only insofar as the discussion needs to be modified specifically related to EUS.

Preprocedure quality indicators

The preprocedure period includes all contact between members of the endoscopy team with the patient before the administration of sedation. Common issues for all endoscopic procedures during this period include: appropriate indication, informed consent, risk assessment, formulation of a sedation plan, clinical decision making with regard to prophylactic antibiotics and management of antithrombotic drugs, and timeliness of the procedure.[5] Preprocedure quality indicators specific to performance of EUS include the following:

1. *Frequency with which EUS is performed for an indication that is included in a published standard list of appropriate indications, and the indication is documented*

   Level of evidence: 1C

   Performance target: >80%

   Type of measure: process

   The ASGE has published appropriate indications for EUS (Table 3).[6] An appropriate indication should be documented for each procedure, and, when it is not a standard indication listed in the current ASGE Appropriate Use of GI Endoscopy guideline, it should be justified in the documentation.

   Discussion: Acceptable indications for EUS have been published recently.[6,7] Although there are many instances in which EUS can be performed, the value of the procedure in the care of any particular patient depends on its impact on management, improvement in outcomes, and the superiority of EUS over other available imaging or surgical procedures. This implies a certain degree of clinical judgment in choosing when and if to perform EUS in relation to other procedures, making rigid indications impractical. Expert opinion