



# Quality and Outcomes Assessment in Gastrointestinal Endoscopy

## BACKGROUND

The delivery of health care is undergoing dramatic change. Patients have come to be viewed as customers and physicians as mere providers. The progressive rise in the cost of medical care has placed a premium on identifying the most cost-effective utilization of resources. Unfortunately, quality has not received similar emphasis. As costs equalize among health care systems, however, quality of care will become a major differentiating feature among gastroenterologists. These changes have led to what some term the third revolution in medical care - "assessment and accountability."

There are a number of trends supporting this revolution. First, the growing penetration of managed care and the increasing popularity of cost-containment efforts such as capitated contracts are requiring physicians to gather data regarding their own practices in order to make appropriate business decisions. Second, and probably more importantly, there are growing concerns by employer coalitions, accrediting agencies, and even patients regarding the quality of care being provided at the individual physician level, particularly with managed care's emphasis on controlling costs. The field of quality and outcomes assessment has emerged in response to these concerns and offers, among other things, a monitoring system to determine if quality health care is being provided.

This attention to quality, however, must extend to the level of the individual practitioner to ensure that patients' interests are preserved. Although managed care organizations desire their providers to track clinical outcomes, there are no clear standards detailing which outcomes should be followed. To address this void, the ASGE has identified the following quality indicators which, when taken as a whole, are intended to represent a national standard for the assessment of quality in endoscopic practice. It is the expectation of the ASGE that these quality indicators represent the starting point in the process of equipping practitioners with the resources to track the outcomes of their own endoscopic practices.

## SPECIFIC QUALITY INDICATORS

The systematic collection of quality indicators represents a significant change within the clinical practice of most practicing endoscopists and adds an increased time commitment to an already busy clinical schedule. The selection of potential indicators, therefore, was based on ease of use, ability to measure a desired outcome and availability of the data in routine clinical practice to reduce the burden of collecting additional data.

The following outcomes measures have been identified as quality indicators appropriate for collection in all patients undergoing upper endoscopy and colonoscopy. These indicators include both process and outcomes measures. **Process measures** are defined as components of the encounter between patient and provider, in this case the endoscopic procedure. **Outcomes measures** assess what happens to the patient's health status as a result of the procedure. All but one of these indicators should already be collected as part of an endoscopy report.

1. Demographic information - age, gender, and American Society of Anesthesia (ASA) classification (Appendix I). The collection of demographic information permits the identification of subgroups which can be analyzed individually. Age and gender allow for crude stratification by procedure risk. ASA classification is included since accrediting agencies already require documentation of patient risk for conscious sedation. Although unproved, inclusion of ASA status as a quality indicator allows the stratification of individual patients by sedation risk. Further investigation is necessary to confirm the value of the ASA classification system among patients undergoing endoscopy.
2. Procedure indication - ASGE approved indications are recommended as the criteria for determining the appropriateness of the procedure. Indications should be tracked for all procedures.
3. Sedation - Two separate indicators should be used to track outcomes of sedation: frequency of reversal agent use, including naloxone or flumazenil, and adequacy of sedation as determined by the patient. These indicators are directly linked to procedure outcomes and patient satisfaction.

**Table 1. EGD Specific Quality Indicators**

Demographics:	age, gender, ASA status
Indications:	ASGE approved indications
Sedation:	use of reversal agents such as naloxone or flumezanil
Complications:	requires an intervention; includes both immediate and delayed
Patient satisfaction:	see appendix II
Procedure success:	
technical success -	reaching the descending duodenum and retroflexion in the stomach
subjective outcome of procedure	
frequency of esophageal abnormalities when EGD performed for symptoms of gastroesophageal reflux disease	

4. Procedure complications - Complications are defined as adverse events which necessitate intervention. Complications are further defined either as immediate, occurring during the procedure or prior to discharge from the endoscopy unit, and delayed, occurring up to 30 days after the procedure. The specific method of identifying and collecting delayed complications, however, remains controversial. Further research is required before the optimal method to record delayed complications can be firmly established. Nevertheless, procedure complications should be tracked for all patients undergoing endoscopy.
5. Patient Satisfaction - Information on patient satisfaction will be collected using a modification of the GHAA-9 Patient Satisfaction survey plus two additional questions (Appendix II). This patient satisfaction survey has been in existence for nearly 20 years and has been validated in numerous patient populations. Furthermore, it is well accepted by managed care organizations and a significant amount of reference (benchmark) data are available for comparative purposes.
6. Procedure success - There are few published data addressing the concept of procedure success. Technical success, although easier to measure, is not sufficient alone to determine the success of an endoscopic procedure. Since there are no established methods to measure other aspects of procedural success, two additional indicators are identified: first, the question whether the findings of endoscopy were clinically useful and whether an intervention such as polypectomy or hemostasis was successful; and second, comparison of the procedure indication with the endoscopic findings. When data from an individual endoscopist or endoscopic practice is compared to national or regional benchmarks, the success of the procedure as well as its appropriateness can

**Table 2. Colonoscopy Specific Quality Indicators**

Demographics:	age, gender, ASA status
Indications:	ASGE approved indications
Sedation:	use of reversal agents such as naloxone or flumezanil
Complications:	requires and intervention; includes both immediate and delayed
Patient satisfaction:	see appendix II
Procedure success:	
technical success -	reaching the cecum when the cecum is present
subjective outcome of procedure	
prevalence of polyps when colonoscopy performed for screening or surveillance	

be evaluated. For example, colorectal polyps are the most common reason for performing colonoscopy. If the prevalence rate of polyps found by an individual practitioner is lower than that of a comparable benchmark population, it might be that polyps are being missed (indicating decreased procedure success) or that colonoscopy is being performed too frequently (questionable appropriateness of the procedure). Similarly, the frequency of esophageal abnormalities can be evaluated among patients undergoing EGD for gastroesophageal reflux disease. Data from this quality indicator, however, are only useful when compiled from multiple procedures.

Using the core set of quality indicators listed above, the following specific indicators were selected for upper endoscopy and colonoscopy (Table 1 & 2).

### RECOMMENDATIONS

It is recommended that these quality indicators be routinely tracked on all patients undergoing endoscopy. For some parameters, only a random sample of patients may need to be surveyed. For example, patient satisfaction and procedural success may require sampling of patients on a quarterly basis to provide sufficient quality data. For other areas such as demographics, indications and complications all patients undergoing endoscopic procedures should be tracked. This is particularly true for complications because they occur so infrequently. In the absence of initial benchmark data, goals should be established and quality data should be tracked over time. As these indicators become more widely implemented, it is anticipated that benchmark data will be published for comparison on both national and regional levels. As this benchmark data becomes more refined, it may be possible to stratify by patient population, meaning that results may be different depending upon the practice setting. The task of tracking these quality indicators is made consid-

erably easier by implementing an endoscopic data base program.

## CONCLUSIONS

The delivery of medical care is changing dramatically. Resources are becoming increasingly scarce, and the progressive rise of health care expenditures suggests a need for careful utilization of resources. The field of outcomes research has emerged in response to these challenges and provides the means to identify the most effective and efficient use of finite resources and provide a monitoring system to ensure that quality is maintained. This attention to quality must extend to the level of the individual practitioner to ensure that patients' interests are preserved. As providers of health care, practicing gastroenterologists need to take an active role in these efforts in both understanding and implementing the techniques of outcomes and quality assessment into their practices. Although possibly intimidating to the practicing gastroenterologist, tracking patient outcomes should not be a foreign concept. Routine clinical practice encompasses outcomes and quality information on a continuous basis. In order for the data to be meaningful, however, it is important that these experiences be recorded in a systematic manner. If gastroenterologists are not actively involved in data collection and measurement to improve the quality and value of their own work, it is likely that someone else will assume this role. These recommendations are intended to provide a starting point in assisting endoscopists to track the outcomes of their own practices. By facilitating the collection of data on endoscopic quality, it is the goal of the ASGE that all endoscopists will successfully meet the challenges of this ongoing revolution in health care.

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## Appendix I:

### ASA Classification - Anesthesia Risk Class

Class I	Healthy Patient
Class II	Mild systemic disease No functional limitations No acute problems e.g. controlled hypertension mild diabetes chronic bronchitis, asthma
Class III	Severe systemic disease Definite functional limitation e.g. brittle diabetic

	frequent angina myocardial infarction
Class IV	Severe systemic disease with acute, unstable symptoms e.g. recent (3 months) myocardial infarction congestive heart failure acute renal failure ketoacidosis uncontrolled, active asthma
Class V	Severe systemic disease with imminent risk of death

## Appendix II:

### Patient Satisfaction Questions - Modified From the GHAA 9

A number of questions are listed below regarding the visit you just made. In terms of your satisfaction, how would you rate each of the following:

1. How long you waited to get an appointment.  
Excellent    Very good    Good    Fair    Poor
2. Length of time spent waiting at the office for the procedure.  
Excellent    Very good    Good    Fair    Poor
3. The personal manner (courtesy, respect, sensitivity, friendliness) of the physician who performed your procedure.  
Excellent    Very good    Good    Fair    Poor
4. The technical skills (thoroughness, carefulness, competence) of the physician who performed your procedure.  
Excellent    Very good    Good    Fair    Poor

5. The personal manner (courtesy, respect, sensitivity, friendliness) of the nurses and other support staff.

Excellent    Very good    Good    Fair    Poor

6. Adequacy of explanation of what was done for you - all your questions answered.

Excellent    Very good    Good    Fair    Poor

7. Overall rating of the visit.

Excellent    Very good    Good    Fair    Poor

8. Would you have the procedure done again by this physician?

Yes                  No

9. Would you consider having this procedure done again at this facility?

Yes                  No

### ASGE Ad Hoc Committee on Outcomes Research Committee Members:

John F. Johanson, MD, MS, Chairman  
Colleen M. Schmitt, MD, MHS  
Thomas M. Deas, Jr., MD  
Glenn M. Eisen, MD  
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Dennis M. Jensen, MD  
David A. Lieberman, MD  
Simon K. Lo, MD  
Anand Sahai, MD, MS  
Philip Schoenfeld, MD, MS  
Megan Morgan, MA, Project Consultant

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