

# ADVANCES IN ENDOSCOPY

Current Developments in Diagnostic and Therapeutic Endoscopy

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## Quality Indicators in Colonoscopy Practice



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### **G&H** Why have quality indicators for endoscopic procedures recently attracted attention?

**IMP** Quality indicators for endoscopic procedures have become a topic of increased interest for the same reason that quality has become important throughout healthcare. This movement was kickstarted in 1999, when one of the first articles dealing with quality (“To Err Is Human: Building a Safer Health System”) was published by the Institute of Medicine. The article claimed that many adverse outcomes and deaths occurred in US healthcare as a result of errors in medicine. This disclosure incited a search for these errors and their causes. In 2001, the Institute of Medicine published another white paper (“Crossing the Quality Chasm: A New Health System for the 21st Century”), which called for transparency of quality in healthcare. As a result, gastroenterology societies realized that they would be called upon to document and display the quality of procedures.

Therefore, in 2005, the American College of Gastroenterology (ACG) and the American Society for Gastrointestinal Endoscopy (ASGE) decided to form a Quality Taskforce to develop quality indicators in endoscopy. The societies recognized that endoscopic procedures were what members of the public thought of when they thought of gastroenterology. Due to cost and volume, private insurers and the Centers for Medicare and Medicaid Services monitor gastrointestinal procedures. The Taskforce chose to develop quality indicators for each of the major endoscopic procedures (colonoscopy, esophago-gastroduodenoscopy [EGD], endoscopic retrograde cholangiopancreatography [ERCP], and endoscopic ultrasound) as well as quality indicators common to all endoscopic procedures.

### **G&H** What are the postulated benefits of developing quality indicators? Are there any difficulties associated with this process?

**IMP** The postulated benefits include improved outcomes, better care, higher quality, and, perhaps, better use of available resources in terms of gastroenterologists, supplies, equipment, and medications. There are some hurdles that we need to get over in order to adequately and precisely measure quality indicators and then determine whether they are affecting the ultimate outcome (ie, better health). Electronic health records will help us mine the data we need to accomplish the task of providing higher quality at lower cost. Using this technology will allow us to gather large amounts of data with much less effort in very little time. This will lead to improving care much more rapidly than previously.

### **G&H** What quality indicators have been identified specifically for colonoscopy?

**IMP** Quality indicators that were developed for each endoscopic procedure, as well as indicators common to all endoscopic procedures, were published simultaneously in 5 articles and an introductory article in the April 2006 issue of the *American Journal of Gastroenterology* and a special supplement to the April 2006 issue of *Gastrointestinal Endoscopy*. Fourteen measures were developed for colonoscopy (Table 1).

### **G&H** Could you discuss the process of data mining from endoscopy reports?

**IMP** All individuals who perform colonoscopies should measure the quality of the procedures that they are per-

**Table 1.** Quality Indicators for Colonoscopy\*

<ol style="list-style-type: none"> <li>1. Appropriate indication</li> <li>2. Informed consent is obtained, including specific discussion of risks associated with colonoscopy</li> <li>3. Use of recommended postpolypectomy and postcancer resection surveillance intervals</li> <li>4. Use of recommended ulcerative colitis/Crohn's disease surveillance intervals</li> <li>5. Documentation in the procedure note of the quality of the preparation</li> <li>6. Cecal intubation rates (visualization of the cecum by notation of landmarks and photo documentation of landmarks should be present in every procedure)</li> <li>7. Detection of adenomas in asymptomatic individuals (screening)</li> </ol>	<ol style="list-style-type: none"> <li>8. Withdrawal time: mean withdrawal time should be &gt;6 minutes in colonoscopies with normal results performed in patients with intact anatomy</li> <li>9. Biopsy specimens obtained in patients with chronic diarrhea</li> <li>10. Number and distribution of biopsy samples in ulcerative colitis and Crohn's colitis surveillance. Goal: 4 per 10-cm section of involved colon or approximately 32 specimens per case of pancolitis</li> <li>11. Mucosally based pedunculated polyps and sessile polyps &lt;2 cm in size should be endoscopically resected or documentation of unresectability obtained</li> <li>12. Incidence of perforation by procedure type (all indications vs screening) is measured</li> <li>13. Incidence of postpolypectomy bleeding is measured</li> <li>14. Postpolypectomy bleeding managed nonoperatively</li> </ol>
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\*This list of quality indicators was meant to be a comprehensive listing of measurable endpoints. It is not the intention of the Taskforce that all endpoints be measured in every practice setting. In most cases, validation may be required before a given endpoint may be universally adopted.

Reproduced from Rex DK, Petrini JL, Baron TH, et al; ASGE/ACG Taskforce on Quality in Endoscopy. Quality indicators for colonoscopy. *Am J Gastroenterol.* 2006;101:873-885.

forming. (This guideline is not specific to gastroenterologists; it applies to all physicians who perform a colonoscopy.) Many endoscopists (perhaps >50%) use a specialized electronic medical record sometimes called an endoscopy report writer. For many years, the endoscopy report writer was viewed as a glorified transcription device or a word processor; however, it is a computer software database that stores the text report and has data fields that are populated by the endoscopist. Until we set out on a pilot program before developing the Gastrointestinal Quality Improvement Consortium (GIQuIC) registry, we could not mine these data. Now, however, regardless of the software used by the physician, these data fields can be encrypted and sent electronically to a central registry; there, the information can be immediately analyzed using various formulas and can provide feedback to physicians and/or facilities, in terms of their performance compared to others.

### G&H What is the current status of the GIQuIC registry?

**IMP** GIQuIC is co-owned by the ACG and ASGE and was created for the purpose of developing a quality improvement and benchmarking registry. After undergoing an 18-month pilot program, validating the accuracy of the data, and imagining what could be done with computers, software, endoscopy report writers, and various electronic medical record systems, we formed a corporation, which

was granted status as a free-standing organization recognized by the US government as a nonprofit entity. The GIQuIC registry has been built by the company Outcome Sciences, which has significant experience in healthcare registry development. Many facilities, including hospitals, universities, ambulatory surgery centers, and office-based endoscopy units, have registered with us, and over 45,000 colonoscopy cases have been collected in the registry so far. In addition, we are in the process of developing quality measures for EGD, ERCP, and hepatitis C virus infection treatment, and we are considering developing inflammatory bowel disease measures. As new measures are developed, we plan to capture those data within the registry as well.

### G&H What role does benchmarking play in the development of these quality indicators?

**IMP** We know from measuring quality indicators that the process of measurement itself improves quality; the Hawthorne Effect, which was recognized in the 1920s, states that individuals pay greater attention to detail and perform at a higher level when they know that they are being watched and/or measured. Thus, quality improves by measuring. Quality can be further improved by benchmarking against others (ie, comparing our quality with the quality of other physicians). As we benchmark against others, we will find individuals who are performing at a higher level than we are.

The next step is to investigate what these individuals are doing differently. For example, how are they improving their adenoma detection rates, or why do they have a higher level of adequate preparation when they perform a colonoscopy? This encourages physicians to read articles, ask colleagues questions, attend meetings, and listen to what is being done. People have a natural drive to improve what they are doing; I think all individuals who work in health-care want to do the best job they can every day. Importantly, benchmarking in a de-identified fashion (maintaining some privacy for individuals) improves quality across the board (ie, it moves the quality curve to the right).

### **G&H** In what other ways do the data generated by these processes benefit an endoscopy unit?

**IMP** Another benefit of participating in quality measurements is being able to deal with today's well-educated patients. Today, patients want to know about the quality of their physicians. They frequently ask questions, such as, "What is your adenoma detection rate? How long have you been doing this? What is your complication rate?" Having the answers to their questions is always helpful; it shows patients that you are aware of your performance and looking for ways to improve it. Many endoscopy units display their safety and quality measures, and they apply for recognition, such as that given by the ASGE Endoscopic Unit Recognition program. In this program, units implement multiple patient safety and quality measures and are awarded recognition and certificates for doing so. These certificates are displayed to the public, so patients can feel comfortable coming to the unit and undergoing procedures. This is an important benefit for the endoscopy unit, as well as for the public it serves.

### **G&H** What do you foresee as the next steps in the development of quality indicators for colonoscopy?

**IMP** The GIQuIC database is growing. Physicians have contributed data from 45,000 colonoscopies in

a very short period of time, and other units are starting to join the registry and submit data as well. If, say, 3,000 endoscopists begin using the registry and each submit 700–800 colonoscopies per year, the registry will quickly amass hundreds of thousands of colonoscopies that can be distilled to 84 data points, and we will be able to mine these data and, looking forward, monitor the outcomes of these patients. With this information, we can look at various measures and find out what truly results in better patient health and lower incidences of colorectal cancer, and we can determine when surveillance colonoscopies are most helpful. This analysis involves evaluating outcomes of procedures, as opposed to indicators of quality; outcomes can be improved by finding out what truly improves quality. It may turn out that some of these measures do not alter quality, and perhaps we will drop those measures and find new ones by combining all of the available data points.

In the near future, more data may be available on new measures, such as detection of serrated lesions, which do not always have the same morphology as actual polypoid lesions. Many of these lesions have been recognized as flat lesions, and some are very aggressive. We need to monitor them separately and determine the appropriate surveillance interval for individuals who have these lesions. All endoscopists should stay up-to-date with developments and new technologies that enable recognition of polyp differences and better prediction of which patients may need different forms of monitoring.

### **Suggested Reading**

Rex DK, Petrini JL, Baron TH, et al; ASGE/ACG Taskforce on Quality in Endoscopy. Quality indicators for colonoscopy. *Am J Gastroenterol*. 2006;101:873-885.

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