

## Standardized colonoscopy reporting and data system: report of the Quality Assurance Task Group of the National Colorectal Cancer Roundtable

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**Background:** Standardized reporting systems for diagnostic and screening tests facilitate quality improvement programs and clear communication among health care providers. Although colonoscopy is commonly used for screening, diagnosis, and therapy, no standardized reporting system for this procedure currently exists. The Quality Assurance Task Group of the National Colorectal Cancer Roundtable developed a reporting and data system for colonoscopy based on continuous quality improvement indicators.

**Design:** The Task Group systematically reviewed quality indicators recommended by the Multi-Society Task Force on Colorectal Cancer and developed consensus-based terminology for reporting and data systems to capture these data elements. The Task Group included experts in several disciplines: gastroenterology, primary care, diagnostic imaging, and health care delivery.

**Results and Conclusions:** The standardized colonoscopy reporting and data system provides a tool that can be used for efforts in continuous quality improvement within and across practices that use colonoscopy.

Colorectal cancer (CRC) is the second leading cause of cancer death in North America.<sup>1</sup> Screening of asymptomatic average-risk persons has been recommended by many expert panels, including the United States Preventive Services Task Force, the American Cancer Society (ACS), the Multi-Society Task Force on Colorectal Cancer (MSTF-CRC), and the American College of Gastroenterology.<sup>1-4</sup> Recommended tests include fecal occult blood test, sigmoidoscopy, and double-contrast barium enema; each of these screening tests leads to colonoscopy if positive. Colonoscopy is also recommended as a screening test. There is evidence that utilization of colonoscopy has increased dramatically in the past few years, largely because of increased rates of CRC screening.<sup>5,6</sup> The effectiveness and the safety of colonoscopy depend on the quality of examination, and a growing body of evidence suggests that the quality of colonoscopy in clinical practice varies.<sup>7</sup>

In 2002, the MSTF-CRC generated specific recommendations to improve the quality and effectiveness of colonoscopy.<sup>7</sup> This important contribution highlighted key

indicators for continuous quality improvement (CQI) and suggested targets for specific indicators. In 2006, Rex et al<sup>8</sup> added background data with identification of levels of evidence that supported key quality indicators and proposed targets in the earlier document. One obstacle to measuring quality within and across practices is the absence of a standardized reporting system for colonoscopy, which precludes measurement of quality across many settings. Standardized systems for reporting the results of screening tests and managing data systems have numerous advantages over nonstandardized systems, including better communication of test results, standardization of terms and measurement criteria, and the establishment of data systems that can be used for medical audits and CQI. In cancer screening, standardized reporting and data systems are in place for both Papanicolaou testing and mammography, but no such system exists for colonoscopy.

To advance the recommendations from the MSTF-CRC, the Quality Assurance Task Group of the National Colorectal Cancer Roundtable (NCCRT) was charged with developing a standardized colonoscopy reporting and data system (CO-RADS) to improve the quality of colonoscopy. The specific goals were to produce a tool that will provide endoscopists with a quality improvement instrument and

to provide referring physicians a colonoscopy report that will use standard terms and provide follow-up recommendations. The Quality Assurance Task Group focused on terminology and elements of reporting, with the goals of standardization and of measuring quality both within and across practices. The Quality Assurance Task Group also made recommendations on the use of the data generated from reports to achieve CQI. The report elements are summarized in [Appendix 1](#). The Quality Assurance Task Group members considered the work burden associated with each element in the lexicon and selected certain items because of their importance in CQI efforts. Many other items were either not included or were discussed in general terms, because they are not directly related to CQI. This commentary will discuss the rationale for inclusion and present a standard method for reporting these elements.

CO-RADS represents a consensus among experts in gastroenterology, diagnostic radiology, primary care, and health care delivery, and describes the specific elements of colonoscopy that should be considered for monitoring in every endoscopy unit in a program of CQI. A standardized reporting system can be a valuable educational tool. The tool will ensure that primary care providers receive colonoscopy reports that demonstrate the quality of the examination and include specific recommendations for follow-up. The Quality Assurance Task Group did not specify targets for each indicator and agreed that further research is needed to establish appropriate benchmarks for clinical practice. The Quality Assurance Task Group believes that a standardized reporting system will facilitate such research.

*This document has been approved by the governing boards of the American College of Gastroenterology, American Gastroenterological Association Institute, and the American Society for Gastrointestinal Endoscopy. The document has also been approved by the National Colorectal Cancer Roundtable and the ACS.*

## **METHODS: QUALITY ASSURANCE TASK GROUP PROCESS**

The NCCRT is a national coalition of public, private, and voluntary organizations whose mission is to advance efforts to control CRC by improving communication, coordination, and collaboration among health agencies, medical professional organizations, and the public. The Quality Assurance Task Group developed a specific tool for colonoscopy reporting that would enable clinicians to measure CQI items specified by the Multi-Society Task Force. This effort is modeled after work by radiologists to standardize the reporting of mammography and CT colonography.<sup>9-11</sup>

The Quality Assurance Task Group reviewed each quality indicator from the Multi-Society Task Force, updated the literature review for each topic, and then developed

consensus around the optimal method of endoscopic reporting that would capture the quality indicator. The Quality Assurance Task Group considered the relative importance of each measure and the associated work burden. The final outcome includes important elements that can be measured in diverse clinical practice settings.

After conference calls in winter and spring 2005 and a face-to-face meeting in June 2005, the Quality Assurance Task Group used telephone and correspondence to manage the process of revision throughout the spring and summer 2006. In November 2006, documents were submitted for approval by the governing boards of the American College of Gastroenterology, the American Gastroenterological Association Institute, and the American Society for Gastrointestinal Endoscopy.

## **STANDARDIZED COLONOSCOPY REPORT**

The Standardized Colonoscopy Report is presented in [Appendix 1](#); the major subjects for reporting are outlined in [Table 1](#).

## **PRE-ENDOSCOPY INFORMATION: PATIENT DEMOGRAPHICS AND HISTORY**

### **Background**

Age and sex are important risk factors for adenomas and CRC, and are required for any meaningful analysis of adenoma prevalence.<sup>7,12,13</sup> There are differences in the incidence rate and mortality of CRC based on race and ethnicity.<sup>14,15</sup> Accurate identification of race or ethnicity is difficult in clinical practice, and, in many cases, mixed race/ethnicity further complicates data collection. The Quality Assurance Task Group did not include race and ethnicity in the lexicon, but it encourages clinicians to obtain and document these data by patient self-identification. Collection of data on race and ethnicity can be used to indicate the success of outreach programs for CRC screening and assure generalizability of CQI data across different programs.

The Quality Assurance Task Group identified elements of patient history that may require special precautions before a colonoscopy is performed. Patients receiving chronic anticoagulation require special preprocedure adjustment of medications, which can include several options. These clinical decisions should be documented. Patients with intraventricular antiarrhythmia devices and some pacemakers may need to have these devices “turned off” to safely receive electrocautery during the colonoscopy. In each circumstance, there should be documentation that the endoscopist was aware of patient circumstances that warrant special attention and that steps were taken to ensure patient safety.

Other elements include documentation of previous GI procedures and informed consent. If clinicians are aware

**TABLE 1. Colonoscopy report: key subject areas**

Patient demographics and history
Assessment of patient risk and comorbidity
Procedure indication(s)
Procedure: technical description
Colonoscopic findings
Assessment
Interventions/unplanned events
Follow-up plan
Pathology

of earlier endoscopic procedures, then they can review patient tolerance and the need for medications, and develop a sedation plan based on prior experience.

### CQI targets

- Documentation of informed consent that conveys to the patient the risks of significant adverse events and the possibility of failure to detect neoplasia in the colon, even if it is present.
- Documentation of the management plan for anticoagulation.
- Documentation of the management plan taken for patients with implantable defibrillators and pacemakers.

## ASSESSMENT OF PATIENT RISK AND COMORBIDITY

### Background

Anesthesiologists and surgeons have used the physical status of the American Society of Anesthesiology (ASA) (Table 2) for over 50 years to predict perioperative morbidity and mortality.<sup>16-18</sup> Although few studies have been performed to validate the tool in endoscopy, the classification has been widely accepted as a surrogate of comorbidity across numerous specialties in medicine.<sup>7</sup> The classification category has an impact on the setting and the precautions, which should be considered before colonoscopy. Patients with ASA class 3 or higher should be considered at high risk for cardiopulmonary events. Endoscopists should consider performing procedures in ASA class 3 patients in a hospital setting or in a setting with full capacity for resuscitation and support.

The Quality Assurance Task Group recognized significant ambiguity in the ASA classification system and the possibility of wide variation in how it is applied. To address this concern, the Quality Assurance Task Group proposes

**TABLE 2. ASA classification system**

Class	
1	Patient has no organic, physiologic, biochemical, or psychiatric disturbance ( <i>healthy, no comorbidity</i> ).
2	Mild-to-moderate systemic disturbance caused either by the condition to be treated surgically or by other pathophysiologic processes ( <i>mild-to-moderate condition, well controlled with medical management; examples include diabetes, stable coronary artery disease, stable chronic pulmonary disease</i> ).
3	Severe, systemic disturbance or disease from whatever cause, even though it may not be possible to define the degree of disability with finality ( <i>disease or illness that severely limits normal activity and may require hospitalization or nursing home care; examples include severe stroke, poorly controlled congestive heart failure, or renal failure</i> ).
4	Severe systemic disorder that is already life threatening, not always correctable by the operation ( <i>examples include coma, acute myocardial infarction, respiratory failure requiring ventilatory support, renal failure requiring urgent dialysis, bacterial sepsis with hemodynamic instability</i> ).
5	The moribund patient, who has little chance of survival.

relatively simple corollary definitions to reduce inter-observer variability (Table 2, italics).

### CQI target

- Documentation of ASA classification should be included in the colonoscopy report.

## PROCEDURE INDICATION(S)

### Background

Colonoscopists should know the appropriate indications for colonoscopy and document the indication(s) in the report. The requirements in this lexicon emphasize specific quality-control issues relative to screening and surveillance for colon neoplasia, which represent the most common indications for a colonoscopy<sup>19</sup> and have been the subject of recent guidelines.<sup>1,20</sup>

### Family history

To determine the appropriateness of screening at a specific age, key family history data should be recorded, including CRC and adenomas in first-degree relatives.

Patients with first-degree relatives who had CRC may need screening before age 50 years.<sup>1,3</sup>

### Postpolypectomy surveillance

Surveillance after previous colorectal neoplasia represents more than 20% of the colonoscopy workload in persons over age 50 years.<sup>18</sup> The MSTF-CRC and the ACS have recently developed joint recommendations for surveillance intervals.<sup>20</sup> To determine the appropriateness of surveillance for previous colon neoplasia, some data from earlier examinations should be recorded. In some cases, the size and the histology of previous lesions may not be known (eg, “I had polyps removed 10 years ago”). However, in many cases, these data will be available and should be noted. Recent studies found that many physicians perform surveillance at shorter intervals than recommended in guidelines.<sup>21,22</sup>

If bowel preparation is adequate and the cecum is intubated, then the frequency of deviation from the published guidelines on surveillance should be low. Other reasons for early reexamination include incomplete or piecemeal removal of a large sessile adenoma or the presence of more than 10 adenomas, or incomplete removal of all polyps at the first procedure. Patients with hereditary nonpolyposis colorectal cancer syndrome (HNPCC) will require short surveillance intervals because of rapid progression to malignancy. All of these reasons are quite acceptable. The lexicon includes elements to determine the appropriate interval for surveillance when the patient had colon neoplasia in the past.

### Colitis surveillance

Patients with chronic ulcerative colitis or Crohn’s colitis have an increased risk of CRC, and the risk increases with the duration of disease. Surveillance colonoscopy in patients with chronic colitis should be performed every 1 to 2 years in patients with disease duration longer than 8 years.<sup>1,3</sup> After 20 years of disease, some experts recommend annual colonoscopy. In addition, patients with primary sclerosing cholangitis or a family history of CRC in a first-degree relative may need more intensive surveillance.<sup>1,3</sup> The lexicon does not prescribe a specific biopsy protocol but does require a description of the protocol in the report. The Quality Assurance Task Group recommends that biopsy specimens be obtained in each involved segment of the colon. The absolute number of biopsies may vary, based on colon anatomy.<sup>7</sup>

If the primary reason for colonoscopy is the evaluation of symptoms, then the symptoms should be recorded. The single most-common symptomatic indication for a colonoscopy is rectal bleeding.<sup>19</sup> The appropriateness of colonoscopy for this indication is difficult to ascertain from the current literature because of poor standardization of type and extent of bleeding.<sup>23</sup> The lexicon includes recommended terminology that can standardize the description.

### CQI targets

- a. Use of recommended screening intervals based on family-history risk factors.
- b. Use of recommended postpolypectomy and post-cancer resection surveillance intervals.
- c. Use of recommended surveillance intervals for ulcerative colitis and Crohn’s colitis.
- d. Use of descriptors for rectal bleeding.
- e. Document reasons for deviation from the recommended guidelines.

## PROCEDURE: TECHNICAL DESCRIPTION

### Background

The technical description is designed to provide the referring physician a clear picture of what was done during the procedure, including its difficulty, completeness of the examination, and adequacy of the bowel preparation. These factors may play an important part in determining an appropriate interval for a repeat examination.

The method and intended level of sedation should be recorded in all cases. Colonoscopy reports should indicate whether anesthesia or nursing staff participated in the administration of sedation. Sedation drugs and doses should be recorded.

Cecal intubation rates have been reported in prior quality assurance studies<sup>24,25</sup> and are included in the CQI document from the MSTF-CRC.<sup>7</sup> Current recommendations include clear documentation of anatomic landmarks (appendiceal orifice and ileocecal valve) and photodocumentation if available.

There is evidence that time spent during withdrawal of the colonoscope is closely correlated with rates of adenoma detection.<sup>25,26</sup> The following times should be recorded: (1) the endoscope is inserted into the rectum, (2) withdrawal from cecum was started, and (3) the endoscope is withdrawn completely. The withdrawal time can be calculated for patients who do not have polypectomy or biopsy. The total procedure time alone is insufficient.

There is some debate about the benefit of retroflexion in the rectum. The Quality Assurance Task Group advocates documentation of completion of retroflexion if it is done, without passing judgment on whether the procedure should be performed in all cases.

Bowel preparation can be an important factor in determining the interval for a repeat examination and an important CQI element as well. The type of bowel preparation used should be documented. The Quality Assurance Task Group and the MSTF-CRC recommend a simple method of reporting based on the adequacy of examination for the detection of lesions larger than 5 mm.<sup>7</sup> This is similar to an approach used by radiologists in the CT colonography lexicon.<sup>11</sup> If the bowel preparation is inadequate in more than 10% of examinations, then this may reflect a quality-control issue and indicate that special

attention should be given to the method of patient instruction and type of bowel preparation. This is an important issue because of the burden of repeating examinations from poor preparation.

An assessment of “degree of difficulty” in completion of the examination is highly subjective. Nevertheless, because many patients will have repeat examinations, an assessment should be recorded to alert future endoscopists that the examination could be challenging for this patient. If the examination is difficult, then reasons for the difficulty should be provided.

The Quality Assurance Task Group recommends that clinicians or their staff record the actual model and instrument number used so that they can track procedure volume, problems, infection transmission, and instrument repairs. Frequent repairs may be indicators of problems with equipment or of mishandling of the equipment at some level in the chain of use, and they should prompt evaluation and corrective action.

### CQI targets

- Documentation of sedation goals, medications, and dosages.
- Documentation of cecal landmarks if reached.
- Cecal intubation rate, calculated as follows:  
*Numerator*: number of examinations in which cecal landmarks are documented.  
*Denominator*: number of examinations in which cecal intubation was intended. Procedures that should not be included in the denominator would be those with obstructive colon malignancy, severe colitis, or poor preparation. In other cases, a full colonoscopy may not be intended (reexamination of a polypectomy site or bleeding site).
- Mean examination time during endoscope withdrawal, when no biopsies or polypectomies are performed.
- Documentation of quality of the bowel preparation.

## COLONOSCOPIC FINDINGS

### Background

The Quality Assurance Task Group focused on standardized descriptors for colonic polyps, because clear communication of findings is a key determinant of risk status and subsequent follow-up. Each polyp has required descriptors that describe morphology, size (in millimeters), method of removal, and completeness of removal and retrieval. Vague terms such as “large” or “small” should be avoided.

In previous studies, estimates of polyp size were subject to wide variation. The ideal method is to use a measuring tool (open biopsy forceps of known size or an endoscopic ruler) to estimate size. Neither approach is convenient or practical when snare polypectomy is used. Therefore, the Quality Assurance Task Group did not make a recommendation for the method of measuring polyp size.

All suspected neoplastic polyps should be removed with polypectomy. Multiple polyps in the rectum and the sigmoid colon that are less than 5 mm, pale, and appear to be hyperplastic can be sampled with biopsy to confirm histology. If the lesion is too large to safely remove, then biopsy specimens should be obtained and tattoo injection should be performed. The tattoo should be documented if performed. Endoscopists should indicate whether a polyp was completely removed en bloc or required piecemeal resection. Retrieval of resected polyps should be documented.

Endoscopists should monitor the rates of adenoma detection in patients undergoing first-time screening examinations. Expected rates of adenomas are derived from large screening colonoscopy trials,<sup>26-29</sup> and lower rates in clinical practice may be a reflection of lower examination quality. There is evidence that a higher adenoma detection rate is associated with longer withdrawal time (>6 minutes).

Tattoo placement should be considered to mark the location of significant colon lesions for repeat endoscopy or for surgery. These include any lesion suspicious for malignant tumor and large sessile polyps removed with piecemeal resection or that may not be completely resected and may require repeat colonoscopy. Lesions in the cecum do not generally require a tattoo, but most other suspicious lesions should be marked.

### CQI targets

The lexicon will provide clinicians with standard methods for reporting polyps and other colon findings. Specific CQI targets include:

- Adenoma detection rate in first-time screening examinations.<sup>26-29</sup>
- Polyp retrieval rate.

## ASSESSMENT OF PROCEDURE RESULTS

The assessment should reconcile all of the available data derived from history, laboratory, radiographies, and new endoscopic findings. The Quality Assurance Task Group has no specific recommendations for structure or content. However, a clear set of recommendations for follow-up should be included after review of pathology (see below).

## INTERVENTIONS/UNPLANNED EVENTS

### Background

All sentinel events and interventions should be recorded. This includes events occurring during colonoscopy and after the procedure is completed. The Quality Assurance Task Group recommends that, if an event occurs that requires an unplanned intervention, then it should be recorded. Examples of events and interventions are as

follows: (1) a fall in blood pressure for which intravenous fluids are infused; (2) an unplanned reversal of sedation medications, including discontinuation of short-acting drugs, eg, propofol; (3) oxygen desaturation for which oxygen is added during the procedure. Each of these interventions was not planned and should be recorded in the colonoscopy report.

All serious events that result in an unplanned emergency department visit, hospitalization, blood transfusion, surgery, or death should be documented and attached to the endoscopy report. There should be documentation that patients were instructed to call or report to a medical facility for specific events, such as bleeding or severe abdominal pain.

The Quality Assurance Task Group recommends that the medical record reflect any intra- and postprocedure complications. Many adverse events related to a colonoscopy may not be recognized at the time of the procedure. The difficulty of recording delayed events and interventions, and linking them to the colonoscopy report makes it a challenge to fully describe the quality of a particular colonoscopy. Ideally, postprocedure complications should be tracked over a 30-day interval after a colonoscopy. The Quality Assurance Task Group recognizes that such tracking would represent a significant burden to some practices and does not include 30-day tracking as a CQI target. Nevertheless, endoscopists should make every effort to report postprocedure events that may be linked to the colonoscopy. There should be a regular review of rates of serious complications and associated risk factors.

### CQI targets

- a. There should be documentation of unplanned interventions during colonoscopy.
- b. The record should reflect any intra- and postprocedural complications. Serious events such as hospitalization, perforation, bleeding requiring transfusion, and surgery should be recorded and linked to the colonoscopy report.
- c. There should be documentation that patients received instructions about how to manage adverse events after discharge.

## FOLLOW-UP PLAN

### Background

Recommendations for discharge planning and immediate follow-up should be included with the colonoscopy report. In this report, endoscopists should indicate whether they anticipate following published surveillance guidelines or if there is reason to deviate from the guidelines. The Quality Assurance Task Group recognized that whenever biopsies are performed, final recommendations for repeat procedures or additional evaluation and treatment will be delayed until the pathology report is received. The

endoscopist should ensure that there is a system in place to communicate all pathology reports and final recommendations for follow-up and/or surveillance based on pathology reports to both the patient and referring clinician.

### CQI targets

- a. Documentation of the communication of colonoscopy results with the patient and referring clinician, including pathology results and recommendations for follow-up.

## PATHOLOGY

Pathologic specimens are obtained in 30% to 50% of colonoscopy procedures, and the histologic report should be considered an essential element of the final outcome. Final recommendations for follow-up, based on pathology, should be communicated clearly to the referring provider and the patient. The Quality Assurance Task Group strongly recommends that endoscopists regularly review pathology with a pathologist, particularly in cases when malignancy is strongly suspected.

### CQI targets

- a. Systematic review of the pathology report with documentation of results and a subsequent follow-up plan.
- b. Either (1) The final endoscopy report should include the pathology results as an addendum (with a recommendation for follow-up) *or* (2) each endoscopy report that does not include a pathology result should be accompanied by a separate report that provides pathology results, and recommendations for follow-up.

## SUMMARY

CO-RADS will provide referring health care providers with key information about the outcome of the procedure and recommendations for follow-up. The reporting system will be a valuable tool to facilitate the monitoring of quality within a practice and across practices, and it provides a tool for quality improvement. The process of CQI requires benchmarking performance on meaningful indicators over time and updating those indicators at regular intervals to measure improvement.<sup>30,31</sup> As part of its statement on Maintenance of Certification, the American Board of Medical Specialties states that critical self-assessment contributes to self-improvement and is preferable to regulatory inspections.<sup>32</sup>

In Table 3, a sample basic audit is summarized, which could be used in any practice using colonoscopy to monitor quality and identify specific elements for CQI. These elements represent a subset of the standardized reporting system and were selected to provide endoscopists with the key elements that should be measured

**TABLE 3. Basic audit**

Bowel preparation quality: percent adequate to detect polyps > 5 mm
Cecal intubation rate
Rate of photodocumentation of cecal landmarks
Mean colonoscopic withdrawal time in patients without polypectomy or biopsy
Adenoma detection rate in first-time screening examination based on patient's sex
Adverse or unplanned events occurring within 24 h of colonoscopy
Rates of
Hospitalization
Bleeding, requiring transfusion
Bleeding, requiring unplanned endoscopic intervention
Perforation
Surgery
Rate of documentation of recommendations for follow-up

periodically as part of CQI. Routine measurement will enable endoscopists to routinely monitor their practice and identify areas that can be improved. Although certain items may be viewed as an additional reporting burden, each element is directly linked to an important CQI target.

The Quality Assurance Task Group recommends that these elements be incorporated into all endoscopic reports. Furthermore, the Quality Assurance Task Group recommends that all endoscopists monitor quality in their practices, by using the standard report elements to measure specific targets. Future projects should report results of these quality-improvement efforts to provide benchmarking. We anticipate that, over time, CO-RADS will be modified and revised based on clinical experience.

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## DISCLOSURE

*The authors report that there are no disclosures relevant to this publication.*

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## APPENDIX 1.

### RECOMMENDED ELEMENTS IN STANDARD COLONOSCOPY REPORT

#### Preprocedure

Documentation of informed consent

Document type of facility where endoscopy performed (hospital, ambulatory surgery center, office)

#### (1) Patient demographics and history

Age

Sex

Receiving anticoagulation: if yes, document management plan

Need for antibiotic prophylaxis: if yes, document reason and management plan

Presence of intraventricular defibrillator device: if yes, document management plan

Presence of pacemaker, requiring management plan: if yes, document management plan

#### (2) Assessment of patient risk and comorbidity

ASA classification (see Table 2)

#### (3) Indication(s) for procedure (\*option for unknown) screening and surveillance for colon neoplasia

Recommended documentation in all cases if known

- Date of last colonoscopy
- Family history of CRC in 1st-degree relative
  - Number of family members

- Age of index family member(s) who had CRC
- Family history of adenoma in 1st-degree relative
- Family history of inherited syndrome
  - FAP
  - HNPCC

#### Screening

- Average risk
- Family history of CRC (1st-degree relative)
- Family history of adenomatous polyps (1st-degree relative)
- Familial syndrome
  - Familial adenomatous polyposis (FAP)
  - HNPCC

#### Colonoscopy to evaluate abnormal test result

- Fecal occult blood test (FOBT)
- Sigmoidoscopy
- Barium enema
- CT colonography
- Abdominal CT

#### Surveillance: Previous colon neoplasia

*Hierarchy of most significant lesion in previous examinations:*

- Invasive cancer
- Advanced adenoma (defined as adenoma  $\geq$  1 cm, adenoma with villous histology, adenoma with high-grade dysplasia)
  - > 10 adenomas
  - 3-10 adenomas
  - 1-2 tubular adenomas < 1 cm



- Hyperplastic polyp
- Unknown histology
- No pathology

*The following information should be provided if known:*

- Previous most advanced histologic lesion:
  - Cancer
    - Date of cancer diagnosis\*
    - Location of cancer\*
  - Adenoma
    - Date of adenoma diagnosis\*
    - Size/histology of most significant lesion (see hierarchy above)\*
- Date of last colonoscopy (actual date or mo/y)\*
- Description of last colonoscopy\*
  - Most significant lesion at last examination (see hierarchy above)
  - Adequacy of last examination
    - Cecum reached
    - Preparation adequate
- If surveillance is performed before the recommended interval, provide a reason; some reasons could include
  - Poor preparation at previous examination
  - Incomplete previous examination (unable to reach cecum)
  - Piecemeal resection of sessile adenoma with question of complete removal
  - Incomplete information about prior examinations
  - Other

#### Surveillance: ulcerative colitis or Crohn's colitis

- Duration, extent, and activity of disease
- Date of last colonoscopy examination
- Biopsy protocol: report should include description of biopsy protocol, including number of biopsies in each segment and interval (cm) between biopsies

#### Evaluation of symptoms: list symptom(s)

- Rectal bleeding/hematochezia: description
  - Intermittent outlet-type bleeding with normal stools
  - Blood mixed with stool
  - Gross blood and clots
  - Hemodynamically significant lower GI bleeding
- Other signs and symptoms should be reported.

#### (4) **Procedure: technical description**

Procedure date and time

Procedure performed with additional qualifiers (CPT codes, such as biopsy, polypectomy, etc)

Sedation

- Medications (with dosages) given
- Type of provider responsible for administration of sedation: GI specialist, family physician, internist,

surgeon, anesthesia specialist, or nonphysician (nurse, nurse practitioner, physician assistant)

- Level of sedation (conscious, deep, general anesthesia)

Extent of examination

- Actual extent of examination (anatomic segment: cecum, ascending colon, hepatic flexure, etc)
- If cecum is not reached, provide reason
- Method of documentation: ie, photo of ileocecal valve and/or appendiceal orifice (if possible, where equipment available); name landmarks

Time of examination: the following times should be recorded

- Time when scope was inserted into rectum
- Time when withdrawal from cecum was started
- Time when endoscope was withdrawn from patient

Retroflexion in rectum (yes/no)

Bowel preparation

- Type of preparation and dosage
- Quality
  - Adequate to detect polyps >5 mm
  - Inadequate to detect polyps >5 mm

Technical performance

- Examination not technically difficult
- Examination difficult
- Comments could include
  - Patient discomfort
  - Looping
  - Need for special maneuvers including turning patient, changing instrument

Type of instrument used: model and instrument number; this could be monitored separately by nursing staff

#### (5) **Colonoscopic findings**

Colonic mass: malignancy suspected

- Anatomic location
- Length/size (dimensions in mm or cm)
- Descriptors
  - Pedunculated/sessile
  - Circumferential
  - Obstructive (% of lumen reduced)
  - Ulcerated
- Biopsy obtained (yes/no)
- Tattoo (if done)

Colonic polyp(s) (descriptors for each polyp)

- Anatomic location
- Size, mm
- Morphology
  - Pedunculated
  - Sessile
  - Flat: only slightly raised above surrounding mucosa, with or without a central depression
- Method of removal or biopsy
  - Snare with cautery (saline solution injection yes/no)

- Snare without cautery
  - Cold biopsy
  - Hot biopsy
  - Fulguration or ablation with cautery
  - Completely removed (yes/no)
  - Retrieved (yes/no)
  - Sent to pathology (yes/no)
  - Tattoo (if done)
- Polyp cluster: multiple polyps (3 or more) in same anatomic region
- Anatomic location
  - Size range, mm
  - Approximate number in a segment
  - Morphology (sessile/pedunculated/ flat)
  - Method of removal or biopsy
  - Completely removed (yes/no)
  - Retrieved (yes/no)
  - Sent to pathology (yes/no)
  - Tattoo (if done)
- Submucosal lesion
- Anatomic location
  - Size, mm
  - Method of removal or biopsy
  - Completely removed (yes/no)
  - Retrieved (yes/no)
  - Sent to pathology (yes/no)
  - Tattoo (if done)
- Mucosal abnormality
- Suspected diagnosis: ulcerative colitis, Crohn's, ischemia, infection, etc; anatomic location/extent
  - Pathology obtained (yes/no)
- Other findings
- Diverticulosis
  - Arteriovenous malformations
  - Hemorrhoids
  - Other
    - Normal-appearing mucosa in patient with diarrhea

- Pathology obtained (yes/no)
- (6) **Assessment**  
Based on history, symptoms, and colonoscopic findings
- (7) **Interventions/unplanned events**  
Events and unplanned interventions during or immediately after colonoscopy
- Type of event
  - Type of intervention
- Events that occur within 30 d of colonoscopy that result in
- Unplanned visit to health care provider
  - Emergency department visit
  - Hospitalization
  - Blood transfusion
  - Surgery
  - Death (record cause of death)
- (8) **Follow-up plan**  
Immediate follow-up and discharge plan
- Further tests, referrals
  - Medication changes
  - Follow-up appointments
- Recommendation for follow-up colonoscopy and tests
- Interval for follow-up colonoscopy will be determined pending pathology
  - If recommendation will differ from guidelines, a reason should be provided
  - No further FOBT for 5 y or more
- Documentation of communication directly to the patient and referring physician
- (9) **Pathology**  
Pathology results should be reviewed, with documentation of
- Review of results by endoscopist
  - Communication with referring provider with recommendation for follow-up
  - Communication with patient