



INSTITUTE FOR CLINICAL  
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# Health Care Guideline for Patients and Families

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The information contained in this document is a translation of an ICSI health care guideline from medical terminology to commonly used and easily understood English. It is intended for patients, their families and/or caregivers, and other individuals who have little or no health care training. The medical terms used in this document are followed by italicized statements in parentheses that explain the meaning of the term.

The *Colorectal Cancer Screening for Patients and Families* should not be construed as medical advice or medical opinion related to any specific facts or circumstances. If you are seeking medical advice, you are urged to consult a health care professional regarding your own situation and any specific medical questions you may have. In addition, you should seek assistance from a health care professional in interpreting any *ICSI Health Care Guideline for Patients and Families* and applying it in your individual case.

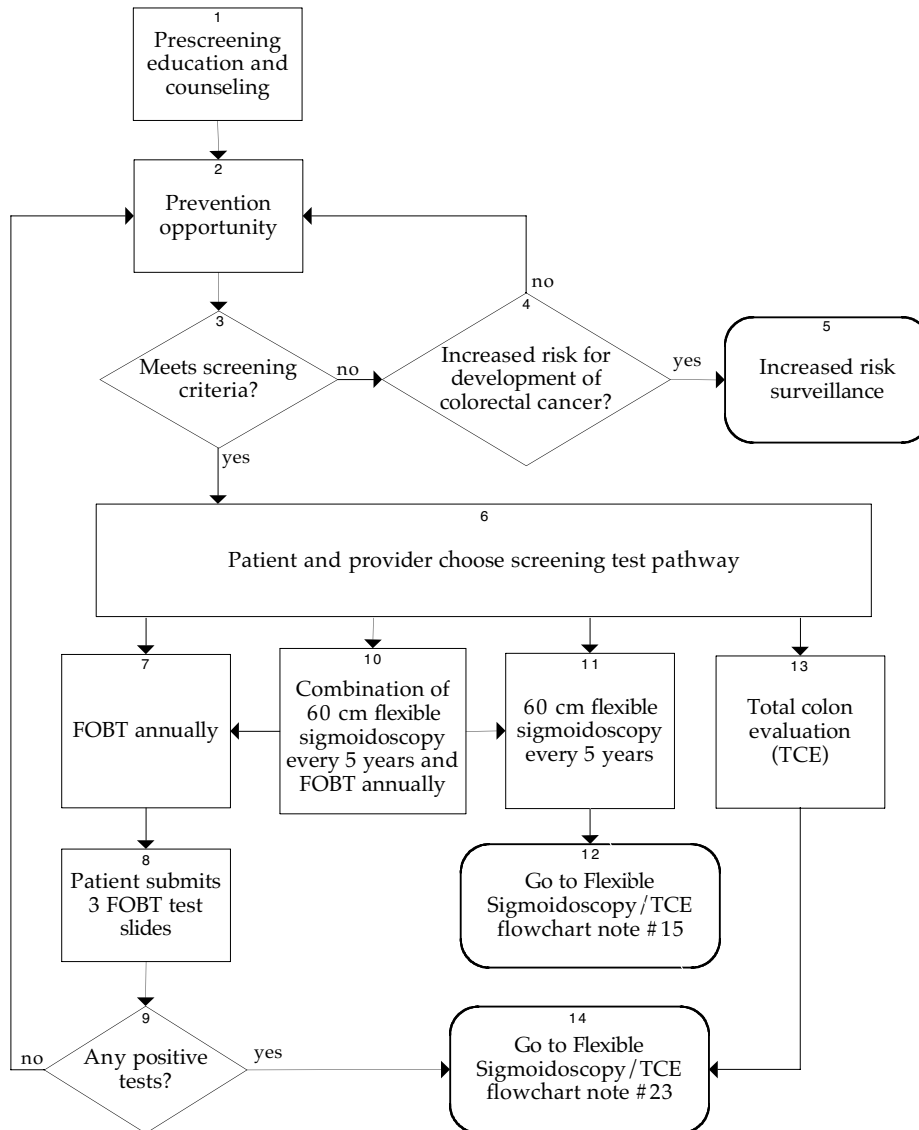
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The next scheduled revision will occur within 12 months.

The numbers in the boxes correspond with the specific flow chart notes on the following pages for more detailed information. Not all items will have a flow chart note.

### Screening Flowchart



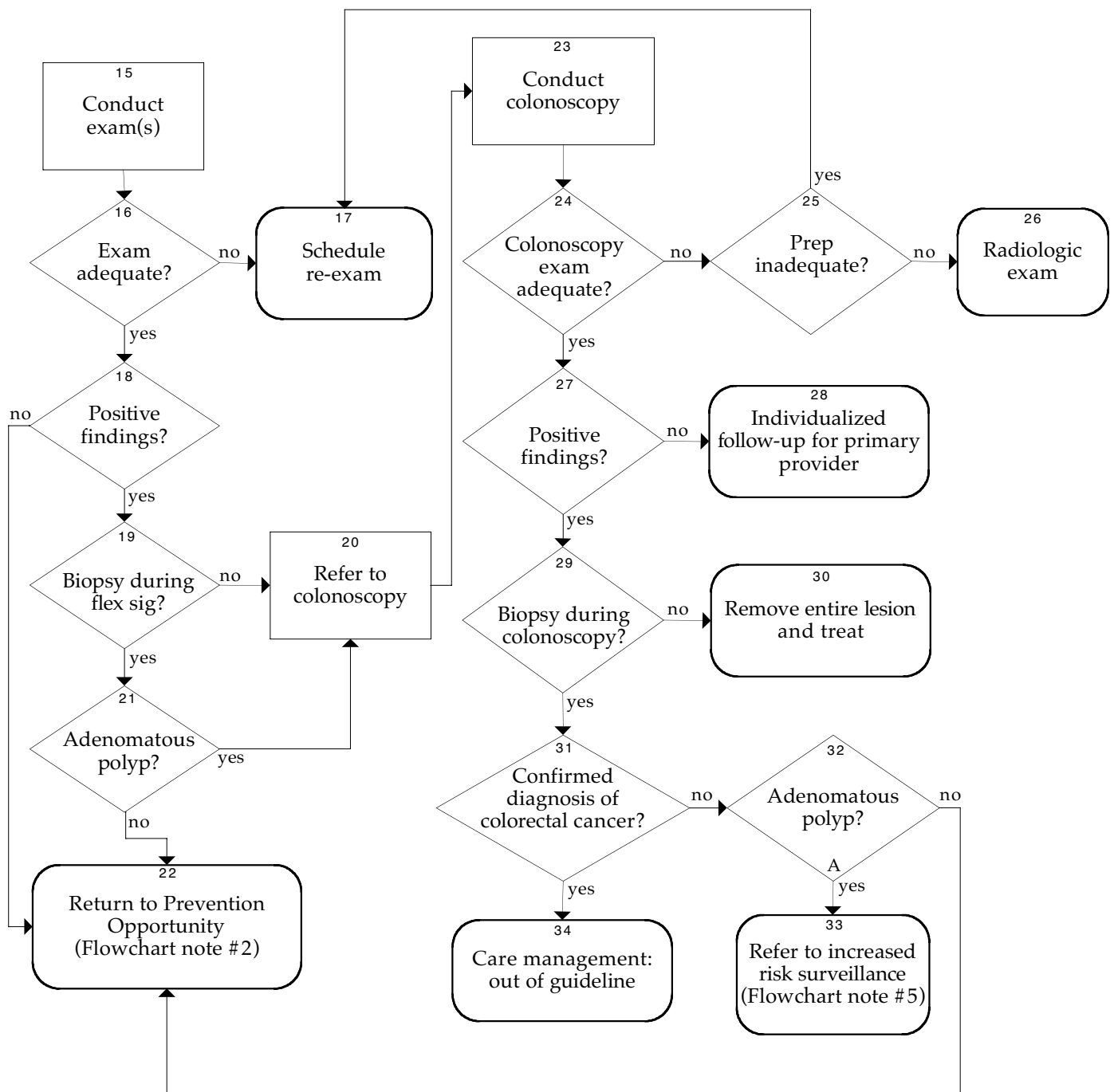
#### Criteria for Routine Screening for Colorectal Cancer

The patient must meet all four of the following criteria:

- 50 to 80 years old, or if African American 45 to 80 years old
- No personal history of polyps and/or colorectal cancer
- No family history of colorectal cancer in:
  - One first order relative diagnosed before age 60 **or**
  - Two first order relatives diagnosed at any age
- No family history of adenomatous polyps in first-order relative diagnosed before age 60

(A single first order relative diagnosed with colorectal cancer after age 60 may put the patient at a slightly increased risk and may warrant starting colon cancer screening at age 40, a single first order relative with an adenomatous polyp diagnosed after age 60 may put the patient at a slightly increased risk and may also warrant colon cancer screening at age 40)

## Flexible Sigmoidoscopy/Total Colon Exam Flowchart



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## Foreword

### What Is an ICSI Health Care Guideline For Patients and Families?

This document is a summary of an ICSI health care guideline that has been "translated" from medical terminology to commonly used and easily understood English. It is intended for patients, their families and/or caregivers, and other individuals who have little or no health care training. The guideline is designed to help you understand the diagnostic and treatment options recommended for a particular condition. Being better informed should help you during discussions with your physician or other health care professional.

However, an ICSI Health Care Guideline for Patients and Families should not be construed as medical advice or medical opinion related to any specific facts or circumstances. If you are seeking medical advice, please consult a health care professional regarding your particular situation, any specific medical questions you may have, and the application of the guideline to your individual case.

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- <http://www.icsi.org>
- click on "For Patients" at the top
- select the category you are interested in

You will find the healthcare guideline for Patients and Families as well as links to other resources for that topic.

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### How are ICSI Health Care Guidelines Developed?

ICSI, the Institute for Clinical Systems Improvement, is an independent, non-profit organization dedicated to helping identify best clinical practices for health care professionals. A significant part of ICSI's mission is to create and maintain clinical guidelines to help health care professionals evaluate and treat patients with a particular condition. A team of experts develops each ICSI guideline, using the most current information about a particular condition. This information is carefully evaluated, reviewed, and compiled before it is published.

Each guideline recommends a strategy for making decisions, but it is not intended to replace a physician's judgment or establish a protocol (strict plan) for all patients. One set of recommendations is rarely the only approach to a problem.

### How Do I Use the Flowchart?

The flowchart represents the major steps in the process of evaluating and treating a patient with a particular condition. Numbers within the flowchart correspond with a flowchart note. Some flowchart boxes will not have a corresponding note.

### Scope and Target Population

This guideline addresses appropriate screening methods for colorectal cancer in patients 50-80 years of age and age 45-80 for African Americans.

# Flowchart Notes

## Screening Flowchart Notes

### 1. Prescreening Education and Counseling

Education and outreach efforts play important roles in helping to increase the number of risk-appropriate individuals who present themselves for colon cancer screening, thereby increasing the rate of early detection of this disease.

At present, the most accurate test for colon cancer screening has not been determined, but the value of colon cancer screening is proven and should not be neglected. In the face of this uncertainty, use patient education and preference to help guide the selection of a screening test.

Patients and families should become familiar with the following terminology, which is used continually throughout this guideline:

#### Glossary

**adenoma:** a benign (*noncancerous*) abnormal growth that appears in glandular (*related to glands*) tissue

**adenomatous polyp:** a polyp that consists of benign (*noncancerous*) abnormal glandular tissue on the lining of the colon

**colonoscopy:** examination of the entire colon using a lighted, flexible tube inserted into the rectum

**CT colonography:** use of computerized tomography to examine the colon; images result in a cross-section of colon

**double contrast barium enema (DCBE):** x-ray examination of the colon and rectum in which barium and air are introduced gradually into the colon by a rectal tube

**flexible sigmoidoscopy:** insertion of a small-sized flexible tube into the rectum to visualize the rectum and a portion of the colon

**polyp:** an abnormal growth on the lining of the colon

**proctoscopy:** looking into the rectum and anus with a short, rigid metal tube

**single contrast barium enema:** x-ray examination of the colon and rectum in which barium is introduced gradually into the colon by a rectal tube

### 2. Prevention Opportunity

A prevention opportunity may be any visit to a health care provider that offers the opportunity for conducting a screening process, preventive services visit or outreach to patients who historically do not come in for visits.

### 3. Meets Screening Criteria?

Since the term "screening" implies random testing of asymptomatic (*not showing symptoms*) individuals within a population, patients who are symptomatic (*showing symptoms*) or who have a history of gastrointestinal symptoms (*related to the digestive tract*) or disease may be excluded from this screening activity. Providers should make decisions on a case-by-case basis.

The best data available support screening between ages 50 and 80; however, otherwise healthy individuals over the age of 80 may be candidates for continued screening if their presumed life expectancy is 80 or more years.

All four of the screening criteria must be met to advance individuals in the guideline for colorectal cancer screening:

1. 50 to 80 years old or for African Americans, 45 to 80 years old
2. No personal history of polyps (*abnormal growth on the lining of the colon*) and/or colorectal cancer
3. No family history of colorectal cancer involving:
  - One first-order relative\* diagnosed before age 60.
  - Two first-order relatives\* diagnosed at any age.
  - a single first-order relative diagnosed with colorectal cancer after age 60 may put patients at a very slightly increased risk and may warrant starting colon cancer screening at age 40. A single first order relative with an adenomatous polyp (*a polyp that consists of benign [noncancerous] abnormal glandular tissue in the lining of the colon*) diagnosed after age 60 may put the patient at a slightly increased risk and may also warrant starting colon cancer screening at age 40
4. No family history of adenomatous polyps in first-order relative\* diagnosed before age 60.

\* First-order relatives include only parents, siblings and children.

#### 4. Increased Risk for Development of Colorectal Cancer?

Patients with the following history are considered to be at increased risk:

- Prior adenomatous polyp (*a polyp that consists of benign [noncancerous] abnormal glandular tissue in the lining of the colon*) with villous component (*microscopic, hair-like projections*) or larger than 10 mm. The risk also increases if there is more than one polyp. These patients should have regularly scheduled colonoscopies every 3-5 years.
  - Individuals with a single tubular (*tube-shaped*) adenoma (*benign [noncancerous] abnormal growth that appears in glandular tissue*) smaller than 10 mm are at slightly increased risk and may continue routine screening.
  - Patients with a single, small adenomatous polyp (*a polyp that consists of benign [noncancerous] abnormal glandular tissue in the lining of the colon*) after two colonoscopies 5 years apart can return to routine screening.
- Prior colorectal cancer.
- Long standing inflammatory bowel disease (*a specific disease causing inflammation of the bowel, including Chron's Disease and ulcerative colitis*) involving the colon.
- Family history of colorectal cancer involving:
  - One first-order relative\* diagnosed before age 60 or
  - Two first-order relatives\* diagnosed at any age.
  - A single first-order relative diagnosed after age 60 may put patients at a very slightly increased risk.

\* First-order relatives include only parents, siblings and children.

Certain patients are considered to be at high risk for development of colorectal cancer. Relevant conditions include familial polyposis coli (*inherited condition causing numerous adenomas in the colon*) and variants (*variations*), long-standing chronic ulcerative colitis (*chronic inflammation of the colon*), and non-polyposis

hereditary colorectal cancer. Monitoring patients with these disorders lies outside the scope of this screening guideline.

## 5. Increased Risk Surveillance

Patients at increased risk of developing colorectal cancer as indicated in Note #4 require regularly scheduled colonoscopies every 3-5 years, and are outside the scope of this guideline.

Whenever colonoscopy is performed, it should begin at age 50 or 10 years before the index carcinoma (*first cancerous tumor*), whichever comes first. As it may take a number of years for the malignancy (*related to cancer*) to grow, the provider should use his or her discretion and consider performing the colonoscopy earlier in those individuals whose relative had advanced cancer at the time of diagnosis. Follow-up intervals should be dictated by the results of the colonoscopy but should occur at least every 5 years.

Patients with only one first-order relative with a history of colorectal cancer could be followed using combined double contrast barium enema and flexible sigmoidoscopy at 5-year intervals.

## 6. Patient and Provider Choose Screening Test Pathway

Screening intervals apply to patients between 50 and 80 years old, or beginning at age 45 for African Americans without clinical factors that place them at increased risk for colorectal cancer. Clinical groups may decide internally as to which screening pathway will be offered routinely at their site. Alternatively, individual providers may advise each patient as to which pathway might be most suitable, and with the patient's preference in mind, choose one of the pathways recommended in this guideline.

### Flexible Sigmoidoscopy Versus Fecal Occult Blood Test (FOBT)

The value of either flexible sigmoidoscopy (*insertion of a small-sized flexible tube into the rectum to visualize the rectum and a portion of the colon*) or fecal occult blood test (FOBT) (*a test to look for occult [hidden] blood in the stool*) in detecting colorectal cancer or adenomatous polyps (*a polyp that consists of benign [noncancerous] abnormal glandular tissue on the lining of the colon*) has been proven. At this time, the provider should use his or her best judgment when choosing one (or both) of these tests, taking into account other significant factors such as informed patient choice. There is a high rate of false-positive FOBTs, and flexible sigmoidoscopy alone fails to screen the entire colon. It has not yet been proven which screening test leads to the most efficient and effective use of colonoscopy. One study shows that one-time combined screening fails to detect 24% of advanced neoplasia (*uncontrolled abnormal growth of tissue*) in the colon.

This guideline advocates screening by one or both tests, with flexible sigmoidoscopy considered to be slightly more effective.

The time interval for the development of malignant (*cancerous*) changes in adenomatous polyps (*a polyp that consists of benign [noncancerous] abnormal glandular tissue on the lining of the colon*) is estimated at 5 to 25 years. Therefore, it is recommended that flexible sigmoidoscopy screening be conducted at 5-year intervals.

### Total Colon Evaluation

If the provider determines the need to examine the whole colon and rectum, either colonoscopy (*examination of the entire colon using a lighted, flexible tube inserted into the rectum*), flexible sigmoidoscopy (*insertion of a small-sized flexible tube into the rectum to visualize the rectum and a portion of the colon*) combined with single contrast barium enema (*x-ray examination of the colon and rectum in which barium is introduced gradually into the colon by a rectal tube*) or double contrast barium enema (DCBE) (*x-ray examination of the colon and rectum in which barium and air are introduced gradually into the colon by a*

rectal tube) or CT colonography (*use of computerized tomography to examine the colon; images result in a cross-section of colon*) can be used. If the sigmoid (*S-shaped part of the colon, located before the rectum*) is not well visualized on DCBE, a flexible sigmoidoscopy should be obtained. The interval between exams within this choice is 5 years (5-10 years for colonoscopy). There is no direct evidence, however, that any of these strategies reduce mortality (*death*) from colorectal cancer.

Colonoscopy involves a higher risk of perforation (*a rupture in the body*) than flexible sigmoidoscopy. If conscious sedation is used, there is risk of complications related to the medication, as well the need for transportation after the procedure and a period of post-procedure recovery.

## 8. Patient Submits 3 FOBT Test Slides

A minimum of 3 fecal occult (*hidden*) blood test (FOBT) cards should be submitted by a patient annually. Fecal immunochemical testing (*a test for occult [hidden] blood that uses a chemical specific for blood*) is an acceptable method of testing for occult (*hidden*) blood and has greater sensitivity than guaiac (*a chemical that turns blue when blood is present*) based methods.

Standard protocols for obtaining specimens should be followed as specified by the manufacturer and/or individual testing lab (usually based on 2 samples from 3 different stool specimens). Slide rehydration (*adding fluid to the specimen*) when testing is not recommended.

Several studies have shown that annual or biannual (*every other year*) routine FOBTs done for large, average-risk, randomly selected populations significantly reduce mortality (*death*) rates for colorectal cancer.

In reviewing FOBT studies, this guideline also considers the following:

- How does one measure the cost per year of life saved?
- Can the same reduction in mortality (*death*) be obtained from doing random colonoscopies?
- Several, but not all, agencies and authors consider annual FOBT to be of "probable" value in early detection of colon cancer or adenomatous polyps for average risk, asymptomatic (*showing no symptoms*) patients. Only about 25% of lesions are estimated to bleed intermittently enough to be detected by periodic FOBT, and the specificity (*ability to exclude*) of a positive FOBT is relatively low. Thus, there are a large number of false positives which, when pursued with colonoscopy or double contrast barium enema studies, add to the cost of early detection.
- FOBT is easy to perform but still is noxious or offensive to many patients, thus lowering compliance rates.

The search for a serum (*liquid portion of whole blood*) or fecal test with a much higher specificity (*ability to exclude*) is ongoing.

## 10. Combination of 60 cm Flexible Sigmoidoscopy Every 5 Years and FOBT Annually

Refer to Notes #6 and 8 for information on FOBT. Refer to Note #11 for information on flexible sigmoidoscopy. When this pathway is chosen, the FOBT should be completed before the flexible sigmoidoscopy.

## 11. 60 cm Flexible Sigmoidoscopy Every 5 Years

Direct examination of the colon is recommended using a 60 cm flexible sigmoidoscope (*insertion of a small-sized flexible tube into the rectum to visualize the rectum and a portion of the colon*), preferably with the capacity for performing a biopsy (*removal of tissue that is checked for cancer cells under a microscope*). A digital rectal examination (DRE) may be performed just before inserting the scope.

Several studies have shown the value of this exam in detecting adenomatous polyps (*a polyp that consists of benign [noncancerous] abnormal glandular tissue in the lining of the colon*) and colorectal cancers in the distal (*distant*) colon and rectum. Biopsy of suspicious lesions (*areas of altered tissue*) can be performed with relative ease and at low risk as part of the exam.

A search for adenomatous polyps is the mainstay of this screening activity. Biopsy (*removal of tissue that is checked for cancer cells under a microscope*) and subsequent removal of polyps are anticipated outcomes, as is the need to examine the rest of the colon (via colonoscopy and/or double contrast barium enema) should an adenoma or cancer in situ (*in the original place*) be discovered.

Up to 60% of all cancers or polyps are potentially detected by a 60 cm flexible sigmoidoscopic exam alone. Serial studies indicate that it takes between 5 and 25 years for malignant change to occur (if it occurs at all) in any one adenomatous polyp. Malignant (*cancerous*) potential also varies with the microscopic structure of the polyp.

A significant number of colons with one visualized polyp will have one or more polyps occurring at the same time elsewhere in the colon.

Flexible sigmoidoscopy examination every 5 years can decrease mortality (*death*) from colorectal cancer.

Suggested minimal preparation may include two phosphasodyl enemas (for example, Fleet's) on the morning of the procedure and nothing by mouth for 4-6 hours before the procedure. Special attention may need to be directed to the diabetic who has not had anything by mouth or the patient on anticoagulation therapy.

Flexible sigmoidoscopy for screening is superior to rigid sigmoidoscopy (*insertion of a small-sized rigid tube into the rectum to visualize the rectum and a portion of the colon*) for the following reasons:

- A longer segment of distal colon can be seen.
- The exam yields a lower risk of bowel perforation.
- The exam is better tolerated by patients.
- The exam is more sensitive for detection of distal (*distant*) colon polyps.

### **Digital Rectal Exam (DRE)**

DRE has the potential to discover a small percentage of colon cancers within reach of the examining finger. Palpation (*examination by touch*) of any mass or polyp should lead to further investigation. While some lesions might be better visualized and confirmed with rigid proctoscopy (*looking into the rectum and anus with a short, rigid metal tube*), flexible sigmoidoscopy examination is usually adequate for this purpose. Flexible sigmoidoscopy also permits visualization and detection of any synchronous lesions (*areas of altered tissue occurring at the same time*) in the rectum (*the last 5-6 inches of the intestine leading to the outside of the body*) and sigmoid (*S-shaped part of the colon, before the rectum*).

Clinic visits for the sole purpose of doing a DRE are not suggested. A DRE might be performed as part of a visit for either health evaluation or illness-related concerns, but the theoretical benefit of DRE is insufficient to warrant mandatory annual performance.

FOBT at the time of a DRE is less predictive of colorectal pathology (*diseased tissue*) than if stool is passed spontaneously.

## 13. Total Colon Evaluation (TCE)

### Colonoscopy

Colonoscopy (*examination of the entire colon using a lighted, flexible tube inserted into the rectum*), which can visualize the entire colon, is similar in performance to flexible sigmoidoscopy (*insertion of a small-sized flexible tube into the rectum to visualize the rectum and a portion of the colon*), which has been shown to reduce colorectal cancer mortality.

National consensus guidelines suggest an interval of 10 years between colonoscopy examinations for the average-risk population.

Colonoscopy has been shown to reduce the incidence of colorectal cancer in patients with adenomatous polyps (*a polyp that consists of benign [noncancerous] abnormal glandular tissue in the lining of the colon*). There is, however, no hard evidence that colonoscopy reduces colorectal cancer mortality (*death*) in an average-risk population.

### Barium Enema

Barium enema may be performed with either double contrast technique (DCBE) (*x-ray examination of the colon and rectum in which barium and air are introduced gradually into the colon by a rectal tube*) or a fluoroscopic barium enema study conducted by a radiologist with advanced specialized training in gastrointestinal procedures (*related to the digestive tract*).

The fluoroscopic barium enema is performed in conjunction with a proctoscopy or a flexible sigmoidoscopy.

There is evidence that screening DCBEs can image the entire colon and detect cancers and large polyps almost as well as colonoscopy or flexible sigmoidoscopy. There are no studies, however, evaluating whether screening by barium enema alone reduces mortality from colorectal cancer in people at average risk for the disease.

### CT Colonography

During the last decade, CT colonography (sometimes referred to as virtual colonoscopy [*examination of the entire colon using a lighted, flexible tube inserted into the rectum*]) has been developed in the hope that it will eventually provide a non-invasive total colon evaluation with accuracy similar to colonoscopy. Currently, however, CT colonography is being performed and reimbursed as a colorectal cancer screening procedure at only a few sites.

Currently, CT colonography seems to be a reasonable colonic imaging examination in the following clinical situations: 1) after incomplete screening or diagnostic colonoscopy; 2) in anticoagulated (*medication that prevents the blood from clotting*) patients who cannot safely discontinue anticoagulation therapy; 3) patients who refuse colonoscopy and understand that their insurance may or may not cover the cost of the CT. If polyps or other pathology (*related to disease*) is seen on CT colonography this may require further evaluation with colonoscopy. Only some of these indications are reimbursed by Medicare. In many locations, CT colonography is not available and barium enema can be performed in the situations described above.

## 14. Go to Flexible Sigmoidoscopy/TCE Flowchart Note #23

Colonoscopy is the most accurate additional test to pursue after a positive FOBT. Double contrast barium enema plus flexible sigmoidoscopy is an acceptable alternative, depending on the provider's discretion.

The specificity (*ability to exclude*) of a positive FOBT is low. Numerous case studies report a very high rate (60-80%) of false positives. Colonoscopy should be used to discover if the source of occult blood is cancer, polyps or a non-cancerous cause.

The advantage of colonoscopy over double contrast barium enema is the potential to detect more, smaller polyps, and to perform biopsy (*removal of tissue that is checked for cancer cells under a microscope*) and/or polypectomy (*surgical removal of a polyp*) with a single procedure. Double contrast barium enema combined with flexible sigmoidoscopy is an adequate monitoring option for certain high-risk patients or for patients who prefer that option.

## Flexible Sigmoidoscopy/Total Colon Exam Flowchart Notes

### 16. Exam Adequate?

#### Flexible Sigmoidoscopy

The adequacy of a flexible sigmoidoscopy (*insertion of a small-sized flexible tube into the rectum to visualize the rectum and a portion of the colon*) exam is determined by the provider. Reasons for which an exam could be inadequate include:

- Inadequate bowel prep
- Limited distance of scope insertion due to patient discomfort
- Other technical difficulties
- Uncertainty as to the significance of findings
- Unsuccessful biopsy

#### Barium Enema

The adequacy of a barium enema is determined by the provider. Reasons for which an exam could be inadequate include:

- Inadequate bowel prep
- Inadequate evaluation of rectum (*the last 5-6 inches of the intestine leading to the outside of the body*) and sigmoid (*S-shaped part of the colon, before the rectum*)
- Other technical difficulties
- Uncertainty as to the significance of findings

The provider may reschedule the examination with an altered bowel preparation, suggest a proctoscopy (looking into the rectum and anus with a proctoscope [*a short, rigid metal tube*]), flexible sigmoidoscopy (*insertion of a small-sized flexible tube into the rectum to visualize the rectum and a portion of the colon*) or colonoscopy (*examination of the entire colon using a lighted, flexible tube inserted into the rectum*) depending on the nature of the findings and/or limitations of the study.

#### CT Colonography

The adequacy of a CT colonography (*use of computerized tomography (CT) to examine the colon; images result in a cross-section of body tissues and organs and reconstruction of a luminal view*) is determined by the provider. Reasons for which an exam could be inadequate include:

- inadequate bowel prep
- technical difficulties
- uncertainty as to the significance of findings

#### Colonoscopy

See Note #24, "Colonoscopy Exam Adequate?"

## 17. Schedule Re-Exam

A re-examination could be performed immediately after adequate prepping or at the discretion of the provider, depending on individual patient factors.

## 18. Positive Findings?

A positive finding on screening includes an invasive cancer, polyp, bleeding source or mucosal abnormality. From the standpoint of colorectal cancer screening, diverticula (*small pouches in the colon*). As a frame of reference, a standard biopsy forceps fully opens to a diameter of 7 mm. Note that other authors consider tubular adenomas (*microscopic derivation of a polyp type that has the potential to progress to cancer if not removed*) smaller than 10 mm to be a positive finding.

For colorectal cancer, diverticula (*small pouches in the colon*), small left-sided hyperplastic polyps (*abnormal growth of cells*) and single tubular adenoma (*microscopic derivation of a polyp type that has the potential to progress to cancer if not removed*) less than 10 mm are not precursors to cancer. Large right-sided hyperplastic polyps, particularly those that fit the description of sessile serrated adenomas (*polyp attached to the colon lining by a broad base of tissue with irregular edges*) may be precursors to cancer.

## 20. Refer to Colonoscopy

Hyperplastic polyps found with flex sigs by definition are left-sided hyperplastic polyps. Mixed hyperplastic-adenomatous polyps exist. The routine of two biopsies per polyp does not sample the majority of a polyp greater than 5 mm. As the size of the polyp increases, the likelihood that the polyp is adenomatous increases. The majority of polyps larger than 10 mm should be referred for colonoscopy.

A sufficient number of biopsies (*removal of tissue that is checked for cancer cells under a microscope*) of polyps larger than 5 mm should be done to ensure adequate sampling. Referral for flexible sigmoidoscopy with biopsy may be appropriate.

Future prospective studies may demonstrate that multiple diminutive (*less than 5 mm*) tubular adenomas also pose an average risk.

## 21. Adenomatous Polyp?

Attempt biopsy (*removal of tissue that is checked for cancer cells under a microscope*) of every polyp smaller than 5 mm in diameter. Polyps larger than 10 mm should be referred for complete excision at colonoscopy (no biopsy needed). Intermediate-sized polyps (greater than 5 mm and less than 10 mm) may be referred for colonoscopic removal. If the polyp was biopsied at flexible sigmoidoscopy and is hyperplastic (*growing excessively*), no further exam is needed at this screening. Non-adenomatous polyps (juvenile, lipomatous [*related to the presence of a lipoma, a benign tumor composed mainly of fat cells*], inflammatory) are not precursors to cancer and do not require referral for colonoscopy.

Completion of a biopsy may be dependent upon the operator's comfort or skill level. If a biopsy is indicated but not performed, the patient should be referred.

## 24. Colonoscopy Exam Adequate?

The provider must decide whether a colonoscopy (*examination of the entire colon using a lighted, flexible tube inserted into the rectum*) is adequate. Reasons for which an exam would be inadequate include:

- Inadequate bowel prep
- Limited distance of scope insertion due to patient discomfort

- Other technical difficulties
- Uncertainty as to the significance of findings
- Unsuccessful biopsy

## 26. Radiologic Exam

The colonoscopy exam may be inadequate for a number of reasons. The preparation of the colon may be inadequate for an accurate exam. If this is the case, the patient should be re-prepped with an alternate or more vigorous preparation method and the colonoscopy repeated.

If the colonoscopy is inadequate due to a partially obstructing lesion that prevents immediate advancement of the colonoscope, the more proximal (*closer to the mouth*) colon should be evaluated by x-ray. CT colonography has been shown to provide more accurate examination of the proximal colon than double contrast barium enema, provided this segment is adequately cleaned out. If CT colonography is not available, use of a contrast enema to evaluate the more proximal colon is advised.

## 27. Positive Findings?

See Note #18, "Positive Findings?"

## 31. Confirmed Diagnosis of Colorectal Cancer?

Positive pathology (*study of diseased tissue*) from the biopsy (*removal of tissue that is checked for cancer cells under a microscope*) report confirms the diagnosis of colorectal cancer.

## 32. Adenomatous Polyp?

When the biopsy report is a normal mucosa/or the polyp is a small (5 mm or less) left-sided hyperplastic polyp, return to screening activities and intervals as indicated in the Screening Flowchart. Patient education and communication should occur at this time.

Emerging evidence that large (greater than 5 mm) hyperplastic polyps on the right side of the colon may have malignant potential. Colonoscopic follow-up may be indicated.

Adenomatous polyps (*a polyp that consists of benign abnormal glandular tissue*) should be removed as part of the colonoscopy procedure. Confirmation of the presence of adenomatous polyps places the patient in an increased risk group. Such patients should be followed according to the increased risk surveillance protocol. (See Note #5, "Increased Risk Surveillance.")

## 33. Refer to Increased Risk Surveillance (Flowchart Note #5)

Due to the pre-cancerous nature of certain adenomatous polyps, patients with such polyps should be monitored more closely than patients in the Screening Flowchart, and are outside the scope of this guideline.

## 34. Care Management: Out of Guideline

Management of confirmed colorectal cancer is beyond the scope of this guideline, and should be undertaken via appropriate specialty referral and care management.

---

## Appendix A – Glossary

### A

**adenoma:** benign abnormal growth that appears in glandular tissue (see also: tubular adenoma and tubulovillous adenoma)

**adenomatous polyp:** a polyp that consists of benign abnormal glandular tissue

**asymptomatic:** showing no symptoms

### B

**barium:** barium sulfate is a chalky substance used to partially fill and open up the colon

**biannual:** every other year

**biopsy:** removal of tissue that is checked for cancer cells under a microscope

### C

**colonic neoplasia:** new abnormal growth of cells (includes polyps and cancer)

**colonoscopy:** examination of the entire colon using a lighted, flexible tube inserted into the rectum

**CT colonography:** use of computerized tomography (CT) to examine the colon; images result in a cross-section of body tissues and organs and reconstruction of a luminal view

### D

**distal:** distant - closer to the anus (in colon anatomy)

**diverticula:** small pouches in the colon

**double contrast barium enema:** x-ray examination of the colon and rectum in which barium and air are introduced gradually into the colon by a rectal tube

### F

**flexible sigmoidoscopy:** insertion of a small-sized flexible tube into the rectum to visualize the rectum and a portion of the colon

**FOBT:** fecal occult blood test (test that looks for hidden blood in smears of stool on a special card)

### G

**gastrointestinal:** related to the digestive tract

**guaiac test:** a test for blood in urine or feces using a re-agent containing gualacum

### H

**histology:** study of the microscopic structure of tissues

**hyperplastic polyps:** the microscopic appearance of a type of polyp associated with a very low risk of progression to cancer

**I**

**index carcinoma:** the cancer in the relative that prompts this colonoscopy

**in situ:** in the original place

**L**

**lesion:** area of altered tissue

**lipomatous:** related to the presence of a lipoma, a benign tumor composed mainly of fat cells

**luminal stricture:** abnormal narrowing of a tubular organ

**M**

**mucosa:** a membrane lining all body passages

**mucosal:** related to the membrane living of all body passages

**N**

**neoplasm:** uncontrolled growth of benign or malignant tissue

**P**

**palpation:** examination by touch

**pathology:** study of diseased tissue

**polypectomy:** surgical removal of a polyp

**polyposis coli:** inherited condition causing numerous adenomas in the colon

**polyp:** an abnormal growth on the lining of the colon

**precursor:** a substance that precedes and is the source of another substance

**proctoscopy:** looking into the rectum and anus with a proctoscope (a short, rigid metal tube)

**proximal:** closer to the mouth (in colon anatomy)

**R**

**rectum:** the last 5-6 inches of the intestine leading to the outside of the body

**rehydration:** adding fluid

**rigid sigmoidoscopy:** insertion of a small-sized rigid tube into the rectum to visualize the rectum and a portion of the colon (same as proctoscopy)

**S**

**serum:** clear portion of any body fluid

**sigmoid:** S-shaped part of the colon, before the rectum

**single-contrast barium enema:** x-ray examination of the colon and rectum in which barium is introduced gradually into the colon by a rectal tube

**specificity:** ability to exclude

**symptomatic:** having symptoms

**synchronous polyps:** happening at exactly the same time

**T**

**total colon exam:** either colonoscopy or CT colonography or double contrast barium enema combined with flexible sigmoidoscopy

**tubular adenoma:** microscopic definition of a polyp type that has the potential to progress to cancer if not removed

**tubulovillous:** microscopic definition of a polyp type that has the potential to progress to cancer if not removed

**U**

**ulcerative colitis:** chronic inflammation of the colon

**V**

**variants:** variations

**villous:** hair-like projections

## Website Resources

A number of websites provide more in-depth information on colorectal cancer screening. The table below includes details.

Website Sponsor	Description	Website Address
American College of Gastroenterology	Information on gastroenterology	<a href="http://www.acg.gi.org">http://www.acg.gi.org</a>
American Society for Gastrointestinal Endoscopy	GI endoscopy and digestive health information	<a href="http://www.asge.org">http://www.asge.org</a>
Gastroenterology Consultants, PC	Information on gastroenterology	<a href="http://www.gastro.com">http://www.gastro.com</a>
National Institutes of Health: National Institute of Diabetes & Digestive & Kidney Disorders	Information on diabetes, digestive, and kidney conditions	<a href="http://www.niddk.nih.gov">http://www.niddk.nih.gov</a>