

How to Increase Colorectal Cancer Screening Rates in Practice:

A Primary Care Clinician's* Evidence-Based
Toolbox and Guide
2008

**Including Family Physicians, General Internists, Obstetrician-Gynecologists,
Nurse Practitioners, Physician Assistants, and their Office Managers*

Mona Sarfaty, MD

EDITORS

Karen Peterson, PhD

Richard Wender, MD



Avoid These Errors:

- X** Patients are screened for colorectal cancer (CRC) with only a digital rectal exam.¹
- X** Patients are screened for CRC in the office with a single sample from a stool blood test.²
- X** Patients with a history of adenomatous polyps in a first-degree relative are not identified as people at increased risk.^{3,4}
- X** Providers have cultural assumptions that inhibit frank discussion, which leads to a clear recommendation for screening.
- X** Patients with a positive FOBT, FIT, stool DNA, CT colonography, double-contrast barium enema, or flexible sigmoidoscopy never receive an order for a complete diagnostic exam.⁵
- X** There is no follow up on patients referred for a complete diagnostic exam.⁶
- X** Practitioners recommend screening with colonoscopy for those at average risk more often than every 10 years or CT colonography, double-contrast barium enema, or flexible sigmoidoscopy more often than every five years.
- X** Screening is started earlier than age 50 for average-risk asymptomatic individuals.

How to Increase Colorectal Cancer Screening Rates in Practice:

A Primary Care Clinician's* Evidence-Based Toolbox and Guide 2008

**Including Family Physicians, General Internists, Obstetrician-Gynecologists, Nurse Practitioners, Physician Assistants, and their Office Managers*

BY

Mona Sarfaty, MD

THOMAS JEFFERSON UNIVERSITY

EDITORS

Karen Peterson, PhD

PREVENT CANCER
FOUNDATION

Richard Wender, MD

DEPARTMENT OF FAMILY
AND COMMUNITY MEDICINE,
THOMAS JEFFERSON UNIVERSITY

PROJECT MANAGER

Katherine Sharpe

AMERICAN CANCER SOCIETY

Mary Doroshenk, MA

AMERICAN CANCER SOCIETY

REVIEWERS

Kevin Brady, MPH

Mary B. Barton, MD, MPP

Durado Brooks, MD, MPH

Claire A. Kendrick, MEd, CHES

Marilyn Roubidoux, MD

Paul C. Schroy III, MD, MPH

Tricia L. Trinité, MSPH, APRN-BC

Herbert Young, MD

Thomas Jefferson University Department of Family Medicine

Published by The National Colorectal Cancer Roundtable

An Activity of

The American Cancer Society and The Centers for Disease Control and Prevention

2006, Revised 2008

Table of Contents

Dear Colleague Letter	i	
Executive Summary	iii	
Checklist for Increased Screening	v	
Goals of This Guide	1	
Introduction	2	
Four Essentials for Improved Screening Rates	11	
Essential #1	Your Recommendation	12
Essential #2	An Office Policy	18
	A. An Office Policy Is Vital	19
	B. Fit the Policy to Your Practice	19
	• Determine Individual Risk Level	21
	• Identify Local Medical Resources	26
	• Assess Insurance Coverage	28
	• Consider Patient Preference	29
	• Attend to Office Implementation	31
Essential #3	An Office Reminder System	32
	A. Options for Patients: Education and Cues to Action	33
	B. Options for Physicians	35
	• Chart Prompts	36
	• Audits and Feedback	42
	• Ticklers and Logs	44
	• Staff Assignments	44
Essential #4	An Effective Communication System	48
	A. Options for Action	50
	• Stage-based Communication	50
	• Shared Decisions, Informed Decisions, Decision Aids	53
	• Staff Involvement	54
Conclusion	58	
Appendix A	Current Screening Guidelines	61
Appendix B	Test Your Knowledge and Answer Key	129
Appendix C	Barriers to Screening for Colorectal Cancer	135
Appendix D	Tools	143
	I. Phone Scripts, Reminder Letters, Postcards	144
	II. Preventive Services Schedules	153
	III. Audit and Tracking Sheets	159
	IV. Brochures, Pamphlets, Posters	163
References	165	

Acknowledgements

The author, editors, and reviewers of this guide would like to acknowledge all of those who have worked to focus attention on the promise of reducing the incidence and mortality of colorectal cancer, the nation's second-leading cause of cancer mortality. They include many dedicated individuals who have worked with, or been funded by, the Agency for Healthcare Research and Quality, the American Cancer Society, the Centers for Disease Control and Prevention, the Maryland Department of Health and Mental Hygiene Center for Cancer Surveillance and Control, the Prevention Cancer Foundation, the National Cancer Institute, and the National Colorectal Cancer Roundtable. We would also like to acknowledge the efforts of the nation's practicing physicians and their professional organizations, the staff of academic and free-standing cancer centers, Daryl Strawberry, formerly of the New York Yankees, Eric Davis of the San Francisco Giants, Katie Couric of *CBS Evening News*, BC Pane, author of the "Pickles" comic strip, and many other individuals and programs whose combined efforts will reduce the impact of colorectal cancer on American life within the next decade.

Disclaimer

This publication was supported by Cooperative Agreement Number CCU424071-03 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

September 2008

Dear Colleague,

Like you, we are primary care physicians who have experienced the many changes in primary care medicine over recent years. While the burdens on primary care practitioners are greater than ever before, the need for effective primary care practice is just as great. Screening for colorectal cancer, like other highly effective preventive measures, is one of the essential elements of primary care practice. This publication is similar to other continuing medical education bulletins you receive, but the intended outcome is different. The outcome here is improved office practice. This is designed to help you and your office manager organize your practice so that every appropriate patient walks out of the door with the needed recommendation.

While the overwhelming majority of primary care doctors screen for colorectal cancer and other cancers, few would say that every eligible patient leaves the practice with the needed recommendation. It is not enough to know what needs to be done. It is *doing* it that makes a difference. This guide contains evidence-based tools and strategies that can move your practice to a higher level of performance. We have assembled materials we wish we had available as we worked toward improving screening rates in our respective communities. While screening may not be at the top of a patient's lists of concerns when he/she walks through the door, recommendations from the patients' doctors are the most effective way to ensure that every age-appropriate individual gets screened. Abundant research supports this statement. It is essential to get this simple truth to primary care doctors around the country.

There are many misconceptions about colorectal cancer screening. One of the most destructive is that patients do not want to be screened. There is hard evidence from several studies that this is untrue. Some physicians might not be aware of how much evidence has accumulated that screening procedures prevent cancers and save lives. Solid projections are that incidence and mortality will drop significantly with widespread screening.

We hope that you, your practice, and your patients benefit from the materials in this guide. Continuing medical education credit is now available from the American Medical Association, the American Academy of Family Physicians, the American Board of Internal Medicine, and other organizations for practice-improvement activities like those described in this guide. See inside for details. A Web-based version is also available.

Sincerely,



Richard Wender, MD



Mona Sarfaty, MD

NATIONAL COLORECTAL CANCER ROUNDTABLE MEMBER ORGANIZATIONS

Founding Organizations:

American Cancer Society
Centers for Disease Control and Prevention

NCCRT Members

Agency for Healthcare Research and Quality
Alliance of Community Health Plans
America's Health Insurance Plans
American Academy of Family Physicians
American College of Gastroenterology
American College of Obstetricians and Gynecologists
American College of Preventive Medicine
American College of Radiology
American Gastroenterological Association
American Medical Association
American Medical Women's Association
American Public Health Association
American Society for Gastrointestinal Endoscopy
American Society of Colon and Rectal Surgeons
Association of State and Territorial Health Officials
Boston Medical Center
C3: Colorectal Cancer Coalition
California Colorectal Cancer Coalition (C4)
C5/New York City Department of Health and Mental Hygiene
Center for Colon Cancer Research
Centers for Medicare and Medicaid Services
C-Change
Collaborative Group of the Americas on Inherited Colorectal Cancer
Colon Cancer Alliance
Crohn's and Colitis Foundation of America, Inc.
Digestive Disease National Coalition
Directors of Health Prevention and Education
Eric Davis Foundation
Foundation for Digestive Health and Nutrition
Hadassah, Women's Zionist Organization of America
Harvard Medical School
Hereditary Colon Cancer Association
Intercultural Cancer Council
International Digestive Cancer Alliance
The Jay Monahan Center for Gastrointestinal Health at New York-Presbyterian Hospital/Weill Cornell
Lynn's Bowel Cancer Campaign (UK)
Mayo Clinic

Minnesota Colon and Rectal Foundation
Minnesota Colorectal Cancer Initiative
Morehouse School of Medicine
National Association of Chronic Disease Directors
National Cancer Institute
National Caucus and Center on Black Aged, Inc.
National Colorectal Cancer Research Alliance
National Committee for Quality Assurance
National Governors Association
New York State Department of Health
The Permanente Medical Group, Inc.
Prevent Cancer Foundation
Society for Gastroenterology Nurses and Associates, Inc.
Society of Gastrointestinal Radiologists
Spirit of Eagles Cancer Control Network
United Ostomy Associations of America
University of Minnesota Cancer Center
University of Texas – Houston School of Public Health
University of Texas M. D. Anderson Cancer Center
The Wellness Community

Corporate Associates

EXACT Sciences, Inc.
Hoffman-LaRoche, Inc.
Myriad Genetics, Inc.
Olympus America Inc.
Quest Diagnostics
Sanofi-Aventis

Individual Members

Ann Favreau
Amy Manela
Anna Schenck, PhD
Barbara Barrie
Judith Blanchard
Michael Pignone, MD
Michael B. Potter, MD
Richard Wender, MD
Robert Fletcher
Sidney Winawer, MD

Executive Summary

Colorectal cancer (CRC) is both the nation's second-leading cause of cancer mortality and one of its most preventable cancers. If adenomatous polyps were removed before they transformed into cancers, starting at age 50 for those at average risk and earlier for those at increased risk, there would be a precipitous drop in the number of new colorectal cancers. If developing CRCs were detected at earlier stages and ages, mortality rates would fall dramatically. The increase in survival would be impressive. This accomplishment could be one of the great medical achievements of the 21st century. The evidence and tools in this guide will help physicians and their office managers increase screening rates to make this achievement a reality.

Even though highly effective methods of CRC screening are available across the country, the current rates of screening, and of complete diagnostic examination that should flow from screening, remain inadequate. Thus, the potential benefits of widespread CRC are unrealized. The American Cancer Society has established the goal of 75 percent of the eligible population screened for CRC by the year 2015. This guide will help us reach that goal.

There are several proven screening methods that reduce mortality. These are presented as practice guidelines in Appendix A, which offers a chart called "Common Sense Recommendations at a Glance," as well as the consensus guidelines of the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology, as well as the guidelines of the US Preventive Services Task Force. Practitioners must become aware that their recommendation is the single most influential factor in persuading individuals to be screened for cancer. This evidence has come from multiple studies in multiple locations over several decades, and it is increasingly recognized and understood. The evidence is presented in the section "Essential #1." Since 75 to 90 percent of Americans visited a doctor for a routine checkup within the past two years, there are many opportunities for physicians to reach the target population with the screening message.

While nearly all physicians screen for CRC, few would claim that every eligible patient leaves the office with the screening recommendation. Only a systematic approach that is designed to identify and provide a recommendation to every eligible patient who visits the practice for any reason is likely to reach the American Cancer Society goal. There are a variety of effective tools to create a systematic approach. The first step is that every practice should have an office policy on CRC screening. This is discussed under "Essential #2." The policy should incorporate an assessment of patient-risk level, and the realities of local medical resources, insurance coverage plans, and patient preferences. Algorithms, flow sheets, and procedures are tools to implement the office policy. They help ensure that it remains consistent into the future. Instructions on how to create an office policy and tools to implement it are presented under "Essential #2."

Reminder systems are another essential element of effective office practice. There are reminder systems that target physicians and those that target patients. Strong evidence from meta-analyses proves that many reminder options are effective. They are presented under “Essential #3.” These options will assist physicians and their office managers in choosing their own strategy and tools to attain a high level of consistency and impact.

Skillful communications also improve the effectiveness of office practice. This is discussed in “Essential #4.” Theory-based communications are more effective than generic communications. Tools are available to help clinicians utilize a theory-based approach to identify and improve communication with patients who are at different decision stages with regard to screening. These are presented in “Essential #4.” Decision aids are also available, and new tools are under development that will soon facilitate shared decision-making between patient and clinician. Office staff can make a significant contribution to this process.

While there are barriers to increasing screening rates, these barriers are now clearly identified and many of them can be overcome. New evidence that first came to light during the 1990s has not penetrated into all practice settings. Some providers may not be aware that national guidelines have changed. Updated knowledge is needed. The digital rectal exam is no longer a recommended screening strategy for CRC. A single sample stool blood test completed in the office is not sound practice. A single positive stool blood test should never be repeated. Positive screening tests should always be followed by colonoscopy. Other barriers that should be removed are presented in Appendix C.

The only way to raise national CRC screening rates is to institutionalize changes in your practice routines so that every eligible patient receives the screening message. It is not enough to know what needs to be done. It is doing it that makes the difference. The evidence-based tools and strategies in this guide will help move your practice to a higher level of performance.

Checklist for Increased Screening

1. Your Recommendation

For CRC cancer screening _____

For complete diagnostic evaluation
when screen is positive _____

2. An Office Policy

Policy characteristics

- Determine individual risk level _____
- Identify local medical resources _____
- Assess insurance coverage _____
- Consider patient preference _____
- Attend to office implementation _____

Algorithm posted _____

Stool blood test flow sheet posted,
and excludes in-office tests _____

Steps to implement policy in office _____

3. An Office Reminder System

Options for physicians

- Chart prompts _____
- Audits and feedback _____
- Ticklers and logs _____
- Staff assignment _____

Options for patients

- Education _____
- Cues to action _____
- Posters _____
- Brochures _____
- Reminder postcards _____
- Reminder letters _____
- Reminder calls _____

4. An Effective Communication System

Options for action

- Stage-based communication _____
- Shared decisions, informed decisions, decision aids _____
- Staff involvement _____

Goals of This Guide:

- **To inform clinicians and their office managers, who deliver primary care about their opportunity to prevent colorectal cancer with appropriate screening**
- **To encourage primary care providers to decrease the mortality and morbidity of colorectal cancer (CRC) and other cancers through appropriate screening**
- **To facilitate efforts of office-based clinicians to reduce disparities by applying screening guidelines on a universal basis to the age-appropriate population**
- **To improve preventive care in primary care practices through use of the strategies and tools presented in this guide**

Introduction

Why screen for colorectal cancer?

- Screening both prevents colorectal cancer (CRC) and reduces mortality.



- New insurance reporting requirements include rates of screening for CRC.
- Malpractice suits involving colorectal cancer are costly.
- Continuing medical education (CME) credit is available for improving screening rates in a practice.

Why this guide?

- Every primary care practice can contribute to raising screening rates.
- This guide highlights the essential elements for improved screening rates.
- This guide will help clinicians overcome barriers to screening.

Introduction

Why screen for colorectal cancer?

- Screening both prevents colorectal cancer and reduces mortality.
- New insurance reporting requirements include your practice's screening rates.
- Malpractice cases involving colorectal cancer are costly.
- Continuing medical education (CME) credit is available for practice improvement activities that focus on improved screening for colorectal cancer.

Screening both prevents colorectal cancer and reduces mortality.

Colorectal cancer (CRC) is both the nation's second leading cause of cancer mortality and one of the most preventable cancers.^{7,8,9,10,11} It is second to lung cancer as a cause of cancer deaths and shares with lung cancer the unusual distinction of being a largely preventable disease. However, while a lung cancer begins as a tiny malignancy that grows into a larger tumor, a colorectal cancer begins as an adenomatous polyp that is not malignant and takes a period of five to 15 years to transform. This long period of transformation gives physicians an invaluable window of opportunity to help their patients prevent this cancer.

Two developments in medicine have provided doctors with this opportunity. The first was the elucidation of the natural history of colorectal cancer, which was documented and published in the early 1990s.¹² The second was the development of fiber-optic techniques that permitted the exploration of the body's cavities. Together, these advances have created the potential for a giant leap forward in combating colorectal cancer.

The near elimination of new colorectal cancers and a precipitous fall in mortality could be one of the great medical successes of the early 21st century. If adenomatous polyps could be removed from the colon before they turn into cancers, the corresponding fall in new cases of colorectal cancer would be stunning.¹³ Mortality from colorectal cancer would be dramatically reduced. The sizable population that is at increased risk because of a family history of an adenomatous polyp or colorectal cancer would be protected from that risk. There are few opportunities in medicine at this time that are as promising as preventing colorectal cancer.

New insurance reporting requirements include your practice's screening rates.

Many primary care physicians are now required to report their CRC screening rates. This information is available and has been presented to the public. Many insurance companies that reimburse physicians for services require this information of practitioners along with other data reports. The Health Plan Employer Data and Information Set (HEDIS), which is disseminated by the National Committee for Quality Assurance (NCQA), and is required for all employer health plans, includes colorectal cancer screening rates on the standard list of quality measures. Colorectal cancer was added to the HEDIS list in 2003, and reported to the public starting in 2006. All clinicians who accept reimbursement from private insurers that provide employee health coverage are affected.

Malpractice cases involving colorectal cancer are costly.

The inescapable logic that supports timely and thorough screening is also producing a growing number of medical malpractice suits. Successful malpractice suits have ranked CRC among the five leading diseases in dollar value of awards garnered.¹⁴ There are a number of factors that combine to make this cancer an easy target for lawsuits and an important focus for risk management.[†]

The consequences of a missed opportunity to prevent CRC – or to diagnose it early before it has spread – can be grave and life-threatening and can lead to substantial morbidity. Because public awareness of the consequences of this missed opportunity is growing, it can also lead to substantial legal jeopardy and financial loss. A delay in diagnosis and the mismanagement of diagnostic testing are currently the main complaints made in malpractice cases that involve CRC.

The stage of presentation at which CRC is identified and treated is the most important determinant of long-term survival. Early stage presentation and intervention dramatically increase the likelihood of long-term survival and cure. Late stage presentation reduces survival and leads to a poorer prognosis. The beneficial impact for early stage diagnosis and treatment has important implications for office practice and for the public's reaction to a diagnosis of CRC.

Public awareness of the following facts is expanding. As a result, a delay in diagnosis and the mismanagement of diagnostic testing are the main complaints made in malpractice cases that involve CRC. Previously “failure to diagnose” had been the dominant malpractice complaint, especially where patients presented with symptoms. A newer version of this complaint, “failure to screen,” is rising in frequency as a principal accusation, especially for patients at increased risk.

1. *The incidence of CRC is fairly high, with a lifetime risk of developing CRC of approximately 5 to 6 percent. People at increased risk may have a lifetime risk that is two to three times the baseline, or 12 percent to 18 percent or even higher.*
2. *CRCs develop from adenomatous polyps (adenomas) and are preventable if the adenomas are identified and removed before they turn into cancers.*
3. *The lead time required for the identification of an adenoma is long. These dangerous polyps typically reside in the colon for 10 to 15 years until they metamorphose into cancers.*
4. *The technology and facilities that are needed to find the adenomas and remove them are widely dispersed, and clearly accessible for those who have health insurance.*
5. *There is a widespread consensus across medical professional organizations and panels of experts that screening for CRC is strongly recommended. In fact, since Medicare began reimbursing for it, CRC screening has essentially become national policy.*
6. *The consequences of a missed opportunity to prevent CRC – or to diagnose it early before it has spread – are substantial. The impact can be large for patients and physicians.*

The logic of these realities has produced many costly lawsuits. The dollar value of malpractice awards for CRC is an indication of expanded awareness and the personal loss when individuals fail to get screening.

[†] From presentation of Dr. Ernest Hawk, National Cancer Institute, 2002.

Continuing medical education (CME) credit is available for practice improvements described in this guide.

In 2004, the American Medical Association (AMA) established a policy of offering continuing medical education (CME) credits for physicians who undertake quality improvement projects in their practices. This initiative coincides with programs under way at two specialty boards, the American Board of Family Medicine (ABFM) and the American Board of Internal Medicine (ABIM). These programs provide credit toward maintenance of certification for physicians who complete online “practice improvement modules.”^{†‡§} While each board has its own modules, the boards are collaborating. Completion of an online practice improvement module of the ABIM generates credit toward maintenance of certification from the ABFM. The mutual reinforcement of these activities by the AMA, ABIM, and ABFM reflects the belief that improved medical practice is a priority.

Why this guide?

- Every primary care practice can contribute to raising cancer screening rates.
- This guide highlights the essential elements for improved screening rates.
- This guide will help clinicians overcome barriers to screening.

Every primary care practice can contribute to raising screening rates.

Every practicing primary care physician can contribute to increasing the national CRC screening rate to reach the goal of 75 percent by 2015 established by the American Cancer Society. A recommendation of a physician is arguably the most powerful influence available to attain this goal. A physician’s recommendation to participate in cancer screening is a high-impact health message that will result in a large reduction in the risk of dying from this disease. This fact is evidence-based and extensively documented in the literature. It is widely recognized and summarized in the next section of this guide. However, it remains underappreciated by many practicing physicians.

While nearly all primary care physicians do screen their patients for CRC, few practices have systems in place to ensure that this recommendation is delivered to each and every age-appropriate patient. In other words, it is highly likely that every clinician has seen patients in the past few months who should have received a recommendation for screening but did not receive it, and patients who should have been screened but were not screened. Most physicians realize this. In fact, in a national survey, only 20 percent of primary care physicians thought that as many as 75 percent of their age-eligible patients had been screened.¹⁵

This manual provides strategies and user-friendly tools so that every primary care clinician and practice can increase the percentage of patients who get the screening message and – most importantly – who actually follow through. It provides a road map and a tool kit that all primary care providers and their office managers can utilize to become part of the solution to the problem of colorectal cancer – and other preventable cancers and diseases. While there is work to be done

† American Medical Association. AMA direct credit for AMA PRA Category 1 Credit. Available at: <http://www.ama-assn.org/ama/pub/category/16244.html>. Accessed July 27, 2007.

‡ American Board of Internal Medicine. Practice Improvement Module. Available at: www.abim.org/online/pim. Accessed July 17, 2007.

§ American Board of Family Medicine. Part IV—Performance in Practice (PPM). Available at: <https://www.theabfm.org/MOC/part4.aspx>. Accessed July 27, 2007.

INTRODUCTION

everywhere, different work needs to be done in different communities, as well as in different practices. With the approach described here, every practicing physician can expand his or her impact and contribute to the promising nationwide effort to dramatically reduce the scourge of cancer.

The great potential for physicians to raise screening rates with their recommendation to screen is currently unrealized. Despite the tremendous promise of screening, and the attention to its benefits by national print and broadcast media, screening rates remain low across the country. According to the Behavior Risk Factor Surveillance System of the Centers for Disease Control and Prevention (CDC), in 2006, only 24.2 percent of the nation's population age 50 and over had had a stool blood test within the past two years, and only 57.1 percent had ever had a sigmoidoscopy or colonoscopy. This was both good news and bad news.

It was good news because those numbers had improved. It was bad news because many more people need to be screened to achieve a dramatic reduction in mortality from CRC. We have to go even further to realize the American Cancer Society's goal of 75 percent of the eligible population screened by 2015. While there are some indications that screening rates are rising, only a thoughtful strategy and a concerted effort to bring the numbers up will realize the more ambitious goal that has the greatest potential to save lives.

Efforts to reduce the incidence and mortality of colorectal cancer are also part of the national effort to eliminate health care disparities.¹⁶ African Americans have a disproportionately high incidence of and mortality from CRC.¹⁷ Variability in screening rates and lower use of diagnostic testing contribute to this discrepancy.^{18,19} Inadequate awareness of the importance of CRC screening has been cited as an underlying cause, along with lower rates of health insurance, poor access to care, perceptions of bias, or even racism.²⁰ Other underserved minority groups also have lower screening rates. Cultural barriers are a factor. A physician's recommendation has been demonstrated to be strongly influential with all ethnic and racial groups. An important element of a solution to health care disparities is assuring that a practitioner's recommendation is issued to every age- and risk-appropriate individual.

This guide highlights the essential elements for improved screening rates.

This guide presents essential elements for raising screening rates. There are four. Each will be reviewed in a separate section. Each section addresses one of the key elements and presents strategies and tools to assist in building that element. Some tools are of recent origin. Most are evidence-based. This guide is intended to facilitate success in establishing the four essential elements: 1) Your Recommendation, 2) An Office Policy, 3) An Office Reminder System, and 4) An Effective Communication System.

1) Your Recommendation. The first essential for better screening rates is a recommendation from a physician to every patient who is at risk. A physician's recommendation is the most influential factor. The strong evidence on the importance of a recommendation will be presented.

INTRODUCTION

- 2) **An Office Policy.** The second essential element is an office policy on colorectal cancer screening. The policy assures consistency over time by clearly articulating the intentions of the practitioner and the practice. The policy must incorporate assessment of individual risk levels and be based on local medical resources and local insurance coverage. All staff of the practice should be familiar with the policy and know how to implement it.
- 3) **An Office Reminder System.** The third element is an office reminder system. There are reminder systems for patients and for providers. Both types can contribute to better screening rates.
- 4) **An Effective Communication System.** Though communication is a central part of the relationship between the physician and the patient, it typically occurs according to individual habit and inclination or early professional training without attention to techniques that are based on evidence and have actually been demonstrated to improve effectiveness.

The practice that puts the four essentials in place can maximize its impact on the incidence and mortality of colorectal cancer. This guide offers a “how to” for building these four key elements into the practice. The appendix contains the most recent guidelines on colorectal cancer screening, a summary of the screening practices of primary care physicians, and a more detailed discussion to help overcome barriers to screening. There is a knowledge test in the Appendix so you can test your knowledge before and after reading the guide.

This guide will help you overcome barriers to screening.

Barriers and countervailing forces have made it difficult to achieve improved screening rates. This guide provides solutions. Confusion exists about national guidelines. Out-of-date knowledge and outmoded practices persist. Up-to-date knowledge is often derailed by patient demands, or the absence of defined policies. There is a lack of confidence in the efficacy and acceptability of screening tests. Nonexistent or inadequate health insurance coverage is also a barrier. This guide will help physicians and their office managers develop their own strategies so they can overcome barriers and contribute to the success that is within their collective grasp. A discussion of these barriers is introduced here and further explored in Appendix C.

- **Outdated Knowledge.** Some physicians may not be aware that a family history of adenomatous polyps places a patient at increased risk or that CRC in an older first-degree relative also increases an individual’s risk.^{22 23 24 25 26 27} Some physicians are still performing an in-office digital rectal exam or a single stool blood test; these are not evidence-based and should not be used for colorectal cancer screening. The recommended procedure is an at-home procedure of collecting samples from two or three (depending on which test is used) consecutive bowel movements. Accepted stool blood tests include guaiac-based tests (gFOBTs) and immunochemical tests (FITs). Many abnormal screenings get inadequate or incomplete follow up. Some physicians are unaware of the significance of a single positive stool test and erroneously believe that such a test may be followed up with another set of stool test cards.²⁸ Every positive stool blood test should be followed up with colonoscopy.

INTRODUCTION

- **Inconsistent Guidelines.** Many primary care physicians are unclear about the current guidelines and, therefore, continue to utilize outdated approaches to screening that are no longer recommended by national professional organizations. Since guidelines have changed, this is not surprising. Though there appear to be inconsistencies among guidelines, in reality, all major guidelines strongly endorse regular screening.
- **Guideline Changes.** As scientific evidence has accumulated, guidelines have changed, most recently in 2002, 2003, and 2008. Outdated guidelines may still be fixed in the minds of some practitioners. In 1989, the US Preventive Services Task Force (USPSTF) judged there was insufficient evidence to recommend for or against fecal occult blood testing (FOBT) or flexible sigmoidoscopy (FS) screening.²⁹ By 2002, the USPSTF found evidence that several screening methods were effective in reducing mortality.
Specific guideline changes addressed:
 - The age to begin screening people at increased risk
 - The digital rectal exam, which is not evidence-based
 - Complete diagnostic exam with colonoscopy whenever there is a positive screen
 - Up-to-date guidelines are found in this guide in Appendix A.

In 2008, the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer (a consortium representing multiple GI organizations and the American College of Physicians), and the American College of Radiology (ACR) agreed to collaborate on an update of each organization's guidelines. These consensus guidelines were developed through a process of collective deliberation between experts from the three organizations and that completed guideline was reviewed and approved by each organization. These up-to-date guidelines are found in this guide in Appendix A.

- **Confusion about Priorities and Goals.**³⁰ There are two goals of screening. One is to prevent CRC by removing adenomatous polyps that can turn into CRC. The other is to remove early cancers before they become later stage cancers, which carry worse prognoses. The first of the two goals is the more common achievement. Only about 1 percent of endoscopy screenings find a CRC.
- **Lack of Confidence in Efficacy and Acceptability of Screening Tests.** Despite strong new evidence that supports the efficacy of screening, physicians lack confidence in the efficacy of CRC screening tests. Though gFOBT was for many years the test most commonly recommended and despite strong evidence in its favor, only 24 to 35 percent of primary care physicians believe that FOBT is “very effective” in reducing mortality.^{31 32} Furthermore, only 43 to 59 percent believe that FS is “very effective” in reducing mortality, despite the fact that evidence has demonstrated that FOBT plus FS can detect significant neoplastic growths in the colon 76 percent of the time and, with appropriate intervention, can reduce mortality by more than 40 percent.^{33 34 35} Some physicians may believe that flexible sigmoidoscopy or colonoscopy are distasteful or unacceptable choices for their patients, though there is little evidence to support this. One statewide survey has documented that less than 5 percent of respondents find the nature of the tests inhibiting.³⁶ News coverage of emerging technologies may also undercut current efforts to increase screening. Some patients and providers may have been waiting until these new, “better” screening methods were available – not realizing how unanimous are recommendations in favor of screening. The

INTRODUCTION

excuse of waiting for new technologies will be largely neutralized by the addition of these methods in the menu of screening options in the 2008 multiorganization consensus guidelines (Appendix A).

- **Cost, Reimbursement, and Insurance.** In one study of physician attitudes, cost was the most common explanation for not recommending colonoscopy (CS).³⁷ However, reimbursement has declined and so has cost. Thus, cost could be less of an issue than it was previously. While some private insurers won't pay for every recommended screening modality, most insurance pays for some recommended modality. For example, most insurance will support screening stool blood test followed by diagnostic colonoscopy, if the result is positive. Medicare pays for all screening options except CT colonography and stool DNA testing, which were only recently added to the screening recommendations of major organizations. Absence of health insurance is a more serious problem. The number of individuals nationwide who lack health insurance has risen steadily in recent years. Lack of health insurance is a barrier to receipt of primary medical care and preventive screening services. While a stool blood test is inexpensive and may not require health insurance, the visit to obtain the test will be more costly.^{**} Pharmacies provide stool blood tests in some areas of the country. The colonoscopy, which follows if the screen is positive, may be unaffordable. However, public health authorities may be able to assist in these cases.
- **Inadequate Resources and Reinforcement.** The options for screening in any given community depend on the medical resources in that community and the policies of the dominant health insurers.^{††‡‡} Several states have laws that require insurance reimbursement for colorectal cancer screening. The majority do not. Some states have a high density of specialty physicians, especially gastroenterologists, who perform endoscopic screening. The majority do not. In some areas of the country, medical resources are adequate. In others, they are not.

However, the capacity of the nation to perform CRC screening is not a barrier. There is sufficient capacity to screen the entire unscreened population within one year, using a combination of fecal occult blood testing and diagnostic colonoscopy for positive tests.³⁸

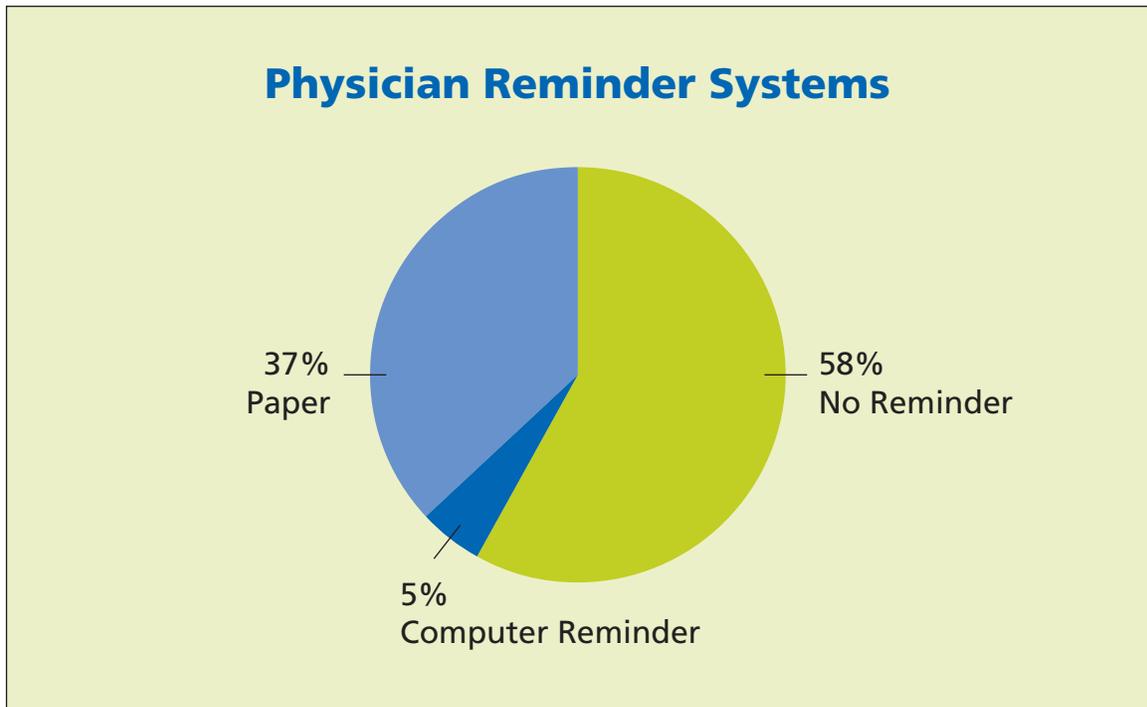
A larger concern is that office practices appear to make limited use of reminder systems. A Wisconsin survey revealed that only 5 percent of primary care physicians had a computer reminder system; 37 percent had a paper reminder system; 58 percent had no reminder system at all.³⁹

All barriers and obstacles must be identified, confronted, and removed in order to reap the potential benefits of screening. Achieving a higher standard of office practice by assuring that a screening recommendation goes to every age-appropriate or at-risk patient will start the ball rolling. This guide is specifically intended to help improve the effectiveness of office practice. The material presented here is relevant to all cancer screening and preventive services that have a strong evidence base. The key essential elements described in the guide will not require investment of additional monetary resources, but will require changes in practice routines. These essentials, if implemented, will save time and save lives.

^{**} Unless specified, all mention of stool blood test in this guide refers to either guaiac-based (FOBT) tests or immunochemical (FIT) tests.

^{††} Medicare issued a new policy in 2001. It began paying for screening CS every 10 years. No longer are symptoms of CRC required in order for Medicare to reimburse for CRC screening with colonoscopy. In 1998, Medicare began paying for annual gFOBT and flexible sigmoidoscopy (FS) every four years and expanded coverage to include annual FIT in 2004.

^{‡‡} Forty-eight states require that insurers reimburse for mammography screening, but only 20 require reimbursement for guideline-based CRC screening.



Four Essentials for Improved Screening Rates

1. Your Recommendation

2. An Office Policy

A. An Office Policy Is Vital

B. Fit the Policy to Your Practice

- Determine Individual Risk Level
- Identify Local Medical Resources
- Assess Insurance Coverage
- Consider Patient Preference
- Attend to Office Implementation

3. An Office Reminder System

A. Options for Patients: Education and Cues to Action

B. Options for Physicians

- Chart Prompts
- Audits and Feedback
- Ticklers and Logs
- Staff Assignments

4. An Effective Communication System

A. Options for Action

- Stage-based Communication
- Shared Decisions, Informed Decisions, Decision Aids
- Staff Involvement

Essential #1: Your Recommendation

- 1.** The positive impact of advice from a doctor to get cancer screening is well-documented.
- 2.** The magnitude of a clinician's impact is considerable: State surveys have shown that 90 percent of people who reported a physician recommendation for CRC testing were screened vs. 17 percent of those who reported no provider recommendation, and 72 percent of those whose physician recommended a stool blood test completed it vs. 8 percent of those whose physician had not.
- 3.** Every clinician has seen patients who should have received, but did not receive, cancer screening. A consistent and reliable recommendation will result if three other essential elements – an office policy, a reminder system, an effective communication system – are part of the practice.
- 4.** The positive effect of a doctor's advice is limited to those who have access to a doctor or a usual source of care. All patients need a usual source of care.
- 5.** To prevent CRC and reduce mortality, the recommendation must include a referral for colonoscopy where any non-colonoscopy screening test is positive.

Essential #1: Your Recommendation

*Patients do things their physicians recommend.
They don't do things their physicians do not recommend.⁴⁰*

One fact that has remained consistent from community to community is the influence of a physician's recommendation on the cancer screening decisions of their patients. This is an evidence-based finding that has been well-established. Confirmations accumulated over two decades show that a recommendation from a doctor is the most powerful single factor in a patient's decision about whether to obtain cancer screening. While other factors also have impact (including health beliefs, social influences, insurance, and access to care), for those who have a doctor, the doctor's advice is the single most persuasive factor.

The positive impact of a doctor's advice has been demonstrated in studies of cancer screening behavior for several cancers, specifically colorectal cancer, breast cancer, and cervical cancer. The impact of a physician's recommendation was first demonstrated in research on breast and cervical cancer. A physician's recommendation to a woman has been found to be the single most important motivator for mammography and for Pap smear screening.^{41 42 43 44 45 46} In fact, lack of a doctor's recommendation is actually experienced as a barrier to screening.

Recent studies have also documented the impact of a doctor's recommendation on screening for colorectal cancer.^{48 49 50 51} For older adults, lack of recommendation from a physician is a significant reason for not having a CRC screening test.⁵² Having seen a physician within the prior year is one of the strongest predictors of receipt of CRC screening.⁵³ Having ever received a doctor's recommendation for a flexible sigmoidoscopy makes it more likely that an individual will be screened for CRC.⁵⁴ Receiving stool blood test cards from a doctor increases the likelihood that an individual will be screened for CRC. More preventive health visits also increase the likelihood of screening.⁵⁵



STATE SURVEY EVIDENCE

In one state telephone survey of people age 50 years and older, 90 percent of those who reported that their health provider recommended testing had been screened for CRC, compared to only 17 percent of those who reported that they had not received this recommendation.⁵⁶ And 71 percent of those whose provider recommended testing thought screening was important, compared to only 48 percent of those who had not received a recommendation.

In another statewide survey in a second state, 67 percent of the population who reported that they received a recommendation from their physician for CRC screening had completed stool blood test in the prior year, compared to 5 percent of those who reported they received no recommendation.⁵⁷ Similarly, 85 percent of those who reported that they received a recommendation for CRC screening by endoscopy completed it, compared to 25 percent of those who reported they received no such recommendation.⁵⁸

When those who had not had a flexible sigmoidoscopy or a colonoscopy in the prior five years were asked why, the most frequent explanation chosen (23 percent) was that the “doctor didn’t order it or didn’t say they needed it.” Other reasons included that they had “never thought about it or didn’t know they needed it” or that they didn’t have any problems. When those who had not had a stool blood test in the prior year were asked why, the most frequent explanation chosen (29 percent) was that the “doctor didn’t order it or didn’t say they needed it.” On an earlier Maryland Survey in 2002, only 5 percent of the population selected that the endoscopy was “too painful, unpleasant, or embarrassing” as the reason for not having had a test. Other frequent explanations included that they had “never thought about it or didn’t know they needed it” or that “they didn’t have any problems.”

ALL ELIGIBLE PATIENTS NEED A RECOMMENDATION

While most primary physicians recommend CRC screening to their age- and risk- appropriate patients, few practitioners have a system in place to make sure they recommend it to all of their patients who are eligible. Only a system with reproducible procedures will do this effectively. There are many options. The next sections of this guide provide a roadmap and the tools with which you can create such a system for your practice. It should be kept in mind that, without a functional system in place, even physicians who have been extraordinarily effective in getting their patients screened will find it difficult to sustain, demonstrate, or prove their achievement.

AN OPPORTUNISTIC APPROACH

While many physicians prefer to give recommendations for cancer screening at the time of the annual checkup, this approach will not reach all the patients in the practice who need screening. An alternate approach is to recommend screening at all types of visits. This is generally referred to as an “opportunistic approach” or a “global approach.” The opportunistic approach means recommending screening far more frequently. Given the many demands on a practitioner’s time, this approach will only work when office systems function automatically to get a recommendation to every appropriate patient – even if the clinician is not immediately involved. One caveat is that the opportunistic approach does not justify conducting a single sample stool blood test in the office as a screening test. This practice of the stool blood test in the office is not effective.¹

USUAL SOURCE OF CARE AND HEALTH CARE DISPARITIES

The positive effect of a doctor's advice is limited to those who have regular access to a doctor.⁵⁹ Having a regular source of care has traditionally been used as an indicator of access to care.^{60 61 62} Disparities associated with race and ethnicity are predictors of a regular source of care.^{63 64}

Using data from the nationally representative 1996 Medical Expenditure Panel Survey (MEPS), analysts from the Agency for Healthcare Research and Quality reported the racial breakdown of those with no usual source of care as follows: 29.6 percent of Hispanics, 20.2 percent of Blacks, 20.7 percent of Asians, and 15.2 percent of Whites.⁶⁵ Consistent with this finding, Hispanic and non-White minorities are the most likely not to receive preventive services.⁶⁶ The importance of a regular source of care was more recently underscored by findings from the 2001 California Health Interview Survey. Among interviewees with private health insurance coverage, 53 percent with a regular source of care had had CRC testing, compared to 23 percent of similarly insured individuals with no regular place of care.⁶⁷

Health insurance is also predictive of CRC screening status. Data from the 2002-03 Health Information National Trends Survey, administered by the National Cancer Institute, showed that the uninsured were 64 percent less likely to receive CRC screening than the insured. Uninsured individuals who lacked a provider recommendation were 98.5 percent less likely to be screened.⁶⁸ Income is documented as another significant factor.⁶⁹

ADDRESSING DISPARITIES

The problem of health care disparities extends beyond the absence of a usual source of care or health insurance. Black and Hispanic women have been less likely to report having received a recommendation by their physician to get a mammogram.^{79 80} Certain people are also less likely to get a doctor's recommendation for screening, especially those people with less education and income – or older age.⁸¹ Demographic factors, such as race, income level, education and age, have been found to influence the amount of time physicians spend in communication with their patients.⁸² It comes as no surprise that minority race, limited education, and low family income are related to poor indices of health.

Disparities in the incidence and mortality from CRC are evident. But when recommendations are offered and access barriers removed, screening rates for those with less education and income rise substantially.^{75 76} Even though cost should not be a major barrier to screening with stool blood testing because a stool blood test costs little and is not difficult to perform, only testing that is backed up by diagnostic colonoscopy will prevent CRC and reduce mortality.⁷⁷



Fecal occult blood testing on an annual basis, backed up by diagnostic colonoscopy, has sufficient sensitivity to reduce CRC mortality by one-third over 13 years.⁷⁸ Access to colonoscopy may be difficult and requires a source of medical specialty services and medical insurance. More efforts are needed to expand access, raise insurance rates, and secure the full range of screening options for the entire eligible population. In 2007, legislation was introduced into Congress (HR 1738) that would create a national system of subsidized colorectal screening programs at the state and local level for low-income, uninsured individuals. If this legislation should pass, access to colonoscopy will improve.

COMPLETE DIAGNOSTIC EVALUATION

Many patients who have been tested and have screened positive fail to get a recommendation for the colonoscopy that should be performed subsequently.^{79 80} Even those who get the recommendation may not complete the evaluation. In 1993, only 38 percent of those who contacted their physician after a positive FOBT received a recommendation for a complete diagnostic evaluation in a health maintenance organization.⁸¹ While recent studies in a similar setting demonstrate that a larger percent (as many as 60 percent) are now likely to get the recommendation for a work-up, the majority may fail to complete the workup.⁸² When patients lack health insurance, this problem is undoubtedly worse.

One positive stool blood test should always be enough reason to refer for a complete diagnostic examination with colonoscopy. **A positive stool blood test should not be repeated.** The lack of dietary compliance is no exception to this rule. Similarly, one adenomatous polyp or polyp that was not biopsied on flexible sigmoidoscopy (FS) or polyps seen on barium enema or CT colonography should always be enough reason to refer for a complete diagnostic evaluation. Follow up of a positive screen with a colonoscopy is a risk management issue and is also an important measure of quality of care.

A systematic approach that ensures a colonoscopy for patients who have positive findings on any non-colonoscopy screening test is imperative. Tools have been developed and tested for the purpose of ensuring follow-through. One tool is presented on the next page. It is a template for a systematic approach. The checklist approach has been found useful in improving the quality of practice.⁸³

Follow-through rates can be calculated easily by summing the results from the individual sheets. The sheets may be placed on the individual charts and stored in a pending file for CRC screening. The calculation of rates may be utilized as the basis for providing feedback and tracking improvement. This type of assessment may also be achieved by using electronic medical records.

Checklist for Follow Through: From Screening to Complete Diagnostic Evaluation ^{§§}			
gFOBT/FIT Screening		FS, DCBE, CTC, or CS Screening (circle one)	
	date		date
1. gFOBT/FIT given	_____	1. FS/DCBE/CTC/CS ordered (circle)	_____
2. Provider notified re: gFOBT/FIT result	_____	2. FS/DCBE/CTC/CS scheduled	_____
3. Non-responder contacted	_____	3. No-show identified	_____
4. If gFOBT/FIT +, referral given	_____	4. Rescheduled	_____
5. Colonoscopy scheduled	_____	5. Results reviewed	_____
6. Show/No-show	_____	6. Results on chart for endoscopy/pathology	_____
7. No-show rescheduled	_____	7. If FS/DCBE/CTC +, referral for colonoscopy	_____
8. Results reviewed	_____	8. Show/No-show	_____
9. Results on chart	_____	9. No-show rescheduled	_____
		10. Results reviewed for endoscopy/pathology	_____
		11. Results on chart	_____

Source: RE Myers

§§ Abbreviations used in this checklist include gFOBT for fecal occult blood test, FIT for immunochemical-based fecal occult blood test, CTC for computerized tomographic colonography, DCBE for double contract barium enema, FS for flexible sigmoidoscopy, and CS for colonoscopy. Stool blood test screening should be done at home with two samples taken from each of two or three consecutive stools (depending on the type of test used). All discussion of stool blood tests in this guide refers to either guaiac-based tests or immunochemical tests.

Essential #2: An Office Policy

A. An Office Policy Is Vital

B. Fit the Policy to Your Practice

- Determine Individual Risk Level
- Identify Local Medical Resources
- Assess Insurance Coverage
- Consider Patient Preference
- Attend to Office Implementation



Essential #2: An Office Policy

*“Almost all primary care physicians recommend screening for CRC. Few have systems in place to assure that all eligible patients get the recommendation.”****

– Richard Wender, MD, 2003

A. An Office Policy Is Vital

A physician’s recommendation is the most consistently influential determinant of a patient’s decision to be screened for colorectal cancer. Clinicians should feel confident about this consequential and comforting reality, but it will require more than confidence to ensure that all eligible patients leave their visit with the vital recommendation for screening. Only a systematic approach will achieve this goal.

Office policies are the foundation of a systematic approach. They are the precondition for a reliable and predictable office practice. Effective office practices are built on clear policies, well-designed systems, effective communications, and quality reviews. These pillars of effectual practice do not have to be identically constructed in every practice, but they should be present in some form.

B. Fit the Policy to Your Practice

Your office policy on screening for colorectal cancer must be constructed to address different risk levels. It must also incorporate the realities of local medical practice, insurance coverage, and patient preference. It must be understood and implemented by the office staff.

Since national screening guidelines offer a menu of options, there is room for every physician to design a practice policy that fits the practice. The following should be considered in constructing the policy:

- Individual risk level
- Local medical resources
- Insurance coverage
- Patient preference

While office policy should adhere to national guidelines, it must be appropriate to a specific setting. Every practice exists in a local milieu where there are definable medical resources and standards of care. Preferences and trends also vary from community to community. The screening policy must reflect local resources, standards, and trends. No single policy will fit all practices.

*** Richard Wender, MD, FAAFP, is Chair of the Professional Practices Task Force of the National Colorectal Cancer Roundtable and past President of the American Cancer Society

All national guidelines offer more than one screening option, and nearly all areas of the United States have more than one modality available. This surfeit of options creates a complexity that may actually be a barrier to screening. Some may feel that the existence of options reflects a lack of hard evidence on screening. This is not the case. Thus, a policy on CRC screening is even more important.

While many providers are somewhat confused by the options, their patients are likely to be more confused. All practices should reduce this confusion with a screening policy to strengthen resolve and create the basis for rational office management. A policy may also help address unrecognized and unintended disparities in office practice. Only “not screening is not an option.”

Individual Risk Based on Family History of CRC^{†††}	
Familial Setting	Approximate Lifetime Risk of Colon Cancer
No history of colorectal cancer or adenoma (General population in the United States)	6%
One second- or third-degree relative with CRC	About a 1.5-fold increase
One first-degree relative with an adenomatous polyp	About a 2-fold increase
One first-degree relative with colon cancer*	2-to-3-fold increase
Two second-degree relatives with colon cancer	About a 2-to-3-fold increase
Two first-degree relatives with colon cancer*	3-to-4-fold increase
First-degree relative with CRC diagnosed at < 50 years	3-to-4-fold increase

* First-degree relatives include parents, siblings, and children.
 Second-degree relatives include grandparents, aunts, and uncles.
 Third-degree relatives include great-grandparents and cousins.

††† Adapted from Winawer SJ, et.al., 2003.

Determine Individual Risk Level

An office policy must provide guidance on handling patients at differing levels of risk. In fact, risk stratification is the first step when a clinician considers screening options for any specific patient. (See Appendix A.) Risk stratification is addressed in all the national screening guidelines and is the essential core of the clinician's assessment leading to sound advice. Refer to the table of individual risk based on family history of CRC to obtain the lifetime odds of developing colorectal cancer.

The generally acknowledged risk levels are “average,” “increased,” or “high,” and a specific designation for each individual rests on personal history and family history. Your office policy should specify your recommendation for individuals at “average” risk. Individuals at “increased” risk merit a colonoscopy. Those who are at “high” risk, which is a restricted but frequently missed category, need frequent surveillance starting with early referral for specialized care.

It is preferable for risk assessment to occur at the time of initial entry to the practice and become part of the chart. The sooner risk status is recorded in the chart, the sooner it is accessible to the practice. It should be remembered that, since risk changes over time, an assessment should be repeated with regularity.⁸⁶ Annual risk assessment is a workable approach.

AVERAGE RISK

An average-risk individual has no first-degree relatives with a history of either colorectal cancer or adenomatous polyps and has not experienced these problems personally. The average-risk adult age 50 and over has several recommended options for screening.^{†††} He or she may be encouraged to utilize any of the options available in the community. The screening options presented in the 2008 joint American Cancer Society/US Multi-Society Task Force/American College of Radiology (ACS/USMSTF/ACR) guidelines include:

Tests That Detect Adenomatous Polyps and Cancer

- Flexible sigmoidoscopy (FS) every 5 years, or
- Colonoscopy (CS) every 10 years, or
- Double-contrast barium enema (DCBE) every 5 years, or
- CT colonography (CTC) every 5 years

Tests That Primarily Detect Cancer

- Annual guaiac-based fecal occult blood test (gFOBT)^{§§§} with high test sensitivity for cancer, or
- Annual fecal immunochemical test (FIT)^{§§§} with high test sensitivity for cancer, or
- Stool DNA test (sDNA), with high sensitivity for cancer, interval uncertain

††† See Appendix A for current screening guidelines.

§§§ The multiple stool take-home test should be used. One test done by the doctor in the office is not adequate for testing

The ACS/USMSTF/ACR expert panel also strongly encouraged that *colon cancer prevention* be the primary goal of CRC screening and recommended that, to this end, structural exams that are designed to detect both early cancer and adenomatous polyps should be the preferred approach to screening if resources are available and patients are willing to undergo an invasive test.

Informed decision-making should characterize the choice of screening option. Of course, patients cannot make informed decisions unless they have been informed. Shared decision-making, carried out by patient and clinician together, is especially worthwhile and is preferred by many patients. In general, patients are guided by the option their doctors recommend. But, in reality, patient preference is the final arbiter of the available options. Information can help the patient pick the option that confers the best odds of prevention.

INCREASED RISK

An individual at increased risk has a personal or family history of colorectal cancer or adenomatous polyps but does not have one of the high-risk familial syndromes. The individual who is at increased risk doesn't need, and is generally not given, options. This individual should be encouraged to have a colonoscopy. This situation is not rare. A significant percentage of the general population (18 to 20 percent) is at increased risk. Increased risk is common because age is a defining risk factor for CRC and the prevalence of adenomatous polyps rises as people get older. It is 20 to 25 percent by age 50, and 50 percent by age 75 to 80.^{87 88} While only a limited percentage of adenomatous polyps turn into cancers, these polyps are the precursors of colorectal cancers.

Both personal history and family history are deciding factors in the determination of risk status. Increased risk may be caused by a personal history of adenomatous polyps or colorectal cancer, or a family history of adenomatous polyps or colorectal cancer. A family history of adenomas or CRC under age 50 should lead to suspicion of a high-risk situation and further evaluation. The individual with a personal history of CRC or adenomatous polyps requires regular surveillance, not screening. Surveillance recommendations for such individuals were recently updated (Appendix A).

The risk factor of a family history of adenoma is frequently overlooked. More attention needs to be given to this risk factor. A family history of an adenomatous polyp in a first-degree relative under age 60 should lead to screening starting at age 40 or earlier. (See the chart "Common Sense Recommendations at a Glance" in Appendix A.) A family history of a polyp of unknown type should be managed as if it were an adenoma. Another factor of personal history that can raise the risk level is a personal history of chronic inflammatory bowel disease (ulcerative colitis or Crohn's disease). Risk is regarded as increased when there is a personal history of these diseases for more than eight years.

Individuals at increased risk should begin screening earlier (age 40 or younger), be screened more frequently, and use the most sensitive screening modality available. At this time, colonoscopy is both the most sensitive and the most specific screening modality available. It is worth remembering that only the absence of risk factors confers a state of average risk. New evidence regarding the most common location for adenomatous polyps has raised questions about an imperative for colonoscopy screening in populations that have a tendency to exhibit polyps in the proximal colon.

HIGH RISK

High-risk patients are those with hereditary colorectal cancer syndromes. These individuals need specialty attention, and they need it early in life. CRC can be prevented in most cases with proper syndrome recognition. The three hereditary syndromes are hereditary nonpolyposis colorectal cancer (HNPCC), familial adenomatous polyposis (FAP), and attenuated FAP (AFAP).

Hereditary colorectal cancer syndromes are under-diagnosed. Identifying individuals at risk for these syndromes is important because their cancer risk far exceeds that of the general population. Identification of those at high risk can be challenging. A family history of an adenomatous polyp or a colorectal cancer in a relative under age 50 may be an indication of a high-risk hereditary syndrome. So might be a history of two relatives with CRC. Early identification of these syndromes is key so that surveillance may begin in the early 20s, or even in childhood.

Patients with HNPCC have an 80 percent lifetime risk for developing CRC. Colonoscopy surveillance should begin for HNPCC between the ages of 20 and 25 with an interval of one to two years. Patients with FAP often present in childhood with hundreds to thousands of colonic adenomatous polyps. The risk for CRC in these patients is nearly 100 percent if the colon is not removed. Gastric, duodenal, and small bowel polyps also occur, but the risk of cancer is less in these areas. Annual surveillance is recommended for patients at-risk for FAP, beginning at age 10 to 12.

Another form of FAP, called Attenuated FAP (AFAP), is a milder version of the disease. The number of cumulative colon adenomas most often varies between 10 and 100, and the onset of polyps and cancer is later than in FAP. Annual colonoscopy is recommended for patients at risk for AFAP, beginning in the late teens to early 20s.

A personal or family history suggestive of one of these syndromes can be evaluated further by genetic testing. The results of this testing can serve to guide management of both patients and their family members. If a disease-causing mutation is identified in a family, mutation-positive individuals can be offered intensive cancer surveillance or prophylactic surgery. Alternatively, those individuals who do not carry the disease-causing mutation are not at increased risk for cancer and can follow general population screening guidelines.

If you suspect a hereditary colorectal cancer syndrome, you may choose to refer your patient to a center that specializes in cancer genetics. You can locate a cancer genetic counselor in your local area by visiting www.nsgc.org. The most common hereditary colorectal cancer syndromes are HNPCC, FAP, and AFAP. Hallmarks of these syndromes include a personal or family history of:

- CRC or adenomas diagnosed prior to age 50
- Endometrial cancer diagnosed prior to age 50
- Two or more HNPCC-related tumors in a family or in an individual****
- Multiple colorectal adenomas (usually 10 or more) diagnosed over one or more exams

**** HNPCC-related tumors include colorectal, endometrial, stomach, ovarian, pancreas, ureter and renal pelvis, biliary tract, brain (most often glioblastoma), small bowel, pancreatic, sebaceous gland adenomas and keratoacanthomas (Umar).

RISK AWARENESS

A patient's awareness of his or her personal risk level is very important. Establishing this awareness is paramount. Since family history is so relevant, awareness of the health status of family members is needed and should be encouraged. The first-degree family members of patients who are discovered to be at increased risk are faced with the reality of a change in their risk status. It is advisable to give impetus to a chain of communication so that related family members will learn that their risk level has been altered.

The clinician or staff should instruct the patient to notify his or her first-degree relatives, and this instruction should be documented in the chart. A model letter can be provided to the patient by the practice to facilitate the notification process.

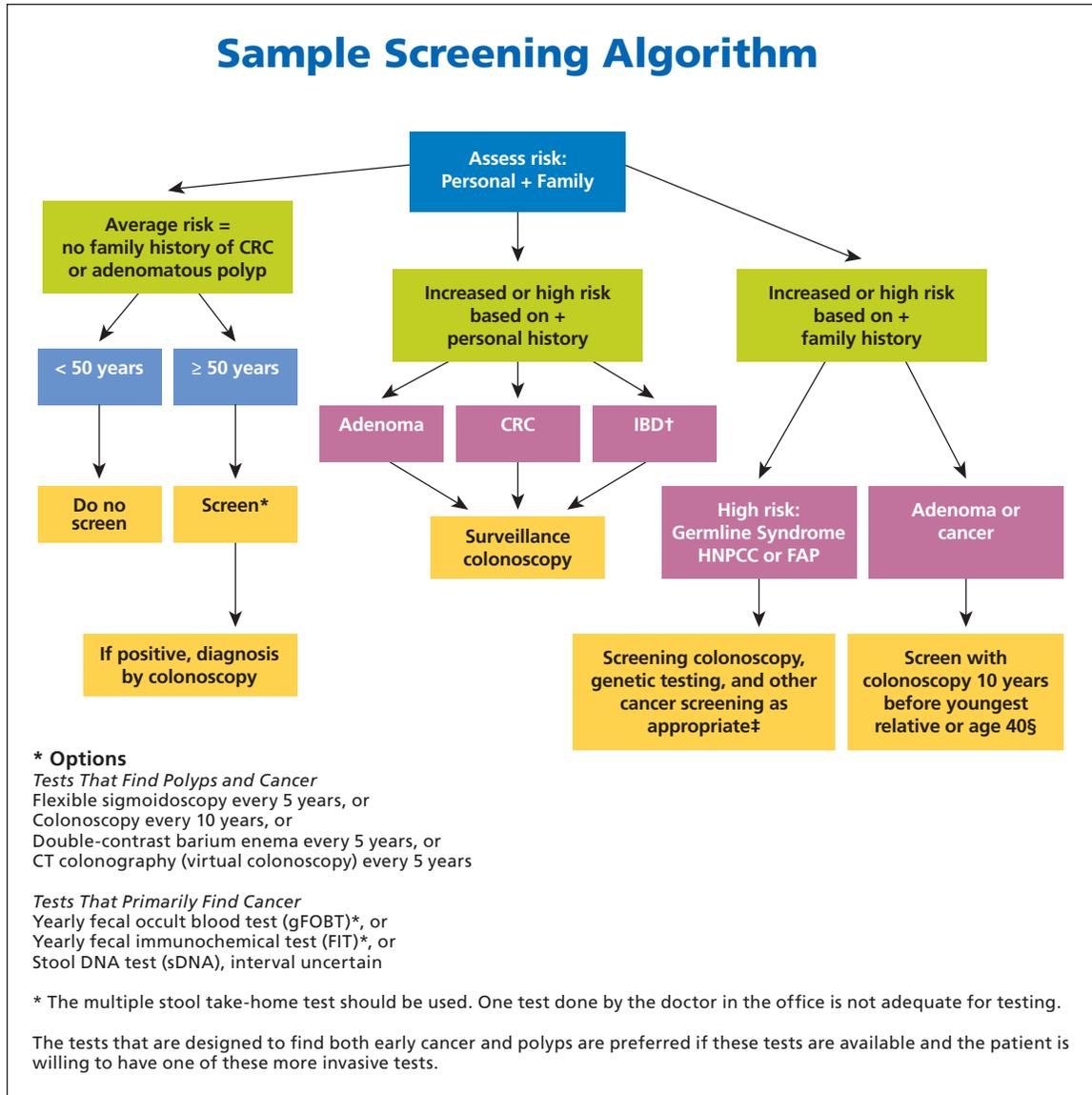
Standardized questions that assist in the determination are found below. When risk level is assessed, the patient should be informed, and notation should be made in the chart. A standard mechanism for determining risk level and making the patient aware of it should be part of the office policy and operating procedure.

Questions to Determine Risk

- Have you or any members of your family had colorectal cancer?
- Have you or any members of your family had an adenomatous polyp?
- Has any member of your family had a CRC or adenomatous polyp when they were under the age of 50? (If yes, consider a hereditary syndrome.)
- Do you have a history of Crohn's disease or ulcerative colitis (more than eight years)?
- Do you or any members of your family have a history of cancer of the endometrium, small bowel, ureter, or renal pelvis? (If yes, consider hereditary non-polyposis colorectal cancer (HNPCC). Check the criteria.)

UTILIZE AN ALGORITHM

A policy that incorporates the considerations of risk level, insurance coverage, local medical resources, and patient preference will lead to the best screening choice for each patient. An algorithm that incorporates these considerations will be the easiest way to conceptualize and remember the office policy. It may also be the easiest way to communicate the policy to the office staff who will help implement the policy. Refer to the sample algorithm that accompanies this description.



The algorithm shown includes all the recommended options for the average-risk patient and could be a starter policy for your practice. Average-risk patients will generally have at least two options available. In many locations, they will have all options available. Because there are multiple options for the average-risk individual, provider and patient preferences will interact to produce the chosen modality, unless the office policy limits the recommendations for specific reasons. Patients at increased risk should be given a single recommendation only, for colonoscopy.

Identify Local Medical Resources

Local medical resources will determine what options are available to the patients in your community. Every physician should be aware of the medical resources in their community. A suburban area with a physician surplus will call for a different policy than a rural area or inner city area with a shortage of health personnel. Recommendations lacking realism will guarantee failure.

A stool blood test performed at home requires no facilities and no personnel beyond the patient and staff of the office practice. Stool cards can be dispensed in the office and returned by mail. The other choices for screening, either colonoscopy (CS), flexible sigmoidoscopy (FS), CT colonography (CTC), or double-contrast barium enema (DCBE) require specialized training, facilities, and equipment.

A positive screen requires complete diagnostic examination with colonoscopy. A recent analysis of the national capacity for screening conducted by the CDC concluded that there is sufficient capacity to screen the entire eligible population of the nation within one year, using stool blood testing, backed up by colonoscopy for those who screen positive.⁹²

LOCAL CAPACITY FOR ENDOSCOPIC AND RADIOLOGIC SCREENING

Access to colonoscopy (CS) varies by region of the country. The capacity for CS depends on the supply of physicians and nurses, the number of facilities, insurance coverage, regulatory requirements, and other factors. The distribution of gastroenterologists, the facilities for their procedures (free-standing vs. hospital-based), and the capacities of both, are variable. A surplus characterizes some regions; shortage characterizes others.

Hospital-based CS is typically more costly than ambulatory CS. With an ample supply of endoscopists and low-cost ambulatory endoscopy suites, CSs are done efficiently at limited cost and high volume. Where there is shortage of endoscopists and low-cost ambulatory facilities, the wait for CS may be long, the inconvenience large, and the cost high.

CS is not the only procedure with variable access. Access to flexible sigmoidoscopy (FS) also varies greatly. FS is performed by primary care physicians, gastroenterologists (GEs), general surgeons, and, in some settings, by nurse-endoscopists, nurse practitioners, and physicians' assistants. FS is

done easily in the procedure room of a typical practice with no assistance from an anesthesiologist. Yet, paradoxically, it is more difficult to get an FS than a CS in many localities. There has been a substantial falloff in office procedures performed by primary care physicians.⁹³ Financial pressures and a marked drop in reimbursement rates for FS have reduced the incentive to provide this procedure. To complicate matters, patients referred to a gastroenterologist for a flexible sigmoidoscopy may be advised to have a colonoscopy instead because it is the most sensitive procedure. Conflicting recommendations cause confusion, breed lack of confidence, and will deter patients from choosing FS.

Computed tomographic colonography (CTC), sometimes called “virtual colonoscopy,” was recently added to the menu of screening options recommended by major medical and public health organizations. CTC is a radiologic imaging examination that uses computed tomography (CT) to acquire images of the entire colon and rectum. Advanced 2-D and 3-D image display techniques are then used by radiologists to look for polyps, cancers or other abnormalities. CTC is an “image-only” test, and patients with polyps of significant size or other abnormalities detected on CTC will require colonoscopy for evaluation and polypectomy. Like colonoscopy, CTC requires a full bowel preparation and restricted diet. In some settings, same-day polypectomy can be offered without the need for additional preparation; however, this requires coordination between medical specialists (radiologists and endoscopists) and facilities (radiology departments and endoscopy suites). If such coordination is not in place, patients will be scheduled for colonoscopy at a future time and will be required to undergo a second bowel prep. Access to CTC is variable across the country, with a higher concentration in major urban areas at the present time. This is in part due to technical requirements and associated costs; specialized CT software is required to perform the studies, and radiologists must receive special training if consistent and reliable interpretation of CTC images is to be achieved. In addition, most insurance plans do not currently pay for screening CT colonography, although 47 states now offer Medicare reimbursement for diagnostic CTC for certain clinical indications (typically limited to patients who have had an incomplete optical colonoscopy).

A double-contrast barium enema (DCBE) is another accepted screening test for CRC. In the past few years, the number of DCBE examinations done for screening has dropped so much that high-quality screening DCBE may now be hard to access in many communities. At present, DCBE remains an option for direct imaging of the entire colon where colonoscopy and CTC resources are limited, or colonoscopy is contraindicated or less likely to be successful (e.g., prior incomplete colonoscopy, prior pelvic surgery, etc.), or based on factors such as personal preference, cost, and the local availability of trained radiologists able to offer a high-quality examination.

The crafting of each office policy must be based on an assessment of the ease of access and quality of the options in the community.

Assess Insurance Coverage

Health insurance coverage for CRC screening is not uniform across all plans, nor are the options affirmed by the guidelines covered by all plans.⁹⁴ Even when all the recommended options are covered, deductibles and copays are typical. The deductibles, in particular, are large enough to be prohibitive for some patients.

As of 2008, only 26 states plus the District of Columbia required insurance coverage for all CRC screening options. Nearly half of all states still have no laws that mandate coverage.⁹⁵ Furthermore, some health insurance plans called “self-insured” or “self-funded” plans are regulated only by the federal government, not state governments. Thus, even when states have passed these laws, there are many individuals who will not be covered by these consumer protections. Physicians should be aware of the legal milieu for health insurance in their states and the impact on their patients.

Doctors who practice in states without colorectal cancer screening insurance mandates will have insured patients who are forced to pay out-of-pocket for the entire cost of some procedures, and doctors in states with CRC screening mandates still will have patients who do not benefit from the state law. Every physician knows these factors can be a serious impediment to a patient’s care. Insurance coverage has been demonstrated to be a predictor of compliance with cancer screening guidelines. The largest source of coverage for seniors, the Medicare program, began reimbursing for colonoscopy performed as a screening procedure in 2001. Before 2001, only diagnostic colonoscopy was covered by Medicare; screening colonoscopy was not. Today, Medicare pays for screening colonoscopy and most other screening options (with the exception of CT colonography and stool DNA testing, which were only recently added to the consensus screening recommendations and as of this writing, are not yet covered by Medicare). Some providers may remain unaware of the current Medicare policy.

While Medicare policy improved, the copay for screening colonoscopy may still prove to be a barrier for some patients. In addition, reimbursement obstacles confront Medicaid patients. Low-income patients on Medicaid are limited in their options because colonoscopy requires specialty care that is hard to access or unavailable for Medicaid patients in many areas. Private endoscopy suites may be unavailable with Medicaid coverage. Fortunately, stool blood cards can be accessed by many patients in many locations, including pharmacies, at a limited and reasonable price.

States with Legislation on Screening for Colorectal and Other Cancers, 2008			
Type of Cancer	Require Coverage	Must Offer Coverage	Not a Requirement
Colorectal	26 plus D.C.	3	21
Breast	46 plus D.C.	3	1
Prostate	30 plus D.C.	1	19
Cervical	24 plus D.C.	0	26

* 2006 data

Source: Kaiser Family Foundation / statehealthfacts.org and ACS CAN data tracking

Patients with no insurance coverage are also limited in their options. While stool blood testing should be available at a modest price, the other more expensive options – flexible sigmoidoscopy, colonoscopy, CT colonography, barium enema and stool DNA testing – must also be paid out of pocket. While some individuals will be able to afford this testing, most probably will not. Some areas have public programs that are making CRC screening available through widespread distribution of stool blood tests and attendant diagnostic workup where indicated. Opportunities for such free testing, or testing at nominal cost, are generally announced by the local health department. Some states, such as New York, Maryland, Delaware, and New Jersey, have screening programs in place. Other states have started demonstration programs with help from the CDC. Federal legislation may soon provide additional funding to support state and local screening programs for the uninsured.

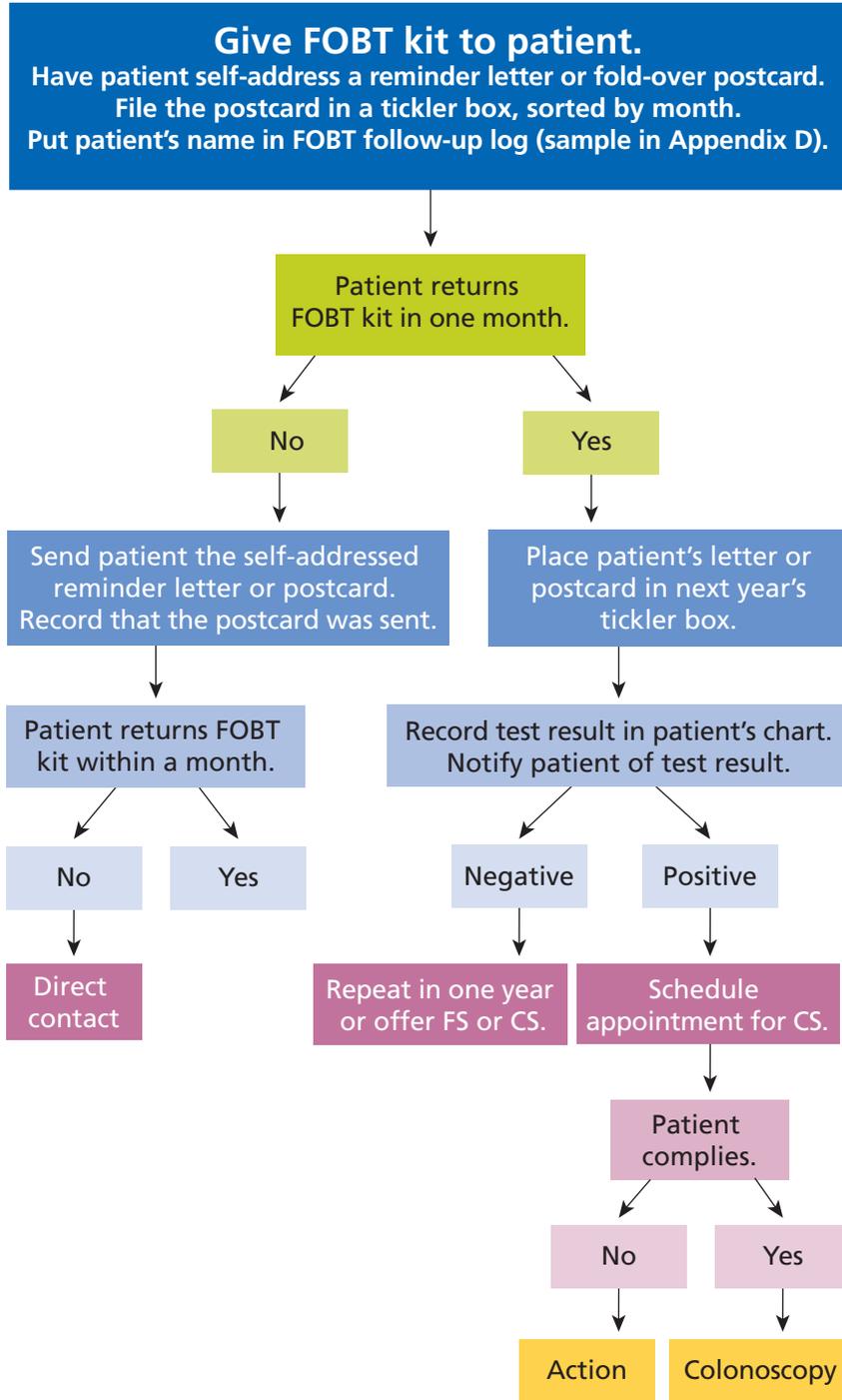
Consider Patient Preference

*“All of us need to embrace and celebrate every successful screen ...
The best screen is the one you do.”
– Sidney Winawer, MD*

The written policy should spell out how the patient will be involved in the decision-making process. It should allow for patient preference within the confines of the realistic options for your locale and the realities of insurance coverage. The simplicity, convenience, privacy, and low cost of a home stool test for occult blood is preferred by some patients, even though it needs to be done annually to reap the benefits. The privacy and relative convenience offered by stool DNA testing may also appeal to some patients; however, the high one-time cost of this test, as well as uncertainty regarding the frequency at which the test should be repeated, may pose barriers to its use. The less frequent, five-year interval and colon visualization offered by a flexible sigmoidoscopy (FS), CT colonography (CTC) and double-contrast barium enema (DCBE) may be more appealing to some, but some of these tests may be difficult to obtain in some regions of the country. Alternatively, the infrequent 10-year interval, and maximal sensitivity and specificity of a screening colonoscopy (CS), has the most appeal to others, but may be difficult to schedule or less available; it also requires a day off from work. The combination of stool blood tests and FS has a higher sensitivity than either test alone and is easily available in some locales. In expert settings, CTC accuracy at detection of cancer and large polyps approaches that of colonoscopy, but geographic and financial barriers may currently limit access to this technology. Another accepted screening option is a double-contrast barium enema every five years, though it is offered infrequently in most settings.

After the pros and cons are presented, a process of shared decision-making involving clinician and patient should revolve around provider advice, local medical resources, and patient health insurance coverage. The provider’s guidance on the best choice for each patient should be offered after ascertaining the patient’s preferences and/or constraints. The best option is the one that will be completed in each setting for each patient.

Sample FOBT Policy in Flow Chart Form^{###}



From Seabury J. Tools and Strategies to Increase Colorectal Cancer Screening Rates: A Practical Guide for Health Plans. Harvard Center for Prevention and American Cancer Society, 2004. Approach reprinted from procedures of Dartmouth Medical School, 2003.

Attend to Office Implementation

To actualize an office policy, you must commit to delivering it and engage your staff in the endeavor.⁹⁷ Once the policy has been defined, it needs to be depicted, presented, and posted. The office staff must be formally introduced to the policy and have an opportunity to ask questions about its implementation. The presentation of the policy is central to its implementation.⁹⁸

Every practice should have its own screening policy. Though five effective screening options are recommended, the capacity to deliver each varies with the local environment for practice, individual coverage, and state insurance regulations. Given the limitations in personnel and facilities that exist in some communities, you may recommend a scaled-down menu of options or only a single option. Stool blood testing may be the only realistic option, or stool blood testing and colonoscopy may be the only options available. Your practice policy does not need to include the entire menu of options. Even policies that incorporate all options are often presented with a bias toward a particular option. Whatever the policy, it must be disseminated within the office.

The policy on screening should be conveyed in a manner that makes it clear to staff members, old and new. Clarity alone, however, is only half the battle. Staff must know how to implement the policy. Some of the best tools for this purpose are the algorithm and accompanying procedures. An algorithm is one of the sharpest ways to delineate, visualize, and communicate a policy. Step-by-step procedures inform the staff, facilitating its implementation. An algorithm and step-by-step procedures will codify expectations for the provider and office staff. These belong in the manual that holds the policies and procedures for the practice.

Easily accessible reminders can be posted on bulletin boards. They provide a reference point to be revisited when shortcuts threaten to derail the original intentions. Refer to the sample stool blood test policy in this guide in the form of a flow chart or algorithm. This could be posted in your practice.

A sample script can also be helpful to staff.

Sample Script

“I would like you to be screened for CRC. You have a number of choices:”

- 1) You may choose a structural exam, which is a type of test that is more likely to prevent cancer by finding noncancerous polyps. By removing these polyps we can decrease your chance of developing cancer.
 - a) Tests in this category include flexible sigmoidoscopy, double-contrast barium enema, and computerized tomographic colonography, also known as virtual colonoscopy.
 - b) Colonoscopy is also a structural exam. You may go directly to colonoscopy for screening. Also be aware that you should always have a colonoscopy if you have an abnormal finding on any of the other screening tests.
- 2) You can choose a simpler, take-home stool test. These tests are mainly effective at finding cancer early. They may also find some polyps, but are less likely to find polyps and lead to cancer prevention than are the structural exams.
 - a) Tests in this category include stool tests that look for blood and stool DNA tests.

Essential #3: An Office Reminder System

A. Options For Patients: Education and Cues to Action

B. Options For Physicians

- Chart Prompts
- Audits and Feedback
- Ticklers and Logs
- Staff Assignments



Essential #3: An Office Reminder System

Reminder systems work.^{99 100 101} Office practice will be more effective with the use of reminder systems, which are evidence-based and demonstrated to be effective. These systems can be directed at providers or patients or both. Provider-directed and patient-directed systems contribute to improved screening rates.

The evidence for reminders directed at patients is strong. Proven results have come with screening for breast cancer and colorectal cancer.^{102 103} The types of patient reminders and the evidence are discussed below. The evidence for reminder systems directed at providers is also clear. They have been demonstrated to be of benefit in many studies. Several kinds of reminder systems for physicians are presented below. They are not complex. The Appendix (Tools Section) has examples of physician reminders in the form of preventive services schedules, and patient reminders in the form of letters, postcards, and telephone scripts.

A. Options for Patients: Education and Cues to Action

There are two types of patient reminders, those that focus on action, called “cues to action,” and those that educate by providing information. Cues to action are straightforward; they are reminder postcards, letters, prescriptions, phone calls, etc. They encourage people to take action. Education, on the other hand, is more complex and can be in two forms, a generic form that presents relevant information in no particular format or theory-based, which uses specific principals and models. The models facilitate consistency in the delivery of health messages that work to help get patients the screening they need.

A meta-analysis of 43 randomized controlled trials on patient reminders of multiple types that were used to encourage women to get breast cancer screening found that most were effective. The degree of improvement in screening rates from the different reminder types ranged from 13-17.6 percent.¹⁰⁴ Many cues to action had impact, but the most effective types were those delivered actively via conversation with a person, either over the telephone or in person. Education that was based on a model or theory was especially effective and far surpassed the effect of generic education.¹⁰⁵

Cues to action have been shown to be effective with colorectal cancer. Mailed reminders, plus personal phone calls, significantly increased the return of stool blood test cards.¹⁰⁶ Two personal phone calls had more effect than one call. Advance mailing of stool blood test cards with accompanying letters before the appointment increased the rate of CRC screening significantly. The return rate further increased within the full year after the stool blood test card was mailed.¹⁰⁷

What Strategies Directed at Patients Can Achieve. ^{89,90}		
Office Strategies	Screening Rate Improvement	Comment
Patient education based on a communication theory (i.e., health belief model, stages of change model)	24%	Compared to usual care control group
Cues or office stimuli, like prescriptions, telephone reminders, and letters from clinicians	13% ⁹¹ -17.6% ⁹²	Two options work better than one.
Patient education based on a theory and delivered actively, by telephone or in-person	8%	Compared to active controls ^{*****}
Patient education based on a communication theory but not delivered actively	.4%	Compared to active controls
Generic education not based on a communication theory	0%	

Source: Yabroff KR, Mandelblatt JS (1999) (See reference #89) and Legler J, Meissner HI, Coyne C, et. al. (2002) (See reference #90)

Examples of theory-based models of education include the Health Belief Model, Social Cognitive Theory, and Stages of Intention.

^{*****} Active controls receive an alternate and often simpler intervention. Passive controls receive usual care only.

B. Options for Physicians

What Strategies Directed at Providers Can Achieve: ⁹³	
Strategies	Screening Rate Improvement ^{*****}
Use of “behavioral” innovations like reminders or office system prompts	13.2%
Use of “cognitive” approaches to produce feedback to physicians, such as audits, or providing focused education after assessing knowledge	18.6%
Use of “sociologic” strategies to better use nurses or change staff roles	13.1%
Use of a combination of both cognitive and behavioral approaches	21

Source: Yabroff KR, Mandelblatt JS (1999) (See reference #89) ; Mandelblatt JS, Kanetsky PA (1995) (See reference #95)

All provider-focused intervention strategies have been documented to be effective in raising screening rates.¹⁰⁸ As shown in the accompanying chart, intervention strategies of several types have been studied. They are categorized as interventions of behavioral, cognitive, and sociologic types. All types of interventions have proven effective. They all produce improvements in screening rates. However, the narrower and better focused the efforts, the higher the degree of impact. Interventions focused on both patients and providers have not been more effective than interventions that focused on providers alone. In addition, when combined efforts were used at the community level rather than the practice level, the improvement was minimally successful – only 1 percent.

The evidence is strong that the results of efforts to improve screening rates by focusing efforts on physicians will be worth the effort. Strategies that target the provider all have an excellent chance of succeeding. Decisions on approach should depend on resources, feasibility, and cost. This section will present tools to facilitate implementation of these options.

***** All effect sizes are as compared to usual care controls.

Chart Prompts

Problem lists, screening schedules, integrated summaries, and electronic reminders serve as visual reminders or “cues to action.” All clinicians can have their office charts prepared with these elements. Interventions that feature these cues to action have been studied and are found to be effective.

- A problem list on each chart that includes “preventive services” or an equivalent phrase as a separate item is an ongoing cue to action. Patients who are at increased risk for colorectal cancer should have this fact listed as an item on the problem list.^{109 110 111}
- Age-appropriate screening schedules should be easy to find on the chart. These are available from professional, governmental, and insurance-based organizations. They can be downloaded electronically. Several are in Appendix D of this guide.
- Some clinicians tout the usefulness of an integrated summary on the front of the chart to provide a complete overview for each patient that includes cancer screening and preventive services. An integrated summary is available online in a version that can be downloaded.¹¹²
- Electronic medical records can provide integrated summaries and automatic reminders.

Office staff can pull charts ahead of patient visits to identify patients who should be screened. Where screening is indicated or overdue, or the patient is at increased risk, they can use a paper reminder or sticker to flag attention. This adds to efficiency and effectiveness for the provider and has been shown in many studies to improve screening rates.

The same procedures will ensure follow-through for patients who require a complete diagnostic exam with colonoscopy because of a positive screen. Identify the charts of patients who haven’t followed through and flag them for action. While chart review in advance of patient visits can increase effectiveness, regular chart audits are a part of quality assurance. Charts that lack documentation of a recommendation for screening, the results of screening, or a colonoscopy (where screening was positive) can be held aside for follow up. The chart review process should generate reminders that can be pursued immediately.

Clearly, it is also important to increase the knowledge base of the clinicians and staff. All staff should understand the importance of screening and be comfortable with the expected office routine and procedures. However, in the final analysis, there is no substitute for a visual prompt – a paper reminder – in the front of the chart to focus provider attention at the right moment.

ELECTRONIC REMINDER SYSTEMS

Information technology systems that are best suited to office practice are still in a period of rapid development. Electronic medical records (EMRs) offer a faster automated version of reminder and follow-up systems and are in active use by clinicians where they are available.¹¹⁶ Currently, the uptake of EMRs varies greatly around the country – by specialty, region, and practice size. Many office-based practitioners utilize electronic billing and scheduling systems; fewer have electronic medical records (EMR). In the short run, there are electronic tools available for practices that do not yet have full-scale EMRs. One is described in the next section.

Full-scale EMRs will be more and more prevalent over the next decade.^{117 118} The federal government, Medicare-quality organizations, and major professional societies have embarked on programs to help practitioners develop electronic record keeping and management systems. The Veterans Health Administration has made available at low cost its medical record system, which was updated for ambulatory care. The Center for Health Information Technology (CHIT), established by the American Academy of Family Physicians, is currently working with 10 major technology companies to promote and facilitate the use of health information technology by family physicians.^{††††} In the years to come, there should be more EMR systems that meet the needs of primary care practice and facilitate preventive screening.¹¹⁹ Their efforts must conform to four principles: affordability, compatibility with prior and other newer systems, interoperability so that data can be shared between systems, and data stewardship to guarantee privacy and proper use of data. Due to the efforts of the CHIT partnership, the price of such systems should be reduced by 15 to 50 percent.¹²⁰

Ratings of existing EMRs that can help guide physicians who are looking for the best version for their practice have appeared in the literature.

A listing of EMR features is available in the journal *Family Practice Management*.¹²¹ There are also evaluations of EMRs – one is available for free online, another is proprietary. The AC Group report established a rating system that included the Institute of Medicine's requirements for a computerized patient record; it is available online.^{‡‡‡‡} The KLAS report is a proprietary compilation of data gathered from Web sites, health care industry reports, interviews with health care provider executives and managers, and vendor and consultant organizations.^{§§§§} The existence of a reminder system for preventive services should be a criterion for choosing the EMR. Preexisting EMR systems may have upgrades available to add preventive services and reminders.

†††† The partner companies are A4 Health Systems, GE Healthcare, MedPlexus, MedPlus, NextGen, Physician Micro Systems, Inc., SOAPware, SureScripts, WelchAllyn.

‡‡‡‡ 2004 EMR Survey is a white paper done by the AC Group. www.acgroup.org/pages/396843/index.htm. This is the third annual report on electronic medical records and electronic health record applications.

§§§§ Ambulatory EMR Perception Report. January 2004. KLAS Enterprises. www.healthcomputing.com.

ELECTRONIC TRACKING FOR PREVENTIVE SERVICES

There is also easy-to-install, user-friendly software available at a low cost that can be utilized to track preventive screening services. The Patient Electronic Care System (PECSYS) makes it easy to store and retrieve information and to produce lists of age-eligible patients or patients with specific conditions and patients who have had – or have not had – specific screening tests.¹²² The system incorporates automatic reminders. This software is relatively inexpensive. It was developed in conjunction with the community health center program under contract to the Bureau of Primary Care Services in the Health Resources Services Administration of the federal Health and Human Service Department. It may also be used to improve the ease and quality of medical practice. It is especially useful for chronic disease management. It does not currently provide either billing or scheduling capabilities, however.

PECSYS is an improved version of a system that has been in use for several years. It prints out a unique, age-appropriate encounter form for each patient. The encounter can be attached to the chart as the patient comes in. This encounter contains (see page 39) specific information about the patient from prior visits, including summary graphs of key data. It includes reminders in red ink for those preventive tests that are missing. Depending on age, gender, and what diagnoses or conditions have been previously entered for that patient, the appropriate reminders, diagnostic tests, and patient education needs will appear automatically, based on established preprogrammed treatment guidelines.

Another system that operates on similar principles is ClinfoTracker.¹²³ It will prompt only when appropriate. And it integrates clinician input into the prompting process. It was developed with attention to cognitive issues including the need for physicians to focus, prioritize and avoid distraction.

The patient-specific encounter forms of PECSYS and ClinfoTracker already include data from prior visits. PECSYS includes vital signs, diagnoses, medications, lab tests, diagnostic studies, preventive services, immunizations, and referrals for consults and education. It automatically incorporates the last results on one page, so it presents a quick, comprehensive overview. The encounter sheet becomes a flow sheet of high-priority information that would otherwise be time consuming to dig out of the chart. If the office staff prints an encounter for each scheduled patient, this information is available before the encounter begins. For example, the encounter sheet for a man age 50 who has not had CRC screening and who carries the diagnosis of diabetes will have CRC screening appear in red on his encounter sheet. Diabetes-specific lab results like HgbA1c and microalbuminuria will appear on the encounter form in red if they are missing, or they'll appear with the results of the last several tests.

Physicians may type data directly into the system during the patient encounter or write on the encounter form in a space provided for that purpose. The encounter sheet with the physician's current progress note is placed in the chart like any other chart note. While data entries on each patient are necessary to start this system off, data can be entered over a period of time as patients come in – or it can be entered for all charts at once.

ESSENTIAL #3: An Office Reminder System

Once the initial patient data are entered, data entry is limited to new findings, labs, diagnostic tests, and consults as they are completed or as results come in. The time necessary to enter these into the electronic system is little more than the time that would be needed to place them in the chart. Each new patient visit may then be accompanied by a printout of a fresh encounter form that includes the most recent data. A second page can also be printed out automatically with its graphs of the patient's blood pressure measurements, weight, or key lab values as measured over time.

The PECSYS system can operate on a personal computer or a laptop and in a network. It installs a modified version of Sequel for data storage. While the PECSYS software does not currently interface with scheduling or billing, there are new modules under development that should provide this capability.

Encounter Form from Patient Electronic Care System (PECSYS)

The screenshot displays a comprehensive 'Encounter Note' form. At the top, it includes navigation tabs like 'Chart', 'Flow Sheet', 'Planned', 'Clinical', 'Index', 'Custom View', 'Documents', and 'Look'. The main header section contains fields for 'Encounter Date' (11/03/03), 'Provider' (Dr. Mervin), 'Clinic' (My Clinic), 'Next Visit Date', and 'Encounter Type' (Office Visit). Below this, patient demographics are listed: 'Chart #' (C1000), 'Last Name' (Example 7), 'First Name' (July), 'Age' (74), 'DOB' (3/1/29), and 'Sex' (Female). A large table on the left tracks 'Vitals' such as Weight (164.0 to 168.5), Height (49.0), Pulse, Rest Rate, Temp, and Blood Pressure (Systolic/Diastolic) at two different points in time. The central and right portions of the form are organized into several functional areas: 'Medications' (listing drugs like AMF, MON, and ACE inhibitors with checkboxes for 'Add' or 'Discontinue'), 'Other Diagnostic Tests' (listing tests like Hemogram, ECG, and X-ray with checkboxes for 'Add' or 'Discontinue'), 'Consults and Education' (listing various medical consultations with dates and checkboxes), and 'Laboratory Test Results' (a table with columns for Test, Value, Date, and P/R/Ref/Dec, showing results for Glucose, Cholesterol, LDL, HDL, Triglycerides, Potassium, and Creatinine). A 'Reminders' section at the bottom right lists tasks like 'Take Cancer Screening Test' and 'Get Management Goal Set at 1 year'. The form is densely packed with data entry fields, checkboxes, and tables, typical of a clinical information system interface.

ADVANCE PREPARATION WITH THEORY-BASED QUERIES

With or without electronic reminders, considerable time can be saved if office staff anticipate visits by reviewing the charts before the patient arrives or by querying the patients before the clinician encounter.¹²⁴ A brief questionnaire can be provided by the front desk staff, or questions may be added to the office's current list of questions asked by the nurse or medical assistant in the exam room.¹²⁵ The questions should determine the patient's risk level and prior screening history.

This information provides an excellent opportunity to define the CRC decision stage of that patient, as described below, so that a theory-based education effort can ensue. As described under the section on patient reminders, theory-based education has been convincingly shown to be effective, whereas generic education has not.¹²⁶ This type of approach has been specifically investigated for relevance to CRC screening.^{127 128} This will be explained further under "Essential #4: An Effective Communication System." An advance query with a theory-based approach is both a form of reminder and an example of communication that employs the use of theory-based education.

Decision stages:

- Never heard of CRC screening
- Heard of, but not considering CRC screening
- Heard of and considering CRC screening
- Decided against CRC screening
- Heard of and decided to do CRC screening

Once a patient's decision stage is defined, a patient can be encouraged to make a transition from one stage to the next with a focused pitch. Stages and focused pitches are depicted in the accompanying figure. The stage of decision guides the clinician or staff to make the best use of face time with the patient by speaking directly to the central issues of that stage.

The patient who has "never heard of" colorectal cancer screening needs information about the risk of CRC, the available screening methods, and what screening will accomplish. The patient who has "decided against" screening can be approached with an inquiry about the reasons for the decision. These might then be addressed. The patient who is "not considering" it also needs probing so that his or her lack of inclination to get screened can be understood. The patient who is "considering" screening needs to be questioned for perceived barriers and provided help on following through. The patient who has already "decided to do" screening may need only logistic instruction and/or assistance.

Decision Stages and Corresponding Physician Message	
Decision Stage	Physician Message
1. Never heard of CRC screening	1. Provide basic information about risk of CRC and benefits of screening.
2. Heard of, but not considering CRC screening	2. Remind patient about risk and benefit of CRC screening. Discuss screening options.
3. Heard of and considering CRC screening	3. Assist patient to select a screening option. Help identify barriers and possible solutions.
4. Heard of and decided to do CRC screening	4. Discuss logistics. Answer questions.
0. Decided against CRC screening	0. Probe for reasons and address them.

Audits and Feedback

Audits and feedback that provide focused information after assessing knowledge have been referred to as “cognitive” reminders. They can be viewed as tools to measure progress or as a cognitive cue for the clinician. Evidence from meta-analysis indicates that a practice can achieve an 18.6 percent improvement in screening rates by using audits that produce feedback for providers.

The simplest chart audit involves pulling a certain number of charts of the target population and reviewing each chart to document whether certain elements are found on the chart. Chart audits can produce feedback for a specific clinician or an entire practice. However, there is evidence that feedback is more effective if it is specific. After the requisite number of charts have been reviewed, the results in each category are tallied.**** There is a sample chart audit template in the tools section in Appendix D.

While chart reviews are time consuming, collecting this information is not complicated and is essential for maintaining the quality of practice. A context is needed to interpret the results of an audit. The results can be put in perspective through national or local benchmarks. For example, a 75 percent screening rate may not satisfy the provider but it may be above the national average. Comparison helps the clinician understand the results in the context of national trends and goals. Such information is available online from the National Committee for Quality Assurance (www.NCQA.org).

Goals and measures with which to track them have been set by national collaboratives of primary care clinics. The Bureau of Primary Care in the federal Health Resources Services Administration has worked with selected clinic practices to create registries of patients who can be tracked for cancer screening and chronic disease management. The registries facilitate tracking and documentation of practice improvements. The chart that follows lists some of the measures these practices have used for CRC screening.

The time interval for repeat audits depends on the size of the practice, the patient population, the staffing level, and the reminder system that has been created. A baseline audit, a follow up audit, and an additional audit after a year has gone by will provide insight about the effectiveness and endurance of change(s) in the practice. The baseline and follow up will measure whether there have been changes.

Audits will now generate CME credit toward the Physician’s Recognition Award as part of an AMA initiative to provide credits for performance improvement activities.¹²⁹ This initiative coincides with programs under way at two specialty boards, the American Board of Family Practice (ABFM) and the American Board of Internal Medicine (ABIM). These programs provide credit toward maintenance of certification for physicians who complete online “practice improvement modules” (PIMs).^{130 131} These PIMs include web-based data abstraction tools, feedback reports, access to guidelines, and individualized action plans with alternative interventions that may be chosen by the physician.¹³² While each board has its own modules, the boards are collaborating. Completion of an online PIM of the ABIM generates credit toward maintenance of certification from the ABFM. The mutual reinforcement of these activities by the AMA, ABIM, and ABFM reflects endorsement of the belief that audits and feedback lead to improved medical practice.

**** A chart audit will pull information from each chart: age, gender, race/ethnicity, and risk status of each patient. It is most useful if it records multiple dates, including when the test or procedure (stool blood test, colonoscopy [(CS)], flexible sigmoidoscopy [(FS)], DCBE) was recommended, when the stool blood tests or referral for procedure was issued, when the results returned, and when the patient was notified. Finally, it may include findings about whether hyperplastic polyps, adenomatous polyps, CRC, or other diagnoses were found. Each category of data is tallied, and results are computed over the appropriate denominator. Physicians who wish to determine the parameters of their own chart review, will find a sample size calculator online at the Web site of a Medicare quality of care contractor, www.cmri-ca.org. This automatically calculates appropriate sample sizes for quality improvement projects.

Measures Used by Collaboratives for Colorectal Cancer				
Sample Measures	Definition	Data-gathering Plan	Goal	Notes/ Comments
1. Percent of adults age ≥ 50 who have been screened for colon cancer	1. Number of adults age ≥ 50 who have been screened with at least one of the following: – FOBT/FIT w/in 1 yr – FS w/in 5 yrs – CS w/in 10 yrs – CTC w/in 5 yrs – DCBE w/in 5 yrs divided by the total number of adults ≥ 50. Multiply by 100 to get the percentage.	1. On (date) the registered patient database will be searched for all adults ≤ 50 who have been screened with at least one of the following: – FOBT/FIT w/in 1 yr – FS w/in 5 yrs – CS w/in 10 yrs – CTC w/in 5 yrs – DCBE w/in 5 yrs At the same time, count the total number of adults ³ 50 yrs in the registry or practice.	> 75%	
2. Percent of patients with documented notification of colon cancer screening results on their chart within 30 days	2. The # of adults age ≥ 50 having documented notification of colon cancer screening results on chart within 30 days of test, divided by the total number of adults ≥ 50 having documented colon cancer screening within the past 12 months. Multiply by 100 to get percentage.	2. On (date), the registered patient database will be searched for all adults ≥ 50 having colon cancer screening results on chart.	> 90%	
3. Percent of patients requiring complete diagnostic evaluation (CDE), completing that evaluation within 60 days	3. The number of adults ≥ 50 with + FOBT/FIT or a polyp on FS or polyp on CTC or polyp on DCBE having complete diagnostic evaluation (CDE) documented within 60 days, divided by the total number of adults ≥ 50 with +FOBT/FIT or a polyp on FS or polyp on CTC or polyp on DCBE. Multiply by 100 to get percentage.	3. On (date), the registry will be searched for the number of adults age ≥ 50 with +FOBT/FIT having CDE within 60 days. At the same time, count the # of adults who had a + FOBT/FIT OR on (date) search for the # of adults ≥ 50 with a polyp who had CDE within 60 days of identification.	> 95%	
4. Percent of adults age ≥ 50 with adenomatous polyp or CRC having their initial treatment documented within 90 days of lab confirmation of the diagnosis	4. The # of adults ≥ 50 with adenomatous polyp or CRC having initial treatment documented within 90 days of lab confirmation of the diagnosis, divided by the total number of adults ≥ 50 with adenomatous polyp or CRC. Multiply by 100.	4. On (date), search for the # of adults ≥ 50 with adenomatous polyp or CRC who have their initial treatment documented within 90 days of lab confirmation of the diagnosis. At the same time, count the number of adults ≥ 50 with adenomatous polyp or CRC.	> 95%	

Adapted from: http://healthdisparities.net/Cancer_Measures_Mar05.html, accessed November 2005.

Ticklers and Logs

Other traditional systems to ensure compliance include tickler systems and logs.^{††††} A tickler system is created when a copy of a lab order, referral, reminder letter, or tracking sheet is placed in a “tickler file.” A tickler file is a series of file folders, one for each month of the year. (Sub-folders for each day of each month may be added.) The copy is filed by date of the visit. The contents of each folder are organized alphabetically. When results or reports arrive, the copy is pulled from the tickler file, the patient notified by phone or mail, the results placed on the chart, and a visit scheduled if appropriate.

On a specific day each month, all the copies in the tickler file are reviewed. Orders with no accompanying results should prompt follow up. And the patients in question should receive phone calls, postcards or letters. The tracking sheets placed in the file for a patient are started when he or she begins the screening process. Regular review of tracking sheets in the tickler file will assist the physician or the practice to follow the screening process through to completion including follow up of abnormals. For physicians who wish to apply this system to repeat screenings in the subsequent year, file folders may be created for the next year as well. A reminder letter with the patient’s name on it, or a copy of the original result, may be placed in one of the file folders for the subsequent year.

Postcard tickler systems are similar. The patient self-addresses a fold-over reminder and/or result postcard which is used for the tracking of stool blood tests. This is placed in the tickler file by the date of the office visit. If the stool blood test is returned, the fold-over postcard is pulled and the test results sent to the patient and documented in the chart. At the end of the month, the remaining postcards from the preceding two months are pulled from the file. Patients receive their own postcards to remind them to return their stool blood tests. A record should be kept when reminder postcards sent for the purpose of additional follow up.

Another approach to improve patient adherence is to create a single log or tracking sheet of all patients who take home a stool blood test kit. Such a tracking sheet can be found in Appendix D. Many practices keep logs for strep cultures. A stool blood test log is similar. The log can be used to record information and contact patients with the results of the tests. It can also be used for telephone calls or reminder letters for patients whose kits haven’t been returned. Patients with positive screens should have a colonoscopy. The log can be used to ensure colonoscopy follow up for these patients. It can also track those screenings that employ flexible sigmoidoscopy or colonoscopy to ensure completion. Logs and tracking sheets are found in Appendix D.

Staff Assignments

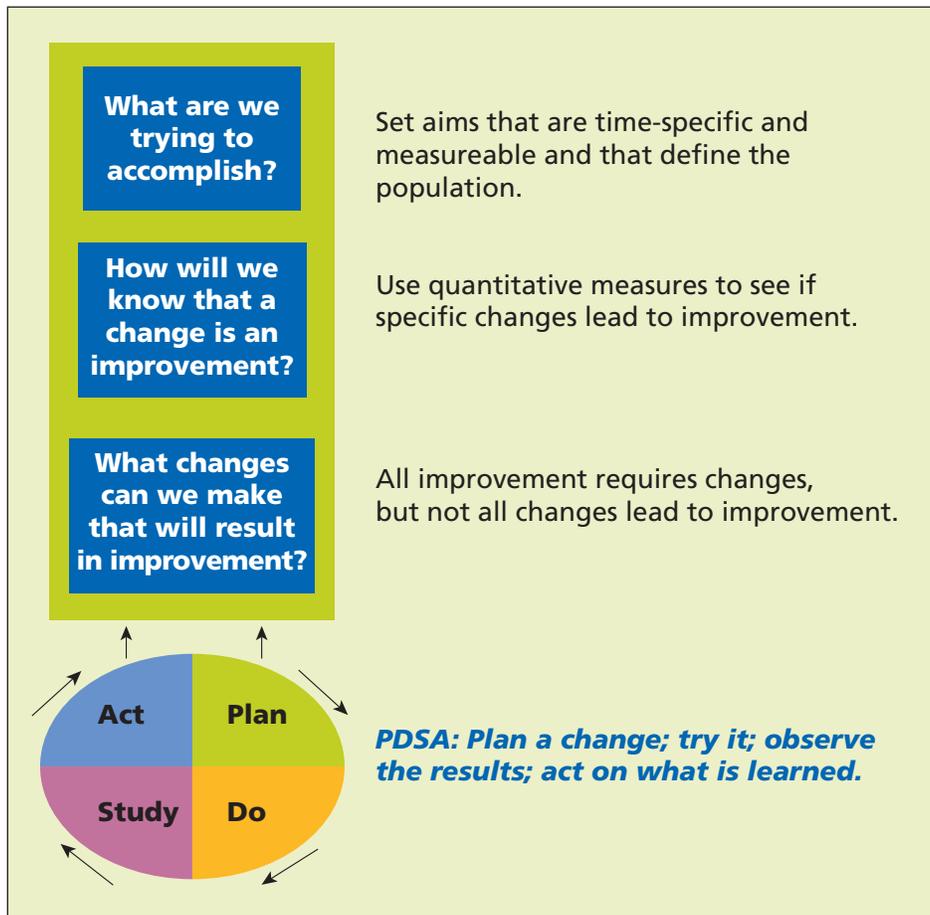
Reminder systems that are not of the paper or telephone type include changes in the practice routines that involve staff and staff responsibilities. Changes in staff routines and staff assignments can increase the ordering of preventive care services. Office procedures are built on human routines and systems that incorporate staff in the office.^{133 134 135} The effectiveness of your practice can be improved by including different staff in the process of cancer screening by using the same office

††††† This description is from the Harvard Center for Cancer Prevention, 2003.

staff but deploying them differently. The assignment of responsibilities and the flow of patients through the staffing pattern of the office will help or hinder the outcome. Changes in responsibility and flow can be made and evaluated.

Staff can help boost screening rates by encouraging screening or even initiating the process. You can empower them to do this.¹³⁶ The changes you make will constitute a reminder system. This section presents two different models for making changes – Model A and Model B. Both have been developed by organizations that promote quality improvement and have provided assistance to federal programs. Both are accessible over the Internet. The first model, presented in a flow diagram, is offered by the Institute for Healthcare Improvement.¹³⁷ The second is presented in text form by an organization known as Lumetra.¹³⁸

Model A. This model has two parts. The first part poses three questions that can be asked in any order. One question is in each of the square boxes in the diagram below. The second part is the “Plan-Do-Study-Act (PDSA)” cycle for testing and implementing change. The PDSA cycle helps you test the change to see if it is an improvement or not. A diagram of the model is depicted below.



Source: www.ihl.org/IHI/Topics, accessed May 2004.

Examples of system changes to increase CRC screening rates include:

- Informing patients ahead of time so they are ready to make a decision
- Having staff other than the provider present the options to the patient
- Assessing the patient's decision stage before the provider encounter
- Sending brochures or education materials to the patient before the appointment
- Sending a letter that describes the doctor's recommendation before the visit

Model B. This model is a step-by-step guide to help you establish a reminder system. An organized system is needed in every office to remind patients and providers of the need for CRC screening services. The reminder system can save time and effort, improve health outcomes, and help meet guidelines and regulatory requirements. It can also be the most cost-effective approach.¹³⁹ It is important to plan, implement, and follow up on the changes.

1. Plan

- A. Evaluate the current system. (See sample chart audit pages in Appendix D.)
- B. Include office staff as part of the planning team.
- C. Establish shared goals for improving screening rates.
- D. Determine new procedures.
- E. Assign roles and responsibilities to team members.^{††††††}

2. Implement

- A. Implement the new roles and responsibilities.
- B. Meet regularly to identify and solve problems.

3. Follow up

- A. Track the changes.

†††††† See reference #118.

These are examples of possible changes to a visit:

1. While in the waiting room:

- The patient may be asked to complete a questionnaire to provide information on risk status, screening history, and attitudes.
- Place informative and attractive office posters or fliers in the waiting room or exam rooms as an expression of your own policy and as cues to action.
- Customize the use of educational materials, instructional materials, and reminder tools to suit your practice needs.

2. At patient check-in:

- Have staff ask about preventive care and highlight services that are needed or past due.
- Use preventive care flow sheets and reminder chart stickers.

3. During the visit:

- Ask patients about family history and previous screening.
- Let your patients know that getting CRC screening can prevent cancer and save lives.
- Schedule screening before the patient leaves the office.

4. At checkout:

- Have patients fill out reminder cards. File reminder cards by the month and year of planned notification.

5. Communication beyond the office:

- Contact patients in need of preventive services for the following month.
- Send patients a stool blood test in the mail in anticipation of a visit.

Tracking patient compliance assures that the changes achieve what is intended. Here are suggestions for techniques:

- On a periodic basis, pull charts of patients in the “screening completed” file to see if results are on the chart.
- Track patient compliance by phone to verify screening or provide a reminder for those who were given a referral. If screening is already done, mark this on the tracking sheet or place a copy of the results in a “screening completed” file.
- Perform ongoing preventive service assessments at the time of the visit and document them.
- Use patient personal health record booklets and encourage all patients to bring their records to every visit.

Essential #4: An Effective Communication System

A. Options for Action

- Stage-based Communication
- Shared Decisions, Informed Decisions, Decision Aids
- Staff Involvement



Essential #4: An Effective Communication System

There are many arguments in favor of effective and skillful communications. Communication strategies can facilitate and promote the delivery of health messages that work to help get patients the screening they need. Many studies have found that “theory-based” strategies have the largest effect on patient behavior. Though evidence has been published, descriptions of theory-based interventions in the medical literature are more likely to be known to certified health educators than physicians. A meta-analysis of patient education interventions for breast cancer screening revealed that theory-based education strategies were far more effective than generic education strategies. They increased screening rates by 24 percent, compared to generic information, which was no more effective than usual practice.¹⁴⁰ The improvement was greater when the approach was active, involving conversation with another individual, either over-the-phone or in-person.¹⁴¹

Skillful communication routines can save time. In many settings, a clinical encounter is shorter than it has ever been, and the pressure on the encounter is greater than it has ever been.¹⁴² Studies confirm what primary care physicians know well: There is less time to do more. This may not seem like the opportune moment for adding items to the agenda for each medical visit. Thus, a communication tool that takes pressure off the clinician while achieving maximum effect will be a valuable asset.

Skillful communications will increase impact. There is substantial evidence that a physician’s recommendation is the most effective strategy for persuading individuals to complete cancer screening. If physicians and their staff wish to realize their full potential to promote screening, they will need to get a recommendation to every eligible patient in the most efficient way possible. Communication tools facilitate this process.

In general, effective communication is a cornerstone of good practice. Physicians’ communication skills are related to patient satisfaction. Patient satisfaction affects outcome. Studies and reviews in the literature document the benefit of enhanced communication between doctors and patients for the successful management and outcome of the care process.^{143 144 145}

An informal rating of the doctor’s “bedside manner” is probably the most common reference to a doctor’s communication skills. However, effective communication not only satisfies a patient’s need for skilled verbal interaction, but also builds productive relationships that lead to desired outcomes. One of the outcomes is the completion of preventive services. New research has begun to guide the way to more effective and skillful communication with patients where decision-making is necessary.¹⁴⁶ This research is building on top of evidence accumulated from two decades from research on improving screening rates for breast cancer.¹⁴⁷

A. Options for Action

Stage-based Communication****

Stage-based communication methods may be the easiest strategy to understand and implement. Tools based on this model have been developed specifically for use in colorectal cancer screening. Based on the work of Prochaska and DiClemente, stage-based models have been discussed in the medical literature for more than two decades.¹⁴⁸ These methods grew out of efforts to construct a model that would transcend all other communication theories and help patients move through processes of change to achieve desired outcomes.

This approach defines stages of a patient's thinking to guide the provider with precision to the message that the patient needs to hear. The provider's time is then used more wisely. There is no need to repeat what the patient already knows, understands, and is familiar with. According to a leading expert in communication, stage theory allows practitioners to treat individuals "as they are – in different stages of readiness to make health behavior changes."¹⁴⁹ The right information at the right time is the communication that will make a difference.

THE STAGE-BASED MODEL FOR EFFICIENT COMMUNICATIONS

When a patient's stage of readiness is known, the patient can be approached with a sales pitch appropriate to that stage. A patient who has never heard of the issue needs basic information to increase their awareness of colorectal cancer. A patient who has decided to act on screening may only need "how-to" instructions, while a person who is truly undecided about screening will need to be convinced of its value and its acceptability.

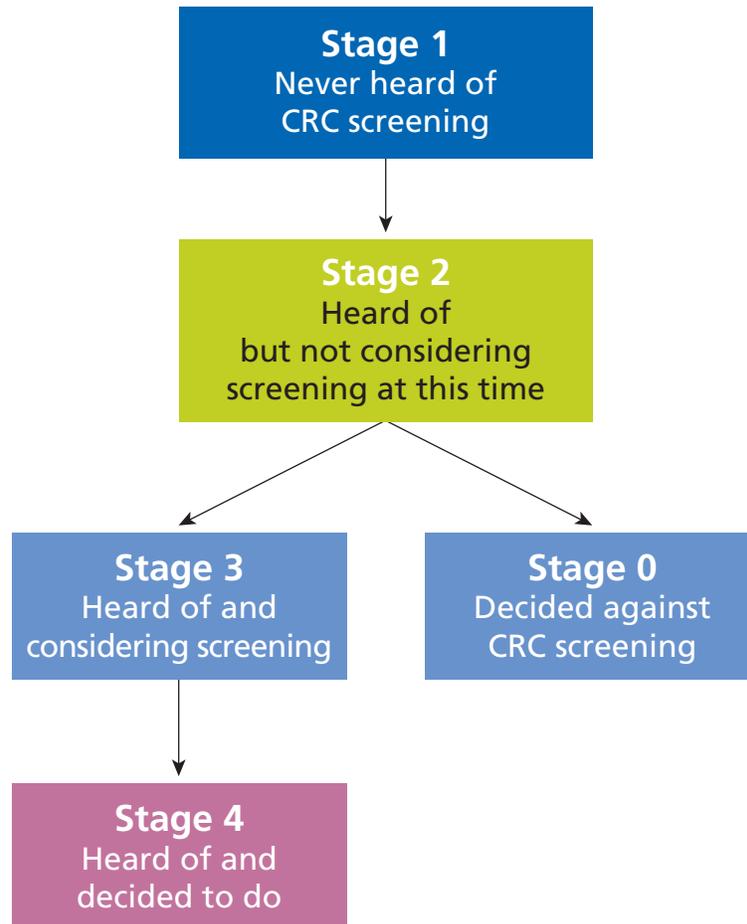
There are several models that utilize stages of readiness as a tool to guide information exchange and conversation. The names of the stages may vary in the different models, but the basic idea remains constant, and provides a framework to assist the clinician and staff in addressing the issue that is most relevant to the individual patient. Simple questions can define the stage of readiness of an individual and guide the clinician or staff to use the most relevant information or argument. Spoken and written communications can be based on this efficient framework. The version of stage-based communication presented here recognizes five "decision" stages.^{§§§§§} These decision stages are visualized in the figure. This model has been tested for effectiveness with colorectal cancer screening.

There are several approaches to determination of stage. One that has been tested is presented here. Consult the "Brief Questionnaire to Identify Decision Stage" on the following page. This simple line of questioning to define a decision stage helps short-circuit lengthy and unnecessary discussion. The provider can respond to the patient's level of thinking and help with planning, focus on insurance issues, or address other barriers.

**** The stage theories of change include the Transtheoretical Model of Behavior Change, the first of its type, developed by Prochaska and DiClemente (1983), with four stages (precontemplation, contemplation, action, maintenance), the Precaution Adoption Process Model studied by Weinstein, et. al. (1990), with seven stages, and the model shown here with five stages, developed by RE Myers

§§§§ This version of stage theory was developed by RE Myers.

A Decision Stage Model for CRC Screening^{††††††††}



†††††††† This version of stage theory was adapted from the work of by RE Myers.

Brief Questionnaire to Identify Decision Stage*****

Use this questionnaire when starting a conversation with a patient about screening. It will help you identify the readiness of the patient for screening.

Describe the specific screening test – e.g., stool blood test , CT colonography (CTC), or colonoscopy (CS), etc.

- 1.** Have you ever heard of a (stool blood test, CTC, CS)?
Yes – Go on
No – Stop (Stage 1)

- 2.** Are you thinking about doing a (stool blood test, CTC, CS)?
Yes – Go on
No – Stop (Stage 2)

- 3.** Which of the following statements best describes your thoughts about doing a (stool blood test, CTC, CS) in the future?
 - a. I have decided against doing a (stool blood test, CTC, CS). (Stage 0)
 - b. I'm thinking about whether or not to do a (stool blood test, CTC, CS). (Stage 2 or 3)
 - c. I have decided to do a (stool blood test, CTC, CS). (Stage 4)

Responses place the individual in a decision stage related to screening test use:

- Stage 0: Decided against
- Stage 1: Never heard of
- Stage 2: Heard of – not considering
- Stage 3: Heard of – considering
- Stage 4: Heard of – decided to do

***** Source: Adapted from RE Myers, 2003

To reiterate, interactions based on a communication theory are more effective than generic education. In meta-analysis conducted on mammography screening, generic education was not demonstrated to be an effective approach. Theory-based education strategies produced a 24 percent increase in screening rates, compared to no increase for generic education strategies.¹⁵¹

In summary, due to the time pressures on contemporary practice, communications must be more efficient than ever before. Studies confirm what primary care physicians know well: There is less time to accomplish a larger number of objectives with each patient visit. Strategies and tools that improve efficiency are needed. Stage-based communications offer a valuable and accessible tool. They are logical, easy-to-understand and remember. In short, they are efficient and facilitate flow of the right information.¹⁵²

Shared Decisions, Informed Decisions, Decision Aids

While most providers support the idea of shared decision-making, it has been shown that it is all too often neglected. Providers commonly fail to explore patient preferences and simply offer their own recommendations.¹⁵³ Documentation exists that patients do have preferences. In fact, patients express clear preferences for screening options that rest on the value they place on particular test features.^{154 155} Patients who place a high value on accuracy value a colonoscopy, which is the most sensitive and specific test. Patients who place a high value on convenience, privacy, or reassurance from frequent testing benefit from a home stool blood test kit. The existence of patient preference dictates that clinicians learn their patients' preferences and aim for a shared decision about the screening modality. Failure to do so puts the clinician at risk of being ineffective. There is evidence that patients prefer shared decision-making. A decision that is based on a patient's preference and guided by a physician is a shared decision.¹⁵⁶

A tool that helps clinician and patient identify patient preferences should be helpful in producing a shared decision. Unfortunately, recommendations for screening are undermined by the mismatch between physicians who haven't explored patient preferences and patients who get recommendations that don't fit their preferences. Tools that will help produce the best, most informed decision – the decision to go ahead with screening – are greatly needed.

Decision-making tools that identify patient preference are under development with the support of the National Cancer Institute. Some tools are already showing promise. Studies have demonstrated that these tools help patients who start out undecided to identify their preference.^{157 158 159} Within a few years, validated tools should be available. However, at this moment, few decision-making tools are ready for mass distribution.

Informed decisions are decisions in which patients are aware of their options and understand the risks and benefits. For those patients who are considering screening but would like additional information to help them make an informed decision, there are brochures, pamphlets, and Internet guides. The Internet also offers a great deal of useful information. Useful Web sites include www.healthfinder.gov and www.cancer.org. Communication systems with informational content can be upgraded in efficiency if they are delivered actively, and based on the “stages of intention” theory or another useful theory like the health belief model or social cognitive theory.^{160 161 162}

Some decision aids are also available online. They may not yet be validated as effective but they do provide information. As described, these help an individual weigh the risks and benefits of different procedures. These can be found on the Internet at www.mayoclinic.com or <http://my.webmd.com>. An informed patient who has used a decision aid may be in a better position to share in decision making with their clinician. The American Cancer Society has developed for office use a video decision aid that reviews and demonstrates all screening options. Available in both English and Spanish, this tool can be found at www.cancer.org/colonmd.

Staff Involvement

The staff of your practice can contribute directly to expanded screening. The time that a patient spends with non-physician staff is under-utilized. This time can be used for a better purpose. Staff can play several different roles.

Standing orders can empower nurses and intake/discharge staff to give patients a stool blood test kit, a referral for endoscopy, or a complete diagnostic work-up after a positive screen based on patient needs, all without a doctor’s immediate order. While in the waiting room, patients can be asked to fill out brief surveys that guide staff to a course of action. Surveys can include questions about risk factors, prior screening, and stage of intention regarding CRC screening. Subsequently, staff members who place patients in the exam room can then give them a “tailored” information sheet, geared to their decision stage and/or risk level and talk about it with them.

The time when the patient is placed in a room and prepared for the clinician encounter may also be useful for clarifying CRC risk level and asking the simple questions that define decision stage about screening. With the risk level and decision stage pinpointed, a targeted discussion with the clinician is facilitated. Non-physician staff can also encourage patients to get the needed screening tests. The discharge staff can provide referrals for flexible sigmoidoscopy (FS) or colonoscopy (CS) testing – or dispense stool blood test cards – as part of a chain of responsibility for the screening process.

ESSENTIAL #4: An Effective Communication System

Incorporating staff into this effort makes it easier to provide screening on an “opportunistic” basis, i.e., whenever patients come in. “Opportunistic” screening differs from screening that is arranged solely at the time of the annual checkup in that it can occur any time the patient visits the practice.¹⁶³ Grouping visits for patients who share the same category of increased risk is another approach that is being used to advance practice goals, including referrals for screening.¹⁶⁴ Letters, fold-over postcards, or phone calls may be used to invite those at increased risk for CRC to an individual or group visit – or to invite at-risk family members. In many cases, providers can bill insurers for each attendee for the preventive visit.

When staff are explicitly involved in making practice improvements, it becomes easier to achieve the desired goals. As described above under Office Reminder Systems: Staff Assignments, all staff can be included in regular meetings to examine and improve the process, receive education about the effort, and review the results.

TRACKING OFFICE PROGRESS

Progress can be tracked through repeat chart audits. New charts are chosen at random. This will allow for a comparison between subsequent audits and a baseline audit. Many practices choose 20 charts of age-appropriate patients for each clinician. The sample-size calculator mentioned above can also be used to choose an appropriate number. (This is available at the Web site of a Medicare quality of care contractor, www.cmri-ca.org.) Intervals of six months to a year may be appropriate, depending on how many patients age 50 and over visit the practice. The results of these audits can be shared with all the members of the staff team and used as the basis for discussion and planning. There are audit templates in Appendix D.

Physicians can also evaluate their systems for providing CRC screening by having regular staff meetings or eliciting patient feedback. Regular staff meetings allow for regular reports from staff on the progress of new procedures. They also give staff the opportunity to rehearse new skills, get continuing education, and explore ways to support one another.

There will be areas of strength and areas of deficiency of the practice. Areas of excellence should receive positive reinforcement and acknowledgement. Input helps develop solutions for deficiencies. An informal questionnaire can also help identify strengths and weaknesses. Please refer to the example.

Patient feedback can be elicited through suggestion boxes, focus groups, customer satisfaction surveys, or calls. Tracking your success with individual patients – or patients at increased risk – is another important quality approach. A tracking template is found in Appendix D.

Internal Practice Questionnaire

Goals

Are we functioning in alignment with our greater purpose? Our vision?

Do we need to reevaluate our goals?

What is working well? Why?

What is not working? Why?

What can be done differently?

Are we providing the services we said we wanted to provide?

Should we reevaluate the services we offer?

Materials

How do the cancer prevention materials fit our needs?

Should we modify any of the cancer prevention materials?

Documentation

Are we documenting the services we provide?

Staff Performance and Satisfaction

How are the staff performing their functions?

Are staff stepping in where needed?

Are staff working together as a team?

Are all staff contributing suggestions?

How do staff members feel about their work?

Do staff members feel supported and heard?

Patients

How are our patients responding to the change?

Source: Agency for Healthcare Research and Quality.

Conclusion

- Colorectal cancer is the second leading cause of cancer deaths in the United States, even though it is largely preventable.
- A physician's recommendation is the most powerful influence on individual patient decisions to undergo cancer screening.
- Risk management concerns and new insurance reporting requirements dictate improved cancer screening rates.
- This guide will help you realize the potential for making a difference in colorectal cancer incidence and mortality.
- Office practice routines can be altered to attain a high level of consistency in getting screening recommendations to patients.
- Four elements are essential to improved screening.
- The evidence-based strategies and tools in this guide will help make your practice more effective.

Conclusion

Colorectal cancer (CRC) is the second leading cause of cancer deaths in the United States, even though it is largely preventable. If CRC screening were universal – beginning at age 50 for those at average risk and earlier for those at increased risk – with timely removal of adenomas and early cancers, the mortality from CRC could be drastically reduced. Health care disparities in colorectal incidence and mortality would also be dramatically reduced.

A physician's recommendation is one of the most powerful influences on individual patient decisions to undergo cancer screening. While 98 percent of primary physicians do recommend CRC screening to their patients, most physicians do not convey a recommendation to every patient who warrants it. Only a systematic approach that is specifically designed to identify and provide a recommendation to every eligible patient who visits the practice for any reason is likely to succeed.

Risk management concerns and new insurance reporting requirements are other strong reasons to pursue improvement in CRC screening rates. Dollar awards place CRC in the top five malpractice targets nationwide. As of 2006, CRC screening rates were being reported to the public under the Health Plan Employer Data and Information Set (HEDIS) reporting requirements of the National Committee on Quality Assurance. Continuing medical education (CME) credit is now available for practice improvement activities.

Where there are barriers to improvement in CRC screening, they need to be actively addressed. Outdated knowledge must be updated, and changes in the guidelines must be understood. Inconsistencies in the guidelines are exaggerated and misunderstood. Lack of confidence in the efficacy of screening is unwarranted, and there is little evidence that any of the recommended screening tests are not acceptable to patients.

While lack of health insurance and absence of a regular source of care are real barriers to screening, a stool blood test is affordable to almost everyone. The provider of the stool blood test may be harder to come by at low cost. Stool blood tests are now available over-the-counter in some pharmacies during screening campaigns. Still, colonoscopy procedures are needed for those who have a positive stool blood test, and there is little remedy for those who lack access or payment for colonoscopy. Another barrier is confusion about priorities and goals. Colorectal cancers are found in about 1 percent of screenings, but adenomatous polyps are found in about 20 percent of all colonoscopies. Removal of the adenomatous polyp prevents the development of the cancer.

This guide will help you make a difference in the incidence and mortality from colorectal cancer. The key to success is the screening recommendation. Office practice routines can be altered to create systems that attain a high level of consistency in getting screening recommendations to patients. This guide is intended to assist physicians and their office managers build a practice that has such consistency. While the overwhelming majority of primary care doctors screen for colorectal cancer, few would say that every eligible patient leaves the practice with the needed recommendation. It is not enough to know what needs to be done. It is doing it that makes a difference. The evidence-based tools and strategies in this guide can move your practice to a higher level of performance.

There are four elements that are essential to improve the effectiveness of the practice.

- 1. A Recommendation.** Doctors should recommend screening to every appropriate patient according to accepted guidelines and their own office policy. This is the single most important element in increasing screening rates.
- 2. An Office Policy.** An office policy is necessary to assure that every appropriate patient receives a recommendation. The policy incorporates the considerations of risk level, local medical resources, patient health care insurance coverage, and local standards of care; it also provides ongoing guidance to the members of the practice and the staff about how to proceed. A high level of success in achieving follow-through on complete diagnostic workups for those who screen positive is another important objective. This has frequently been a weak point in the system. Without this step, the benefits of screening will not be realized.
- 3. A Reminder System.** Reminder systems can be directed at patients, at providers, or both. Evidence has demonstrated that all types of reminder systems directed at physicians can be effective. Some of those directed at patients are also effective.
- 4. An Effective Communication System.** Effective communications are a key link in the chain that produces desired health outcomes. Stage-based models provide simple tools that can be used in practice so that the face time of the doctor is directed to the most pivotal issue. Patient buy-in is key. Many patients do have preferences where there is a reasonable choice to be made. Informed decisions and shared decisions are preferred to simple physician directives. Decision-making tools are under development. Patient education that is based on a theory (i.e., stage theory) is more effective than generic education. Theory-based models make it easier to reproduce an approach over and over again with tools that ensure consistency and thoroughness.

Tracking the improvements made by the practice is the only way to be sure that it has happened. CME credit is now available for such efforts.

Appendix A:
Current Screening Guidelines

Current Screening Guidelines

- Common Sense Colorectal Cancer Screening Recommendations at a Glance
- Guidelines of the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology
- Guidelines of the US Preventive Services Task Force
- Guidelines article of the American Cancer Society, the US Multi-Society Task Force, and the American College of Radiology
- Guidelines article for Surveillance after Polypectomy from the US Multi-Society Task Force and the American Cancer Society
- Guidelines article for Surveillance after Cancer Resection from the American Cancer Society and the US Multi-Society Task Force



Common Sense Colorectal Cancer Screening Recommendations ¹ at a Glance		
Risk Category	Age to Begin Screening	Recommendations
<p>Average risk No risk factors</p> <p>No symptoms²</p>	<p>< Age 50</p> <p>≥ Age 50</p>	<p>No screening needed</p> <p>Screen with any one of the following options:</p> <p><i>Tests That Find Polyps and Cancer</i></p> <p>FS q 5 yrs* CS q 10 yrs DCBE q 5 yrs* CTC q 5 yrs* OR</p> <p><i>Tests That Primarily Find Cancer</i></p> <p>gFOBT q 1 yr*,** FIT q 1 yr*,** sDNA***</p>
<p>Increased risk CRC or adenomatous polyp in a first-degree relative³</p>	<p>Age 40 or 10 years younger than the earliest diagnosis in the family, whichever comes first</p>	<p>Colonoscopy⁴</p>
<p>Highest risk Personal history for > 8 years of Crohn's disease or ulcerative colitis or a hereditary syndrome (HNPCC or, FAP, AFAP)</p>	<p>Any age</p>	<p>Needs specialty evaluation and colonoscopy</p>

* If the test is positive, a colonoscopy should be done.

** The multiple stool take-home test should be used. One test done by the doctor in the office is not adequate for testing.

*** Interval uncertain.

The tests that are designed to find both early cancer and polyps are preferred if these tests are available and the patient is willing to have one of these more invasive tests.

1. Patients with a personal history of CRC or adenomatous polyp require a surveillance plan not screening.
2. Patients with symptoms merit an evaluation of their condition to precede screening.
3. The American Cancer Society and the US Multi-Society Task Force on Colorectal Cancer view a patient as being at average risk for the purpose of screening if only one first degree relative (FDR) > age 60 is affected. If the FDR is <50, or affected, also check for a history consistent with hereditary non-polyposis colorectal cancer. The criteria (Revised Amsterdam) for HNPCC are that there should be at least three relatives with HNPCC-associated cancers (colorectal, endometrium, small bowel, ureter, renal pelvis) and all of the following criteria must be met: 1) One should be a first-degree relative of the other two. 2) At least two successive generations should be affected. 3) At least one cancer should be diagnosed before age 50. 4) Familial adenomatous polyposis should be excluded in the CRC case. 5) Tumors should be verified by pathological examination.
4. Colonoscopy for persons at increased risk is the recommendation of the American Cancer Society and the US Multi-Society Task Force on Colorectal Cancer. The US Multi-Society Task Force on Colorectal Cancer recommends repeat every five years, the American Cancer Society every five to 10 years. The US Preventive Services Task Force (USPSTF) does not specifically recommend colonoscopy, but notes that colonoscopy is the most sensitive and specific modality.

Source: Adapted by the author from the guidelines of the Maryland State Cancer Programs (2005) and national guidelines.

TABLE 2 Guidelines for Screening for the Early Detection of Colorectal Cancer and Adenomas for Average-risk Women and Men Aged 50 Years and Older

The following options are acceptable choices for colorectal cancer screening in average-risk adults beginning at age 50 years. Since each of the following tests has inherent characteristics related to prevention potential, accuracy, costs, and potential harms, individuals should have an opportunity to make an informed decision when choosing one of the following options.

In the opinion of the guidelines development committee, *colon cancer prevention* should be the primary goal of colorectal cancer screening. Tests that are designed to detect both early cancer and adenomatous polyps should be encouraged if resources are available and patients are willing to undergo an invasive test.

Tests that Detect Adenomatous Polyps and Cancer		
Test	Interval	Key Issues for Informed Decisions
FSIG with insertion to 40 cm or to splenic flexure	Every 5 years	<ul style="list-style-type: none"> Complete or partial bowel prep is required Sedation usually is not used, so there may be some discomfort during the procedure The protective effect of sigmoidoscopy is primarily limited to the portion of the colon examined Patients should understand that positive findings on sigmoidoscopy usually result in a referral for colonoscopy
Colonoscopy	Every 10 years	<ul style="list-style-type: none"> Complete bowel prep is required Conscious sedation is used in most centers; patients will miss a day of work and will need a chaperone for transportation from the facility Risks include perforation and bleeding, which are rare but potentially serious; most of the risk is associated with polypectomy
DCBE	Every 5 years	<ul style="list-style-type: none"> Complete bowel prep is required If patients have one or more polyps ≥ 6 mm, colonoscopy will be recommended; follow-up colonoscopy will require complete bowel prep Risks of DCBE are low; rare cases of perforation have been reported
CTC	Every 5 years	<ul style="list-style-type: none"> Complete bowel prep is required If patients have one or more polyps ≥ 6 mm, colonoscopy will be recommended; if same day colonoscopy is not available, a second complete bowel prep will be required before colonoscopy Risks of CTC are low; rare cases of perforation have been reported Extracolonic abnormalities may be identified on CTC that could require further evaluation
Tests that Primarily Detect Cancer		
Test	Interval	Key Issues for Informed Decisions
gFOBT with high sensitivity for cancer	Annual	<ul style="list-style-type: none"> Depending on manufacturer's recommendations, 2 to 3 stool samples collected at home are needed to complete testing; a single sample of stool gathered during a digital exam in the clinical setting is not an acceptable stool test and should not be done
FIT with high sensitivity for cancer	Annual	<ul style="list-style-type: none"> Positive tests are associated with an increased risk of colon cancer and advanced neoplasia; colonoscopy should be recommended if the test results are positive If the test is negative, it should be repeated annually Patients should understand that one-time testing is likely to be ineffective
sDNA with high sensitivity for cancer	Interval uncertain	<ul style="list-style-type: none"> An adequate stool sample must be obtained and packaged with appropriate preservative agents for shipping to the laboratory The unit cost of the currently available test is significantly higher than other forms of stool testing If the test is positive, colonoscopy will be recommended If the test is negative, the appropriate interval for a repeat test is uncertain

Abbreviations: FSIG, flexible sigmoidoscopy; DCBE, double-contrast barium enema; CTC, computed tomography colonography; gFOBT, guaiac-based fecal occult blood test; FIT, fecal immunochemical test; sDNA, stool DNA test.

TABLE 3 Guidelines for Screening and Surveillance for the Early Detection of Colorectal Adenomas and Cancer in Individuals at Increased Risk or at High Risk

Risk Category	Age to Begin	Recommendation	Comment
Increased Risk—Patients with History of Polyps at Prior Colonoscopy			
Patients with small rectal hyperplastic polyps ²⁶	—	Colonoscopy or other screening options at intervals recommended for average-risk individuals	An exception is patients with a hyperplastic polyposis syndrome. They are at increased risk for adenomas and colorectal cancer and need to be identified for more intensive follow up.
Patients with 1 or 2 small tubular adenomas with low-grade dysplasia ²⁷	5 to 10 years after the initial polypectomy	Colonoscopy	The precise timing within this interval should be based on other clinical factors (such as prior colonoscopy findings, family history, and the preferences of the patient and judgment of the physician).
Patients with 3 to 10 adenomas or 1 adenoma >1 cm or any adenoma with villous features or high-grade dysplasia ²⁸	3 years after the initial polypectomy	Colonoscopy	Adenomas must have been completely removed. If the follow-up colonoscopy is normal or shows only 1 or 2 small, tubular adenomas with low-grade dysplasia, then the interval for the subsequent examination should be 5 years.
Patients with >10 adenomas on a single examination ²⁸	<3 years after the initial polypectomy	Colonoscopy	Consider the possibility of an underlying familial syndrome.
Patients with sessile adenomas that are removed piecemeal ²⁹	2 to 6 months to verify complete removal	Colonoscopy	Once complete removal has been established, subsequent surveillance needs to be individualized based on the endoscopist's judgment. Completeness of removal should be based on both endoscopic and pathologic assessments.
Increased Risk—Patients with Colorectal Cancer			
Patients with colon and rectal cancer should undergo high-quality perioperative clearing ²⁵	3 to 6 months after cancer resection, if no unresectable metastases are found during surgery; alternatively, colonoscopy can be performed intra-operatively	Colonoscopy	In the case of nonobstructing tumors, this can be done by preoperative colonoscopy. In the case of obstructing colon cancers, CTC with intravenous contrast or DCBE can be used to detect neoplasms in the proximal colon.
Patients undergoing curative resection for colon or rectal cancer ²	1 year after the resection (or 1 year following the performance of the colonoscopy that was performed to clear the colon of synchronous disease)	Colonoscopy	This colonoscopy at 1 year is in addition to the perioperative colonoscopy for synchronous tumors. If the examination performed at 1 year is normal, then the interval before the next subsequent examination should be 3 years. If that colonoscopy is normal, then the interval before the next subsequent examination should be 5 years. Following the examination at 1 year, the intervals before subsequent examinations may be shortened if there is evidence of HNPCC or if adenoma findings warrant earlier colonoscopy. Periodic examination of the rectum for the purpose of identifying local recurrence, usually performed at 3- to 6-month intervals for the first 2 or 3 years, may be considered after low-anterior resection of rectal cancer.
Increased Risk—Patients with a Family History			
Either colorectal cancer or adenomatous polyps in a first-degree relative before age 60 years or in 2 or more first-degree relatives at any age ²⁴	Age 40 years or 10 years before the youngest case in the immediate family	Colonoscopy	Every 5 years
Either colorectal cancer or adenomatous polyps in a first-degree relative ≥age 60 years or in 2 second-degree relatives with colorectal cancer ²⁴	Age 40 years	Screening options at intervals recommended for average-risk individuals	Screening should begin at an earlier age, but individuals may choose to be screened with any recommended form of testing.

APPENDIX A: Current Screening and Surveillance Guidelines

TABLE 3 (continued)

Risk Category	Age to Begin	Recommendation	Comment
High Risk			
Genetic diagnosis of FAP or suspected FAP without genetic testing evidence ²⁴	Aged 10 to 12 years	Annual FSIG to determine if the individual is expressing the genetic abnormality and counseling to consider genetic testing.	If the genetic test is positive, colectomy should be considered.
Genetic or clinical diagnosis of HNPCC or individuals at increased risk of HNPCC ²⁴	Aged 20 to 25 years or 10 years before the youngest case in the immediate family	Colonoscopy every 1 to 2 years and counseling to consider genetic testing	Genetic testing for HNPCC should be offered to first-degree relatives of persons with a known inherited MMR gene mutation. It should also be offered when the family mutation is not already known, but 1 of the first 3 of the modified Bethesda Criteria is present.
Inflammatory bowel disease, ²⁴ chronic ulcerative colitis, and Crohn's colitis	Cancer risk begins to be significant 8 years after the onset of pancolitis or 12 to 15 years after the onset of left-sided colitis	Colonoscopy with biopsies for dysplasia	Every 1 to 2 years; these patients are best referred to a center with experience in the surveillance and management of inflammatory bowel disease

Abbreviations: FSIG, flexible sigmoidoscopy; DCBE, double-contrast barium enema; CTC, computed tomographic colonography; FAP, familial adenomatous polyposis; HNPCC, hereditary nonpolyposis colon cancer; MMR, mismatch repair.

U.S. Preventive Services Task Force Summary of Colorectal Cancer Screening Recommendations

The U.S. Preventive Services Task Force (USPSTF) strongly recommends that clinicians screen men and women 50 years of age or older for colorectal cancer. There are insufficient data to determine which strategy is best in terms of the balance of benefits and potential harms or cost-effectiveness. Studies reviewed by the USPSTF indicate that colorectal cancer screening is likely to be cost-effective (less than \$30,000 per additional year of life gained) regardless of the strategy chosen.

Test	Interval (Beginning at age 50)	Comment
Fecal Occult Blood Test (FOBT) and Flexible Sigmoidoscopy	FOBT every year plus flexible sigmoidoscopy at an unspecified interval	The combination of FOBT and sigmoidoscopy may detect more cancers and more large polyps than either test alone, but the additional benefits and potential harms of combining the two tests are uncertain. In general, FOBT should precede sigmoidoscopy because a positive test result is an indication for colonoscopy, obviating the need for sigmoidoscopy.
Flexible Sigmoidoscopy	Unspecified interval	Although sigmoidoscopy can only visualize the lower half of the colon, it has been estimated to identify 80 percent of all patients with significant findings in the colon, because findings on sigmoidoscopy will trigger examination of the entire colon.
Fecal Occult Blood Test (FOBT)	Every year	Proven methods of FOBT screening use guaiac-based test cards prepared at home by patients from three consecutive stool samples and forwarded to the clinician. Whether patients need to restrict their diet and avoid certain medications is not established. Rehydration of the specimens before testing increases the sensitivity of FOBT but substantially increases the number of false-positive test results.
Colonoscopy	Unspecified interval	The USPSTF did not find direct evidence that screening colonoscopy is effective in reducing colorectal cancer mortality. Efficacy of colonoscopy is supported by its integral role in trials of FOBT, extrapolation from sigmoidoscopy studies, limited case-control evidence, and the ability of colonoscopy to inspect the proximal colon.
Double-Contrast Barium Enema (DCBE)	Unspecified interval	Double-contrast barium enema offers an alternative means of whole-bowel examination, but it is less sensitive than colonoscopy, and there is no direct evidence that it is effective in reducing mortality rates.

SOURCE: U.S. Preventive Services Task Force, 2002.

Surveillance Guidelines

Guidelines for Colonoscopy Surveillance after Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer and the American Cancer Society.

Winawer SJ, Zauber AG, Fletcher RH, et al. Guidelines for Colonoscopy Surveillance after Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer and the American Cancer Society. CA Cancer J Clin 2006;56:143-159.



CLICK HERE to go directly to CA: A Cancer Journal for Clinicians to read these consensus guidelines on colonoscopy surveillance after polypectomy.

Surveillance Guidelines

Guidelines for Colonoscopy Surveillance after Cancer Resection: A Consensus Update by the American Cancer Society and US Multi-Society Task Force on Colorectal Cancer.

Rex DK, Kahi CJ, Levin B, et al. Guidelines for Colonoscopy Surveillance after Cancer Resection: A Consensus Update by the American Cancer Society and US Multi-Society Task Force on Colorectal Cancer. CA Cancer J Clin 2006;56:160-167.



CLICK HERE to go directly to CA: A Cancer Journal for Clinicians to read these consensus guidelines on colonoscopy surveillance after cancer resection.

Surveillance Guidelines

Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps, 2008: A Joint Guideline from the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology.

Levin B, Lieberman DA, McFarland B, et al. Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps, 2008: A Joint Guideline from the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology. CA Cancer J Clin 2008;58:130-160.



CLICK HERE to go directly to CA: A Cancer Journal for Clinicians to read these consensus guidelines on screening and surveillance for the early detection of colorectal cancer and adenomatous polyps.

Appendix B:
**Test Your Knowledge
and Answer Key**

Test Your Knowledge

I. Improving Screening Rates in Practice

1. The most effective tool at a physician's disposal for encouraging patients to be screened is:
 - a. A recommendation
 - b. An education pamphlet
 - c. An educational video
 - d. None of the above
 - e. All of the above
2. Which of the following have been demonstrated to be effective in raising cancer screening rates?
 - a. Postcard reminders
 - b. Reminder letters
 - c. Prescription reminders
 - d. Telephone calls
 - e. All of the above
3. Effective chart prompts include:
 - a. Problem lists
 - b. Screening schedules
 - c. Electronic medical record reminders
 - d. Chart stickers
 - e. All of the above

Choose whether the statements are true or false.

True/False

- | | |
|---|-------|
| 4. A theory-based communication strategy is more effective than generic education. | _____ |
| 5. Provider feedback is an effective way to improve office screening rates. | _____ |
| 6. Reassignment of office staff to involve them in the screening process can facilitate improved screening rates. | _____ |
| 7. The digital rectal exam is an accepted CRC screening practice. | _____ |
| 8. Doctors should do a stool blood test in the office to make sure that at least one CRC screening test is completed. | _____ |
| 9. If a stool blood test kit is returned and only one window is positive, the test should be repeated. | _____ |
| 10. A positive stool blood test should be repeated if the diet restrictions were not followed. | _____ |

II. Content of the Current Screening Guidelines

Categorize the risk level of the following patients as average, increased, or high.

11. A 45-year-old woman whose father was diagnosed with a CRC at age 70
Average Increased High
12. A 30-year-old male whose older brother was diagnosed with an adenomatous polyp at age 59
Average Increased High
13. A 50-year-old female whose uncle was diagnosed with an adenomatous polyp at age 55
Average Increased High
14. A 20-year-old woman whose mother died of CRC at age 47
Average Increased High

Choose the correct answer.

15. At what age should “average-risk” patients begin CRC screening?
 Puberty Age 25 Age 40 Age 50 Age 60
16. At what age should a patient with a family history of colorectal cancer or adenomatous polyps affecting one first-degree relative diagnosed at age 55 begin screening?
 Puberty Age 25 Age 40 Age 50 Age 60
17. What screening modality offers the greatest sensitivity and specificity and should be recommended to those at increased risk?
 Stool blood test Stool blood test/Flexible sigmoidoscopy
 Flexible sigmoidoscopy Colonoscopy Double-contrast barium enema
18. What screening modality might be best to recommend to a patient who is distrustful of physicians or very uncomfortable with invasive procedures?
 Stool blood test Stool blood test/Flexible sigmoidoscopy
 Flexible sigmoidoscopy Colonoscopy Double-contrast barium enema

19. Which of the following screening test(s) are recommended for a 40-year-old patient whose 65-year-old father had colorectal cancer or an adenomatous polyp?
- Stool blood test
 - Flexible Sigmoidoscopy
 - Stool DNA testing (sDNA)
 - Colonoscopy
 - Double-contrast barium enema (DCBE)
 - All of the above
20. Which of the following screening test(s) are recommended by one or more authoritative groups for patients at risk of hereditary non-polyposis colon cancer (HNPCC) or familial adenomatous polyposis (FAP)? (Choose one.)
- Stool blood test
 - Flexible Sigmoidoscopy
 - CT colonography (CTC)
 - Colonoscopy
 - Double-contrast barium enema (DCBE)

Answer Key

I. Improving Practice Screening Rates

1. a. *A recommendation.* The evidence is overwhelming that a doctor's recommendation is the most powerful factor that influences a patient to be screened.
2. e. *All of the above.* There is benefit from patient reminders of many types, as shown by meta-analysis of interventions that effectively increased screening rates for breast cancer.
3. e. *All of the above.* There is benefit from all interventions directed at physicians. This conclusion is based on meta-analyses of the studies on interventions directed at physicians to increase screening rates for breast cancer.

Choose whether the statements are true or false.

4. *True.* Meta-analyses provide strong evidence that theory-based communications are more effective than generic education.
5. *True.* Provider feedback has been shown to be an effective way to improve office screening rates.
6. *True.* Reassignment of office staff to involve them in the screening process can facilitate improved screening rates.
7. *False.* The digital rectal exam is no longer considered to be an accepted method for CRC screening. It is omitted from all consensus guidelines.
8. *False.* This practice is not effective. A single stool blood test in the office does not provide the benefit offered by recommended stool blood test screening practices.
9. *False.* Every positive stool blood test should be followed by a complete diagnostic examination with colonoscopy.
10. *False.* Lack of adherence to the diet is not a reason to depart from the rule that every positive stool blood test should be followed by a complete diagnostic examination with colonoscopy.

II. The Content of the Screening Guidelines

Categorize the risk level of the following patients as average, increased, or high.

11. *Increased.* An individual who has a first-degree relative with CRC is at increased risk. The increased risk is slight due to the older age of the relative. Thus, the American Cancer Society and the US Multi-Society Task Force on Colorectal Cancer recommend management like an average risk patient.
12. *Increased.* All guidelines categorize any individual with a family history of an adenomatous polyp in a first-degree relative that is under age 60 as being at increased risk.
13. *Average.* This woman has an uncle – not a first-degree relative – with a positive history.
14. *Increased.* This patient has a first-degree relative diagnosed with a CRC before age 50. This should also raise concerns about the presence of a hereditary syndrome, and family history should be carefully reviewed.

Choose the correct answer.

15. *Age 50.* This is the age at which “average-risk” patients should begin colorectal cancer screening.
16. *Age 40.* This is the age at which patients at increased risk should begin screening, according to the guidelines of the American Cancer Society and the US Multi-Society Task Force on Colorectal Cancer. These guidelines recommend colonoscopy because the procedure is more sensitive and specific. The US Preventive Services Task Force (USPSTF) recognizes this patient as being at increased risk but does not have a specific recommendation about the age to begin screening or about the best modality. The USPSTF recognizes the colonoscopy as the most sensitive and specific test available.
17. *Colonoscopy.* This method is recognized as the most sensitive and specific screening-test available by all consensus guidelines.
18. *Stool Blood Test.* Stool blood testing is not invasive and can be done by an individual in the privacy of their own home.
19. *Colonoscopy or All of the above.* The patient is at increased risk if a first-degree relative had a CRC or an adenomatous polyp. The risk is slight due to the age (>60) of the first-degree relative. Thus, the American Cancer Society and the US Multi-Society Task Force on Colorectal Cancer would continue to offer all screening options. However, colonoscopy is an apt choice because risk is slightly increased.
20. *Colonoscopy.* Colonoscopy should be utilized to screen those who are at high risk because it is currently the test with the highest level of sensitivity and specificity.

Appendix C:

Barriers to Screening for Colorectal Cancer

Barrier	Clarification and Resolution
<p>Outdated knowledge</p>	<ul style="list-style-type: none"> • The digital rectal exam is not accepted practice. • A single FOBT in the office is not evidence-based. • A positive FOBT should not be dismissed as a likely false positive test. It should be followed up by a colonoscopy. <p>Introduction, Essential #1, Guidelines.</p>
<p>Inconsistent guidelines</p>	<ul style="list-style-type: none"> • Physicians often report concerns about inconsistencies in recommended guidelines. • In fact, differences between guidelines are minimal. • Risk stratification must be a priority. <p>Introduction, Essential #2, Guidelines.</p>
<p>Guideline changes</p>	<ul style="list-style-type: none"> • The digital rectal exam is no longer an accepted screening practice. • As additional evidence becomes available, guideline elements, i.e. age to begin screening, the screening interval, the use of different modalities, also will change. <p>Essential #2, Guidelines.</p>
<p>Screening overestimated</p>	<ul style="list-style-type: none"> • Physicians frequently estimate higher screening rates than the actual rates. This may dissipate a sense of urgency about screening. <p>The Screening Practices of Primary Care Physicians.</p>
<p>Confusion about goals</p>	<ul style="list-style-type: none"> • The most common achievement of screening is the removal of an adenomatous polyp. <p>Introduction.</p>
<p>Lack of confidence by doctors</p>	<ul style="list-style-type: none"> • There is high-quality evidence for the efficacy of screening. • Patient acceptance is better than some physicians may believe. <p>Introduction, Essential #2.</p>
<p>Cost and reimbursement</p>	<ul style="list-style-type: none"> • Cost of FOBT is low and colonoscopy cost is declining. • Consult health departments where the uninsured cannot access complete diagnostic examinations. • Discuss the barrier of copays and deductibles. <p>Introduction.</p>
<p>Inadequate resources and reinforcement systems</p>	<ul style="list-style-type: none"> • Nationwide, there are sufficient resources to screen the entire eligible population within one year with FOBT, plus colonoscopy for all positives. (See reference #38.) • Communication strategies can raise efficiency. • Office reminder and reinforcement systems are discussed in the section “Essential #3.” <p>Introduction, Essential #4, The Screening Practices of Primary Care Physicians.</p>

Barriers to Screening for Colorectal Cancer

While there are a number of barriers to improved screening rates, the tools in this guide will help transcend the barriers. Of the barriers in this section, the majority may be overcome through use of the information and strategies that are offered in this publication. The sections of the guide where each barrier is addressed are identified in the table.

Outdated Knowledge

This section will discuss the following practices, which are not evidence-based approaches to screening:

- **The digital rectal exam**
- **A single stool blood test in the office**
- **The “False-Positive” stool blood test**

The digital rectal exam. The digital rectal exam (DRE) is no longer recommended for CRC screening. It is not a recommended strategy in any of the three major guidelines: from the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, or the US Preventive Services Task Force (USPSTF). Only 10 percent of CRCs arise within reach of the examining finger.¹⁶⁵ A study reported in the *Annals of Internal Medicine* demonstrated that the sensitivity of the digital gFOBT is 4.9 percent for advanced neoplasia, compared to 23.9 percent for the six-sample home gFOBT.¹⁶⁶ The digital rectal exam is not an effective screening exam for colorectal cancer.

More than a decade ago, the DRE was recommended as part of the screening exam for CRC for average-risk individuals by the American Cancer Society, the National Cancer Institute, and national professional societies, and the American Academy of Family Physicians, the American College of Obstetricians and Gynecologists, and the American Society of Colon and Rectal Surgeons.¹⁶⁷ **This approach has been abandoned.** Recent evidence demonstrates that this is ineffective for colorectal cancer screening. It should be noted, however, that since the prostate is within the range of the examining finger, the DRE remains an accepted strategy for prostate cancer.

A single stool blood test sample taken in the office. A single stool blood test that is performed in the office is not sound practice.^{†††††} In one study, cited by the USPSTF, the first test card would have missed 42 percent of cancers that were detected by screening.¹⁶⁸ And in a more recent study of more than 2,600 patients who underwent colonoscopy, 95 percent of cancers and significant adenomas went undetected by the single sample stool blood test.¹⁶⁹ No guideline or group recommends a “single stool blood test in the office” as part of the screening regimen. In the past, it was common practice to do a stool blood test in the office during the complete physical as an opportunity to complete one stool blood test. The studies cited above put this view to rest. Some physicians home-based gFOBT. This belief is incorrect.

††††† The evidence for the effectiveness of FOBT as a screening test is based on the completion of three FOBT cards over three days, and on repeat of this process on an annual basis. A single FOBT in the office is not sensitive enough to satisfy the requirements of a screening test.

The “False- Positive” stool blood test. One positive stool blood test window is always an indication for a colonoscopy. There is no justification for repeating a positive stool blood test with another stool blood test. The suspicion that the positive is false because the patient failed to adhere to dietary instructions or medication restrictions is not a relevant concern. The effectiveness of the stool blood test as a screening strategy rests on complete examination of the large bowel following the finding of any positive stool blood test. In addition, the complete diagnostic examination should be done by colonoscopy – not double-contrast barium enema (DCBE) – because it is more sensitive and more specific than DCBE. In one study cited earlier, only 50 percent of patients with a positive stool blood test went on to receive a complete examination of the colon.

Inconsistent Guidelines Despite Unanimity on Principle

Minor inconsistencies in the guidelines have created confusion that must be eliminated. All the guidelines are consistent about the recommendation to screen. All agree there is strong evidence in favor of screening for colorectal cancer. The guidelines differ only in emphasis and in limited ways that create the impression of inconsistency. In a recent survey of physicians, only 37 percent thought the guidelines were clear. Compared to the other guidelines, the USPSTF guidelines seem to promote a narrower array of screening modalities, emphasize a more limited definition of risk, and suggest different ages for initiation of screening. In truth, these are minor variations in emphasis and there is unanimity about the importance of CRC screening. The areas of apparent inconsistency are:

- **Screening options**
- **Risk stratification**
- **Age**

Screening Options. The 2008 American Cancer Society/US Multi-Society Task Force on Colorectal Cancer/American College of Radiology update of the guidelines endorses the value of a variety of screening options and presents the evidence regarding each option. The 2002 USPSTF guideline distinguishes between the options and expresses less enthusiasm for four of them. In the summary statement, the USPSTF states that the use of stool blood test is supported by “good” evidence; FS or stool blood test/FS are supported by “fair” evidence; colonoscopy is supported by no “direct evidence”; and, DCBE is described as “less sensitive” than colonoscopy. However, the USPSTF makes it clear up front that it “strongly recommends that clinicians screen men and women 50 years of age or older for colorectal cancer.”¹⁷¹ The USPSTF also states that “colonoscopy is the most sensitive and specific test for detecting cancer and large polyps.”

Risk Stratification. The guidelines differ in their emphasis on risk and the choice of screening modality in response to risk. The American Cancer Society and the US Multi-Society Task Force on Colorectal Cancer recommend risk stratification as the initial step in determining the appropriate screen for each individual. They recommend colonoscopy for people at increased risk. A family history of colorectal cancer or adenomatous polyp in a first-degree relative increases the lifetime risk of CRC by two to three times, bringing it to 12 to 18 percent. If a first-degree relative presents with one of these at a young age (under 60), the lifetime risk is even greater. Lifetime risk is also increased – but less so – if these factors are present in a second-degree relative, or even a third-degree relative.

The USPSTF focuses its recommendations on people at average risk. This focus is apparent in the way the recommendations are presented and summarized. Though the epidemiology section lists the risk factors (genetic syndromes, family history of CRC, long-standing ulcerative colitis, personal history of adenomatous polyps or family history of adenomatous polyps in a relative under age 60) and identifies the prevalence of adenomatous polyps as 20 to 25 percent by age 50, and 50 percent by age 75 to 80,^{172 173} the USPSTF summary has no special recommendation for management of the common risk factors. The USPSTF concedes that colonoscopy “may be appropriate” with “very high-risk patients,”¹⁷⁴ with the specific groups being those with familial syndromes (FAP, HNPCC) or a personal history of long-standing ulcerative colitis, not the other more common risk experiences presented in the epidemiology section.

Age. The last updates of the American Cancer Society and the US Multi-Society Task Force on Colorectal Cancer guidelines for increased and high-risk individuals recommend that screening begin 10 years before the age of the youngest relative who presented with either CRC or adenomatous polyps or at age 40, whichever comes first. The USPSTF states that, for people at higher risk (i.e. where there is a first-degree relative diagnosed with CRC before age 60), “initiating screening at an earlier age is reasonable.”

Guideline Changes

Some physicians may not be aware that the guidelines have all been updated in response to new evidence, most recently in 2002 (USPSTF) and 2008 (ACS/USMSTF/ACR). As evidence has accumulated, guidelines have changed. The newest guidelines superceded guidelines articulated in 1996, 1997, and 2000. Earlier guidelines date back further and may still be fixed in the minds of some practitioners. The changes are quite significant. In 1989, the US Preventive Services Task Force judged there was insufficient evidence to recommend for or against gFOBT or FS screening.¹⁷⁵ By 2002, the USPSTF found evidence that several screening methods were effective in reducing mortality. Specific areas of change include:

- **The digital rectal exam**
- **Age**
- **Diagnostic workup**

The Digital Rectal Exam. The digital rectal exam is no longer considered a useful screening exam for colorectal cancer. In 1989, a digital rectal exam was considered standard practice in the health maintenance exam to look for CRC and prostate cancer.^{176 177} The digital rectal exam continued to be recommended for screening for both cancers into the mid-1990s. Today, it is recommended as a screening exam for prostate cancer only, not colorectal cancer.

Age. Age 50 is currently recommended as the advent of screening for individuals at average risk. Earlier is better for individuals at increased risk. In the past, the age to begin screening those at average risk was earlier.¹⁷⁸ The American Cancer Society formerly recommended that screening begin at age 40. The age for screening people at increased risk has also varied. In 1979, the Canadian Task Force on the Periodic Health Examination recommended starting at age 45 with an annual stool blood test for those at increased risk. Current recommendations of the American Cancer Society and the US Multi-Society Task Force on Colorectal Cancer are to begin screening 10 years before the youngest relative affected or at age 40.

Diagnostic WorkUp. The recommended workup after a positive stool blood test has changed somewhat since 1997. The American Cancer Society and the US Multi-Society Task Force on Colorectal Cancer previously recommended a colonoscopy or, as an alternative, DCBE plus a flexible sigmoidoscopy. The American Cancer Society and the US Multi-Society Task Force on Colorectal Cancer now recommend a colonoscopy only for this workup because all the evidence for the effectiveness of stool blood testing in reducing mortality is based on diagnostic evaluation with colonoscopy.

Overestimation of Current Screening Rates

Overestimation of screening rates may lull physicians into making less effort than needed to assure that every eligible patient leaves the practice with a recommendation for screening. The fact is that CRC screening rates remain low across the country.^{†††††} Physicians frequently estimate higher screening rates than the actual rates. This may dissipate a sense of urgency about screening. Further, news coverage of emerging technologies may also undercut current efforts to increase screening. Some patients and providers may decide to wait until “better” screening methods are available – not realizing how long that wait will be.

Confusion about Priorities and Goals¹⁷⁹

Even a screening program that identifies relatively few cancers can be highly successful by preventing colorectal cancer. There are two equally important goals of screening. One is to prevent CRC, and thereby reduce the incidence of new cancers. The other is to reduce mortality from existing colorectal cancers. Cancers are prevented when adenomatous polyps are removed before they become cancerous. The removal of early CRCs before they become later-stage cancers further improves the prognosis. The first of the two goals is the more common achievement. Ten to 20 percent of endoscopies find adenomatous polyps. Only 1 percent of endoscopies find a cancer. Due to the tremendous potential for cancer prevention through polyp detection and removal, the 2008 ACS/USMSTF/ACR screening guidelines emphatically state that *colon cancer prevention* should be the primary goal of colorectal cancer screening. These recommendations go on to state that patients should be encouraged to be screened with testing methods that are more likely to detect both early cancer and precancerous polyps (i.e. flexible sigmoidoscopy, colonoscopy, double-contrast barium enema and CT colonography) if resources are available and patients are willing to undergo an invasive test.

Lack of Confidence in Efficacy and Acceptability

Despite strong new evidence that supports the efficacy of screening, some physicians may lack confidence in the efficacy of CRC screening tests. Stool blood test is the most popular recommendation, but only 24 to 35 percent of primary care physicians believe that stool blood tests are “very effective” in reducing mortality, despite evidence from randomized controlled studies.^{180 181} Only 43 to 59 percent believe that FS is “very effective” in reducing mortality, despite the fact that new evidence showed that stool blood test plus FS (followed by colonoscopy for the positives) achieved a detection rate of 75.8 percent.^{§§§§§ 182}

††††† CRC screening rates for every state are available in the Behavioral Risk Surveillance System at www.cdc.gov.

§§§§§ Detection was of adenoma of 10 mm or more, or of adenoma that was 25 percent villous, showed high-grade dysplasia, or was classified as invasive cancer.

Some physicians may believe that a flexible sigmoidoscopy or a colonoscopy is a highly distasteful choice for their patients. Though there is little evidence for this, at least one statewide survey has documented that less than 5 percent of those surveyed found the nature of these tests an inhibiting factor.¹⁸³

Cost and Reimbursement

There are routes available to overcome some cost barriers. While some private insurers may not pay for all screening tests, most insurers pay for some type of screening. Most will support a diagnostic colonoscopy if the result of a stool blood test is positive. Stool blood tests are inexpensive tests and can be performed at home. They may be accessed at pharmacies in many areas of the country. In a study of physician attitudes in Wisconsin, cost was the most common explanation for not recommending colonoscopy.¹⁸⁴ Cost may be less of an issue now than it was previously. In 2004, due to the predominance on the system of Medicare rates, colonoscopy was reimbursed at \$300 to \$400 in many locations, with a similar amount for the facility fee, and modest additional costs for anesthesia, bringing the total cost to \$800 to \$900. These payment levels applied if the procedure was performed in an ambulatory endoscopy or surgery center. For a procedure performed in the hospital, the charge was in the \$1,200 to \$1,500 range. However, screening colonoscopy is performed every 10 years, making the hospital-based costs similar to the cost of annual mammography when calculated as an annual cost. Stool DNA cost estimates range from \$300 to \$400 per episode of testing. Medicare and most private insurance plans do not currently pay for stool DNA testing or for CT colonography when used in a screening capacity, though as of this writing, Medicare is evaluating the evidence around CT colonography for colorectal cancer screening to determine if it should be covered. Medicare does pay for screening colonoscopy and most other screening options. And although screening CTC is not yet reimbursable through the program, 47 states now offer Medicare reimbursement for diagnostic CTC for certain clinical indications (typically limited to patients who have had an incomplete optical colonoscopy).^{*****}

An entry physical that includes CRC screening is a part of the Medicare routine, as of 2005. Some states have regulations that shape insurance coverage. In 26 states and the District of Columbia, insurance plans are required to pay for all CRC screening options, with the exception of the recently added stool DNA testing and CT Colonography. The Health Plan Employer Data and Information Set (HEDIS) reporting requirements (the employers' required data set for health plans) now include CRC screening rates. These are reported to the public as of 2006. This will influence insurers to include CRC in standard policies and pay for more options. However, even where reimbursement is available, deductibles and copays may be a barrier. It has been documented based on data from the National Health Interview Survey, that among people with either Medicare or private insurance coverage, those with lower incomes get screened at a significantly lower rate than those with higher incomes.¹⁸⁵

Also of great concern are the 45 million individuals who lack health insurance coverage.

^{*****} Medicare issued a new policy in 2001. It began paying for screening CS every 10 years. No longer are symptoms of CRC required in order for Medicare to reimburse for screening colonoscopy.

While all uninsured individuals are at risk and much less likely to get screened, uninsured people in the increased risk groups are more likely to suffer the consequences of lack of insurance. For individuals at increased risk, the lack of insurance can be a highly detrimental barrier. Some areas of the country have programs available that provide access to colorectal cancer screening and colonoscopy if it is indicated.

Inadequate Medical Resources and Reinforcement Systems

Inadequate local medical resources may appear to present a barrier. If screening rates are increased, knowledge of local resources is key. While primary care physicians recommend several screening choices to their patients, it has become difficult to obtain flexible sigmoidoscopy in many areas of the country.^{186 187} The use of this test has declined.¹⁸⁸ In areas where reimbursement has declined steeply, sigmoidoscopy is available only on a limited basis.

Staffing needs have grown due to the more complex reimbursement milieu of managed care, and there is concern that patient education wastes time and detracts from activities that better support the bottom line.¹⁹⁰ Efficient communication and reminder systems are needed if office practices are to succeed in raising screening rates.

Offices appear to make limited use of reminder systems despite the evidence for them. A Wisconsin survey revealed that only 5 percent of primary care physicians had a computer reminder system; 37 percent had a paper reminder system; and 58 percent had no reminder system at all.¹⁹¹ The lengthy interval between screening tests (FS every five years or CS every 10 years) makes it difficult to maintain follow up and makes reminder systems even more important, unlike the annual mammogram and stool blood test, which are easy to remember. In the absence of reminder systems, it is difficult to identify patients who are due for screening or to contact them. Since referral and scheduling processes are often cumbersome, time-consuming, and discouraging, follow up is essential. Tracking patients through the system, or waiting for feedback from consultants to confirm follow up and follow-through, may be a challenge. More attention is needed to the system by which results are communicated from consultants to primary care doctors.

Appendix D: Tools

- I. Phone Scripts, Reminder Letters, Postcards**
- II. Preventive Services Schedules**
- III. Audit and Tracking Sheets**
- IV. Brochures, Pamphlets, Posters**

I. Phone Scripts, Reminder Letters, Postcards

gFOBT/FIT Follow-up Phone Script for Average-Risk Individuals

Introduction:

Good morning/afternoon. May I speak with _____?

(Note: Due to HIPAA regulations, the conversation should not proceed unless speaking directly with the patient.)

My name is _____ and I am calling from _____.

You recently received a stool test for colon cancer screening.

Did you have any questions about the test?

We are calling everyone who received one of these to see if there is any way we can help you complete the test.

1. “Have you had the chance to complete and mail your kit?”

If the answer is YES, get the approximate date to ensure that the test will be valid, and get the approximate date of receipt. Thank the participant and let him or her know that you will mail them the results.

If the answer is NO, ask the following question.

Mr./Ms. _____, is there any reason why you have not completed your kit?
(Document reason; possible reasons are listed below.)

- Diet and drug restrictions
- Test is difficult and disgusting.
- Haven't had the time
- Changed my mind
- Received other colorectal cancer testing
- Believe it is not effective way of screening
- Health insurance/doctor

2. Emphasize the benefits of screening and program services.

“Colorectal cancer can affect anyone – men and women alike – and your risk increases with age. Colorectal cancer is highly preventable, treatable, and often curable. There are several screening tests for colorectal cancer. These tests not only detect colorectal cancer early, but also can prevent colorectal cancer.

Beginning at age 50, men and women should be screened regularly for colorectal cancer. If you have a personal or family history of colorectal cancer or colorectal polyps, or personal history of another cancer or inflammatory bowel disease, you should begin screening earlier.

3. If patient indicates that he or she prefers a colonoscopy, ask “Do you have health insurance?”

If he or she is insured, suggest a visit to an endoscopist (gastroenterologist or general surgeon) for a colonoscopy. If he or she does not know a gastroenterologist, give physician referral phone number and appropriate form.

If he or she is uninsured, encourage him or her to follow through with a stool blood test.

Mr./Ms. _____ Thank you for your time today.

Do you have any questions? If you need further assistance completing your kit or have any questions, please give us a call at _____ .

Note: Please document and track these conversations.

Follow-up Phone Script for Individuals at Increased Risk

Introduction:

Good morning/afternoon. May I speak with _____ DOB: _____
(Full Name)

(Note: Due to HIPAA regulations, the conversation should not proceed unless speaking directly with the patient.)

My name is _____ and I am calling from _____ .

You recently received a referral for a colonoscopy screening test for colon cancer.

Did you have any questions about the test?

We are calling to see if there is any way we can help you get screening for colorectal cancer.

1. “I see that on the form you filled out, you checked off.” (Confirm their response.)

- Family history of colorectal cancer or polyps – specify: _____
- Personal history of colorectal cancer or polyps – specify: _____
or *inflammatory bowel disease – specify: _____

2. “Can you tell me more about your history (family history) or symptoms?”

Assess the history or symptoms for significance. (Significant personal or family history is an adenomatous polyp or colorectal cancer in one first-order relative under age 60 or more than one first- or second-degree relative over age 60, or a personal history of inflammatory bowel disease such as Crohn’s disease or ulcerative colitis* for more than eight years.)

3. “Because of your history/family history/symptoms, we recommend that you have a colonoscopy for proper screening.”

4. If the person needs more motivation, emphasize the benefits of screening.

“Colorectal cancer can affect anyone – men and women alike – and your risk increases with age. Colorectal cancer is highly preventable, treatable, and often curable. Most colorectal cancers cause no symptoms in the early stages, which is why screening is so important. There are several screening tests for colorectal cancer. These tests not only detect colorectal cancer early but can also prevent colorectal cancer. Beginning at age 50, men and women should be screened regularly for colorectal cancer. If you have a personal or family history of colorectal cancer or colorectal polyps, or a personal history of an inflammatory bowel disease, you should begin screening earlier.”

* Inflammatory bowel disease – ulcerative colitis, Crohn’s disease

5. **“Have you heard about the colonoscopy (or other procedures)?”**

Discuss as appropriate.

If further assessment indicates that the individual is at increased risk or has significant symptoms, continue to encourage a colonoscopy.

6. **“Do you have health insurance? Do you have a gastroenterologist or surgeon who does colonoscopy?”**

Respond as appropriate with suggestions and problem solving. **If the person is uninsured**, explore alternative options that are available. The office should determine in advance what these options might be.

Mr./Ms. _____ **Thank you for your time today.**

Do you have any questions? If you need further assistance or have any questions, please give us a call at _____ .

Letter to Patient at Average Risk

MAIN STREET MEDICAL

Date

Name
Street
City

Dear (Name):

Our office has made a commitment to promote the health of its members, and to provide education regarding preventive health measures that you can take to maintain a healthy lifestyle. Our records indicate that you are either overdue for colorectal cancer screening tests, or that you have never had a colorectal cancer screening test.

I am writing to ask you to call our office today to schedule a colorectal cancer screening appointment. By getting colorectal cancer screening tests regularly, colorectal cancer can be found and treated early when the chances for cure are best. Many of these tests can also help prevent the development of colorectal cancer.

The American Cancer Society and a number of other major medical organizations recommend that average-risk individuals choose one of the following options for colorectal cancer screening. Screening should begin at age 50.

Tests That Find Polyps and Cancer

- Flexible sigmoidoscopy every 5 years*, or
- Colonoscopy every 10 years, or
- Double-contrast barium enema every 5 years*, or
- CT colonography (virtual colonoscopy) every 5 years*

Tests That Primarily Find Cancer

- Yearly fecal occult blood test (gFOBT)*,**, or
- Yearly fecal immunochemical test (FIT)*,**, or
- Stool DNA test (sDNA), interval uncertain*

* If the test is positive, a colonoscopy should be done.

** The multiple stool take-home test should be used. One test done by the doctor in the office is not adequate for testing. A colonoscopy should be done if the test is positive.

The tests that are designed to find both early cancer and polyps are preferred if these tests are available to you and you are willing to have one of these more invasive tests. Talk to your doctor about which test is best for you.

We have also included for your reference an informational pamphlet on colorectal cancer. Should you have any questions about this pamphlet or colorectal cancer screening tests, please contact us. Thank you for taking time to take care of your health.

Sincerely,

Enclosure: *Colorectal Cancer Screening Brochure*

Reminder Letter to Patient at Average Risk

MAIN STREET MEDICAL

Date

Name
Street
City

Dear (Name):

Colorectal cancer is the second leading cause of cancer death among men and women in the United States. The good news is that this disease can be prevented. Screening tests are vital to preventing colorectal cancer because they can detect precancerous polyps that can be removed easily with routine procedures. Lifestyle changes, such as improving diet and increasing physical activity, can also reduce the risk of cancer.

Like many people, you are at risk for colorectal cancer. I am writing to remind you to call your primary care physician today to schedule a colorectal cancer screening appointment. By getting colorectal cancer screening tests regularly, colorectal cancer can be found and treated early when the chances for cure are best.

Please read the enclosed brochure to learn about colorectal cancer screening. If you'd like to know more about colon cancer and the testing process, I would be happy to talk with you about it further. You can also call the American Cancer Society at 1-800-ACS-2345 or visit www.cancer.org. Whatever your next step, I hope you'll schedule your next screening test soon. It just might save your life.

Sincerely,

Enclosure: *Colorectal Cancer Screening brochure*

Reminder Fold-Over Postcard

MAIN STREET MEDICAL

Date

Dear (Name):

Colon cancer is the second leading cause of cancer-related deaths in the United States, and men and women are equally at risk. The good news is that colon cancer can be prevented or detected early and death from colon cancer can be prevented if screening is done on a regular basis.

Our records indicate that it is time for your annual physical and cancer screening. Please call your primary care physician, at XXX-XXX-XXXX so that you can schedule an appointment at your earliest convenience.

Sincerely,

Letter to Patient at Increased or High Risk

MAIN STREET MEDICAL

Date

Name

Street

City

Dear (Name):

According to our records, you indicated that either you or a family member who is under age 60 has a history of colorectal polyps or cancer. This medical history places you at increased risk for colorectal cancer. Because of this, it is advisable that you have a colonoscopy now.

Colonoscopy is the only method of screening recommended for individuals like you who are known to be at increased risk for colorectal cancer. Even if you had a negative stool blood test or other screening test for colorectal cancer, you still need a colonoscopy.

A colonoscopy is a procedure that must be done by a gastroenterologist or a surgeon at an endoscopy center or hospital. This test will allow a doctor to look inside the entire colon (large intestine) to check for a polyp or cancer.

If you do not have health insurance, please do not let this keep you from getting a colonoscopy. We can assist you with scheduling a colonoscopy or finding a doctor who will see you. Please call _____ to set up an appointment, if you have questions.

If you have private health insurance (Medicare or Medicaid), our office will refer you for a colonoscopy. To obtain the referral, call or take this letter with you to your next doctor's appointment.

Thank you for taking care of your health and following through on this important test.

Sincerely,

Medical Director

Result Letter: Patient Who Has a Positive Screening Result

Note that this letter is for stool blood test, but a similar letter should be sent for patients with positive stool DNA, CT colonography, double-contrast barium enema, or flexible sigmoidoscopy.

MAIN STREET MEDICAL

Date

Name
Street
City

Dear _____,

We wanted to congratulate you on successfully completing the stool blood test. The results of your test for colon and rectal cancer screening showed that you may have blood in your stool and that further testing is needed.

You now need a colonoscopy to look for a possible source of the bleeding and to determine if a polyp or cancer is present. Usually there is no serious problem. If a precancerous growth is found, it can be removed to prevent cancer. However, cancer is one of the potential causes for your bleeding and we want to be very careful to rule out this possibility. A colonoscopy is a procedure that must be done by a doctor at an endoscopy center or a hospital. This test will require that you have anesthesia and will allow a doctor to look inside your entire large intestine to check for a growth or a polyp or cancer. The doctor will explain the colonoscopy results to you after the test.

We can assist you with scheduling a colonoscopy. Please call or visit our office at _____ to obtain a referral or set up an appointment. Also, please take this letter with you to your next doctor's appointment.

Thank you for following up on your health care needs. I am enclosing a brochure that describes colonoscopy. We have a videotape available if you would like to view it.

Sincerely,

Medical Director

Enclosure

II. Preventive Services Schedules*



* To remain up to date, see www.preventiveservices.ahrq.gov.

Adult Female Age 50 to 65 Preventive Care Flow Sheet

PATIENT NAME _____
 DOB ____/____/____

Put Prevention
 Into Practice

DATE		50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
HEALTH GUIDELINES																				
Abuse																				
Advance directives																				
Breast self-exam																				
Calcium																				
Dental health																				
Drugs/alcohol																				
Estrogen																				
HIV/AIDS																				
Injuries																				
Mental health/depression																				
Nutrition																				
Occupational health																				
Physical activity																				
Sexual behavior																				
Tobacco																				
UV exposure																				
Violence & guns																				
✓ = Discussed w/ patient																				

EXAMINATION & TESTS		50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
Height, weight	Each visit																			
Blood pressure	Each visit																			
Skin, oral, thyroid exam																				
Pelvic/PAP																				
STD screening	Sexually active																			
Rectal exam																				
Stool test (home)	Annual ≥50y																			
Breast exam	Annual																			
Mammogram	Annual																			
Flex, Sig, CTC, DCBE	≥50y q5y																			
Colonscopy	≤50y q 10 or high risk																			
Vision, glaucoma screen																				
Cholesterol/lipid profile	q5y																			
Glucose, fasting	q5y																			
Urinalysis	q5y																			
TB skin test	High risk: annual																			
Other																				

IMMUNIZATIONS*		50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
Td	q10y																			
Influenza	Annual																			
Pneumovax	>65y or high risk																			
Hepatitis B	High risk																			

O = Ordered, N = Normal, A = Abnormal Result, R = Refused, E = Done Elsewhere

Source: Adopted from Moser SE, Goering TL. Implementing preventive care flow sheets. *Fam Pract Manage*. February 2001:51-53.
 Flow sheet developed by Wesley Medical Center, Wichita, Kan.; adapted from Put Prevention Into Practice, Office of Disease Prevention and Health Promotion, Public Health Service.

* For current recommendations of immunization practices, go to www.cdc.gov

Adult Female Over 65 Preventive Care Flow Sheet

PATIENT NAME _____
 DOB ____/____/____

Put Prevention
 Into Practice

DATE																				
HEALTH GUIDELINES		AGE																		
Abuse																				
Advance directives																				
Breast self-exam																				
Calcium																				
Dental health																				
Drugs/alcohol																				
Estrogen																				
HIV/AIDS																				
Injuries																				
Mental health/depression																				
Nutrition																				
Occupational health																				
Physical activity																				
Sexual behavior																				
Tobacco																				
UV exposure																				
Violence & guns																				
✓ = Discussed w/ patient																				

EXAMINATION & TESTS																				
Height, weight	Each visit																			
Blood pressure	Each visit																			
Skin, oral, thyroid exam																				
Pelvic/PAP																				
STD screening	Sexually active																			
Rectal exam																				
Stool test (home)	Annual ≥50y																			
Breast exam	Annual																			
Mammogram	Annual																			
Flex, Sig, CTC, DCBE	≥50y q5y																			
Colonscopy	≤50y q 10 or high risk																			
Vision, glaucoma screen																				
Cholesterol/lipid profile	q5y																			
Glucose, fasting	q5y																			
Urinalysis	q5y																			
TB skin test	High risk: annual																			
Other																				

IMMUNIZATIONS*																				
Td	q10y																			
Influenza	Annual																			
Pneumovax	>65y or high risk																			
Hepatitis B	High risk																			

O = Ordered, N = Normal, A = Abnormal Result, R = Refused, E = Done Elsewhere

Source: Adopted from Moser SE, Goering TL. Implementing preventive care flow sheets. *Fam Pract Manage*. February 2001:51-53.
 Flow sheet developed by Wesley Medical Center, Wichita, Kan.; adapted from Put Prevention Into Practice, Office of Disease Prevention and Health Promotion, Public Health Service.

* For current recommendations of immunization practices, go to www.cdc.gov

APPENDIX D: TOOLS: Preventive Services Schedules

Adult Male Age 50 to 65 Preventive Care Flow Sheet

PATIENT NAME _____
DOB ____/____/____

**Put Prevention
 Into Practice**

DATE		50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
HEALTH GUIDELINES																				
Abuse																				
Advance directives																				
Aspirin																				
Dental health																				
Drugs/alcohol																				
HIV/AIDS																				
Injuries																				
Mental health/depression																				
Nutrition																				
Occupational health																				
Physical activity																				
Sexual behavior																				
Testicular self-exam																				
Tobacco																				
UV exposure																				
Violence & guns																				
☑ = Discussed w/ patient																				

EXAMINATION & TESTS		50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
Height, weight	Each visit																			
Blood pressure	Each visit																			
Skin, oral, thyroid exam																				
Rectal prostate exam	annual ≥40 y																			
Stool test (home)	Annual ≥50y																			
Testicular exam																				
STD screening	Sexually active																			
Flex, Sig, CTC, DCBE	≥50y q5y																			
Colonscopy	≤50y q 10 or high risk																			
Vision, glaucoma screen																				
Cholesterol/lipid profile	q5yr																			
Glucose, fasting	q5y																			
TB skin test	High risk: annual																			
PSA	FH-: qy ≥ 50, FH+: qy ≥ 40																			

IMMUNIZATIONS*		50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
Td	q10y																			
Influenza	Annual																			
Pneumovax	>65 or high risk																			
Hepatitis B	High risk																			

O = Ordered, N = Normal, A = Abnormal Result, R = Refused, E = Done Elsewhere

Source: Adopted from Moser SE, Goering TL. Implementing preventive care flow sheets. *Fam Pract Manage*. February 2001;51-53.
 Flow sheet developed by Wesley Medical Center, Wichita, Kan.; adapted from Put Prevention Into Practice, Office of Disease Prevention and Health Promotion, Public Health Service.

* For current recommendations of immunization practices, go to www.cdc.gov

Adult Male Over 65 Preventive Care Flow Sheet

PATIENT NAME _____
 DOB ____/____/____

Put Prevention
 Into Practice

DATE																				
HEALTH GUIDELINES		AGE																		
Abuse																				
Advance directives																				
Aspirin																				
Dental health																				
Drugs/alcohol																				
HIV/AIDS																				
Injuries																				
Mental health/depression																				
Nutrition																				
Occupational health																				
Physical activity																				
Sexual behavior																				
Testicular self-exam																				
Tobacco																				
UV exposure																				
Violence & guns																				
☑ = Discussed w/ patient																				

EXAMINATION & TESTS																				
Height, weight	Each visit																			
Blood pressure	Each visit																			
Skin, oral, thyroid exam																				
Rectal prostate exam	Annual																			
Stool test (home)	Annual ≥50																			
Testicular exam																				
STD screening	Sexually active																			
Flex, Sig, CTC, DCBE	≥50y q5y																			
Colonscopy	≤50y q 10 or high risk																			
Vision, glaucoma screen																				
Cholesterol/lipid profile	q5yr																			
Glucose, fasting	q5y																			
TB skin test	High risk: annual																			
PSA	FH-: qy ≥ 50, FH+: qy ≥ 40																			

IMMUNIZATIONS*																				
Td	q10y																			
Influenza	Annual for > 65y																			
Pneumovax	>65 or high risk																			
Hepatitis B	High risk																			

O = Ordered, N = Normal, A = Abnormal Result, R = Refused, E = Done Elsewhere

Source: Adopted from Moser SE, Goering TL. Implementing preventive care flow sheets. *Fam Pract Manage.* February 2001;51-53.
 Flow sheet developed by Wesley Medical Center, Wichita, Kan.; adapted from Put Prevention Into Practice, Office of Disease Prevention and Health Promotion, Public Health Service.

* For current recommendations of immunization practices, go to www.cdc.gov

Colorectal Cancer Screening – SAMPLE Tracking Template*

	Date
1. a. At-home FOBT/FIT kit given	_____
b. FOBT/FIT test completed	_____
c. Results received	_____
d. If no completion or results, reminder card/letter sent	_____
e. Patient notified of finding	_____
f. Referred for CS if positive	_____
g. Placed in tickler file if negative for next year	_____
2. a. Referred for FS	_____
b. FS scheduled	_____
c. FS test completed	_____
d. FS results received	_____
e. If no completion or results, FS reminder card/letter sent	_____
f. FS patient notified of finding	_____
g. FS placed in tickler file if negative	_____
h. Scheduled for CS if positive	_____
3. a. Referred for CS	_____
b. CS scheduled	_____
c. CS test completed	_____
d. CS results received	_____
e. If no completion or results, CS reminder card/letter sent	_____
f. CS patient notified of finding	_____
g. CS placed in tickler file if negative	_____

Colorectal Cancer Screening – SAMPLE Tracking Template* (continued)

	Date
4. a. Referred for CTC	_____
b. CTC scheduled	_____
c. CTC test completed	_____
d. CTC results received	_____
e. If no completion or results, CTC reminder card/letter sent	_____
f. CTC patient notified of finding	_____
g. CTC placed in tickler file if negative	_____
h. Scheduled for CS if positive	_____

* Adapted from materials developed by the Maryland Department of Health and Mental Hygiene Cancer Prevention Education Screening and Treatment Program.

IV. Brochures, Pamphlets, Posters

Resources

From the Centers for Disease Control and Prevention

<http://www.cdc.gov/cancer/colorectal/>

Fact sheets:

- Questions to Ask Your Doctor
- Screening Tests
- Screening Guidelines
- Insurance and Medicare

Brochures:

- Colorectal Cancer Screening Saves Lives
- Screen for Life Facts for People with Medicare Colorectal
- Cancer Screening: A Circle of Health for Alaskans
- Screen for Life Health Professionals Facts on Screening

From the National Cancer Institute

<http://www.cancer.gov/cancertopics/types/colon-and-rectal>

Booklet:

- What you need to know about cancer of the colon and rectum (also available in Spanish)

From the Foundation of Digestive Health and Nutrition

<http://www.fdh.org/wmspage.cfm?parm1=210>

Fact sheet:

- Colorectal Cancer Fact Sheet

Brochure:

- Women and Colorectal Cancer; also available in Spanish

From the Prevent Cancer Foundation

<http://preventcancer.org/colorectal3c.aspx?id=1036>

Fact Sheets:

- Colorectal Cancer (also available in Spanish)

From the American Cancer Society

<http://www.cancer.org/colonmd>

Clinician's Information Source:

- Brochures, DVDs, wall charts

<http://caonline.amcancersoc.org/cgi/content/full/57/6/354>

- Journal article summarizing this guide

<http://caonline.amcancersoc.org/cgi/content/full/CA.2007.0017v1>

- Journal article summarizing recent Colorectal Guidelines

From the Agency for Healthcare Research and Quality

<http://www.ahrq.gov/ppip/healthymen.htm>

<http://www.ahrq.gov/ppip/healthywom.htm>

Health Checklist

- Health Checklist for men and women

References

- 1 Collins JF, Lieberman DA, Durbin TE, Weiss DG. For Veterans Cooperative Study Group 380. Accuracy of screening for fecal occult blood on a single stool sample obtained by digital rectal examination: A comparison with recommended sampling practice. 2005 Jan 18; 142(2): 81-85.
- 2 Ibid.
- 3 Winawer SJ, Zauber AG, Gerdes H, et al. Risk of colorectal cancer in the families of patients with adenomatous polyps. *New Engl J Med* 1996; 334:82-87.
- 4 Winawer SJ, Zauber AG, Gerdes H, et al. Risk of colorectal cancer in the families of patients with adenomatous polyps. *New Engl J Med* 1996; 334:82-87.
- 5 Myers RE, Turner B, Weinberg D, et al. Complete diagnostic evaluation in colorectal cancer screening; research design and baseline findings. *Prev Med*. 2001 Oct; 33(4):139- 249-60. and Myers RE, turner B, Winberg D, Hyslop T, Hauck WW, Brigham T, rothermel T, Grana J, Schlackman N. Impact of a physician-oriented intervention on follow-up in colorectal cancer screening. *Prev Med* 2004Apr; 38(4): 375-81.
- 6 Ibid.
- 7 Levin B, Smith RA, Feldman GE, COLDITZ GA, Fletcher RH, Nadel M, Rothenberger DA, Schrol PS, Vernon SW, Wender R. Promoting Early Detection Tests for Colorectal Carcinoma and Adenomatous Polyps. *Cancer*. October 15, 2002. 95(8); 1618-1628.
- 8 Frazier AL, Colditz GA, Fuchs CS, Kuntz KM. Cost-effectiveness of screening for colorectal cancer in the general population. *JAMA*. 2000;284:1954-1561. And Sonnenberg A, Delco F, Inadomi JM. Cost-effectiveness of colonoscopy in screening for colorectal cancer. *Ann Intern Med*. 2000. 2000; 133: 573-584.
- 9 US Department of Health and Human Services (2000, November). *Healthy People 2010. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health*. 2 vols. Washington, DC: US Government Printing Office. [WWW document] <http://www.healthypeople.gov/> (Viewed July 2007).
- 10 Sonnenberg A, Delco F, Inadomi JM. Cost-effectiveness of colonoscopy in screening for colorectal cancer. *Ann Intern Med*.
- 11 National Cancer Institute. Conquering colorectal cancer: a blueprint for the future – The report of the Colorectal Cancer Progress Review Group. Bethesda, MD: National Cancer Institute, 2000.
- 12 Winawer SJ, Zauber AG, Ho MN, O'Brien MJ, Gottlieb LS, Sternberg SS, et.al. Prevention of colorectal cancer by colonoscopic polypectomy. The National Polyp Study Workgroup. *N Engl J Med* 1993; 329: 1977-1981.
- 13 Seeff LC, Nadel MR, Klabunde CN, Thompson T, Shapiro JA, Vernon SW, Coates RJ. Patterns and predictors of colorectal cancer test use in the adult US population. *Cancer*. 2004 May 15;100(10):2093-103.
- 14 www.wrongdiagnosis.com/malpractice/overview
- 15 Klabunde CN, Frame PS, Meadow A, Jones E, Nadel M, Vernon SW. A national survey of primary care physicians' colorectal cancer screening recommendations and practices. *Prev Med*. 2003 Mar;36(3):352-62.
- 16 Rise LAG, Eisner MP, Kosary CL, et. al. eds. *SEER cancer statistics review, 1975-2000*. Bethesda (MD): National Cancer Institute, <http://seer.cancer.gov/csr/1975-2000>, 2003.
- 17 Agrawal S, Bhupinderjit A, Bhutani M, et. al. Colorectal Cancer in African Americans. *Am J Gastroenterol* 2005; 100: 515-523.
- 18 Ioannou GN. Predictors of colorectal cancer screening participation in the United States. *Am J Gastroenterol* 2003;98:2082-91.
- 19 Richards RJ, Reker DM. Racial differences in use of colonoscopy, sigmoidoscopy, and barium enema in medicare beneficiaries. *Dig Dis Sci* 2002;47:2715-9.
- 20 Agrawal S, Bhupinderjit A, Bhutani MS, et.al. Colorectal Cancer in African Americans. *Am J Gastroenterol* 2005;100:515-523.
- 21 Centers for Disease Control. Behavioral Risk Factor Surveillance System. Health Access 2000, 2002. Department of Health and Human Services. www.cdc.gov.
- 22 Schroy PC 3rd, Geller AC, Wood C, Sutherland PM, Holm LJ, Heeren T. Utilization of colorectal cancer screening tests: a 1997 survey of Massachusetts internists. *Prev Med*. 2001 Nov; 33(5): 381-9.
- 23 Schroy PC 3rd, Barrison AF, Ling BS, Wilson S, Geller AC. Family history and colorectal cancer screening: a survey of physician knowledge and practice patterns. *Am J Gastroenterol* 2002; 97: 1031-6.
- 24 Lemon SC, Zapka JG, Estabrook B, Erban S, Luckmann R. Screening for Colorectal Cancer on the Front Line. *Am J Gastroenterol* 2003; 98(4): 916-923.
- 25 Winawer SJ, Zauber AG, Gerdes H, et al. Risk of colorectal cancer in the families of patients with adenomatous polyps. *NewEngl J Med* 1996; 334:82-87.
- 26 Burt RW, bishop DT, Cannon LA, et. al. Dominant inheritance of adenomatous colonic polyps and colorectal cancer. *N Engl J Med* 1985; 312:1540-1544.
- 27 Minimal Elements for CRC Screening. Maryland State CRC Advisory Committee, Maryland State Cancer Prevention, Education, Screening and Treatment Program, www.fha.dhnh/colcan/.
- 28 N. Baig, R.E. Myers, B.J. Turner, J. Grana, T. Rothermel, N. Schlackma, and D.S. Weinberg, "Physician-Reported Reasons for Limited Follow-Up of Patient with a Positive Fecal Occult Blood Test Screening Result," *The American Journal of Gastroenterology* Vol 98, No 9. 2003: 2078-2081
- 29 Guide to Clinical Preventive Services: An Assessment of the Effectiveness of 169 Interventions. Report of the US Preventive Services Task Force. Williams & Wilkins: Baltimore, p 51-53.

REFERENCES

- 30 Dulai GW, Farmer MM, Ganz A, et. al. Primary Care Provider Perceptions of Barriers to and Facilitators of Colorectal Cancer Screening in a Managed Care Setting. *Cancer* May 1, 1004; 100 (9): 1843-1852.
- 31 Winawer S, Fletcher R, Rex D, et. al. for the Multisociety Task Force on Colorectal Cancer. American Gastroenterological Association: Colorectal Cancer Screening and Surveillance: Clinical Guidelines and Rationale-Update Based on New Evidence. *Gastroenterology* 2003; 124:544-560.
- 32 Dulai GW, Farmer MM, Ganz A, et. al. Primary Care Provider Perceptions of Barriers to and Facilitators of Colorectal Cancer Screening in a Managed Care Setting. *Cancer*. May 1, 1004; 100 (9): 1843-1852.
- 33 Winawer SJ, Flehinger BJ, Schottenfeld D, Miller DG. Screening for colorectal cancer with fecal occult blood testing and sigmoidoscopy. *J Natl Cancer Inst*. 1993 Dec 1;85(23):1965-6.
- 34 Lieberman DA, Weiss DG. One time screening for colorectal cancer with combined fecal occult-blood testing and examination of the distal colon. *N Engl J Med* 2001; 345:555-560.
- 35 Winawer SJ. *J of the Nat Cancer Inst* 1993 Aug 18;85(16):1311-8.
- 36 Maryland Department of Health and Mental Hygiene. State Baseline Cancer Survey, 2002.
- 37 Taylor ML, Anderson R. Colorectal cancer screening: physician attitudes and practices. *WMJ*. 2002;101(5):39-43.
- 38 Seef LC, Manninen DL, Dong FB, Chattopadhyay, Nadel MR, Tangka FKL, Molinari NM. Is there endoscopic capacity to provide colorectal cancer screening to the unscreened population in the United States? *Gastroenterology* 2004; 127: 1661-1669.
- 39 Taylor ML, Anderson R. Colorectal cancer screening: physician attitudes and practices. *WMJ*. 2002;101(5):39-43.
- 40 Mendelson MT, et. al., *Am J Prev Med*. 19: 2000, page 149.
- 41 Rimer BK; Use of Multiple Media and Breast Cancer Screening: An Introduction. *J of Health Commun*; 2000; 5, 113-116.
- 42 Hawley ST, Earp JA, O'Malley M, Ricketts TC; The Role of Physician Recommendation in Women's Mammography Use: Is it a 2 stage Process?; *Med Care*, 2000; 38(4), 392-403.
- 43 O'Malley MS, Earp JA, Hawley ST, Schell MJ, Mathews HF, Mitchell J. The association of race/ethnicity, socioeconomic status, and physician recommendation for mammography: who gets the message about breast cancer screening? *Am J Public Health*. 2001 Jan;91(1):49-54.
- 44 Grady KE, Lemkau JP, McVay JM, Reisine ST. the importance of physician encouragement in breast cancer screening of older women. *Prev. Med.*, 21:776-780, 1992.
- 45 Fox SA, Stein JA. The effect of physician-patient communication on mammography utilization by different ethnic groups. *Med Care* (Phila), 29:1065-1082, 1991.
- 46 Harokopos V, McDermott RJ; Cervical Cancer Screening: Benefits and Barriers; *Jl of Health Educ*; 1996, 27(6), 351-356.
- 47 "Breast and Cervical Cancer Screening Barriers and Use Among Specific Populations;" AMC Cancer Research Center; Review, 1995.
- 48 Etzioni DA, Ponce NA, Babey SH, Spencer BA, Brown ER, Ko CY, Chawla N, Breen N, Klabunde CN. A population-based study of colorectal cancer test use: Results from the 2001 california health interview survey. *Cancer* 2004 Dec 1;101(11):2523-2532.
- 49 Zapka JG, Puleo E, Vickers-Lahti M, Luckmann R. Healthcare system factors and colorectal cancer screening. *Am J Prev Med* 2002 Jul;23(1):28-35.
- 50 O'Malley AS, Forrest CB, Mandelblatt J. Adherence of low-income women to cancer screening recommendations. *J Gen Intern Med* 2002 Feb;17(2):144-54.
- 51 Gilbert A, Kanarek N. Colorectal cancer screening: Physician recommendation is influential advice to Marylanders. *Preventive Medicine* 2005;41:367-79.
- 52 Klabunde CN, Schenck AP, Davis WW. Barriers to colorectal cancer screening among Medicare consumers. *Am J Prev Med*. 2006 Apr; 30(4): 313-9.
- 53 Zapka JG, Puleo E, Vickers-Lahti M, Luckmann R. Healthcare system factors and colorectal cancer screening. *Am J Prev Med*. 2002 Jul;23(1):28-35.
- 54 Seeff LC, Nadel MR, Klabunde CN, Thompson T, Shapiro JA, Vernon SW, Coates RJ. Patterns and predictors of colorectal cancer test use in the adult US population. *Cancer*. 2004 May 15;100(10):2093-103.
- 55 Ouyang DL, Chen JJ, Getzenberg RH, Schoen RE. Noninvasive testing for colorectal cancer: a review. *Am J Gastroenterol*. 2005 Jun;100(6):1393-403.
- 56 Norman, S. American Cancer Society study in Pennsylvania reveals powerful new weapon in the fight against colorectal cancer. American Cancer Society, Pennsylvania Division. 2003.
- 57 Office of Cancer Surveillance and Control. Maryland Department of Health and Mental Hygiene. Maryland State Cancer Survey, 2006.
- 58 Ibid.
- 59 O'Malley MS, Earp JA, Hawley ST, Schell MJ, Mathews HF, Mitchell J. The association of race/ethnicity, socioeconomic status, and physician recommendation for mammography: who gets the message about breast cancer screening? *Am J Public Health*. 2001 Jan;91(1):49-54.
- 60 Lambrew JM, Defriese GH, Carey TS, Ricketts TC, Biddle AK. The Effects of Having a Regular Doctor on Access to Primary Care. *Med Care*. 1996;34: 138-151.
- 61 Bloom B, Simpson G, Cohen RA, Parsons PE. *Access to Health Care*. Part 2: Working-age Adults. National Center for Health Statistics. *Vital Health Stat* 10 (197). 1997.
- 62 Zuvekas SH, Weinick RM. Changes in Access to Care, 1977-1996: the Role of Health Insurance. *Health Services Research*. 1999;34:271-279.
- 63 Weinick RM, Drilea SK. Usual Sources of Health Care and Barriers to Care, 1996. *Statistical Bulletin-Metropolitan Insurance Companies*. 1998;79:11-17.

REFERENCES

- 64 Devoe JE, Fryer GE, Phillips R, Green L. Receipt of Preventive care Among Adults: Insurance Status and Usual Source of Care. *Am J of Pub Health*. 2003;93:786-791.
- 65 Weinick, RM, Zuvekas SH. Experience of Primary Care by Racial and Ethnic Groups. *Med Care*. 2000;38:447-448.
- 66 Devoe JE, Fryer GE, Phillips R, Green L. Receipt of Preventive care Among Adults: Insurance Status and Usual Source of Care. *Am J Pub Health*. 2003;93:786-791.
- 67 Etzioni DA, Ponce NA, Babey SH, S. J Gen Int Med. 1996;11:269-276. Etzioni DA, Ponce NA, Brown ER, Ko CY, Chawla N, Breen N, Klabunde CN. A population-based study of Colorectal Cancer Test Use: Results from the 2001 California Health Interview Survey. *Cancer*. December 1, 2004; 101(11); 2523-2532.
- 68 Cairns CP, Viswanath K. Communication and colorectal cancer screening among the uninsured: data from the Health Information National Trends Survey (United States). *Cancer Causes Control* 2006; 17: 1115-1125.
- 69 Adams EK, Thorpe KE, Becker ER, Joski PJ, Flome J. Colorectal cancer screening, 1997-1999: role of income, insurance and policy. *Prev Med*. 2004 May;38(5):551-7.
- 70 Rimer BK; Interventions to Increase Breast Screening: Lifespan and Ethnicity Issues; *Cancer Supplement*; 1994; 74:1, 323-328.
- 71 Taylor V, Lessler D, Mertens K, Tu SP, Hart A, Chan N, Shu J, Thompson B. Colorectal cancer screening among African Americans: the importance of physician recommendation. *J Natl Med Assoc*. 2003 Sep;95(9):806-12.
- 72 O'Malley MS, Earp JA, Hawley ST, Schell MJ, Mathews HF, Mitchell J. The association of race/ethnicity, socioeconomic status, and physician recommendation for mammography: who gets the message about breast cancer screening? *Am J Public Health*. 2001 Jan;91(1):49-54.
- 73 Siminoff LA, Graham GC, Gordon NH. Cancer communication patterns and the influence of patient characteristics: Disparities in information-giving and affective behaviors. *Patient Education and Counseling* 2006; 6: 355-360.
- 74 Nickens H. Race/Ethnicity as a Factor in Health and Health Care. *Health Services Research*. 1995;30:151-162.
- 75 Legler J, Meissner HI, Coyne C, et. al. The Effectiveness of Interventions to Promote Mammography among Women with Historically Lower Rates of Screening. *Ca Epidemiol Biomarkers and Prev*. 2002; 11: 59-71.
- 76 Sarfaty M, Uptake of Colorectal Cancer Screening in an Uninsured Population. *Prev Med*. 2005 Sept.-Oct; 41 (3-4): 703-6.
- 77 Mandel JS, Church TR, Bond JH, Federer F, Geisser MS, Mongin SJ, et. al. The effect of fecal occult blood screening on the incidence of colorectal cancer. *N Engl J Med* 2000; 343: 1603-1607.
- 78 Hardcastle JD, Chamberlain JO, Robinson MH, Moss SM, Amar SS, Balfour TW, et. al. Randomized controlled trial of fecal-occult-blood screening for colorectal cancer. *Lancet* 1996;348:1472-1477.
- 79 Baig N, Myers RE, Turner BJ, Grana J, rothermel T, Schlackman N, Weinberg DS. Physician-reported reasons for limited follow-up of patients with a positive fecal occult blood test screening result. *Am J Gastroenterol*. 2003 Sep; 98(9): 2078-81.
- 80 Turner B, Myers RE, Hyslop T, Hauck WW, Winberg D, Brigham T, Grana J, rothermel T, Schlackman N. Physician and patient factors associated with ordering a colon evaluation after a positive fecal occult blood test. *J Gen Intern Med*. 2003 May; 18(5): 402-3.
- 81 Myers RE, Balshem AM, Wolf TA, Ross EA, Millner L. Screening for colorectal neoplasia: physician's adherence to complete diagnostic evaluation. *Am J Public Health*. 1993 Nov; 83(11): 1620-2.
- 82 Myers RE, Turner B, Winberg D, Hauck WW, Hyslop T, Brigham T, rothermel T, Grana J, Schlackman N. Complete diagnostic evaluation in colorectal screening: research design and baseline findings. *Prev Med*. 2001 Oct; 33(4):249-60.
- 83 Myers RE, turner B, Winberg D, Hyslop T, Hauck WW, Brigham T, rothermel T, Grana J, Schlackman N. Impact of a physician-oriented intervention on follow-up in colorectal cancer screening. *Prev Med* 2004Apr; 38(4): 375-81.
- 84 The Quality Chasm. Institute of Medicine, *National Academy Press*. 2001.
- 85 Colorectal cancer. Call to Action. www.cdc.gov
- 86 Sifri RD, Wender R, Paynter N. Cancer risk assessment from family history : Gaps in primary care practice. *The Journal of Family Practice* 2002 Oct; 51 (10):856.
- 87 Winawer SJ, Shike M. "Prevention and control of colorectal cancer." In Greenwald P, Kramer BS, Weed D, ets. *Cancer Prevention and Control*. New York: Marcell-Dekker, 1995. 537-60
- 88 US Preventive Services Task Force, Screening for Colorectal Cancer, Recommendations and Rationale. *Ann Int Med*. 16 July 2002; 137(2), p 129-131.
- 89 Lynch HT, de la Chapelle A. Hereditary colorectal cancer. *N Engl J Med* 2003;348:919-932 and Burt R, Neklason DW. Genetic testing for inherited colon cancer. *Gastroenterology* 2005;128:1696-1716.
- 90 Hernegger GS, Moore HG, Guillem JG. Attenuated familial adenomatous polyposis: an evolving and poorly understood entity. *Dis Colon Rectum* 2002;45:127-136. And Umar A, Boland CR, Terdiman JP, et. al. Revised Bethesda Guidelines for hereditary nonpolyposis colorectal cancer (Lynch syndrome) and microsatellite instability. *J Natl Cancer Inst*. 2004 Feb 18;96(4):261-8.
- 91 Vernon SW, Meissner H, Klabunde C, et al. Measures for ascertaining use of colorectal cancer screening in behavioral, health services, and epidemiologic research. *Cancer Epidemiol Biomarkers Prev* 2004;13:898-905.
- 92 Seef LC, Manninen DL, dong FB, Chattopadhyay SK, Nadel MR, Tangka FK, Molinari NA. Is there endoscopic capacity to provide colorectal cancer screening to the unscreened population in the United States? *Gastroenterology*. Dec. 2004; 127(6): 1661-9.
- 93 Wigton RS , Alguire P. The declining number and variety of procedures done by general internists: A resurvey of members of the American College of Physicians. *Annals of InternalMedicine*. 6 March 2007; 146 (5): 355-360.
- 94 Meyers R, Sarfaty M. A Study on Various Aspects of Colorectal Cancer Screening. Pennsylvania Legislative Budget and Finance Committee (LBFC). Reports Released: Health and Welfare: January 2007. 55 pp. <http://lbfc.legis.state.pa.us>
- 95 2004 Colorectal Cancer Legislation Report Card. Entertainment Industry Foundation's National Colorectal Cancer Research Alliance and the American Gastroenterological Association. www.eifoundation.org

REFERENCES

- 96 Sarfaty M, Wender R. How to Increase Colorectal Cancer Screening Rates in Practice. *CA Cancer J Clin* 2007; 57, 00-00.
- 97 Shekelle PG, Stone E, Maglione M, et al. Evidence Report and Evidence-Based Recommendations: Interventions that Increase the Utilization of Medicare-Funded Preventive Services for Persons Age 65 and Older. Baltimore, MD: US Department of Health and Human Services, Health Care Financing Administration; 1999.
- 98 Institute for Healthcare Improvement. Improvement Methods. Available at: <http://www.ihl.org/IHI/Topics/Improvement/ImprovementMethods>. Accessed April 28, 2007.
- 99 S. McPhee, J. Bird, D. Fordham, J. Rodnick and E. Osborn. Promoting cancer prevention activities by primary care physicians. *JAMA* 1991; 266: 538-544.
- 100 D.K.Litzelman, R.S. Dittus, M.E. Miller, W.M. Tierney. Requiring physicians to respond to computerized reminders improves their compliance with preventive care. *J. Gen Intern Med.* 1993; 8: 311-317.
- 101 F.A. Pommerenke and D.L. Weed. Physician compliance: review and application to cancer detection and prevention. *Am Fam Pract.* 1991 ; 43: 560-568.
- 102 Yabroff KR, Mandelblatt JS. Interventions targeted toward patients to Increase Mammography Use. *Cancer Epidemiology, Biomarkers and Prevention*, Vol 8 September 1999, 749-757.
- 103 Myers RE, Ross E, Wolf T, Balschem A, Jepson C. Behavioral interventions to increase adherence in colorectal cancer screening. *Medical Care* 1991;29:1030-1050.
- 104 Yabroff KR, Mandelblatt JS. Interventions targeted toward patients to Increase Mammography Use. *Cancer Epidemiology, Biomarkers and Prevention*, Vol 8 September 1999, 749-757.
- 105 Legler J, Meissner HI, Coyne C, et. al. The Effectiveness of Interventions to Promote Mammography among Women with Historically Lower Rates of Screening. *Cancer Epidemiology, Biomarkers and Prevention.* 2002; 11: 59-71.
- 106 Myers RE, Ross E, Wolf T, Balschem A, Jepson C. Behavioral interventions to increase adherence in colorectal cancer screening. *Medical Care* 1991;29:1030-1050.
- 107 Goldberg D, Schiff GD, McNutt R, Furumoto-Dawson A, Hammerman M, Hoffman A. Mailings Timed to Patients' Appointments: A Controlled Trial of Fecal Occult Blood Cards. *Am J Prev Med* 2004; 26(5).
- 108 Mandelblatt JS, Kanetsky PA. Effectiveness of interventions to enhance physician screening for breast cancer. *J Fam Pract*;40: 162-170, 1995.
- 109 Moser SE, Goering TL. Implementing preventive care flow sheets. *Fam Pract Manage.* February 2001:51-53.
- 110 First published in A Step-by-Step Guide to Delivering Clinical Preventive Services: A Systems Approach. US Department of Health and Human Services, Agency for Healthcare Research and Quality. Rockville, MD, 2001. AHRQ Pub No APPIP01-0001.
- 111 US Preventive Service Task Force and Put Prevention Into Practice. www.preventiveservices.ahrq.gov
- 112 Stelman MA. The Integrated Summary: A Documentation Tool to Improve Patient Care. *Fam Pract Manage.* April 2003.
- 113 Schulte B, O'Hea EL, Darling P. Putting Clinical guidelines Into Practice. *Family Practice Management.* May 2001.
- 114 Chosewood, C. Are Your Patients Getting the Preventive Services They Need? *Fam Pract Manage.* January 1999 in www.aafp.org/fpm/990100fm/improving.html
- 115 Schulte B, O'Hea EL, Darling P. Putting Clinical guidelines Into Practice. *Family Practice Management.* May 2001.
- 116 Lemon SC, Zapka JG, Estabrook B, Erban S, Luckmann R. Screening for Colorectal Cancer on the Front Line. *Am J Gastroenterol* 2003; 98(4): 916-923.
- 117 Balas EA, Austin SM, Mitchell JA, Ewigman BG, Bopp KD, Brown GD. The clinical value of computerized information services. A review of 98 randomized clinical trials. *Arch Fam Med* 1996; 5:271-8
- 118 Hunt DL, Haynes RB, Hanna SE, Smith K. Effects of computer-based clinical decision support systems on physician performance and patient outcomes: a systematic review. *JAMA* 1998; 280:1339-46
- 119 Nease DE, Green LA. ClinInfoTracker: A Generalizable Prompting Tool for Primary Care. *JABFP* March-April 2003; Vol 16(2): 115-123
- 120 Center for Health Information Technology. www.aafp.org/centerforhit.xml
- 121 Ornstein SM, Jenkins RG, Edsall RL. Computerized Patient Record Systems: A Survey of 28 Vendors. *Fam Pract Manage.* November/December 1997.
- 122 www.pecsys.org
- 123 Nease DE, Green LA. ClinInfoTracker: A Generalizable Prompting Tool for Primary Care. *JABFP* March-April 2003; Vol 16(2): 115-123.
- 124 Pickering P. Re-engineering Consultant, Patient Visit Re-Design Workshop. Coleman Associates. April 26, 2004.
- 125 Pickering P. Re-engineering Consultant, Patient Visit Re-Design Workshop. Coleman Associates. April 26, 2004.
- 126 Rimer BK, "Perspectives on Intrapersonal Theories of Health Behavior," in *Health Behavior and Health Education: Theory, Research, and Practice*; 3rd edition; ed. Karen Glanz, Barbara K Rimer, Frances Marcus Lewis; Jossey Bass; 2002, 148.
- 127 Vernon SW, Myers RE, Tilley BC; "Development and Validation of an Instrument to Measure Factors Related to Colorectal Cancer Screening Adherence", *Cancer Epidemiol, Biomarkers Prev*; Vol 6, October 1997, 825-826.
- 128 Trauth JM, Ling BS, Weissfeld JL, Schoen, RE, Hayran M; "Using the Transtheoretical Model to Stage Screening Behavior for Colorectal Cancer;" *Health Education and Behavior*, June 2003, 322-336.
- 129 American Board of Internal Medicine. Practice Improvement Module. Available at: www.abim.org/online/pim. Accessed July 27, 2007.
- 130 American Board of Family Medicine. Part IV – Performance in Practice (PPM). Available at: <https://www.theabfm.org/MOC/part4.aspx>. Accessed July 27, 2007.
- 131 Agency for Healthcare Research and Quality. Dissemination and Implementation: Put Prevention Into Practice (PPIP). Available at: www.ahrq.gov/clinic/ppipix.htm#tools. Accessed July 27, 2007.

REFERENCES

- 132 Borgmeyer C. Innovative AAFP performance measurement program aims to meet multiple goals. *FP Report*; January 2005: 3.
- 133 Rand. Evidence report and evidence-based recommendations: Interventions that increase the utilization of Medicare-funded preventive services for persons age 65 and older. US Department of Health and Human Services, Centers for Medicare and Medicaid Services, 1999.
- 134 Balas, EA, Weingarten S, Garbon CT, Blumenthal, D, Boren, SA, Brown GD. Improving preventive care by prompting physicians. *Arch Int Med*, 2000; 160: 301-308.
- 135 Agency for Healthcare Research and Quality, Rockville MD. Put Prevention into Practice. 10 Steps: Implementation Guide. 2nd Edition, Publication No APPIP 98-0025, 1198.
- 136 Chosewood, C. Are Your Patients Getting the Preventive Services They Need? *Fam Pract Manage*. January 1999 in www.aafp.org/fpm/990100fm/improving.html.
- 137 Institute for Healthcare Improvement. How to Improve: Improvement Methods. www.ihl.org/IHI/Topics
- 138 Lumetra. Improve Preventive Care: A System Approach. www.cmri-ca.org/tools
- 139 Lumetra. Improve Preventive Care: A System Approach. www.cmri-ca.org/tools
- 140 Yabroff and Mandelblatt, 1999, op cit.
- 141 Legler, et. al., 2002, op cit.
- 142 Yarnall KSH, Pollak KI, Ostbye T, Krause KM, Michener JL. Primary care: Is there enough time for prevention? *American Journal of Public Health* April 2003;93(4):635-641.
- 143 Heisler M, Bouknight RR, Hayward RA, et. al. The relative importance of physician communication, participatory decision making, and patient understanding in diabetes self-management. *J Gen Intern Med*. 2002 Apr; 17(4):243-52.
- 144 Bredart A, Bouleuc C, Dolbeault S. Doctor-patient communication and satisfaction with care in oncology. *Curr Opin Oncol* 2005 Jul;17(4):351-4.
- 145 Yedidia MJ, Gillespie CC, Kachur E et.al. Effect of communications training on medical student performance. *JAMA* 2003 Sep 3; 290(9):1210-2.
- 146 Rogers ES, Wallace LS, Weiss BD. Misperceptions of Medical Understanding in Low-Literacy Patients: Implications for Cancer Prevention. *Cancer Control* July 2006; Vol 13(3): 225-229.
- 147 Honda K, Kagawa-Singer M. Cognitive Mediators Linking Social Support Networks to Colorectal Cancer Screening Adherence. *Journal of Behavioral Medicine* October 2006; Vol 29(5): 449-460.
- 148 Prochaska JO, DiClemente CC; "Stages and Processes of Self-Change of Smoking Toward an Integrative model of Change;" *Journal of Consulting and Clinical Psychology*; 1983; 51, 390-395.
- 149 Rimer BK, "Perspectives on Intrapersonal Theories of Health Behavior," in *Health Behavior and Health Education: Theory, Research, and Practice*; 3rd edition; ed. Karen Glanz, Barbara K Rimer, Frances Marcus Lewis; Jossey Bass; 2002, 148.
- 150 Menon U, Belue R, Sugg Skinner C, Rothwell BE, Champion V. Perceptions of colon cancer screening by stage of screening test adoption. *Cancer Nurs*. 2007 May-Jun;30(3):178-85.
- 151 Yabroff KR, Mandelblatt JS, Interventions targeted toward patients to Increase Mammography Use. *Cancer Epidemiol, Biomarkers and Prev*, Vol 8 September 1999, 749-757.
- 152 Prochaska JO, DiClemente CC; "Stages and Processes of Self-Change of Smoking Toward an Integrative model of Change;" *Journal of Consulting and Clinical Psychology*; 1983; 51, 390-395
- 153 Ling BS, Moskowitz MA, Wachs D, Pearson B, Schroy PC. Attitudes toward colorectal cancer screening tests. *J Gen Intern Med* 2001; 16:822-30.
- 154 Leard LE, Savides TJ, Ganiats TG. Patient preferences for colorectal cancer screening *J Fam Pract* 1997;45:211-8.
- 155 Pignone M, Bucholtz D, Harris R. Patient preferences for colon cancer screening. *J Gen Intern Med* 1999; 14: 432-7.
- 156 Messina CR, Lane DS, Grimson R. Colorectal cancer screening attitudes and practice preferences for decision making. *Am J Prev Med*. 2005 Jun;28(5):439-46.
- 157 O'Connor AM, Stacey D, Rovner D, et. al. Decision aids for people facing health treatment or screening decisions. *Cochrane Database Syst Rev* 2001; 3.
- 158 Spunt BS, Deyo RA, Taylor VM, Leek KM, Goldberg HI, Mulley AG. An interactive videodisc program for low back pain patients. *Health Educ Res* 1996; 11:535-41.
- 159 Deber R, Kraetschmer N, Trachtenberg J. Shared decision-making: how does one measure success? *Med Decis Making* 1994; 14:429.
- 160 Rosenstock, I.M. (1990). The Health Belief Model: Explaining health behavior through expectancies. In Glanz, K., Lewis, F., & Rimer, B.K. (Eds.), *Health Behavior and Health Education* (pp. 39-62). San Francisco CA: Jossey-Bass Publishers.
- 161 Trauth JM, Ling BS, Weissfeld JL, Schoen, RE, Hayran M;" Using the Transtheoretical Model to Stage Screening Behavior for Colorectal Cancer;" *Health Educ and Behav*, June 2003, 322-336.
- 162 Baranowski T, Perry CL, Parcel GS. "How Individuals, Environments, and Health Behavior Interact: Social Cognitive Theory." In Glanz, K., Lewis, F., & Rimer, B.K. (Eds.), *Health Behavior and Health Education* (pp. 39-62). San Francisco CA: Jossey-Bass Publishers.
- 163 Kikano GE, Flocke SA, Gotler RS, Stange KC. Are You Practicing Opportunistic Prevention? *Fam Pract Manage*. March 2000.
- 164 Maslely S, Sokoloff J, Hawes C, Planning Group Visits for High-Risk Patients. *Fam Pract Manage*. June 2000: 33.
- 165 Recommendations and Rationale, Screening for Colorectal Cancer. US Preventive Services Task Force. July 2002. www.ahrq.gov/clinic/uspstf/uspcolo.htm
- 166 Collins JF, Lieberman DA, Durbin TE, Weiss DG. For Veterans cooperative Study Group 380. Accuracy of screening for fecal occult blood on a single stool sample obtained by digital rectal examination: A comparison with recommended sampling practice. *Ann Intern Med* 2005 Jan 18; 142(2):81-85.

REFERENCES

- 167 Clinician's Handbook of Preventive Services. Put Prevention into Family Practice. US Department of Health and Human Services. 1994. 153-155.
- 168 Yamamoto M, Makoma H. Cost effectiveness analysis of immunochemical occult blood screening for colorectal cancer among three fecal sampling methods. *Hepatology* 2000; 47(32):396-99
- 169 Collins JF, Lieberman DA, Durbin TE, Weiss DG. Accuracy of Screening for Fecal Occult Blood on a Single Stool Sample Obtained by Digital Rectal Examination: A Comparison with Recommended Sampling Practice. Veterans Affairs Cooperative Study Group 380. *Ann Intern Med.* 2005;142:81-85.
- 170 Taylor ML, Anderson R. Colorectal cancer screening: physician attitudes and practices. *WMJ.* 2002;101(5):39-43.
- 171 Recommendations and Rationale, Screening for Colorectal Cancer. US Preventive Services Task Force. July 2002. www.ahrq.gov/clinic/uspstf/uspcolo.htm
- 172 Winawer SJ, Shike M. "Prevention and control of colorectal cancer." In Greenwald P, Kramer BS, Weed D, eds. *Cancer Prevention and Control*. New York: Marcell-Dekker, 1995. 537-60.
- 173 Winawer S, Fletcher R, Rex D, et. al. for the Multisociety Task Force on Colorectal Cancer. American Gastroenterological Association: Colorectal Cancer Screening and Surveillance: Clinical Guidelines and Rationale-Update Based on New Evidence. *Gastroenterology* 2003; 124:544-560.
- 174 US Preventive Services Task Force, Screening for Colorectal Cancer, Recommendations and Rationale. *Annals of Internal Medicine.* 16 July 2002; 137(2), p 129-131.
- 175 Guide to Clinical Preventive Services: An Assessment of the Effectiveness of 169 Interventions. Report of the US Preventive Services Task Force. Williams & Wilkins: Baltimore, p 51-53.
- 176 Guide to Clinical Preventive Services: An Assessment of the Effectiveness of 169 Interventions. Report of the US Preventive Services Task Force. Williams & Wilkins: Baltimore, p 51-53.
- 177 Clinician's Handbook of Preventive Services. Put Prevention into Family Practice. US Department of Health and Human Services. 1994. 153-155
- 178 Canadian Task Force on the Periodic Health Examination. The periodic health examination. *Canada Med Assoc J*; 1979; 1193-1254.
- 179 Dulai GW, Farmer MM, Ganz A, et. al. Primary Care Provider Perceptions of Barriers to and Facilitators of Colorectal Cancer Screening in a Managed Care Setting. *Cancer* May 1, 1004; 100 (9): 1843-1852
- 180 Winawer S, Fletcher R, Rex D, et. al. for the Multisociety Task Force on Colorectal Cancer. American Gastroenterological Association: Colorectal Cancer Screening and Surveillance: Clinical Guidelines and Rationale-Update Based on New Evidence. *Gastroenterology* 2003; 124:544-560
- 181 Dulai GW, Farmer MM, Ganz A, et. al. Primary Care Provider Perceptions of Barriers to and Facilitators of Colorectal Cancer Screening in a Managed Care Setting. *Cancer.* May 1, 1004; 100 (9): 1843-1852.
- 182 Lieberman DA, Weiss DG. One time screening for colorectal cancer with combined fecal occult-blood testing and examination of the distal colon. *N Engl J Med* 2001; 345:555-560.
- 183 Maryland Department of Health and Mental Hygiene. State Baseline Cancer Survey, 2002.
- 184 Taylor ML, Anderson R. Colorectal cancer screening: physician attitudes and practices. *WMJ.* 2002;101(5):39-43
- 185 Phillipa KA, Liang S, Ladabaum U, Haas J, Kerlikowske K, Lieberman D, Hiatt R, Nagamine M, Van Bebber SL. Trends in Colonoscopy for Colorectal Cancer Screening. *Medical Care.* Feb 2007; Vol 45 (2): 160-167.
- 186 Dulai GW, Farmer MM, Ganz A, et. al. Primary Care Provider Perceptions of Barriers to and Facilitators of Colorectal Cancer Screening in a Managed Care Setting. *Cancer* May 1, 1004; 100 (9): 1843-1852.
- 187 Wigton RS, Alguire P. The declining number and variety of procedures done by general internists: A resurvey of members of the American College of Physicians. *Annals of Internal Medicine.* 6 March 2007; 146 (5): 355-360.
- 188 Meissner HI, Breen N, Klabunde CN, Vernon SW. Patterns of Colorectal Cancer Screening Update among Men and Women in the United States. *Cancer Epidemiol Biomarkers Prev* February 2006; 15(2): 389-394.
- 189 Lewis JD, Asch DA, Ginsberg GG, et. al. Primary care physicians' decisions to perform flexible sigmoidoscopy. *J Gen Intern Med* 1999; 14(5): 297-302.
- 190 Dulai, GW., op cit
- 191 Taylor ML, Anderson R. Colorectal cancer screening: physician attitudes and practices. *WMJ.* 2002;101(5):39-43.

Consider the Facts:

- Colorectal cancer (CRC) is the second leading cause of cancer mortality in the United States, even though it is largely preventable through screening and polypectomy.
- A doctor's recommendation has the greatest influence on a patient's likelihood of completing screening.
- Less than 50 percent of the population has had one of the recommended screening tests.
- There are proven approaches that can help doctors screen all eligible patients.
- Most primary care physicians believe a substantial proportion of their own patients are not screened.
- Members of minority groups are less likely to be screened.
- A significant percentage of patients with a positive screen never receive a complete diagnostic evaluation.
- Colorectal cancer generated some of the highest malpractice awards in 2004.
- Quality guidelines require that health plans now publicly report CRC screening rates.
- Practice improvements that raise screening rates can earn Continuing Medical Education credit.

Highlights of this Guide

- **Four essentials for improved screening rates**
- **Current screening guidelines**
- **How to overcome screening barriers**
- **The screening practices of primary care physicians**
- **Tools for your practice**

**This manual is available online at www.cancer.org/colonmd
and www.nccrt.org.**