

Strategies for Expanding Colorectal Cancer Screening at Community Health Centers

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Community health centers are uniquely positioned to address disparities in colorectal cancer (CRC) screening as they have addressed other disparities. In 2012, the federal Health Resources and Services Administration, which is the funding agency for the health center program, added a requirement that health centers report CRC screening rates as a standard performance measure. These annually reported, publically available data are a major strategic opportunity to improve screening rates for CRC. The Patient Protection and Affordable Care Act enacted provisions to expand the capacity of the federal health center program. The recent report of the Institute of Medicine on integrating public health and primary care included an entire section devoted to CRC screening as a target for joint work. These developments make this the ideal time to integrate lifesaving CRC screening into the preventive care already offered by health centers. This article offers 5 strategies that address the challenges health centers face in increasing CRC screening rates. The first 2 strategies focus on improving the processes of primary care. The third emphasizes working productively with other medical providers and institutions. The fourth strategy is about aligning leadership. The final strategy is focused on using tools that have been derived from models that work. *CA Cancer J Clin* 2013;63:221-231. ©2013 American Cancer Society, Inc.

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Introduction

Reducing the incidence and mortality from colorectal cancer (CRC) is a high priority for addressing the toll that all cancers take on the US population.¹ Cancer is the leading cause of death for individuals aged younger than 80 years, and the leading cause of premature mortality.²⁻⁴ CRC is the nation's third leading cause of mortality from cancer, even though it has been shown to be preventable to a significant degree with timely screening. Screening for CRC reduces its incidence, mortality, and stage at presentation and improves survival. After a decade of progress, momentum in the direction of widespread CRC screening continued to build in 2011 and was further encouraged by the release of 2 national strategies developed as required by the Patient

Protection and Affordable Care Act with broad stakeholder input: the National Prevention Strategy and the National Quality Strategy. Both emphasized the importance of preventive services as essential components of a medical care system that will improve the health of the population as a whole.^{5,6}

However, the disparities in cancer incidence and mortality rates experienced by vulnerable populations are also evident in rates of screening for CRC.^{7,8} Community health centers (referred to hereafter as "health centers") are uniquely positioned to address disparities in CRC screening as they have addressed other disparities.⁹ To pursue this potential, the National Colorectal Cancer Roundtable (referred to hereafter as the "Roundtable"), a national leadership group

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founded by the American Cancer Society (ACS) and the Centers for Disease Control and Prevention (CDC), collaborated with health leaders from other federal agencies and from the National Association of Community Health Centers (NACHC) to identify strategies to support CRC screening at safety net clinics, especially federally funded health centers. These strategies are the subject of this report.

The Time Is Right

Nearly 50 years ago, as a centerpiece of the “War on Poverty,” the Economic Opportunity Act of 1964 funded the first health centers in 1965 and created a new community-based model of primary care that is governed by a user majority board, is located in medically underserved areas, and provides accessible comprehensive primary care services to all individuals regardless of insurance status.¹⁰ In 2011, these health centers provided primary health care to 20.2 million individuals around the country at 8500 sites operated by 1128 organizations.¹¹ The centers receive funding from a variety of sources at the national, state, and local level. By law, health centers are located in medically underserved areas (urban and rural) or serve medically underserved populations (eg, the homeless, farm workers, and residents of public housing).¹⁰ Health centers care for sociodemographically diverse populations with particular needs. For example, 24% of the patients were best served in a language other than English, greater than 1 million were homeless, and 62% were members of racial and ethnic minorities. Of the individuals receiving care from health centers, 36% were uninsured, 39% were covered under Medicaid, and 93% were poor (72% had incomes less than 100% of the federal poverty level, and another 21% had incomes that were 101%-200% of the federal poverty level). Only 14% had private insurance; 8% were covered by Medicare.¹¹

The timing for health centers to embrace CRC screening is right for several reasons. In 2012, the federal Health Resources and Services Administration (HRSA), which is the principal funding agency for the health center program, added a requirement that health centers report CRC screening rates as a standard performance measure through the formal reporting mechanism for health centers known as the Uniform Data System (UDS). These annually reported and publically available data are a major strategic opportunity to improve screening rates for CRC. Although CRC screening rates have improved nationally over the last decade and the incidence of CRC has declined in response, disparities have remained for the uninsured, racial and ethnic minorities, and those who face barriers to care.

Health centers are engaged in a period of transformation to become Patient Centered Medical Homes (referred to

hereafter as “medical homes”) supported through HRSA, state policy initiatives, and modest federal targeted resources.^{12,13} This includes installing new systems such as electronic medical records (EMRs) to support practice changes. As of 2011, 50% of health centers had fully implemented and 65% had partially implemented EMRs.¹⁴ In addition, the Patient Protection and Affordable Care Act enacted provisions to expand the capacity of the federal health center program. These provisions may become additionally significant for states that fail to take advantage of the Medicaid expansion. Furthermore, the recent report of the Institute of Medicine on integrating public health and primary care specifically endorsed collaboration between HRSA, which supports health centers, and the CDC, which supports CRC screening, and included an entire section devoted to CRC screening as a target for joint work.¹⁵ These developments present an ideal opportunity to integrate lifesaving CRC screening into the preventive care already offered by health centers.

The Unique Role of Health Centers

This article takes the unique aspects of health centers into account and offers 5 strategies (listed below) that address the challenges they face with increasing CRC screening rates. The first 2 strategies focus on improving primary care processes of care. The third emphasizes working productively with other medical providers and institutions. The fourth strategy concerns aligning leadership of health centers and other organizations and agencies that have a role to play. The final strategy is focused on using tools that have been derived from models that work.

1. Design a realistic CRC screening program that will allow each health center to deliver quality CRC screening to its particular population.
2. Apply core concepts from the medical home model to improve operations within health centers.
3. Improve links between health centers and the rest of the health system, including hospitals and specialty providers.
4. Define roles and coordinate strategies and initiatives of the involved national leadership organizations.
5. Identify and apply what is known to improve quality CRC screening delivery using the tools that are available.

Strategy 1: Design a Realistic CRC Screening Program

Several CRC screening modalities are endorsed by national practice guidelines. Two are used most commonly: colonoscopy every 10 years and stool blood testing annually. Flexible sigmoidoscopy performed every 5 years is another effective modality, but is used infrequently in many regions

of the country.¹⁶ Although some primary care clinicians perceive colonoscopy as the “gold standard,” most experts agree that the best screening test is the one that gets done. Each individual health center must decide which screening approach to implement after taking into account such factors as the capacity of their patient population to gain access to screening with colonoscopy, and their own ability to achieve adherence to recommended screening methods and frequencies, which may be impacted by cultural issues. Each health center should try to match the needs of their population with the realities of delivering the tests available on a programmatic scale. Some programs rely on stool testing for the bulk of patients while reserving colonoscopy for patients at increased risk and those with positive stool tests. It should be recognized that stool testing has been demonstrated to reduce mortality in 3 randomized controlled clinical trials, and that stool testing is included in the screening recommendations of all major medical organizations in the United States.¹⁷⁻¹⁹ Health centers can use their overall stool test positivity rates (generally 5%-10%) as well as their anticipated population that is eligible for screening (those aged 50-75 years) plus the anticipated population aged older than 40 years that is at increased risk (10%-15%) and should be screened by colonoscopy to gain a rough estimate of the number of colonoscopies that will be needed on a yearly basis. These estimates can be used for planning purposes and to engage local colonoscopy providers. Many health centers face cost and capacity challenges associated with access to colonoscopy for their patients. Some address the challenges through strengthening affiliations with hospitals and specialists or through state or local funding.

There are different types of stool tests. Fecal immunochemical tests (FITs) are simpler, more accurate, and better accepted by patients than older guaiac occult blood test kits. (See the Fecal Occult Blood Test Clinician’s Reference Resource described under Strategy 5.) Some FIT tests require only one sample on one day rather than the 3 separate samples over 3 days as required for guaiac-based testing. Some FITs use long plastic brushes, thereby limiting the degree of patient contact with feces. There are a number of options approved by the US Food and Drug Administration; a list (noncomprehensive) is found in Table 1.²⁰ The NACHC has a group purchasing program in place for FIT tests for the benefit of health centers.

When possible, the “one and done” approach, in which one normal colonoscopy provides adequate screening for 10 years, is an appealing option, particularly for transient populations such as migrant workers or the homeless. Colonoscopy-based screening programs have been successfully implemented in some areas with significant underserved and low-income or minority populations, including the cities of New York and Albany, Georgia, and the states of New Hampshire and Colorado among others. However, there still remains a role for stool blood testing. A recent study in a

TABLE 1. Fecal Immunochemical Tests Available in the United States

NAME	MANUFACTURER
InSure FIT	Enterix Inc, a Quest Diagnostics Company
Hemoccult ICT	Beckman Coulter
Instant-View	Alpha Scientific Designs Inc
MonoHaem	Chemicon International Inc
Clearview ULTRA FOB	Wampole Laboratories
OC-Auto Micro 80	Polymedco Inc
Hemosure One-Step	Hemosure, Inc.
QuickVue iFOB	Quidel Corporation

health center population found that adherence to screening was markedly lower among those patients who were recommended to obtain screening colonoscopy alone compared with individuals who were offered fecal occult blood testing (FOBT) alone or a choice between colonoscopy and FOBT.²¹ Even in settings where screening colonoscopy may be easily available, it is imperative that clinicians identify patients who are averse to invasive procedures or who may be placed at a higher risk from them due to comorbidities; these patients will often respond favorably to a recommendation for stool testing, and clinicians should be prepared to screen and track these patients with stool tests.

Clearly, a screening program must be developed at the local level by health center leadership. Building a high-quality screening program requires an investment in system change. Health centers can take the following proven steps to standardize their operations and achieve higher screening rates.

- Develop a screening policy. A policy should specify the screening program. If colonoscopy capacity is inadequate, which is true in most locations, a FIT or a guaiac-based stool test for age- and risk-appropriate patients is a practical and evidence-based approach. Colonoscopies must also be available for patients at higher risk or for diagnostic purposes following positive stool screens.²²
- Use a protocol. Use a protocol that includes delivering a recommendation for CRC screening to every eligible patient. The effectiveness of clinician recommendations to screen is supported by a very strong evidence base.²³ A quality improvement system should ensure that every eligible patient gets a screening recommendation following a risk assessment and documentation of prior screening that is updated regularly. The protocol should clarify which team member(s) are responsible for these tasks. Someone should provide the patient with instructions and make sure the patient can “teach back,” explaining the steps he or she will take to complete the testing process. Cultural, linguistic, and literacy appropriateness must be considered.

- Use reminders. There is strong evidence demonstrating the value of reminders for both patients and providers.²⁴ Just as the recommendation to screen may be given in several ways (in person, over the telephone, or through the mail), so can reminders that let patients know that they are due or overdue for screening. Sending a reminder prior to a clinician visit can prompt the patient beforehand and reduce the time needed to make a recommendation. Providers report that it takes only a few minutes to make the recommendation.²⁵ If a stool test is not returned within 1 month, the patient should be reminded to return it, with a second reminder at 2 months if needed.
- Track test results and follow-up. Staff should keep track of all referrals and all stool tests. If a stool screen is positive, the patient must be contacted to arrange for a colonoscopy. If the patient is a no-show for colonoscopy and needs rescheduling, making a personal contact with him or her will make a difference. Responsibility for follow-up and rescheduling should be an explicit understanding between the health center and the specialist, and reflected in the health center screening protocol discussed above. Without explicit assignment of this responsibility, the needed colonoscopy may not take place.

Detailed information on these points is available in a guide published by the ACS entitled “How to Increase Colorectal Cancer Screening Rates in Practice: A Primary Care Clinician’s Evidence-Based Toolbox and Guide” (nccrt.org/about/provider-education/crc-clinician-guide/).²²

The case of a health center in California illustrates some of these points. The center established an office policy and mapped out a specific process for giving a stool blood test kit to every eligible patient and following up with them to make sure it was returned. The goal was to offer 90% of patients who were due for screening a stool test kit at their clinic appointment unless they were already up to date on screening. The health center:

- Established linkages and formal referral relationships with colonoscopy providers.
- Trained the health center’s care teams in the screening guidelines and created standing orders.
- Assigned responsibility for reviewing medical charts to the nursing staff who offered stool test kits to patients who needed screening.
- Added coaching for patients on how to complete screening using the stool test kit.
- Had nurses flag the charts of patients who declined screening so their physicians would discuss CRC screening with them.
- Tailored patient education printouts to make the screening process easier to understand for low literacy and non-English-speaking patients.

With these changes, they constructed an efficient and effective CRC screening policy and program, and the screening rates improved from 40% to 75% over several years.²⁶

Strategy 2: Use the Medical Home Model to Improve Screening Operations and Understand Population Needs

The medical home model of care can strengthen the ability of a health center to reinforce its infrastructure and provide care for its patients.^{27,28} This model was formally developed by 4 primary care medical associations representing pediatricians, family physicians, internists, and osteopaths and has been endorsed the American Medical Association and a large array of medical specialty societies. It is promoted by coalitions representing providers, purchasers, consumers, and payers as well as by foundations, state health departments, and the federal government. The model emphasizes improved access to care that is delivered by a clinical team that relies on systems that are designed to function with continuity and coordination in mind, build patient engagement, and use population management techniques. The foundation for the medical home model is expanded financial support that potentiates improved clinical operations and produces improved quality and cost outcomes.

A 2009 Commonwealth Fund survey of health centers characterized responses based on capacities that were consistent with the medical home model. Centers were queried about 5 domains: patient tracking and registry functions, test tracking, referral tracking, enhanced access and communication, and performance reporting and improvement. The survey response rate was 79%, representing 795 health center organizations. Slightly more than one-half of the responding centers had 3 to 4 domains in place, while 29% of sites had all 5 domains in place and 16% had 2 or fewer domains in place.²⁹ Health centers with advanced information technology met more domains than those that lacked such technology. The survey also found that centers with more medical home characteristics reported fewer difficulties with accessing specialty care and procedures.

A number of recognition and/or accreditation programs for health centers and other safety net practices have been developed that are aimed at stimulating change and disseminating functional capacities of a medical home.

- A group of funders supported a 5-year initiative at 65 primary care safety net sites in 5 states to transform them into high-performing medical homes.³⁰ The funders were the Commonwealth Fund, Qualis Health, and the MacColl Institute for Healthcare Innovation at the Group Health Research Institute (nachc.com/mhresources.cfm).

TABLE 2. Specific Criteria for the NCQA Patient Centered Medical Home and the Safety Net Medical Home Initiative

PATIENT CENTERED MEDICAL HOME STANDARDS	SAFETY NET MEDICAL HOME INITIATIVE CONCEPTS
	Organized, effective, safe, evidence-based care
Enhance access and continuity	Enhanced access
	Continuity of care with a provider and care team
Identify and manage patient populations	Empanelment
Plan and manage care	Coordinated, integrated care
Track and coordinate care	
Provide self-care and community resources	Patient-, family-, and community-centered care
Measure and improve performance	Data-driven quality improvement
	Cost-efficient and payment alignment

NCQA indicates National Committee for Quality Assurance.

- The NACHC established a Patient Centered Medical Home Institute in collaboration with state and regional primary care associations that partnered with Qualis Health, the MacColl Center, and the American Institutes for Research.
- The Centers for Medicare and Medicaid Services established a demonstration program for health centers called the Advanced Primary Care Practice demonstration program and engaged the American Institutes for Research to provide technical assistance.³⁰

Various standards for recognition as a medical home have been disseminated by the National Committee for Quality Assurance (NCQA) and other groups.^{31,32} Specific criteria for NCQA and the Safety Net Medical Home Initiative are listed in Table 2 with similar capacities shown on the same line in the table. Since one model has more elements, they do not line up exactly; they are consistent with but not identical to the categories used in the Commonwealth Fund survey. Certain capacities of the medical home are especially relevant to cancer screening and preventive services. These capacities are discussed below.³³

Medical Home Capacity: Enhance Access and Continuity

By definition, health centers provide universal access to medical care regardless of whether patients have insurance, but enhancing access can also mean increasing the ability of patients to be seen by a provider when they need to, or ensuring reasonable wait lists for CRC screening. Access can be improved through a variety of approaches, including

open-access scheduling, after-hours care, weekend care, and 24-7 coverage. Cultural competence is also a part of access. For example, one health center in Washington State is seeking to improve patient understanding and completion of CRC screening by providing written instructions on the use of stool blood tests in 22 languages.³⁴

Medical Home Capacity: Identify and Manage Populations

Age, gender, and risk status define medical needs, especially for cancer screening. It is known from population health sources such as the National Health Interview Survey that screening rates for CRC vary by other demographic characteristics such as insurance coverage, education, ethnicity, length of time since immigration to the United States, and language/culture.³ A health center should be able to use data to identify the demographic, personal, and family history characteristics of its enrolled population so that steps may be taken to manage the population through targeted outreach and tailored approaches to screening.

Registries

Registries functions are a central feature of medical home models that help primary care clinicians and practices manage their patient populations and achieve population-based objectives. They are well established tools for chronic disease management and are also important for tracking cancer screening and immunizations.²⁴ Primary care clinicians and their clinical teams are better supported in their efforts to manage care of their patients if they know exactly who their patients are. This is also referred to as “empanelment,” and registries can enable this capacity.

A registry can help maximize a health center’s screening rates by supporting systematic targeted outreach if it includes:

- Age
- Risk, such as a personal or family history
- Ethnic or racial group
- Screening data that are updated regularly (perhaps automatically)
- Data that are easily retrievable
- Alerts or reminder functions

Ideally, a practice can use a patient registry function to identify all those patients who are due for screening. These data can be used for systematic targeted outreach by telephone, letter, etc, and can also support opportunistic efforts to get patients screened when they arrive for other reasons.

Unless the patients’ activities of daily living are quite restricted, they live with cognitive impairment, or their prognosis is poor, individuals with chronic diseases merit preventive services. While concerns such as limited life expectancy, limitations in the activities of daily living, cognitive impairment, and risk of an invasive procedure such as

colonoscopy or polyp removal are relevant and should be taken into account, patients who are cognitively intact, able to engage in some of the activities of daily life, and have a life expectancy of at least 5 years are viewed as benefitting from the identification and removal of a CRC. Similarly, those with a life expectancy of 10 years or more are viewed as receiving benefit from the identification and removal of adenomatous polyps unless polyp removal presents too great a risk. In some cases, stool blood testing will be a safer and therefore preferable choice, provided the patient is a candidate for colonoscopy should the stool test have a positive result and indicate the need for a subsequent colonoscopy.

Navigators

Navigators are particularly well suited to assist health centers in managing patient populations. Several published studies have presented evidence on the usefulness of patient navigators in increasing health center screening rates for selected populations. The first description of the success of patient navigators when used for cancer screening (mammography) was associated with the work of Dr. Harold Freeman at Harlem Hospital.^{35,36} Promising developments in screening for CRC followed.^{37,38}

Between 2008 and 2009, in a randomized clinical trial associated with 4 health centers and 2 hospital-based clinics in a practice-based research network in Boston, Massachusetts, researchers identified 465 patients who were not screened for CRC in a multicultural, multilingual environment.³⁹ They randomly assigned these patients to navigation for up to 6 hours as needed versus usual care. Patients in the intervention arm were sent a letter from their primary clinician and a brochure in their native language followed by telephone contact by a navigator that was also conducted in a concordant language. Navigators reached 181 of 235 patients in the intervention group (77%). The screening rate in the navigator group was 39.8% versus 18.6% in the usual-care group ($P < .001$). Other trials of navigation also have demonstrated positive results.⁴⁰⁻⁴⁴

Credentials and training for navigators vary across the country and include trained patients, social workers, case managers, nurses, and lay/community health workers. Most programs use either nurses or community health workers.⁴⁵ Considerable emphasis is placed on matching the linguistic and cultural capacities with the population served. There are publications that address the type of training that is required for a navigator, and at least one institution has developed a training manual.⁴⁶

Medical Home Capacity: Plan and Manage Care

Planned care applies to preventive services as well as chronic conditions. Clinical teams should adopt evidence-based guidelines as the basis for their practice policy for cancer

screening. Guideline algorithms may be found in a number of sources, including the original “How to Increase Colorectal Cancer Screening Rates in Practice: A Primary Care Clinician’s Evidence-Based Toolbox and Guide” published by the ACS and mentioned above as well as one that evolved from the original that was specifically developed for health centers.^{22,47} A screening policy based on guidelines and local resources will shape the answers to key questions such as: Who are we trying to reach? What tests are available for our patients? This policy can be supported by clinic-wide systems (teams, processes) and measured by clinic-wide rates. A system reliant on team care is key to success because it has the potential to circumvent the clinician’s concern about the multiple competing demands of practice as well as the perceived paradox between providing systematic chronic disease care and preventive services. Screening algorithms have another advantage, allowing support staff to maximize opportunities to reach patients through the use of standing orders without requiring sign-off from the clinician at the time of service. Collection of a thorough family history must be a part of every algorithm to establish accurate risk status that provides guidance regarding the age at which to initiate screening and the proper procedure (colonoscopy for at-risk patients or genetic counseling for high-risk patients).⁴⁸

Medical Home Capacity: Track and Coordinate Care

The practice should track and follow up test results and referrals. The literature reveals that the follow-up of CRC screening is often suboptimal.⁴⁹ All published screening guidelines recommend that patients with positive stool blood tests receive follow-up colonoscopy, but many patients are instead offered inadequate tests (repeat FOBT or flexible sigmoidoscopy) and others receive no follow-up testing.⁵⁰ The practice should notify patients of all normal test results and follow up with patients for all abnormal test results.^{51,52} Stool test distribution should be recorded so that reminders can follow if stool test samples do not arrive within a specified period (ie, 3 weeks-4 weeks). A simple telephone or mailed reminder to patients who do not return their stool tests within this initial window has been shown to substantially improve return rates.^{23,53} Tracking of referrals also improves appointment adherence and follow-up of abnormal findings and requires coordination with other parts of the health care system, including laboratories, diagnostic imaging services, and specialists. To facilitate coordination, the health care team must be accountable for completing the communication loop based on customized agreements with specialists who clarify and specify the responsibilities of the health center and of the specialty office.⁵⁴ This should be revisited periodically to ensure it is working satisfactorily. The development of these relationships is discussed below under the third strategy.

Although electronic test ordering and result reporting can automatically populate an EMR or cancer screening registry,

relying on this approach may not be sufficient to capture tests that were performed in previous years or were performed at a facility that does not use the same EMR. Colonoscopy tracking is particularly challenging since this test is required only once each decade if results are normal. A patient may have undergone this test in the past, ordered by a different clinician, performed at a different facility, and covered by a different insurer. In most communities, until health information exchanges are available to store such information and make it available to multiple providers, the patient will remain the most reliable source of information regarding whether they have had an endoscopic screen in the past, when and where it was performed, and what was found.

While an in-depth discussion of the user-friendly electronic infrastructure that should be developed to meet the needs of health centers is outside the scope of this article, all screening results should be entered into EMRs in searchable fields that include:

- The test(s)
- The date that it was performed
- The results
- Follow-up recommendation(s)
- Dates on which follow-up was attempted and completed

Medical Home Capacity: Provide Self-Care and Community Resources

Tools for patient education about CRC, the choice of screening procedures, or instructions about how to proceed all require communication that is easily understood by the patient. Competency with language, culture, and literacy level will affect the success of a screening program. Some clinicians may feel hesitant when a patient expresses strong resistance to screening. However, many others have experienced changes in patient attitudes as the result of improved awareness and education, the provision of screening options, and persistent but caring prodding by the primary care provider.²¹ Patient handouts may be found in the “How to Increase Colorectal Cancer Screening Rates in Practice: A Primary Care Clinician’s Evidence-Based Toolbox and Guide” mentioned above, in addition to the Web site of the ACS or the Roundtable. Health centers can approach their referral network for colonoscopy and other associated medical needs such as community resources. Making use of these resources is the subject of the next Strategy.

Medical Home Capacity: Measure and Improve Performance

Quality improvement strategies are well known to health centers and have been practiced as part of the requirements of the national funding agencies for many years. Measurement, process improvement, and remeasurement alongside continuing medical education for clinical staff have characterized health center practice. UDS information is collected and reported by

the Bureau of Primary Health Care/HRSA, which makes quality data public and holds health centers accountable for the targeting of priority areas for improvement. As mentioned above, the UDS was expanded to include a new CRC measure in 2012. There are many examples of progress with CRC screening that follow traditional principles of continuous quality improvement.⁵⁵ The gains that are possible from these quality improvement techniques have been embedded in the medical home model, which is part of what gives the model its strength.

Strategy 3: Improve Links Between Health Centers and the Health System

The combination of low enrollment in health centers by privately insured individuals, low Medicaid reimbursement rates, and a large contingent of uninsured patients results in significant access barriers to specialty care for health center patients. This problem was documented by the Commonwealth Fund survey of health centers where difficulties were reported for obtaining specialty care for Medicaid/uninsured patients, but less so for privately insured/Medicare patients. This survey also found that affiliation or connectivity with hospitals was associated with greater access to specialty care.²⁹ This finding underscores the importance of creating a medical neighborhood in addition to a medical home (ie, connections to institutions on the ground in the vicinities in which health centers operate). Several organizations have the potential to assist with forging affiliations, including state primary care associations, health center-controlled networks and health plans, state cancer consortia, state and local health departments, academic medical centers, and the CDC. A number of factors can be used as negotiation points when approaching local hospitals to interest them in collaborating: 1) strengthened partnerships among hospitals and health centers contribute to documenting a hospital’s community benefit contribution for tax exempt status, and CRC screening is one option for demonstrating community benefit; 2) many regional hospitals with cancer treatment programs are certified by the Commission on Cancer; certification requirements include community outreach for cancer screening and navigation for patients requiring treatment; and 3) a low-cost or free colonoscopy costs far less than care for a patient with metastatic cancer, which will be uncompensated care.

Relationships With Colonoscopy Providers

Implementing an effective CRC screening program requires commitment from other individuals and institutions, including local area hospitals, surgery centers, specialists, and laboratories. There is a virtual assembly line of providers needed, including gastroenterologists or general surgeons, anesthesiologists, pathologists when a biopsy is included, oncologists and surgeons when cancer is discovered, and surgeons for complications of colonoscopy; an

endoscopy suite is needed as well. Developing relationships with these collaborators may require the help of neutral parties, such as state cancer coalitions, primary care associations, or health departments. Professional organizations of gastroenterologists or endoscopists may be supportive and helpful as well because of their interest in the prevention and early detection of CRC. Federal agencies such as the CDC and their state and local health department partners, which are supporting CRC screening programs for low-income individuals in 25 states and 4 tribes/tribal organizations, can also be helpful.

Some areas of the country are successfully confronting these challenges. The CDC-funded program in New Hampshire had strategic leadership from gastroenterologists and serves as a model for health centers that wish to establish working relationships with colonoscopy providers. (The CDC cancer screening programs are described in the next section.) Their approach is that the leadership and a clinical champion within the health center galvanize support for CRC screening and establish an internal screening policy that the clinical team is able to implement. The health center measures a baseline screening rate. Support is then sought from the local gastroenterology community, including peer-to-peer conversations from one gastroenterologist to another emphasizing the importance of the mission of screening the unscreened with the intent of driving down the incidence of CRC.⁵⁶ This has created willingness by colonoscopy providers to work with health centers and provide services that were previously unavailable.

In centers that use stool blood testing as their primary screening approach, the number of diagnostic colonoscopies that may be needed can be estimated based on the number and ages of the uninsured population and the expected rate of positive stool tests. Using these data, it may be possible to recruit a number of colonoscopy providers who are each willing to share a piece of the workload and commit to delivering a finite number of procedures for low or no reimbursement. This calculation invariably results in a request for a much smaller number of colonoscopies than is anticipated by the specialist, and alleviates unfounded concerns over committing to provide a high volume of uncompensated care. This approach has been successful in Albany, Georgia, where the Cancer Coalition of South Georgia has had success in increasing regional screening rates using the “direct access colonoscopy” approach and working with local specialists. The Coalition was able to negotiate with local gastroenterologists to include one uninsured patient per week as long as the health center did preendoscopy clearance and navigated for the patients to ensure adherence. In addition to uninsured patients, the health centers also sent patients with Medicare, Medicaid, and commercial insurance for screening. The patient navigation system reduced no-shows and contributed to the success of

long-term relationships with gastroenterologists.⁵⁷ Once relationships are established, communication and shared responsibility are needed to ensure that the primary care and specialty providers contribute to patient follow-up care. The Roundtable issued a publication to provide guidance on the roles and responsibilities of primary care clinicians in ensuring high-quality colonoscopy services.⁵⁸

CDC Cancer Programs

The National Breast and Cervical Cancer Early Detection Program administered by the CDC dates from the early 1990s and offers important lessons.^{59,60} The program, which provides screening and diagnostic services to underinsured and uninsured women, has worked closely with health centers as they both serve a similar population. The program has provided a mechanism to connect clients served by the health center with specialty services within the broader health system, ie, mammography and colposcopy. This program may take significant credit for data that show that screening rates for cervical and breast cancer for the uninsured and Medicaid populations are comparable to or better than nation-wide rates.

A similar program, the National Colorectal Cancer Control Program, was initiated for CRC screening in 2009; the program is smaller in scale and available in only 25 states and 4 tribes/tribal organizations. Many collaborative relationships have formed as a result of this program, which has been building on the program infrastructure constructed by the National Breast and Cervical Cancer Early Detection Program to connect underinsured and uninsured men and women served by health centers to specialty services such as colonoscopy. The cancer coalitions established by the CDC in nearly every state has been an asset; they have brought a range of medical and health care institutions plus public health and community organizations together to develop state-wide plans for addressing the burden of cancer. Many plans include CRC screening as a priority.

Strategy 4: Define and Coordinate Leadership of National Organizations

Significant national infrastructure has been developed over the last 10 years that can support efforts to increase screening rates for CRC. The CDC and the ACS together founded the National Colorectal Cancer Roundtable over a decade ago with the primary goal of reducing the incidence and mortality of CRC through coordinated leadership, strategic planning, and advocacy. The Roundtable has facilitated collaboration between stakeholders and thought leaders, including primary care and specialty medical practitioners, academics, the nonprofit sector, the private for-profit sector, and federal agencies including HRSA and the National Cancer Institute. There is currently a task group within the

Roundtable that focuses on health centers. Other strategic partnerships have been or could be established with national associations of gastroenterologists and other endoscopists, Commission on Cancer-accredited facilities, state cancer consortia, and other national authorities.

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Access to specialty care and the continuum of service depend on interaction with the larger health system. For CRC screening programs, colonoscopy must be available for every patient who is at increased risk or tests positive on a stool test kit or a flexible sigmoidoscopy; however, the means to gain access to colonoscopy are not clear. This issue is explored by the recent report of the Institute of Medicine.¹⁵ CRC screening is presented as one of 3 health challenges that may benefit from joint efforts of the public health and primary care systems and their representative agencies and organizations. The report presents a framework and principles for the integration of primary care and public health and envisions how this might work in the case of CRC screening.

The first Institute of Medicine principle is a joint goal. A higher CRC screening rate has already become a joint goal for public health and primary care. Healthy People 2020 is the nation's public health plan for the decade; its objectives include higher screening rates. The CDC goal for states is an 80% screening rate. The primary care community embraces higher screening rates, as evidenced by the widespread continuing medical education and maintenance of certification opportunities on the subject offered by the major primary care societies.⁶¹ In addition, the NCQA has required health plans to report CRC screening rates of their beneficiaries for nearly a decade as a component of their Healthcare Effectiveness Data and Information Set (HEDIS).

The Roundtable's task group on health centers provides a forum for collaboration among the CDC, ACS, HRSA, NACHC, and a host of other entities involved in health center policy and practice. This satisfies another Institute of Medicine principle, "aligned leadership that bridges disciplines, programs, and jurisdictions to reduce fragmentation and foster continuity."

Collaboratives

Health centers have engaged in initiatives in the past that used joint goals and aligned leadership to address a variety of health conditions in an effort that relied on improvement collaboratives to implement leading-edge EMR technology with better patient flow and team care to improve clinical outcomes. Improvement collaboratives have been launched in various settings across the country to address health delivery challenges.⁶²⁻⁶⁴ From 2005 through 2007, a project focused on cancer screening was implemented by a group of researchers in

Connecticut. They selected health center grantees to redesign the care processes within their sites. They were tasked with using the entire health care team and employing standing orders to make it possible for other team members to take action. They also created "local communities of practice" outside the walls of the health centers through Webinars and in-person meetings that linked together hospitals, health departments, and specialty consultants and "regional communities of practice" to facilitate changes at the state or regional level.

As a result of these activities, breast cancer screening increased from 23% to 39%, cervical cancer screening increased from 25% to 37%, and CRC screening increased from 9% to 21%. Process measures such as self-management goals, the communication of results to patients on a timely basis, and the follow-up of abnormal tests all improved. The project was judged to be effective and reproducible.

Strategy 5: Identify and Apply What Is Known

A number of evidence-based interventions have been demonstrated to improve CRC screening rates. Many of these interventions and supporting tools for clinicians have been collected in "How to Increase Colorectal Cancer Screening Rates in Practice: A Primary Care Clinician's Evidence-Based Toolbox and Guide," published by the ACS.²² Several versions are available, including one that has been modified to meet the needs of health center clinicians and patients (ncspeed.org/sites/default/files/CRC_Toolkit.pdf).⁴⁷ The Guide to Community Preventive Services (The Community Guide) from the Community Preventive Services Task Force of the CDC is an evidence-based site that addresses many preventable conditions (thecommunityguide.org).

Other tools are available as well for health centers that are initiating efforts to improve screening rates.

- **FOBT Clinician's Reference Resource.** This 2-page resource published by the Roundtable is designed to introduce (or reintroduce) clinicians to the value of stool blood testing. It makes physicians aware of the differences between a guaiac FOBT and a FIT, explains why different types of FOBTs are superior, and outlines some of what needs to be part of a stool blood testing screening program if it is to be done in a quality way. Efforts currently are underway to develop clear guidance on implementing high-quality stool blood testing programs. The Roundtable offers a slide set that can walk providers through the key issues to keep in mind when implementing a quality testing program (nccrt.org/about/provider-education).⁶⁵ A type of FIT testing that has raised screening rates in some health centers in California is the FLU-FIT Program, in which FIT kits are distributed during annual influenza vaccination campaigns.⁶⁶ Descriptions are found at the Web site (flufit.org).

- The CDC's Screen for Life: National Colorectal Cancer Action Campaign provides educational materials for men and women aged older than 50 years about the importance of CRC screening. The Web site offers downloadable pamphlets, usable educational text, and video recordings in English and Spanish that feature celebrity testimonials and individual stories (cdc.gov/cancer/colorectal/sfl).⁶⁷ The Prevent Cancer Foundation also offers public education materials (preventcancer.org/prevention/preventable-cancers/colorectal-cancer/).
- The ACS has CRC tools and resources for clinicians and patients. Education and awareness tools including videos, PowerPoint presentations, examination room posters, and brochures can be viewed, downloaded, or ordered at no cost (cancer.org/colonmd).⁶⁸
- A published article commissioned by the Roundtable is now available that helps frame the needs and opportunities with respect to integrating cancer screening into the medical home.³³
- Roundtable reports on colonoscopy quality and the responsibilities of primary care clinicians in assuring high-quality colonoscopy services for their patients also are available.⁶⁹

Summary

Given health reform developments at the state and national levels, including annual CRC performance metrics reporting for health centers, and a strong clinical and public health evidence base, opportunities are emerging to enhance CRC screening rates and reduce health disparities in underserved populations. This article presents strategies that will help health centers address challenges in increasing CRC screening rates. These strategies include: 1) designing a program that will support the delivery of high-quality CRC screening to all age- and risk-eligible health center patients; 2) using the medical home model to make better use of staff throughout the screening process; 3) improving links between health centers and their local health facilities and providers; 4) defining roles for and coordinating the leadership of national organizations to achieve screening goals; and 5) using widely available, evidence-based interventions and tools to improve quality CRC screening delivery. These strategies attempt to address the needs of local health centers while outlining the role that national organizations can play so that this opportunity reaches its full potential. ■

References

1. US Cancer Statistics Working Group. United States Cancer Statistics: 1999-2009 Incidence and Mortality Web-based Report. Atlanta, GA: Department of Health and Human Services, Centers for Disease Control and Prevention, National Cancer Institute; 2013. cdc.gov/uscs. Accessed January 19, 2013.
2. Joseph DA, King JB, Miller JW, Richardson LC; Centers for Disease Control and Prevention (CDC). Prevalence of colorectal cancer screening among adults—Behavioral Risk Factor Surveillance System, United States, 2010. *MMWR Morb Mortal Wkly Rep*. 2012;61(suppl):51-56.
3. Klabunde C, Brown M, Ballard-Barbash R, White M, Thompson T, Plescia M, King S. Cancer Screening United States 2010. *MMWR Morb Mortal Wkly Rep*. 2012;61:41-45.
4. Jemal A, Siegel R, Xu J, Ward E. Cancer statistics, 2010. *CA Cancer J Clin*. 2010;60:277-300.
5. National Prevention Council. National Prevention Strategy. Washington, DC: US Department of Health and Human Services, Office of the Surgeon General; 2011.
6. National Priorities Partnership. Priorities for the National Quality Strategy. Washington, DC: National Quality Forum; 2011. qualityforum.org/Setting_Priorities/NPP/National_Priorities_Partnership.aspx. Accessed October 20, 2012.
7. Lansdorp-Vogelaar I, Kuntz KM, Knudsen AB, van Ballegooijen M, Zauber AG, Jemal A. Contribution of screening and survival differences to racial disparities in colorectal cancer rates. *Cancer Epidemiol Biomarkers Prev*. 2012;21:728-736.
8. Leibold B, Capiak K, Neugut AI, Kastrinos F. Risk of colorectal adenomas and advanced neoplasia in Hispanic, black and white patients undergoing screening colonoscopy. *Aliment Pharmacol Ther*. 2012;35:1467-1473.
9. Shi L, Stevens GD. The role of community health centers in delivering primary care to the underserved: experiences of the uninsured and Medicaid insured. *J Ambul Care Manage*. 2007;30:159-170.
10. US Department of Health and Human Services, Health Resources and Services Administration. What is a Health Center?. bphc.hrsa.gov/about/index.html. Accessed October 10, 2012.
11. US Department of Health and Human Services, Health Resources and Services Administration. 2010 National Data. bphc.hrsa.gov/uds/view.aspx?year=2010. Accessed October 10, 2012.
12. US Department of Health and Human Services, Health Resources and Services Administration. HRSA Health Information Technology and Quality Webinar. "Tips on Using Health IT Within A Patient Centered Medical Home For The Safety Net Community." hrsa.gov/healthit/toolbox/webinars/pdfs/pcmh.pdf. Accessed October 10, 2012.
13. Patient-Centered Primary Care Collaborative. pcpcc.net. Accessed October 10, 2012.
14. Bureau of Primary Health Care. Uniform Data System 2011. Washington, DC: Bureau of Primary Health Care, Health Resources and Services Administration, US Department of Health and Human Services; 2011.
15. Institute of Medicine. Primary Care and Public Health: Exploring Integration to Improve Population Health. Washington, DC: The National Academies Press; 2012.
16. Schoen RE, Pinsky PF, Weissfeld JL, et al; PLCO Project Team. Colorectal-cancer incidence and mortality with screening flexible sigmoidoscopy. *N Engl J Med*. 2012;366:2345-2357.
17. Mandel JS, Church TR, Ederer F, Bond JH. Colorectal cancer mortality: effectiveness of biennial screening for fecal occult blood. *J Natl Cancer Inst*. 1999;91:434-437.
18. Quintero E, Castells A, Bujanda L, et al; COLONPREV Study Investigators. Colonoscopy versus fecal immunochemical testing in colorectal-cancer screening. *N Engl J Med*. 2012;366:697-706.
19. Vart G, Banzi R, Minozzi S. Comparing participation rates between immunochemical and guaiac faecal occult blood tests: a systematic review and meta-analysis. *Prev Med*. 2012;55:87-92.
20. Whitlock EP, Lin J, Liles E. Screening for Colorectal Cancer: An Updated Systematic Review. Report No. 08-05-05124-EF-1. US Preventive Services Task Force Evidence Syntheses. Rockville, MD: Agency for Healthcare Research and Quality; 2008.
21. Inadomi JM, Vijan S, Janz NK, et al. Adherence to colorectal cancer screening: a randomized clinical trial of competing strategies. *Arch Intern Med*. 2012;172:575-582.
22. Sarfaty M. How to Increase Colorectal Cancer Screening Rates in Practice: A Primary Care Clinician's Evidenced-Based Toolbox and Guide. Atlanta, GA: American Cancer Society; 2008. nccrt.org/about/provider-education/crc-clinician-guide/. Accessed October 10, 2012.
23. Sarfaty M, Wender R. How to increase colorectal cancer screening rates in practice. *CA Cancer J Clin*. 2007;57:354-366.
24. Baron RC, Melillo S, Rimer BK, et al; Task Force on Community Preventive Services. Intervention to increase recommendation and delivery of screening for breast, cervical, and colorectal cancers by healthcare

- providers a systematic review of provider reminders. *Am J Prev Med.* 2010;38:110-117.
25. Sarfaty M, Stello B, Johnson M, Sifri R, Borsky A, Myers R. Colorectal Cancer Screening in the Framework of the Medical Home Model: Findings From Focus Groups and Interviews. *Am J Med Qual.* 2013, doi:10.1177/1062860612471424.
 26. Golden L. Colorectal Cancer Screening Program at a Primary Care Public Health Clinic. Presented at: Annual Meeting of the National Colorectal Cancer Roundtable; November 9, 2011; Bethesda, MD.
 27. Jaen CR, Ferrer RL, Miller WL, et al. Patient outcomes at 26 months in the patient-centered medical home National Demonstration Project. *Ann Fam Med.* 2010;8(suppl 1):S57-S67.
 28. Steele GD, Haynes JA, Davis DE, et al. How Geisinger's advanced medical home model argues the case for rapid-cycle innovation. *Health Aff (Millwood).* 2010;29:2047-2053.
 29. Doty MM, Abrams MK, Hernandez SE, Stremikis K, Beal AC. Enhancing the Capacity of Community Health Centers to Achieve High Performance: Findings From the 2009 Commonwealth Fund National Survey of Federally Qualified Health Centers. Commonwealth Fund Pub. No. 1392. Washington, DC: Commonwealth Fund; 2010.
 30. Qualis Health. Safety Net Medical Home Initiative. qhmedicalhome.org/experience-outcomes/snmhi. Accessed October 10, 2012.
 31. California Primary Care Association. Patient Centered Health Home. cpca.org/index.cfm/health-center-information/clinical-quality-improvement/health-home/. Accessed October 10, 2012.
 32. National Committee for Quality Assurance. Standards for Patient-Centered Medical Home (PCMH) 2011. Washington, DC: National Committee for Quality Assurance; 2012.
 33. Sarfaty M, Wender R, Smith R. Promoting cancer screening within the patient centered medical home. *CA Cancer J Clin.* 2011;61:397-408.
 34. Tu S-P. Presented at a meeting of the National Colorectal Cancer Roundtable; June 13, 2012; Washington, DC.
 35. Freeman HP, Chu KC. Determinants of cancer disparities: barriers to cancer screening, diagnosis, and treatment. *Surg Oncol Clin N Am.* 2005;14:655-669, v.
 36. Freeman HP. Patient navigation: a community centered approach to reducing cancer mortality. *J Cancer Educ.* 2006;21(suppl 1):S11-S14.
 37. Christie J, Itzkowitz S, Lihau-Nkanza I, Castillo A, Redd W, Jandorf L. A randomized controlled trial using patient navigation to increase colonoscopy screening among low-income minorities. *J Natl Med Assoc.* 2008;100:278-284.
 38. Lasser KE, Murillo J, Lisboa S, et al. Colorectal cancer screening among ethnically diverse, low-income patients: a randomized controlled trial. *Arch Intern Med.* 2011;171:906-912.
 39. Chen LA, Santos S, Jandorf L, et al. A program to enhance completion of screening colonoscopy among urban minorities. *Clin Gastroenterol Hepatol.* 2008;6:443-450.
 40. Nash D, Azeez S, Vlahov D, Schori M. Evaluation of an intervention to increase screening colonoscopy in an urban public hospital setting. *J Urban Health.* 2006;83:231-243.
 41. Lebowhl B, Neugut AI, Stavsky E, et al. Effect of a patient navigator program on the volume and quality of colonoscopy. *J Clin Gastroenterol.* 2011;45:e47-e53.
 42. Paskett ED, Harrop JP, Wells KJ. Patient navigation: an update on the state of the science. *CA Cancer J Clin.* 2011;61:237-249.
 43. Dohan D, Schrag D. Using navigators to improve care of underserved patients: current practices and approaches. *Cancer.* 2005;104:848-855.
 44. Myers RE, Hyslop T, Sifri R, et al. Tailored navigation in colorectal cancer screening. *Med Care.* 2008;46(9 suppl 1):S123-S131.
 45. Braun KL, Kagawa-Singer M, Holden AE, et al. Cancer patient navigator tasks across the cancer care continuum. *J Health Care Poor Underserved.* 2012;23:398-413.
 46. Myers, RM and The Division of Population Science. Navigator Training Manual (Unpublished Document). Thomas Jefferson University, Philadelphia, PA, 2011.
 47. Rohweder C, Wolf M, Schenck A, Prasad V, Diehl S. Options for Increasing Colorectal Cancer Screening Rates in North Carolina Community Health Centers. Chapel Hill, NC: UNC Lineberger Comprehensive Cancer Center; 2011.
 48. Wattendorf DJ, Hadley DW. Family history: the three-generation pedigree. *Am Fam Physician.* 2005;72:441-448.
 49. Turner B, Myers RE, Hyslop T, et al. Physician and patient factors associated with ordering a colon evaluation after a positive fecal occult blood test. *J Gen Intern Med.* 2003;18:357-363.
 50. Baig N, Myers RE, Turner BJ, et al. Physician-reported reasons for limited follow-up of patients with a positive fecal occult blood test screening result. *Am J Gastroenterol.* 2003;98:2078-2081.
 51. Mack KP, Pavao J, Tabnak F, Knutson K, Kimerling R. Adherence to recent screening mammography among Latinas: findings from the California Women's Health Survey. *J Womens Health (Larchmt).* 2009;18:347-354.
 52. Burhansstipanov L, Dignan MB, Schumacher A, Krebs LU, Alfonsi G, Apodaca CC. Breast screening navigator programs within three settings that assist underserved women. *J Cancer Educ.* 2010;25:247-252.
 53. Church TR, Yeazel MW, Jones RM, et al. A randomized trial of direct mailing of fecal occult blood tests to increase colorectal cancer screening. *J Natl Cancer Inst.* 2004;96:770-780.
 54. O'Malley AS, Cunningham PJ. Patient experiences with coordination of care: the benefit of continuity and primary care physician as referral source. *J Gen Intern Med.* 2009;24:170-177.
 55. Scheirer J. Overcoming Hurdles to Reaching 80% Colorectal Cancer Screening Rates. Harrisburg, PA: Academy of Family Physicians; 2012.
 56. Butterly L. The New Hampshire Colorectal Cancer Screening Program. Presented to the National Colorectal Cancer Roundtable; June 13, 2012; Washington, DC.
 57. Holz J. Enhancing Colorectal Cancer Screening in Community Health Centers through Navigation: A Case Study of Collaboration between Community Health Centers and the Cancer Coalition of South Georgia. Presented to the National Colorectal Cancer Roundtable; June 13, 2012; Washington, DC.
 58. Fletcher RH, Nadel MR, Allen JI, et al. The quality of colonoscopy services—responsibilities of referring clinicians: a consensus statement of the Quality Assurance Task Group, National Colorectal Cancer Roundtable. *J Gen Intern Med.* 2010;25:1230-1234.
 59. Lantz PM, Richardson LC, Sever LE, et al. Mass screening in low-income populations: the challenges of securing diagnostic and treatment services in a national cancer screening program. *J Health Polit Policy Law.* 2000;25:451-471.
 60. Lantz PM, Richardson LC, Macklem DJ, Shugarman LR, Knutson DB, Sever LE. Strategies for follow-up and treatment services in state breast and cervical cancer screening programs. *Womens Health Issues.* 1999;9:42-49.
 61. American College of Physicians. Suggested Timeline For ABIM MOC Process acponline.org/education_recertification/recertification/process/. Accessed January 9, 2013.
 62. Taplin SH, Haggstrom D, Jacobs T, et al. Implementing colorectal cancer screening in community health centers: addressing cancer health disparities through a regional cancer collaborative. *Med Care.* 2008;46(9 suppl 1):S74-S83.
 63. Haggstrom DA, Taplin SH, Monahan P, Clauser S. Chronic Care Model implementation for cancer screening and follow-up in community health centers. *J Health Care Poor Underserved.* 2012;23(suppl 3):49-66.
 64. Haggstrom DA, Clauser SB, Taplin SH. The health disparities cancer collaborative: a case study of practice registry measurement in a quality improvement collaborative. *Implement Sci.* 2010;5:42.
 65. National Colorectal Cancer Roundtable. Clinician's Reference: Fecal Occult Blood Testing for Colorectal Cancer Screening. nccrt.org/about/provider-education/. Accessed November 1, 2012.
 66. Walsh JM, Gildengorin G, Green LW, Jenkins J, Potter MB. The FLU-FOBT Program in community clinics: durable benefits of a randomized controlled trial. *Health Educ Res.* 2012;27:886-894.
 67. Centers for Disease Control and Prevention. Screen for Life: National Colorectal Cancer Action Campaign. cdc.gov/cancer/colorectal/sfl.cdc.gov/cancer/colorectal/sfl. Accessed November 1, 2012.
 68. American Cancer Society. ColonMD: Clinician's Information Source. cancer.org/colonmd. Accessed November 1, 2012.
 69. Sifri R, Wender R, Lieberman D, et al. Developing a quality screening colonoscopy referral system in primary care practice: a report from the National Colorectal Cancer Roundtable. *CA Cancer J Clin.* 2010;60:40-49.