

# Strategies for Increasing Colorectal Cancer Screening Rates for Difficult-to-Engage Patients: A Systemized, Coordinated, and Patient-Centered Approach

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# Strategies for Increasing Colorectal Cancer Screening Rates for Difficult-to-Engage Patients: A Systemized, Coordinated, and Patient-Centered Approach

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## INTRODUCTION

Colorectal cancer (CRC) is the second-leading cause of cancer death in the United States. According to American Cancer Society (ACS) estimates, CRC will account for more than 50,000 deaths in 2017, trailing only lung cancer in terms of mortality (ACS 2017a).

CRC screening plays an important role in early detection and survival. When CRC is found at an early stage, the five-year relative survival rate is approximately 90% (ACS 2017b). Routine screening is believed to be partially responsible for falling CRC mortality rates over the past several decades. The ACS recommends regular screenings for people at average risk of developing CRC (Table 1) (ACS 2017c).

National screening rates have increased substantially over the past decade, but there is still room for improvement. In 2015, only 62% of the eligible population, based on the most recent guidelines, received screenings (Healthy People 2017). The National Colorectal Cancer Roundtable (NCCRT), a coalition of national CRC screening experts, has established a goal of reaching an 80% screening rate by 2018 (NCCRT 2017). The ACS estimates that if this goal were to be attained, more than 200,000 CRC deaths could be prevented between now and 2030 (ACS 2017b).

Continued progress in improving screening rates will stem from the development and implementation of new activities, beyond the interventions that led to the increases of the last decade. Efforts to build on these early successes should focus on the development of strategies that address knowledge, emotional, and structural barriers to screening.

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## ABSTRACT

**Purpose:** Colorectal cancer (CRC) screening rates have improved but are still below national goals. The objective of this pilot was to improve CRC screening rates by using targeted outreach materials, key messaging, and optimized health-system processes to address the screening barriers of patients who are difficult to engage.

**Design:** Observational study in 14 primary care practices in California.

**Methodology:** Eligible yet noncompliant CRC screening candidates were identified and divided into two groups along with their associated primary care practices: an outreach-only group (Group 1, N=14,076 patients, 11 associated practices) and a navigation-assisted group (Group 2, N=219 patients, 3 associated practices). Group 1 screening candidates received a letter and an educational brochure conveying the importance of CRC screening. In addition to receiving an educational brochure and letter, Group 2 screening candidates were referred directly to a gastroenterologist when appropriate and guided through the screening process by a central office coordinator. In addition, Group 2 practices engaged in screening process improvements, such as better identification and tracking of eligible patients, enhanced coordination with Monarch central office, and improved patient communication by office staff.

**Results:** In Group 1 (outreach only), the combined screening rate across the 11 practices rose by 15% (from 59% of eligible patients at baseline to 68% by the end of the pilot). In Group 2 (navigation-assisted), the screening rate rose 34% (from 51% of eligible patients at baseline to 68% by the end of the pilot).

**Conclusion:** A coordinated CRC screening program may help health systems reduce provider-level barriers to screening, motivate screening-eligible patients who are difficult to engage, and ultimately increase screening rates.

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One such strategy is to motivate appropriate patients to complete their screenings. The NCCRT has identified a number of barriers that contribute to low screening rates. These barriers include a rationalized avoidance of screening, stemming from negative connotations with colonoscopies or a perception that screening is of low importance; a perceived lack of affordability; an opinion that one's personal risk for developing CRC is low because of an absence of physical symptoms or family history of cancer; and a lack of a provider recommendation (NCCRT 2017).

Another strategy for improving screening rates is to address provider- and health system-related barriers to CRC screening. These are well documented and include challenges in identifying screening candidates; lack of effective tools for patient engagement, scheduling, and appointment reminders; lack of a protocol; lack of a central office coordinator to help patients understand the screening process, overcome patient objections, and follow through with screening; and inconsistent capabilities for clinical decision support and screening documentation, such as in the electronic health record (EHR) (Hoffman 2011, Wang 2017, Escoffery 2015, Militello 2016).

**TABLE 1**  
**ACS recommendations for colorectal cancer screening**

*For patients age 50–75 at average risk, ACS recommends **one** of the following:*

**Annually<sup>a,b</sup>**

Guaiac-based fecal occult blood test (gFOBT)  
Fecal immunochemical test (FIT)

**Every 3 years<sup>a,b</sup>**

Stool DNA test

**Every 5 years<sup>a,c</sup>**

Flexible sigmoidoscopy  
CT colonography (virtual colonoscopy)  
Double-contrast barium enema

**Every 10 years<sup>c</sup>**

Colonoscopy

<sup>a</sup> Patient should complete a colonoscopy if test is positive.

<sup>b</sup> Highly sensitive versions of these tests should be used with the take-home multiple sample method. A gFOBT or FIT done during a digital rectal exam in the doctor's office is not enough for screening.

<sup>c</sup> Test can detect polyps as well as cancer.  
CT=computed tomography

Source: ACS 2017c

## KEY POINTS

- **Screening procedures play an important role in the prevention and early detection of colorectal cancer (CRC).** Suboptimal screening rates contribute to excess morbidity, mortality, and costs associated with CRC.
- **Barriers to screening involve patient-related factors** (cultural, financial, perception, or lack of awareness of the importance of screening) and health system-level factors (lack of internal processes or resources to implement and sustain a CRC screening program or inability to document patients' screening status).
- **Difficult-to-engage patients can be motivated to complete a CRC screening.** Crisp, clear messaging that is presented in a way that patients can understand and that anticipates their objections can help to improve screening rates.
- **Workflows focused on centralized and localized roles and procedures also can be instrumental in improving screening rates.** A central office coordinator can identify, contact, and track patients eligible for screenings. At the physician practice level, establishing procedures for patient engagement and for documenting patient encounters in the EHR reinforces outreach messages and can prevent losing patients through failure to follow-up.
- **At practices using patient-engagement tools with targeted messaging, optimized internal workflows, and centralized processes, collective screening rates increased by 34%.** At practices that notified patients of eligibility for screening but did not have the benefit of these additional tools for overcoming barriers, overall screening rates rose by 15%.
- **The majority of eligible patients chose fecal occult blood test screenings,** implicating lack of choice as a potential barrier to screening.
- Other best practices learned from this pilot included the importance of establishing measurable goals and using human resources optimally to reduce the potential for administrative burden.

Evidence suggests that specific activities can support strategies at both the patient and provider level. For instance, studies have demonstrated that offering a simple, at-home CRC screening test that provides patients with an alternative to colonoscopy increases screening rates (Potter 2009, Arif 2016). In a study at primary care clinics within a staff-model HMO, proactive outreach by medical assistants and nurse coordinators fostered improved patient engagement and increased CRC screening rates (Green 2016). Multiple studies have shown that reminder systems, directed at physicians, patients, or both, are effective in increasing CRC screening rates (Sarfaty 2007).

Seeking to build on these efforts, Monarch HealthCare® (Monarch), an independent physician association and part of OptumCare™, piloted an innovative CRC screening program to identify, understand, and eliminate barriers to screening in a difficult-to-engage population. The objectives of this pilot were to test the effectiveness of streamlined workflows and to test targeted patient-engagement tools designed to motivate eligible patients to complete a screening.

**METHODS**

Genentech and Monarch worked together in a joint collaboration to define the resources and processes necessary for the success of this pilot screening program. Genentech, however, did not engage with patients directly and did not have access to identifiable patient data.

**Resource development.** Genentech expanded upon its existing CRC screening program, called *Love Your Colon*, to develop resources and tools optimized for integrated health systems. To develop these resources, Genentech first identified screening barriers using insights from colorectal cancer screening experts across the United States. These findings were used to identify a set of resources that health systems could use to better engage with patients and help them to understand the need for screening, address their objections, and ultimately activate them to be screened. The messages included in the resources aligned with work done by the NCCRT to identify national barriers to screening and became the basis for all program resources (Table 2). These resources were refined and validated in collaboration with Monarch to ensure that they would help to address common challenges and would be beneficial to all health systems. As an additional output to the pilot, a program guide for health systems was developed that includes process flows and other best practices that health systems can consider when developing internal processes for patient outreach and screening.

**Planning activities.** Prior to implementation of

the pilot, Monarch identified existing CRC screening-related processes in provider practices. Observations were made about primary care screening authorization processes, timing of referrals, and internal workflow efficiency. The outcomes of these reviews were used in working sessions with cross-functional stakeholders to develop optimal screening flows for both the primary care physician (PCP) office and the central coordination office (Figures 1 and 2, pages 5 and 6). Monarch also standardized procedures for documenting screening information in the EHR. The hypothesis was that these workflows would streamline office activities, define staff roles and responsibilities, increase focus on screening activities, and move much of the burden of patient outreach and tracking from provider practices to Monarch’s central office.

**Pilot inception.** Monarch’s performance improvement division identified patients who were eligible for CRC screening, yet noncompliant. Patient eligibility was determined according to ACS CRC screening guidelines. Patients in need of diagnostic colonoscopies and those due for follow-up were excluded from eligibility in the pilot. Office staff across 14 Monarch primary care practices were sent a list of these screening candidates via email.

**TABLE 2**  
**Love Your Colon tools for patient engagement**

- For use by Monarch central office**
- Initial letters to eligible patients<sup>a</sup>
  - Educational pamphlet about CRC and screening<sup>a,b</sup>
  - Patient navigation script<sup>b</sup>
- For use in Monarch primary care practices**
- Educational pamphlet about CRC and screening<sup>b</sup>
  - Patient navigation script<sup>b</sup>
  - Patient CRC screening cost guide
  - Colorectal cancer facts tent card
  - Appointment reminder card

<sup>a</sup> Materials produced in English and Spanish languages.

<sup>b</sup> Monarch’s central office mailed the educational pamphlet with the initial letters to eligible patients and used the patient navigation script in follow-up calls to screening candidates. Primary care practices were furnished with these resources to ensure consistency of messaging when screening-eligible patients visited the office.

CRC=colorectal cancer.

The primary care practices, with their aligned screening candidates, were then divided into two groups: an outreach-only group and a navigation-assisted group. The intent of the outreach-only group (Group 1) was to determine the effect of a simplified set of outreach materials on patient engagement and CRC screening rates. The intent of the navigation-assisted group (Group 2) was to show the incremental benefit that could be gained from using a larger set of patient outreach materials as well as a coordinated approach to patient communication and navigation.

Figure 3 (page 7) shows the flow of patient-outreach activities for both groups.

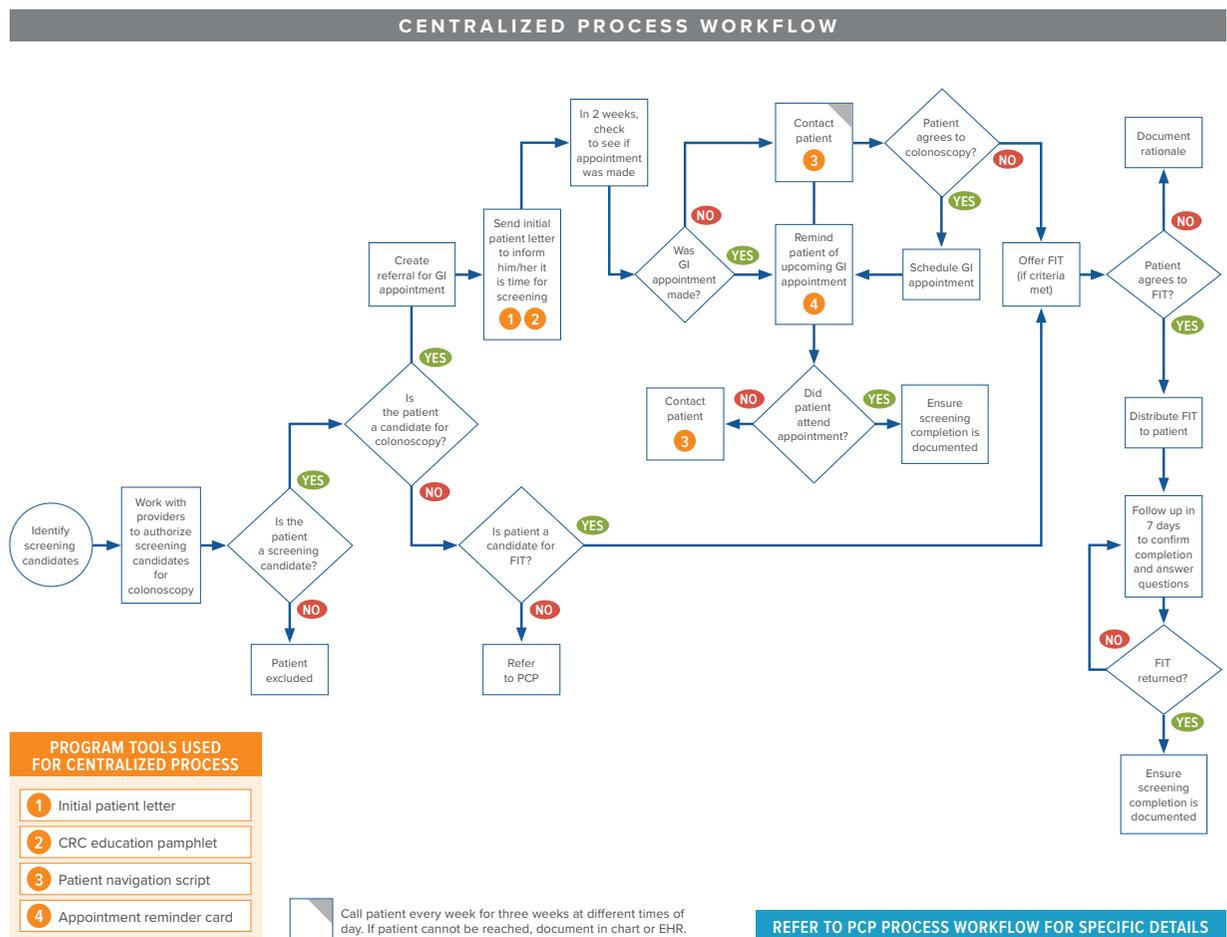
Group 1 consisted of 14,076 eligible patients from 11 primary care practices in Orange and Los Angeles Counties. These screening candidates received a *Love Your Colon* letter from Monarch’s quality medical director

and a *Love Your Colon* educational brochure in the mail. The letter informed the screening candidates that they were due for screening, included key messages (Table 3, page 7) developed to motivate them to talk with their physician, and directed them to follow up with their PCP about CRC screening. The educational brochure, which employed similar key messages, was sent along with the letter. English- and Spanish-language versions of the letter and the educational brochure were sent to all screening candidates.

The objective for Group 1 was to determine the effectiveness of direct mail patient outreach using the letter and educational brochure. Practices associated with this group did not utilize the other *Love Your Colon* tools described in Table 2 or the processes from the optimized workflows.

The navigation-assisted group (Group 2) consisted

**FIGURE 1**  
**Office coordinator (centralized) process workflow**



EHR=electronic health record, FIT=fecal immunochemical test, GI=gastroenterologist, PCP=primary care physician.  
Note: FIT is an at-home CRC screening assay similar to the FOBT assay.

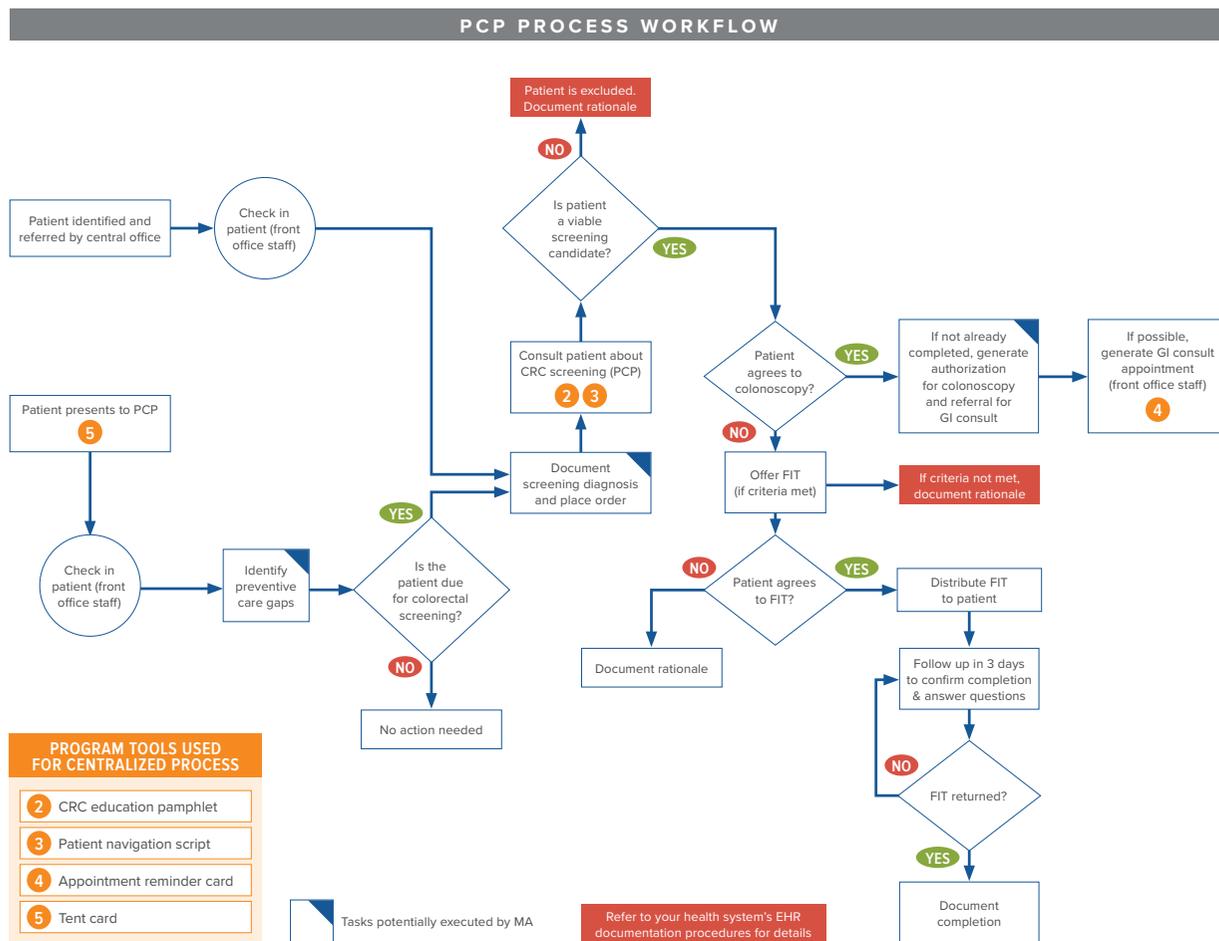
## INCREASING COLORECTAL CANCER SCREENING RATES

of 219 eligible patients associated with three primary care practices in Orange County. These practices, which are part of OptumCare Medical Group (OCMG) and affiliated with Monarch, were selected for two main reasons: They utilized the same EHR system (NextGen) as Monarch’s central office, which facilitated better data exchange as not all practices use the same system, and they demonstrated a willingness to employ process improvements identified through optimized workflows. An OCMG quality medical director trained key staff at these three sites to implement process improvements, coordinate with Monarch’s performance improvement division, and utilize the *Love Your Colon* resources. The next section describes the activities associated with Group 2 screening candidates and providers.

### Group 2 activities for screening candidates

- Initial outreach:** In a single mailing, screening candidates were given the same educational brochure and a similar letter as the Group 1 candidates. The difference in the letter occurred in the patient direction: When a candidate’s PCP gave consent, the patient was preauthorized for a colonoscopy and instructed in the letter to schedule a consultation directly with a gastroenterologist (GI). The assumption was that by reducing the number of required patient appointments, this “fast-track” approach would remove multiple barriers to compliance (i.e., the time involved with getting a referral and going to the appointment, the effort of scheduling the appointment, and the various costs involved, such as travel and office visit copayment).

**FIGURE 2**  
Physician (pilot site) process workflow



EHR=electronic health record, FIT=fecal immunochemical test, GI=gastroenterologist, MA=medical assistant, PCP=primary care provider.

**TABLE 3**

**Key patient-focused messages**

Key message <sup>a</sup>	Benefit
Colon cancer is a serious disease. However, it can be prevented or detected at an early stage	<ul style="list-style-type: none"> <li>Elevates understanding of the seriousness of the disease</li> <li>Suggests a way that a person can do something about colon cancer</li> <li>Appeals to the desire to stay in good health as long as possible</li> </ul>
Colon cancer screening saves lives	<ul style="list-style-type: none"> <li>Provides strong rationale and incentive to consider CRC screening as a way of maintaining one’s health</li> <li>Positions CRC screening as a means of preventing a potentially life-threatening disease or catching it at a stage when it can best be managed</li> </ul>
Several screening options are available, including simple take-home tests	<ul style="list-style-type: none"> <li>Reduces “fear of colonoscopy” barrier</li> <li>Conveys there are screening options available that might work best for the screening candidate</li> <li>Empowers people to be responsible for their own health</li> </ul>
Getting screened for colorectal cancer doesn’t have to cost a lot	<ul style="list-style-type: none"> <li>Directly addresses affordability issue</li> <li>Alleviates the stress of financial hardships that often comes with healthcare</li> <li>For newly insured, addresses affordability issue by educating the audience about access to services they may not have enjoyed before</li> </ul>

<sup>a</sup>Visit [www.LoveYourColon.org](http://www.LoveYourColon.org) to download full key and supporting messages. Source: Love Your Colon.org

- Follow-up:** Screening candidates who had not scheduled an appointment within 2 weeks of the initial mailing received a phone call from Monarch’s central office coordinator. The office coordinator used a patient-centered navigation script to answer patients’ questions and address any objections to CRC screening. The goal of this call was either to schedule a screening consultation with a GI or gain consent from the patient to complete a fecal occult blood test (FOBT).
- FOBT distribution:** If screening candidates had not been screened or scheduled for screening by the final three months of the program, they were mailed a FOBT kit by the central office coordinator.

**Group 2 activities for providers**

- Care gap identification:** Prior to a patient appointment, care gaps were identified to validate

**FIGURE 3**

**Pilot activities by patient group**

	July 2016 (pilot initiation)	July–October	October–December
<b>Group 1</b>	<ul style="list-style-type: none"> <li>Screening candidates identified; sent letter and educational brochure</li> </ul>	<ul style="list-style-type: none"> <li>Screening candidates follow up with PCP and complete CRC screening</li> </ul>	<ul style="list-style-type: none"> <li>No action</li> </ul>
<b>Group 2</b>	<ul style="list-style-type: none"> <li>Screening candidates identified; PCPs notified of screening status</li> <li>Monarch sends letter and educational brochure to screening candidates</li> <li>Screening candidates authorized for colonoscopy and referred to GI (if allowed by PCP)</li> </ul>	<ul style="list-style-type: none"> <li>Central office coordinator uses navigation call script to proactively follow up with noncompliant screening candidates by phone</li> <li>Screening candidates follow up with PCP/GI and complete CRC screening</li> <li>PCP uses tent card, educational brochure, and navigation script to motivate patients</li> </ul>	<ul style="list-style-type: none"> <li>FOBT kits are mailed to remaining noncompliant screening candidates</li> </ul>

CRC=colorectal cancer, FOBT=fecal occult blood test, GI=gastroenterologist, PCP=primary care physician.

## INCREASING COLORECTAL CANCER SCREENING RATES

CRC screening eligibility and flag the patient for screening consultation.

- **Tent card:** A tent card was displayed in patient waiting areas and examination rooms. The tent card served as an in-office “awareness prompt” and included a brief list of key CRC screening-related messages to convey to screening candidates.
- **Patient communication:** Office staff were provided the same educational brochure that screening-eligible patients received in the mail as well as the patient navigation script. The staff used these resources to help to answer patient questions and address their objections to CRC screening.
- **Appointment scheduling:** Office staff scheduled follow-up CRC screening appointments before the patients left the office. Patients were given an appointment reminder card and/or notified electronically in Monarch’s patient portal. This helped to ensure that patients were informed about next steps and removed the burden of patients having to schedule their next appointment.
- **EHR documentation:** Office staff were given a guide

to standardize documentation of screening-related activities in the EHR. This helped to ensure efficient patient tracking and accurate capture of screening data.

**Success metrics.** Baseline screening rates at all 14 practices were documented in March 2016, and final screening rates were assessed at the conclusion of the pilot, which ran through December 2016.

The primary outcome measure was improvement in CRC screening rates in both patient groups. Secondary outcomes were measured for Group 2. These included patient outcomes (number of polyps removed or stage of CRC at detection) and provider and patient satisfaction with the program and its methods, as measured in post-pilot surveys.

## RESULTS

A total of 14,295 patients who were identified as eligible for screening, but noncompliant under ACS CRC screening recommendations, were included in the pilot.

**Screening rates and patient outcomes.** In the outreach-only group (Group 1) 14,076 screening can-

**TABLE 4**  
**Patient outcomes in Group 2**

Number of identified screening candidates	219 (100%)
Number of SCs who followed up with a PCP or GI	119 (54%)
Number of SCs who completed screening	69 (32%)
Completed screenings: type of screening tests	Colonoscopy=28 (41%) Flexible sigmoidoscopy=0 (0%) FOBT=41 (59%)
Number of SCs who had polyps removed	17
Number of SCs with positive FOBT tests	0
Number of SCs diagnosed with colorectal cancer	0

FOBT=fecal occult blood test, GI=gastroenterologist, PCP=primary care physician, SC=screening candidate.

**TABLE 5**  
**Change in screening rates, by site**

	Screening rates*		
	Baseline (March 2016)	End of pilot (December 2016)	Difference vs baseline
Group 1 sites (11-practice aggregate)	59%	68%	+15%
Group 2 sites (3-practice aggregate)	51%	68%	+34%
Rancho Santa Margarita	65%	72%	+11%
San Juan Capistrano	26%	53%	+106%
Irvine	51%	72%	+41%

\*Rounded to nearest full percentage.

didates received a letter notifying them about their eligibility for screening and an educational brochure. In this group, the combined screening rate across the 11 practices rose from 59% to 68%, an overall increase of 15%.

In the navigation-assisted group (Group 2), 219 screening candidates received the eligibility letter and educational brochure, as well as additional targeted interventions previously described. By the end of the pilot, 119 of the 219 (54%) screening candidates followed up with a PCP or GI, and 69 completed a CRC screening (Table 4). Among screening candidates in this group who completed a screening, 28 had a colonoscopy and 41 completed a FOBT. Polyps were removed in 17 patients who underwent colonoscopy. None of the polyps were found to be malignant.

In successfully engaging these 69 screening candidates who previously had been noncompliant with screening recommendations, the three practices in Group 2 raised their combined screening rate from 51% of eligible patients at baseline to 68% of eligible patients by the end of the pilot, an overall increase of 34%. Table 5 lists screening rate improvement by practice.

**Provider and patient satisfaction.** Monarch used surveys to assess how satisfied providers and patients were with the resources provided. Surveys were hand delivered to nine physicians, office managers, and medical assistants at the three Group 2 practices (seven responded) and mailed to 65 screening candidates associated with the practices in Group 2 (19 responded, 17 valid responses were received).

The survey results showed that provider-office personnel at the three Group 2 practices believed that the *Love Your Colon* outreach materials were effective in raising awareness of the importance of CRC screening and in activating screening candidates to complete a test (Figures 4A, 4B). All respondents agreed that during the pilot, the frequency of screening conversations with patients increased and the quality of those conversations improved.

Screening candidate surveys showed that the initial outreach letter was successful in raising awareness of both the importance of screening and options available and respondents indicated that it motivated them to be screened. Additionally, respondents reported that their physicians motivated them to get screened and effectively communicated the importance of, and options for, screening (Figures 5A, 5B, page 10). Qualitative responses yielded patient appreciation for the range of screening options and the convenience of a take-home test.

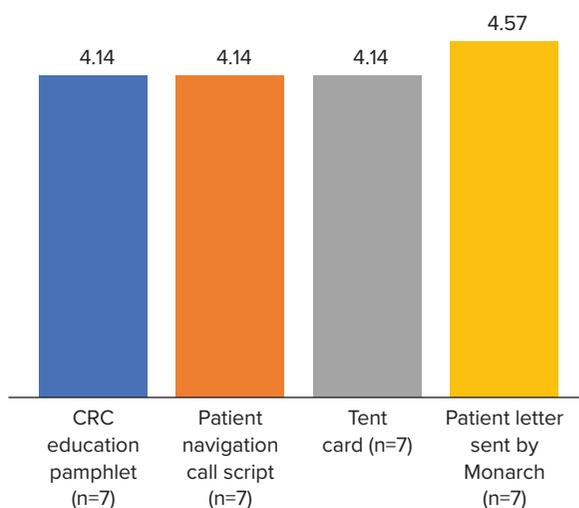
**FIGURE 4**

**Medical offices' perception of patient-outreach materials**

*Follow-up survey of physicians, office managers, and medical assistants in Group 2*

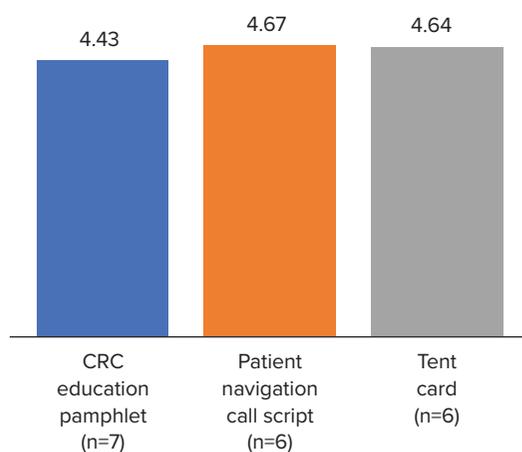
**A. Effectiveness of resources in activating eligible patients to complete a screening test**

0=not effective, 5=highly effective.



**B. Effectiveness of resources in raising patient awareness about CRC and the importance of CRC screening**

0=not effective, 5=highly effective.



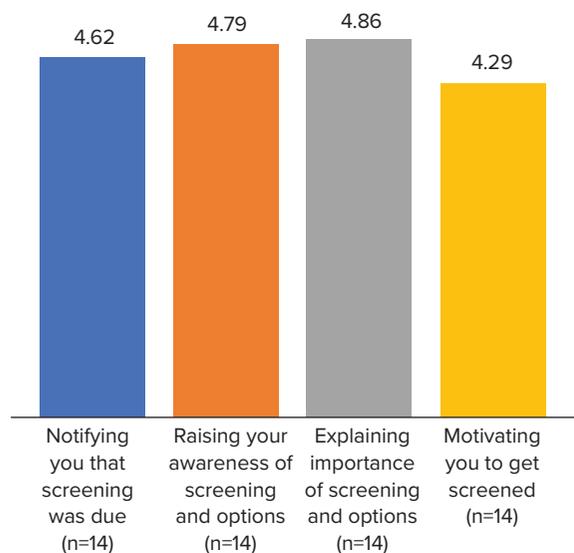
The patient letter was not available to providers for review. CRC=colorectal cancer.

**FIGURE 5**  
**Patients’ perceptions of physician communication**

Follow-up survey of patients in Group 2

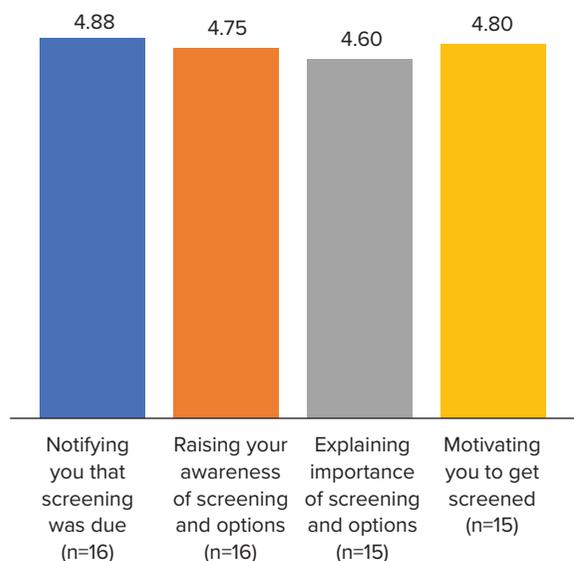
**A. Effectiveness of initial outreach letter in achieving the following objectives:**

0=not effective, 5=highly effective.



**B. Effectiveness of physicians in educating and motivating eligible patients about screening**

0=not effective, 5=highly effective.



**DISCUSSION**

This observational study demonstrated how a focused CRC screening program can help to overcome system-level barriers to screening and motivate screening candidates who are difficult to engage. This pilot resulted in a 34% relative increase in CRC screening rates among candidates who were supported by the full complement of engagement activities (navigation-assisted group), compared with a 15% relative increase among screening candidates who received only initial outreach materials.

These findings improve upon outcomes that other healthcare organizations have reported when attempting to increase CRC screening rates in patients who are eligible for screening but are difficult to engage. In an observational study, Arif (2016) reported 14% to 17% higher activation CRC screening rates among patients who were mailed an at-home test (a fecal immunochemical test, or FIT, which is similar to a FOBT) to detect CRC. In a trial involving mostly Spanish-speaking patients, Baker (2014) randomized patients into usual care or outreach from a CRC screening coordinator. Among patients in the intervention group, 40% completed their screenings if contacted within two weeks of initial patient outreach.

Monarch employed approaches that were similar to, and expanded upon, those used in previous studies. At the implementation of this pilot, Monarch’s overall CRC screening rates were comparable to national averages. At the end of the pilot, rates at both the three sites in Group 2 and across all 14 Monarch sites exceeded national averages, generating meaningful improvements in screening rates. While it is difficult to attribute the increased screening rates to any single intervention during this pilot, surveys of Group 2 providers and patients at the completion of the program allow for the development of some hypotheses.

Healthcare professionals and patients within Group 2 agreed that the outreach messages were effective. Similarly, screening candidates reported that the *Love Your Colon* resources and subsequent discussions with their physicians were effective in helping them to understand the need for screening and the options available to them, including the FOBT. The clarity and consistency of messaging, from initial outreach to face-to-face conversations between patients and physicians, may have contributed to improvements in screening rates. Further evidence of the effectiveness of this approach may be reflected in the higher frequency and quality of physician-patient discussions about CRC screening during the pilot.

This pilot helped Monarch to understand barriers to

screening and challenges of patient engagement. From this process, best practices emerged:

**Best practice 1:** *Analyze workflows and establish formal processes.* Prior to this pilot, Monarch did not have a formal or coordinated process for following eligible patients from identification through completion of a screening. This exercise enabled Monarch to develop and integrate a workflow into each office, thus closing a fundamental gap in quality of care.

Preauthorizing colonoscopies for patients who were overdue for screening removed another process-related barrier to screening. The hypothesis was that a direct referral to a GI, with the consent of the patient's primary care physician, would reduce the burden of time on patients in obtaining a referral and going to an extra appointment, reduce the effort of scheduling multiple provider appointments, and reduce various patient costs related to an extra appointment.

**Best practice 2:** *Provide eligible patients with all available testing options.* Providing at-home testing kits to screening candidates who did not want to complete a colonoscopy removed an important barrier to screening. FOBTs were rarely used by patients in Group 2 sites before the pilot (from January through June 2016, only 0% to 2% of patients completed FOBTs). During the pilot, when screening candidates were presented with the choice of screening modality, FOBT utilization increased. From this result, it can be inferred that access to a FOBT during the pilot may have been a driver of higher screening rates.

**Best practice 3:** *Establish measurable goals.* Monarch sought to increase CRC screening rates closer to the NCCRT-defined goal of 80% of eligible patients screened by 2018. While this is a patient-centered, aspirational goal, any progress toward it can be measured and success factors can be analyzed from the change.

**Best practice 4:** *Use a central office coordinator.* By moving some of the burden of patient outreach and follow-up to the central office, providers and office staff could devote more time to patient care and follow-up. The central office coordinator also used the same patient navigation script as physicians to ensure that messaging was consistent.

**Best practice 5:** *Align with key stakeholders.* In establishing a program, it can be helpful to define organizational objectives, identify challenges, and work out

solutions. For instance, Monarch initially wanted to establish standard processes across all three Group 2 sites. It was quickly learned, however, that because each staff member's skill set differed across provider sites, screening-related roles and responsibilities had to be flexible to fit the needs of the practice.

**Best practice 6:** *Refer screening-eligible patients directly to a gastroenterologist.* This approach minimized the number of provider visits, which saved time for patients and reduced overall costs.

**Best practice 7:** *Leverage your EHR system.* Prior to this pilot, CRC screening-related data (i.e., patient eligibility, patient visits, completed screenings, etc.) were recorded in unstructured data fields that made it difficult to query the EHR. Monarch developed a standardized process to document screening-related data to accurately determine which patients needed screening or who had actually completed a screening test.

**Best practice 8:** *Employ a set of consistent outreach messages.* Messages used in this initiative were developed and validated to ensure broad applicability in increasing awareness, addressing barriers to screening, and ultimately activating eligible patients to complete their screening. In addition, materials were written at a sixth-grade reading level and employed consistent *Love Your Colon* branding, which helped to increase receptivity with difficult-to-engage patients.

**Best practice 9:** *Align physician incentives.* In a capitated environment, GIs were disincentivized to increase the number of colonoscopies completed. To mitigate this issue, Monarch used a point-based compensation system to align physician incentives.

This study has four important limitations. (1) This was an observational study and did not include a control group. No standard protocols or methodology was employed. Historical (March 2016) screening rates were used as a baseline and several interventions were implemented simultaneously. Therefore, screening increases cannot be attributed to any specific intervention; outcomes are more likely to be attributable to a combination of factors. (2) Cohorts were not matched, nor were they randomized, potentially influencing the magnitude of screening-rate improvements. For instance, screening rate variability may be due in part to differences in provider utilization of program tools. (3) This study was conducted in Orange and Los Angeles

## INCREASING COLORECTAL CANCER SCREENING RATES

Counties, the populations of which are predominantly white and Latino with a strong minority consisting of Asians and Pacific Islanders (Orange County 2017, Los Angeles County 2015). The demographics, socioeconomic status, and social determinants of health in Monarch's population may differ from those in other systems or other regions of the country.

Note also that not all activities performed in Group 2 would be easily scalable for every health system. For instance, the costs associated with implementation and maintenance of this program (resource printing and mailing, central office coordinator, FOBT distribution, workflow changes, and provider and staff training) may be prohibitive. This initiative, however, does not have to be replicated in its entirety to have a meaningful impact on screening rates. Outreach, patient navigation, and provider engagement can be implemented in a modular fashion and tailored depending on the resources available to the health system.

### CONCLUSION

This study demonstrated how CRC screening rates can be meaningfully improved through a coordinated approach to screening. Keys to this process included targeted patient outreach, consistent messaging, and the implementation of processes to overcome system-level barriers to screening.

### REFERENCES

- ACS (American Cancer Society). *Cancer Facts & Figures 2017*. 2017a. <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2017/cancer-facts-and-figures-2017.pdf>. Accessed Aug. 14, 2017.
- ACS. *Colorectal Cancer Facts & Figures 2017–2019*. 2017b. [https://www.cancer.org/content/dam/cancer-org/research/cancer-](https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/colorectal-cancer-facts-and-figures-2017-2019.pdf)

### Disclosures

The following stakeholders were involved in the development of this CRC screening pilot: Genentech was responsible for the development of the *Love Your Colon* tools, and Monarch HealthCare and OCMG were responsible for the implementation and maintenance of the program. Genentech did not engage with patients directly and did not have access to identifiable patient data.

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- facts-and-statistics/colorectal-cancer-facts-and-figures/colorectal-cancer-facts-and-figures-2017-2019.pdf. Accessed Aug. 14, 2017.
- ACS. American Cancer Society recommendations for colorectal cancer early detection. March 1, 2017c. <https://www.cancer.org/cancer/colon-rectal-cancer/detection-diagnosis-staging/acs-recommendations.html>. Accessed Aug. 14, 2017.
- Arif K, Hufford D, Debose R. Colon cancer screening: home testing increases patient activation. *CAPG Health*. 2016;10(2):30–31.
- Baker DW, Brown T, Buchanan DR, et al. Comparative effectiveness of a multifaceted intervention to improve adherence to annual colorectal cancer screening in community health centers. A randomized trial. *JAMA Intern Med*. 2014;174(8):1235–1241.
- Escoffery C, Fernandez ME, Vernon SW, et al. Patient navigation in a colorectal cancer screening program, *J Public Health Manag Pract*. 2015;21(5):433–440.
- Green BB, Anderson ML, Chubak J, et al. Colorectal cancer screening rates increased after exposure to the patient-centered medical home (PCMH). *J Am Board Fam Med*. 2016;29:191–200.
- Healthy People 2020. Adults receiving colorectal cancer screening based on most recent guidelines. <https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4054>. Accessed Aug. 14, 2017.
- Hoffman RM, Rhyne RL, Helitzer DL, et al. Barriers to colorectal cancer screening: physicians and general population perspectives, New Mexico, 2006. *Prev Chronic Dis*. 2011;8(2):A35.
- Los Angeles County (County of Los Angeles Department of Public Health). Community Health Assessment 2015. [http://www.publichealth.lacounty.gov/plan/docs/CHA\\_CHIP/LACD-PHCCommunityHealthAssessment2015.pdf](http://www.publichealth.lacounty.gov/plan/docs/CHA_CHIP/LACD-PHCCommunityHealthAssessment2015.pdf). Accessed Aug. 14, 2017.
- Love Your Colon. <http://www.loveyourcolon.org>. Accessed Aug. 14, 2017.
- Militello L, Saleem JJ, Borders MR, et al. Designing colorectal cancer screening decision support: a cognitive engineering enterprise. *J Cogn Eng Decis Mak*. 2016;10(1):74–90.
- NCCRT (National Colorectal Cancer Roundtable). 80% by 2018. 2017 Communications Guidebook: Recommended Messaging To Reach the Unscreened. <http://nccrt.org/tools/80-percent-by-2018/80-by-2018-communications-guidebook>. Accessed Aug. 14, 2017.
- Orange County (Orange County Community Indicators Project). OC Community Indicators. May 2017. <http://www.ocgov.com/civicax/filebank/blobdload.aspx?BlobID=64553>. Accessed Aug. 14, 2017.
- Potter MB, Phengrasamy L, Hudes ES, et al. Offering annual fecal occult blood tests at annual flu shot clinics increases colorectal cancer screening rates. *Ann Fam Med*. 2009; 7(1):17–23.
- Sarfaty M, Wender R. How to increase colorectal cancer screening rates in practice. *CA Cancer J Clin*. 2007;57:354–366.
- Wang H, Gregg A, Qiu F, et al. Provider perceived colorectal cancer screening barriers: results from a survey in accountable care organizations. *JOJ Pub Health*. 2017;1(2):55557.