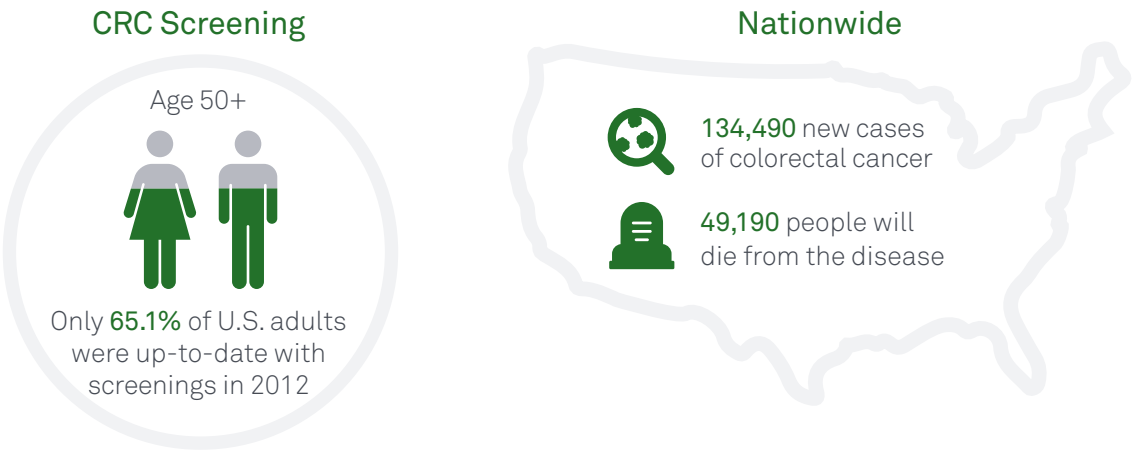
Increased patient compliance with colon cancer screening through use of at-home test kits:
A Case Study of Mercy Medical Group, Dignity Health Medical Foundation and Western Health Advantage

Quest Diagnostics InSure® FIT™ (Fecal Immunochemical Test)

Introduction

Early detection leads to healthier patients and better healthcare

According to the American Cancer Society, starting at age 50, men and women at average risk for developing colorectal cancer should be screened. Yet, in 2012, only 65.1% of U.S. adults were up-to-date with CRC screening. Nationwide, roughly 134,490 new cases of colorectal cancer are diagnosed annually[1] and an estimated 49,190 people will die from the disease.[2]



With early detection and healthy lifestyle choices, colon cancer survival rates soar. If detected early in stages I or II, colorectal cancer may be treatable and the five-year survival rate is greater than 90 percent. However, once the disease spreads, survival rate falls to less than 10 percent.[3] Thus, health and wellness programs that incorporate colorectal screenings are an important part of value-based patient care.

The problem

Encountering patient reticence

Mercy Medical Group, a service of Dignity Health Medical Foundation (MMG), is a multispecialty clinic with patient service centers located throughout the greater Sacramento area. For several years they have employed an in-office colon cancer screening education campaign coupled with mailed reminder letters to patients. Likewise, Western Health Advantage (WHA), a health plan in Northern California, has used direct mail and phone reminder programs to engage patients who are eligible for screening. However, neither effort was yielding much success in increasing compliance.

Colon cancer screening rates lag for many reasons. Some patients are simply embarrassed to discuss colon cancer screening with their doctor. Physicians recommending colonoscopies face an uphill battle as patients perceive the test to be painful[4] and many patients do not know that non-invasive screening options are available. Others believe that without a family history of colon cancer nor active symptoms, they aren't at risk and don't need to be screened. Lastly, patients are concerned about the complexity and costs of screening, including taking time off from work, food or medicinal restrictions, getting a ride home, and high out-of-pocket expenses.

MMG recognized that these barriers to colon cancer screening were limiting patient compliance. Meanwhile, WHA came to believe that patients needed to be engaged directly by their own physicians if they were to increase screening rates. In 2015, MMG partnered with WHA to address the large number of patients who had not, despite previous efforts, completed colon cancer screening at home.

The process

The partnership began by identifying a cohort of WHA patients who met clinical guidelines for colon cancer screening by failing to complete either a fecal occult blood test in the prior year, a sigmoidoscopy in the prior five years, or a colonoscopy in the prior 10 years. Each received a letter from their primary care provider stating they were due for screening. Each letter included a web link to online colon cancer screening information and phone numbers to schedule educational classes offered by MMG gastroenterologists. Patients who did not respond received two additional reminders over the following four months.

A total of 1,660 patients took no action in response to the engagement efforts. The disappointed parties then looked to the recent work of Kaiser Permanente, a nationwide integrated health system, which had provided evidence that improving the ease of colon cancer screening for patients will increase the rate of compliance.[5] Focused on the identified cohort of non-compliant patients, the team set out to study whether increasing testing convenience would result in higher rates of colon cancer screening.

The solution

To test the correlation between ease-of-testing and patient compliance, the team planned to mail each qualified patient a FIT (Fecal Immunochemical Test) collection kit ("FIT kit") to complete at home and mail back to the provider's laboratory. The lab would process the test and inform the ordering physician of the results via the organization's electronic health record (EHR). The physician would then assume the responsibility of patient follow-up.

MMG worked with Quest Diagnostics to supply easy-to-understand patient instructions for the at-home specimen collection process. Quest also arranged for mailing to arrive in a central facility and prepared laboratory personnel for the project commencement. A sample kit was passed through the process to identify any unanticipated problems. A volunteer received a kit via the mail, completed the collection and sent the specimen to Quest. The result was entered into the EHR, which notified the ordering physician, completing a successful quality assurance test run.

How it works

InSure FIT kit mailed to individual

Individual collects **sample** at home

Individual mails completed kit back to **Quest Diagnostics**

Quest Diagnostics **performs and interprets tests**

Results sent to **individual to share** with their **PCP**

MMG engaged their gastrointestinal (GI) providers who enthusiastically supported using FIT, in part, because the non-profit, Integrated Healthcare Association, accepts use of the test for annual screening. In the plan, GI providers would enter the 1,660 lab orders for the study cohort and schedule follow-up appointments for patients with positive (abnormal) FIT results. The organization's primary care leadership was also engaged to garner support of the new testing approach as these individuals would be copied on abnormal FIT results.

All primary care physicians were informed at department meetings about the study and received a co-branded letter from MMG and WHA in hopes that physicians, if questioned about the program, would be motivated to encourage their patients to complete the test. Over a two-week period, the GI specialists entered all 1,660 lab orders into the EHR. All lab orders were printed and signed before being sent via a HIPAA-secure courier to WHA, which was managing the mailing. The medical group and the health plan then worked together to design a co-branded, patient-friendly mail campaign beginning with a post card entitled "An Exam at Home" announcing the subsequent arrival of the FIT kits in the mail. Shortly thereafter, timed to coincide with Colon Cancer Awareness Month, the patients received a packet with the kit, easy-to-follow instructions, a postage-paid return envelope, and a printed lab requisition from the doctor.

The results

Response rate

In general, the study results showed that colon cancer screening by this method increased patient compliance rates by 17 percent for completion of screening test, using the baseline of 0% compliance rate for the group of non-responders. Within the subset of patients who completed kits, 14 percent of patients completed a follow-up colonoscopy.

Impact on compliance

In the first six weeks, 128 completed FIT kits were received in the laboratory. Over the subsequent three months, non-compliant patients received two more reminder letters to complete the kits. Over the next five months, a total of 281 completed FIT kits were received for an overall response rate of 17 percent.

Clinical implications

A total of 16 patients had abnormal FIT results and were notified. As a result, 10 patients scheduled and completed colonoscopies. Of the 10 colonoscopies completed, five patients were diagnosed with adenomas, a condition with variable malignant potential. The remainder had conditions such as gastritis or internal hemorrhoids that do not generally lead to cancer. In an unexpected finding, even among patients with negative FIT tests, 30 individuals scheduled and completed colonoscopies. (See Table 1).

Table 1. Colon Cancer Screening using self-administered, at home collection kits.

Metric	Totals
Patients mailed a FIT kit	1,660
Patients who returned the completed FIT kit	281
Patients with negative FIT results who completed colonoscopy	30
Positive FIT results	16
• Colonoscopies completed	10
• Colonoscopies with adenomas (tubular, tubolovillous, villous or hyperplastic)	5
• Colonoscopies with other findings	5
• Patients with positive FIT results who didn't complete colonoscopy	6

Cost of Care Implications

The patients in the study were insured by a capitated care model while the provider used a sub-capitated lab vendor, Quest Diagnostics. Thus, the FIT kit was provided at essentially no cost. Furthermore, in light of a 2009 study that calculated the mean total colon cancer cost per Medicare patient one year after diagnosis to be $29,196[6], the use of FIT screening was deemed to be highly cost effective.

Product highlight: InSure® FIT™

Millions of patients have benefited from InSure FIT testing over the last 3 years.

Quest Diagnostics offers the non-invasive InSure FIT colorectal cancer screening test to effectively detect colorectal cancers. Fecal occult blood testing is a significantly more cost-effective screening option than invasive procedures such as sigmoidoscopy and colonoscopy. In particular, InSure FIT is designed to maximize patient compliance:

- The self-administered collection can be conducted in the home without food or medicinal restrictions.
- A two-sample methodology, versus one, increases test sensitivity rates.
- Specimens are kept stable for up to 14 days, reducing the need for repeat tests due to transit-related problems.
- A hygienic water-based collection method requiring no fecal handling, poking or smearing.

Make the choice that can save lives

For more information about colorectal cancer screenings, visit QuestForHealth.com or call 1.866.908.9441.

References

1 National Cancer Institute. SEER Stat Fact Sheets: Colon and Rectum Cancer. Available at http://seer.cancer.gov/statfacts/html/colorect.html. Accessed on 09/27/2016.
2 National Cancer Institute. SEER Stat Fact Sheets: Colon and Rectum Cancer. Available at http://seer.cancer.gov/statfacts/html/colorect.html. Accessed 09/27/2016.
3 American Cancer Society. What are the survival rates for colorectal cancer, by stage? Available at: http://www.cancer.org/cancer/colonandrectumcancer/detailedguide/colorectal-cancer-survival-rates. Accessed 09/27/2016.
4 Harewood GC1, Wiersema MJ, Melton LJ 3rd.. A prospective controlled assessment of factors influencing acceptance of screening colonoscopy. Am J Gastroenterol. 2002 Dec;97(12):3186-94.
5 Kaiser Permanente Institute for Health Policy. Policy Stories. Colorectal cancer screening: preventing a deadly disease. Vol 4, No. 1. March 23, 2015.
6 Luo Z, Bradley CJ, Dahman BA, Gardiner JC. Colon cancer treatment costs for Medicare and dually eligible beneficiaries. Health Care Financ Rev. 2010 Fall;31(1):35-50.