

Improving Colorectal Cancer Screening via Mailed Fecal Immunochemical Testing in a Veterans Affairs Health System

Jin Xu, MD^{a,b}; Jeffrey Kravetz, MD^{a,b}; Juliette Spelman, MD^{a,b}; Kimberley Roy, MSN^a; Vincent Lilly, RN^a; Danielle Cosentino^a; Christopher Ruser, MD^{a,b}

Background: Colorectal cancer screening rates at the Veterans Affairs Connecticut Healthcare System (VACHS) decreased during the COVID-19 pandemic. Fecal immunochemical testing is recognized as a tier 1 preferred screening method by the US Multi-Society Task Force on Colorectal Cancer. The VACHS implemented a program that mailed fecal immunochemical testing kits to patients to improve colorectal cancer screening rates.

Observations: This article describes the components of the VACHS patient aligned care team-based mailed fecal immunochemical

testing program. Fecal immunochemical testing utilization, completion, and colorectal cancer screening rates at VACHS substantially increased after the implementation of this project.

Conclusions: Through a proactive, population-based colorectal cancer screening program centered on mailed fecal immunochemical testing kits outside of a traditional patient visit, VACHS substantially increased the utilization of fecal immunochemical testing kits as well as colorectal cancer screening rates.

Colorectal cancer (CRC) is among the most common cancers and causes of cancer-related deaths in the United States.¹ Reflective of a nationwide trend, CRC screening rates at the Veterans Affairs Connecticut Healthcare System (VACHS) decreased during the COVID-19 pandemic.²⁻⁵ Contributing factors to this decrease included cancellations of elective colonoscopies during the initial phase of the pandemic and concurrent turnover of endoscopists. In 2021, the US Preventive Services Task Force lowered the recommended initial CRC screening age from 50 years to 45 years, further increasing the backlog of unscreened patients.⁶

Fecal immunochemical testing (FIT) is a non-invasive screening method in which antibodies are used to detect hemoglobin in the stool. The sensitivity and specificity of 1-time FIT are 79% to 80% and 94%, respectively, for the detection of CRC, with sensitivity improving with successive testing.^{7,8} Annual FIT is recognized as a tier 1 preferred screening method by the US Multi-Society Task Force on Colorectal Cancer.^{7,9} Programs that mail FIT kits to eligible patients outside of physician visits have been successfully implemented in health care systems.^{10,11}

The VACHS designed and implemented a mailed FIT program using existing infrastructure and staffing.

PROGRAM DESCRIPTION

A team of local stakeholders comprised of VACHS leadership, primary care, nursing, and

gastroenterology staff, as well as representatives from laboratory, informatics, mail services, and group practice management, was established to execute the project. The team met monthly to plan the project.

The team developed a dataset consisting of patients aged 45 to 75 years who were at average risk for CRC and due for CRC screening. Patients were defined as due for CRC screening if they had not had a colonoscopy in the previous 9 years or a FIT or fecal occult blood test in the previous 11 months. Average risk for CRC was defined by excluding patients with associated diagnosis codes for CRC, colectomy, inflammatory bowel disease, and anemia. The program also excluded patients with diagnosis codes associated with dementia, deferring discussions about cancer screening to their primary care practitioners (PCPs). Patients with invalid mailing addresses were also excluded, as well as those whose PCPs had indicated in the electronic health record that the patient received CRC screening outside the US Department of Veterans Affairs (VA) system.

Letter Templates

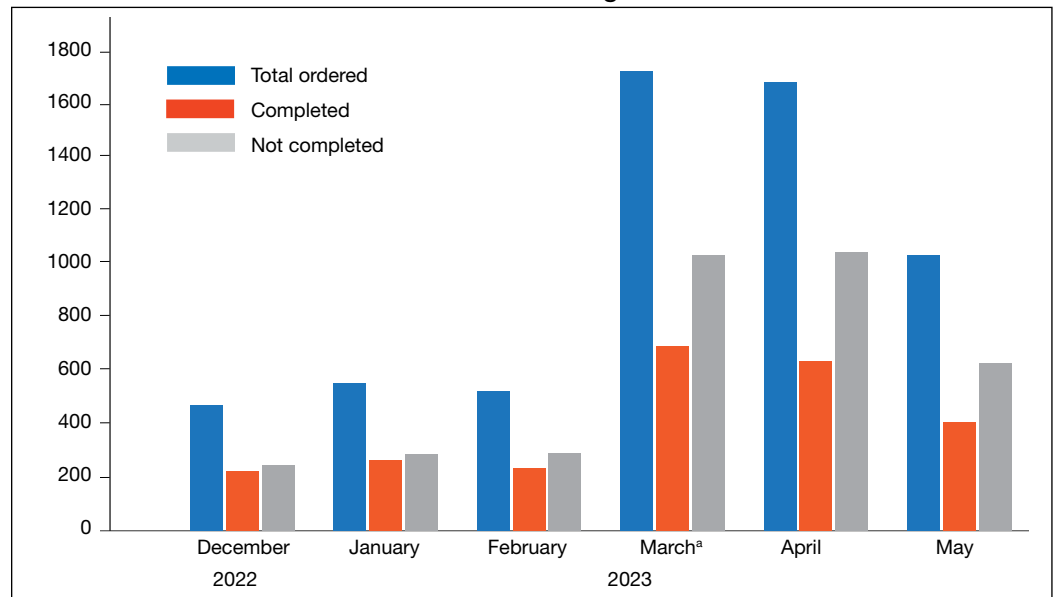
Two patient letter electronic health record templates were developed. The first was a primer letter, which was mailed to patients 2 to 3 weeks before the mailed FIT kit as an introduction to the program.¹² The purpose of the primer letter was to give advance notice to patients that they could expect a FIT

Author affiliations can be found at the end of this article.

Correspondence:

Jin Xu
(jin.xu@yale.edu)

Fed Pract. 2024;41(suppl 3).
Published online August 15.
doi:10.12788/fp.0496

FIGURE Mailed Fecal Immunochemical Testing Kits

^aProgram started March 2023.

kit to arrive in the mail. The goal was to prepare patients to complete FIT when the kit arrived and prompt them to call the VA to opt out of the mailed FIT program if they were up to date with CRC screening or if they had a condition which made them at high risk for CRC.

The second FIT letter arrived with the FIT kit, introduced FIT and described the importance of CRC screening. The letter detailed instructions for completing FIT and automatically created a FIT order. It also included a list of common conditions that may exclude patients, with a recommendation for patients to contact their medical team if they felt they were not candidates for FIT.

Staff Education

A previous VACHS pilot project demonstrated the success of a mailed FIT program to increase FIT use. Implemented as part of the pilot program, staff education consisted of a session for clinicians about the role of FIT in CRC screening and an all-staff education session. An additional education session about CRC and FIT for all staff was repeated with the program launch.

Program Launch

The mailed FIT program was introduced during a VACHS primary care all-staff meeting.

After the meeting, each patient aligned care team (PACT) received an encrypted email that included a list of the patients on their team who were candidates for the program, a patient-facing FIT instruction sheet, detailed instructions on how to send the FIT primer letter, and a FIT package consisting of the labeled FIT kit, FIT letter, and patient instruction sheet. A reminder letter was sent to each patient 3 weeks after the FIT package was mailed. The patient lists were populated into a shared, encrypted Microsoft Teams folder that was edited in real time by PACT teams and viewed by VACHS leadership to track progress.

Program Metrics

At program launch, the VACHS had 4642 patients due for CRC screening who were eligible for the mailed FIT program. On March 7, 2023, the data consisting of FIT tests ordered between December 2022 and May 2023—3 months before and after the launch of the program—were reviewed and categorized. In the 3 months before program launch, 1528 FIT were ordered and 714 were returned (46.7%). In the 3 months after the launch of the program, 4383 FIT were ordered and 1712 were returned (39.1%) (Figure). Test orders increased 287% from the preintervention to the postintervention period. The mean (SD) number of monthly FIT tests prelaunch

was 509 (32.7), which increased to 1461 (331.6) postlaunch.

At the VACHS, 61.4% of patients aged 45 to 75 years were up to date with CRC screening before the program launch. In the 3 months after program launch, the rate increased to 63.8% among patients aged 45 to 75 years, the highest rate in our Veterans Integrated Services Network and exceeding the VA national average CRC screening rate, according to unpublished VA Monthly Management Report data.

In the 3 months following the program launch, 139 FIT kits tested positive for potential CRC. Of these, 79 (56.8%) patients had completed a diagnostic colonoscopy. PACT PCPs and nurses received reports on patients with positive FIT tests and those with no colonoscopy scheduled or completed and were asked to follow up.

DISCUSSION

Through a proactive, population-based CRC screening program centered on mailed FIT kits outside of the traditional patient visit, the VACHS increased the use of FIT and rates of CRC screening. The numbers of FIT kits ordered and completed substantially increased in the 3 months after program launch.

Compared to mailed FIT programs described in the literature that rely on centralized processes in that a separate team operates the mailed FIT program for the entire organization, this program used existing PACT infrastructure and staff.^{10,11} This strategy allowed VACHS to design and implement the program in several months. Not needing to hire new staff or create a central team for the sole purpose of implementing the program allowed us to save on any organizational funding and efforts that would have accompanied the additional staff. The program described in this article may be more attainable for primary care practices or smaller health systems that do not have the capacity for the creation of a centralized process.

Limitations

Although the total number of FIT completions substantially increased during the program, the rate of FIT completion during the mailed FIT program was lower than the rate of completion prior to program launch. This decreased rate of FIT kit completion may be

related to separation from a patient visit and potential loss of real-time education with a clinician. The program's decentralized design increased the existing workload for primary care staff, and as a result, consideration must be given to local staffing levels. Additionally, the report of eligible patients depended on diagnosis codes and may have captured patients with higher-than-average risk of CRC, such as patients with prior history of adenomatous polyps, family history of CRC, or other medical or genetic conditions. We attempted to mitigate this by including a list of conditions that would exclude patients from FIT eligibility in the FIT letter and giving them the option to opt out.

CONCLUSIONS

CRC screening rates improved following implementation of a primary care team-centered quality improvement process to proactively identify patients appropriate for FIT and mail them FIT kits. This project highlights that population-health interventions around CRC screening via use of FIT can be successful within a primary care patient-centered medical home model, considering the increases in both CRC screening rates and increase in FIT tests ordered.

Author affiliations

^aVeterans Affairs Connecticut Healthcare System, West Haven
^bYale University School of Medicine, New Haven, Connecticut

Author disclosures

The authors report no actual or potential conflicts of interest or outside sources of funding with regard to this article.

Disclaimer

The opinions expressed herein are those of the authors and do not necessarily reflect those of *Federal Practitioner*, Frontline Medical Communications Inc., the US Government, or any of its agencies.

Ethics and consent

This quality improvement project was not reviewed by an institutional review board.

References

1. American Cancer Society. Key statistics for colorectal cancer. Revised January 29, 2024. Accessed June 11, 2024. <https://www.cancer.org/cancer/types/colon-rectal-cancer/about/key-statistics.html>
2. Chen RC, Haynes K, Du S, Barron J, Katz AJ. Association of cancer screening deficit in the United States with the COVID-19 pandemic. *JAMA Oncol*. 2021;7(6):878-884. doi:10.1001/jamaoncol.2021.0884
3. Mazidimoradi A, Tiznobaik A, Salehiniya H. Impact of the COVID-19 pandemic on colorectal cancer screening: a systematic review. *J Gastrointest Cancer*. 2022;53(3):730-744. doi:10.1007/s12029-021-00679-x
4. Adams MA, Kurlander JE, Gao Y, Yankey N, Saini SD. Impact of coronavirus disease 2019 on screening

- colonoscopy utilization in a large integrated health system. *Gastroenterology*. 2022;162(7):2098-2100.e2. doi:10.1053/j.gastro.2022.02.034
5. Sundaram S, Olson S, Sharma P, Rajendra S. A review of the impact of the COVID-19 pandemic on colorectal cancer screening: implications and solutions. *Pathogens*. 2021;10(11):558. doi:10.3390/pathogens10111508
 6. US Preventive Services Task Force. Screening for colorectal cancer: US Preventive Services Task Force recommendation statement. *JAMA*. 2021;325(19):1965-1977. doi:10.1001/jama.2021.6238
 7. Robertson DJ, Lee JK, Boland CR, et al. Recommendations on fecal immunochemical testing to screen for colorectal neoplasia: a consensus statement by the US Multi-Society Task Force on Colorectal Cancer. *Gastrointest Endosc*. 2017;85(1):2-21.e3. doi:10.1016/j.gie.2016.09.025
 8. Lee JK, Liles EG, Bent S, Levin TR, Corley DA. Accuracy of fecal immunochemical tests for colorectal cancer: systematic review and meta-analysis. *Ann Intern Med*. 2014;160(3):171. doi:10.7326/M13-1484
 9. Rex DK, Boland CR, Dominitz JA, et al. Colorectal cancer screening: recommendations for physicians and patients from the U.S. Multi-Society Task Force on Colorectal Cancer. *Gastroenterology*. 2017;153(1):307-323. doi:10.1053/j.gastro.2017.05.013
 10. Deeds SA, Moore CB, Gunnink EJ, et al. Implementation of a mailed faecal immunochemical test programme for colorectal cancer screening among veterans. *BMJ Open Qual*. 2022;11(4):e001927. doi:10.1136/bmjopen-2022-001927
 11. Selby K, Jensen CD, Levin TR, et al. Program components and results from an organized colorectal cancer screening program using annual fecal immunochemical testing. *Clin Gastroenterol Hepatol*. 2022;20(1):145-152. doi:10.1016/j.cgh.2020.09.042
 12. Deeds S, Liu T, Schuttner L, et al. A postcard primer prior to mailed fecal immunochemical test among veterans: a randomized controlled trial. *J Gen Intern Med*. 2023;38(14):3235-3241. doi:10.1007/s11606-023-08248-7



NOW AVAILABLE ONLINE

ADVANCES IN Diabetes and Cardiovascular Care

Thiazide Diuretic Utilization Within the VA

Pharmacist Time Collecting Patient-Monitored Blood Glucose Data

Telehealth for Initiating and Optimizing Heart Failure Therapies

Impact of Semaglutide Conversion on Glycemic Control and Costs

Coronary Artery Bypass Graft Vein Harvest Site Hyperpigmentation

▶ Find every issue of *Federal Practitioner* at www.mdedge.com/fedprac/issues