Study Aims to Improve Colorectal Cancer Screening Rates

Five years ago, the National Colorectal Cancer Roundtable launched the “80% by 2018” initiative, an effort to increase colorectal cancer (CRC) screening rates from 58% to 80% by 2018. Achieving that goal could help to prevent 203,000 deaths within the next 2 decades.

However, despite some gains, experts say the needle has not moved as much as they would have liked with regard to CRC screening, and many adults aged 50 to 75 years still are not getting tested as recommended.

Indeed, although a wide range of initiatives have been created to increase patient knowledge of available procedures and, in the case of the fecal immunochemical test (FIT), the ease of use, the percentage of adults in the United States who are up to date with CRC screening hovers in the range of the low to mid-60s, says Rachel B. Issaka, MD, MAS, an assistant member of the clinical research division and the Hutchinson Institute for Cancer Outcomes Research at the Fred Hutchinson Cancer Research Center in Seattle, Washington. According to Dr. Issaka, part of the reason is that it is not yet clear how to optimize existing evidence-based strategies to constantly engage patients in colorectal cancer screening. “The challenge has been, how do we determine and combine interventions that work best for each health care setting or patient population?” she says. “That has been really hard to tease out.”

To help improve CRC screening rates, Dr. Issaka and her research team published a systematic review in *Preventive Medicine* that sought to determine which interventions were most successful in increasing the use of FIT and could possibly be scaled across health care systems (2019;118:113-121).

**KEY POINTS**

- A systematic review of studies found that mailing FIT kits directly to patients brought a median improvement of 21.5% in CRC screening participation.
- CRC screening numbers also improved when FIT was paired with flu vaccinations.
- FIT-based programs that incorporate multilevel interventions have the potential to increase CRC screening rates.

**Study Details**

Dr. Issaka and her colleagues searched publication databases for studies that evaluated low-cost provider-level and system-level interventions to improve FIT adherence between January 1, 1996, and December 13, 2017. According to Dr. Issaka, they focused on FIT because it demonstrates superior test performance characteristics and adherence when compared with the more traditional 3-sample fecal occult blood test. The team excluded studies that required one-on-one interactions between a provider and patient such as patient navigators because, Dr. Issaka says, they only were interested in interventions that could be used in broad, population-wide efforts to improve screening by FIT. They
also excluded studies of fecal DNA testing and studies of high-risk CRC populations.

The researchers identified 20 articles that described 25 studies, 23 of which were randomized controlled trials. There also was 1 quasiexperimental and 1 observational study.

“There is still this very unfortunate perception in the public and, frankly, even among many primary care providers, that stool sampling is ineffective and that patients don’t want it and won’t do it. This analysis shows that with the right conditions and with the right structures in place, it is indeed possible to achieve significant return on any investment in stool sampling,” says Durado Brooks, MD, MPH, vice president of cancer control interventions, prevention, and early detection for the American Cancer Society.

Study Results

Dr. Issaka’s team investigated 23 studies of various forms of clinic, health care system, and population-level interventions, as well as 2 studies of provider-level interventions.

Clinic, Health Care System, and Population-Level Interventions

- **Mailed FIT Outreach.** Researchers found 10 randomized controlled trials that focused on the direct mailing of FIT kits. The median efficacy (defined in this study as the difference in CRC screening between the intervention and control groups) of mailed FIT was 21.5%, with an interquartile range of 13.6% to 29.0%. Approximately 60% of these studies were conducted in safety-net systems or federally qualified health centers. Follow-up ranged from 3 to 24 months.

- **Pre-FIT patient reminders.** Four studies evaluated the use of a letter that provided background information regarding CRC and explained the benefits of screening before FIT kits were mailed. Dr. Issaka says that the benefit of pre-FIT reminders was small but consistent, with a median improvement in the CRC screening prevalence of 4.1% (interquartile range. 3.6%-6.7%). Settings included a large integrated health care system and population-based screening programs. Follow-up ranged from 3 months to 1 year.

- **Post-FIT patient reminders.** Two studies evaluated the use of telephone calls or letters to improve the return of FIT kits after distribution. The researchers reported a statistically nonsignificant 3.5% improvement in FIT completion (48.7% vs 45.2%).

- **Tailored patient messaging.** In 3 studies, patients were randomized to either an intervention group that received a mailed FIT kit, a reminder letter, and tailored messaging pages that addressed screening barriers or to control groups that received mailed FIT kits and a reminder letter only or that did not receive any interventions. The researchers found that patients who received the tailored messages were more likely to complete FIT compared with controls who received no interventions (43.8% vs 32.6%; \( P = .002 \)), but the tailored messages did not improve FIT completion compared with those patients who received a mailed FIT kit and reminder letter only (43.8% vs 45.7%; \( P = .68 \)).

- **High-quality small media.** In one study, randomized subjects from federal and community health centers received either a low-literacy picture booklet and DVD in which local citizens modeled the screening and use of an FIT kit or a CRC screening brochure from the Centers for Disease Control and Prevention. At the 6-month follow-up, the FIT completion rate for those who received the “low-literacy materials” was not considered to be statistically significant compared with those who received the CDC brochure (83.5% vs 78.1%; \( P = .17 \)). Dr. Issaka notes that the cohort was educationally and economically diverse: 24% reported having less than a high school education and 63% reported an annual household income of less than $10,000.

- **FIT paired with vaccination.** Two studies by the same author evaluated the results of combining FIT with influenza (flu) vaccinations at a clinic that had been designated as either a flu vaccination clinic or as a flu-FIT clinic. After 3 months, researchers found a statistically significant improvement in CRC screening by FIT among those patients seen in the flu-FIT clinics compared with patients who went to flu-only clinics (14% vs 4.8%; \( P < .001 \)).

- **Patient financial incentives.** One randomized study found that, compared with a control group who received FIT kits via mail, FIT completion was not significantly increased by interventions that offered financial incentives of $5 (39.2% vs 36.2%; \( P = .07 \)) or $10 (34.6% vs 36.2%; \( P = .32 \)).

Provider-Level Interventions

Two randomized studies reported on the impact of FIT alerts to physicians. A total of 67 providers received an electronic alert reminding them to discuss CRC screening, whereas 63 providers in the control
group did not receive a reminder. Researchers reported that the electronic alerts only had a small and statistically nonsignificant impact on FIT completion (44.1% vs 42.2%; odds ratio, 1.08 [P = .15]).

**Study Implications**

For Dr. Issaka, the results of this systematic review demonstrate that, with the proper focus, providers can observe improvements in FIT compliance. “As we reported, on average across studies, there is a 22% increase in screening participation when participants were mailed FIT programs, compared to controls. I think that’s really exciting [and it may give us] the extra bump that we need to get us over the 80% horizon we’re all aiming for.”

Although Dr. Brooks was surprised that patient navigation studies were not included, noting that “their effectiveness is very well supported in the literature,” Dr. Issaka says that many centers are not in a position to facilitate these programs effectively. “We found that studies on patient navigation often come from integrated health care systems that have the resources to execute these patient navigation programs, and in those settings patient navigation works.”

Dr. Brooks also questioned whether financial incentives might be more effective than the research reported. Pointing to the fact that investigators only examined 1 study in which the incentives were $5 or $10, he said he wondered “if it may not be a matter that incentives don’t work, but that the incentives are not enough.” Although Dr. Issaka agrees that with larger incentives, more patients might comply, she said that such a program could be difficult to sustain.

Notwithstanding these small suggestions, Dr. Brooks concludes that, “I think the authors have really done a great service to those of us who are in the implementation world by going through all that literature with a very careful eye.”

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