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Primary Care Collaboration to Improve Diagnosis and Screening for Colorectal Cancer

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Background: Colorectal cancer (CRC) is a leading cause of cancer death, reducible by screening and early diagnosis, yet many patients fail to receive recommended screening. As part of an academic improvement collaborative, 25 primary care practices worked to improve CRC screening and diagnosis.

Methods: The project featured triannual learning sessions, monthly conference calls, practice coach support, and monthly reporting. The project phases included literature review and interviews with national leaders/organizations, development of driver diagrams to identify key factors and change ideas, project launch and practice team planning, and a practice improvement phase.

Results: The project activities included (1) inventory of barriers and best practices, (2) driver diagram to drive improvements, (3) list of changes to try, (4) compilation of lessons learned, and (5) five key changes to optimize screening and follow-up. Practices leveraged prior transformation efforts to track patients for screening and follow-up during and between office visits. By mapping processes, testing changes, and collecting data, sites targeted opportunities to improve quality, safety, efficiency, and patient and care team experience. Successful change interventions centered around partnering with gastroenterology, engaging leadership, leveraging registries and health information technology, promoting alternative screening options, and partnering with and supporting patients. Several practices achieved improvement in screening rates, while others demonstrated no change from baseline during the 10-month testing and implementation phase (July 2014–April 2015).

Conclusion: The collaborative effectively engaged teams in a broad set of process improvements with key lessons learned related to barriers, information technology challenges, outreach challenges/strategies, and importance of stakeholder and patient engagement.

Despite its status as the second leading cause of cancer death in the United States and a leading cause of malpractice claims, with availability of a number of proven screening modalities, colorectal cancer (CRC) diagnosis and screening remains suboptimal in practice.[1–6] Screening methods can detect cancer at an early and more treatable stage and prevent cancers that may arise from polyps that can be detected and resected. An estimated 60% of CRC deaths in the United States are preventable with regular testing of adults ages 50 to 75 years, but one third of the population has not been tested as recommended, with even lower screening rates in some states and underserved populations.[1,7–13] Screening and diagnostic testing of higher-risk patients (for example, patients with rectal bleeding, positive family history) is also suboptimal.[8,9] Primary care is a crucial catalyst for promoting CRC screening[10] and creating population-based, team-enabled screening programs within primary care sites can increase rates of screening.[11]

Despite large-scale public awareness campaigns to encourage screening, there is clearly a need for health care delivery organizations, particularly those delivering primary care, to pursue improvement strategies to increase CRC screening and timely diagnosis.[12,13] To make significant progress on CRC at a time of great demand for overall improvements in the efficiency and effectiveness of care, organizations must address myriad barriers and challenges that patients and clinicians encounter in navigating CRC screening and diagnostic modalities.[1,14,15]

In 2012 the Harvard Medical School Center for Primary Care partnered with 19 Harvard-affiliated primary care practices affiliated with six major health systems to create a learning community dedicated to improving the experience of care for patients, staff, clinicians, and trainees in primary care, as well as the quality and cost of care.[16] This effort, called the Academic Innovations Collaborative (AIC), focused on eight Change Concepts for Practice Transformation,[17] and during an initial 24-month period (July 2012–June 2014) the participating practices achieved measurable improvements in core infrastructure domains for practice improvement and statistically significant improvements in team dynamics and trainee experience.[18] At the end of these two years, the collaborative had the opportunity to build on the momentum by continuing for a second two years (July 2014–June 2016) supported by funding from CRICO, the nonprofit medical malpractice insurer serving the Harvard medical community. This phase of the collaborative, called the AIC Comprehensive, Accessible, Reliable, Exceptional and Safe (CARES) Initiative, was built on the foundation of team-based care to improve patient safety in participating practice sites and systems by reducing missed and delayed

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diagnosis of cancer and reducing preventable harm for patients with complex care needs. The collaborative expanded to include a seventh organization and added 9 new practice sites for this second phase of work. Of the 28 sites, 25 cared for adult patients and participated in the effort to reduce missed and delayed diagnoses of cancer.

One of the primary aims of the CARES Initiative was to reduce missed and delayed CRC diagnoses. The initiative consisted of five phases, as follows:

1. Literature review and interviews with selected national leaders and organizations across the United States to catalogue and understand barriers, best practices, and innovations
2. Distillation and iterative refinement of a driver diagram to identify common primary and secondary factors likely to be critical for ensuring highly reliable systems for CRC diagnosis and screening
3. Launch of the practice-engagement phase, in which the driver diagram was introduced at a day-long learning session, and multidisciplinary teams from the practice sites began to map out their process flows, identify drivers that presented barriers for them, and discuss a range of change ideas that they helped develop and then test over ensuing months
4. Application of the Model for Improvement,[19–23] with reporting of Plan-Do-Study-Act (PDSA) cycles, submission of monthly transformation updates with reporting of defined metrics and tests of change, on-site and virtual coaching, monthly webinars, and sites' presentations to executive leaders during triannual learning sessions
5. Evaluation activities, both qualitative and quantitative, in conjunction with the Harvard T.H. Chan School of Public Health's larger ongoing evaluation of the AIC program[23,24]

Given the recent publication of the US Preventive Services Task Force stating that "For colorectal cancer screening programs to be successful in reducing mortality, they need to involve more than just the screening method in isolation,"[1(p. 2570)] and instead require a cascade of coordinated activities for benefits to be realized,[1] we believe that reporting our experience is timely and important. Therefore, in this article we provide details on the first four of these five phases and highlight early results and challenges. Our aim is to aid others in understanding the full range of issues in ensuring reliable CRC screening and diagnosis in primary care, provide useful tools (such as a driver diagram and change ideas), and report on barriers and issues that practice sites and the collaborative overcame, to permit others to benefit from our experience. A separate, external evaluation is ongoing to determine the impact of this body of work on CRC screening rates and other practice transformation outcomes.

COLLABORATIVE ACTIVITIES

Best Practices: Literature Review, Interviews, and Process Maps

To identify evidence-based best practices and interventions for reducing missed or delayed diagnoses of CRC, our team carried out a background literature search and summarized the key interventions and evidence. The search (using key words—including "screening," "colorectal cancer," and "colon cancer diagnosis"—and a snowball technique to identify additional references cited or related to initial articles) included a review of titles and abstracts to narrow to the most relevant articles directly related to diagnosis of colon cancer (36 identified and summarized) or that touched on improved practice site processes or change ideas relevant to the project aim (additional 38 articles), identifying a total of 74 articles.

We also identified key individuals and organizations through the literature review, personal recommendations from experts in the field, or organizations known to have effective or innovative colorectal diagnosis and screening programs. We conducted 11 one-hour telephone interviews to review their experiences, current practices, lessons learned, and ongoing challenges and future plans, utilizing a semistructured questionnaire. This effort was largely conducted by a summer medical student volunteer [J.L.] supervised by several of the project clinicians. Sidebar 1 provides a list of the questions and individuals/organizations interviewed.

Sidebar 1. Interview Questions: Best Practices for Preventing Missed or Delayed Colorectal Cancer Diagnoses in the Ambulatory Health Care Setting

1. What are you doing to reduce the potential for missed diagnoses in colorectal cancer patients?
2. How long have you been utilizing this intervention?
3. How are you measuring success (for example, screening rates, interval cancer reduction, etc.)?
4. What are the key factors for the success of this practice site?
5. What do you consider to be potential weaknesses?
6. Are there any health systems that you know of currently using any promising practices attempting to reduce diagnostic errors in other areas?
7. Do you have a system in place to flag any changes in patient status such as significant weight loss?
8. When a priority colonoscopy is ordered, do you have a system in place to ensure the test was completed?
9. If a test result is abnormal, do you have a system in place to ensure the clinician reviews the test results?
10. Do you have a system to ensure that the clinician discusses any abnormal test result with the patient?
11. Do you have a system in place to track whether a patient returns within the desired time frame?
12. Is there anyone else I should be talking to about this?

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