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Identifying Optimal Approaches to Implement Colorectal Cancer Screening Through Participation in a Learning Laboratory

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In the United States, racial/ethnic minorities and vulnerable groups continue to experience disparities in colorectal cancer (CRC) mortality despite the availability of screening tests that can prevent or detect these tumors at an early stage when treatments are most effective.^{1,2} CRC screening rates for these populations consistently have been lower than those of the general population in the United States.² The Centers for Disease Control and Prevention (CDC) has had a long-standing commitment to increase screening for vulnerable populations, starting in 2005 with the Colorectal Cancer Screening Demonstration Program and continuing with the Colorectal Cancer Control Program (CRCCP).^{3–7}

The CRCCP currently supports 23 state health departments, 6 universities, and 1 American Indian tribe to increase CRC screening uptake among individuals aged 50 to 75 years.⁸ The program model centers on integrating public health with primary health systems to reduce disparities and improve population health. CRCCP awardees are partnering with health system clinics and implementing evidence-based interventions (EBIs) recommended by the Community Preventive Services Task Force, including provider and patient reminders, provider assessment and feedback, and reduction of structural barriers, as well as supporting activities (SAs) such as small media and patient navigation.⁹ Given the focus on vulnerable populations and disparity reduction, the majority of awardees are implementing interventions in partnership with federally qualified health centers (FQHCs) to increase CRC screening.

A total of 14 programs, selected from among the 30 CRCCP awardees, currently are participating in the CRCCP learning laboratory to share information regarding the effectiveness and cost-effectiveness of the interventions, and lessons learned from the implementation processes. The CDC recognizes the diversity of populations being reached and the variations across the intervention settings, and encourages innovation with evaluation to determine what works best. In this effort, the CDC works intensively with 4 or

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CONFLICT OF INTEREST DISCLOSURES

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5 awardee programs for a specified period of time to complete multiple studies and then transitions to support a new group of programs participating in the learning laboratory. The current series presents findings from the first set of 4 awardee programs in a series of 4 articles along with a methods article describing the data collection and analytic procedures used to perform comprehensive assessments.^{10–14} Table 1 provides an overview of these awardees.

The results presented by the Washington State Department of Health and the Colorado Department of Public Health and Environment provide valuable evidence that EBIs implemented in real-world settings can increase CRC screening, even among the diverse, low-income populations seeking health care at FQHCs. In Washington State, the mailed fecal immunochemical test (FIT) program had a test return rate of 31% with an average intervention cost of \$18.76 per FIT kit returned (this does not include the cost of purchasing the kit or processing returned kits). The 2 FQHCs in Colorado implemented a range of multicomponent interventions over multiple years, including provider assessment and feedback, mailed FIT kits, and standardization of workflow processes. They reported percentage point increases in CRC screening uptake of 10% and 18%, respectively. The average EBI/SA implementation cost per person successfully screened at these 2 FQHCs was \$29 and \$24, respectively.

The University of Chicago Medical Center implemented a patient navigator program that increased colonoscopy completion by 11 percentage points when compared with a usual-practice cohort that did not receive patient navigation and reduced missed appointments and late cancellations by approximately 50%. Based on simulations using projected prenavigation screening rates for the navigated cohort, these improvements could be achieved at an estimated implementation cost of \$88 to \$215 per patient who successfully received patient navigation.

New York State implemented a randomized mailed patient reminder program with or without a financial incentive that targeted Medicaid management care beneficiaries in one geographic region followed by a second region. Although no difference was observed with regard to screening uptake in either region during the short follow-up of 4 to 5 months, the implementation cost for the second region studied was substantially lower. These results may highlight the need for multilevel interventions to reach this historically hard-to-reach population. An important finding from this study is that intervention costs are likely to substantially decrease in subsequent rounds of implementation because there are high startup or planning costs, which decrease once important lessons are learned and incorporated to improve the intervention.

Three of the 4 programs analyzed for this series of articles experienced an increase in their screening uptake in participating clinics, which is likely due to the implementation of the interventions. These studies used a pre-post design, without a concurrent comparison group, but all reported either process improvements or detailed implementation procedures that strengthened confidence in the findings. The screening uptake and the intervention cost per person successfully promoted to receive screening varied across the programs, and these differences will be explored in future studies. The CDC will continue to collaborate with the

CRCCP learning laboratory partners and support the rapid dissemination of findings to share lessons learned regarding implementing and scaling up EBI/SA interventions in real-world settings.

A total of 14 programs selected from among the 30 Centers for Disease Control and Prevention's Colorectal Cancer Control Program awardees are participating in the Colorectal Cancer Control Program learning laboratory to share information regarding the effectiveness and cost-effectiveness of the interventions and lessons learned from the implementation processes. Herein, the authors present findings from the first set of 4 awardee programs in a series of 4 articles along with a methods article describing the data collection and analytic procedures used to perform comprehensive assessments.

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TABLE 1.

Overview of Awardees, Implementation Sites, and Interventions

Awardee	Implementation Site	Intervention
Washington State Department of Health	HealthPoint (FQHC with 10 clinic sites)	Mailed FIT program
Colorado Department of Public Health and Environment	2 FQHCs with multiple sites	Multicomponent intervention
University of Chicago Medical Center	Academic medical center	Patient navigation
New York State Department of Health	Medicaid managed care	Mailed screening reminder with and without a financial incentive

Abbreviations: FIT, fecal immunochemical test; FQHC, federally qualified health center.