Identifying Best Practices in the Implementation of Stool-Based Testing for Colorectal Cancer Screening

Background and Purpose

In July 2009, the Centers for Disease Control and Prevention's (CDC's) Division of Cancer Prevention and Control funded the Colorectal Cancer Control Program (CRCCP) for 5 years. The CRCCP funds 25 States and 4 tribal health organizations to provide CRC screening to underserved populations. To enhance grantees' CRC screening efforts, CDC conducted a formative evaluation of programs using FOBT (fecal occult blood test) or FIT (fecal immunochemical test) that achieve high rates of CRC screening.

To build the evidence base for best practices in CRC screening, the purpose of this project was to explore and identify potentially promising programs that are implementing innovative strategies to promote CRC screening using FOBT or FIT.

Formative Evaluation Questions

Representatives from CDC, National Institutes of Health (NIH), and ICF International collaborated to create a set of overarching evaluation questions to guide the project. The following were the evaluation questions:

1. What strategies do FOBT/FIT-based programs implement that are effective in increasing the uptake of and compliance with FOBT/FIT?
2. How is success or effectiveness of FOBT/FIT programs defined?
3. What obstacles or barriers do programs experience in implementing their FOBT/FIT activities?
4. How do programs monitor and track FOBT/FIT screening?

Formative Evaluation Design

To identify potentially promising practices and to build the evidence base for implementing CRC screening using FOBT or FIT, programs were explored to better understand effective strategies that increase the appropriate use of the tests. To conduct the formative assessment, the project team devised a five-stage approach, relying primarily on qualitative data collection and analysis methods to allow for exploration of the evaluation questions.

Stage of the Evaluation

1. Engage Advisory Group
- Brainstorm elements to include in definition of an effective FOBT/FIT program
- Identify key informants to interview in environmental scan stage
- Develop list of variables to be collected during the abstraction process of the environmental scan

2. Conduct Environmental Scan and Key Informant Interviews
- Review of published and gray literature
- Conduct interviews with key informants to identify successful programs and obtain their input on how they define success
- Analyze data and develop program summaries

3. Define Criteria for Effective FOBT/FIT Programs and Select Programs for In-Depth Review
- Define criteria for selection of FOBT/FIT programs
- Review program summaries from the environmental scan to select programs for in-depth review

4. Conduct In-Depth Review of Selected FOBT/FIT Programs
- Recruit selected programs to participate in site visit
- Conduct site visit to interview program stakeholders; review key documents, and observe implementation
- Develop in-depth review field notes to document key findings from in-depth review

5. Develop and Disseminate FOBT/FIT Guidance Document
- Develop FOBT/FIT guidance document to be disseminated to CRCCP grantees to enhance or initiate FOBT/FIT activities within their program

Program Selection Criteria

The evaluation team used information gathered in Stage 2 to determine criteria for selecting FOBT/FIT-based CRC screening programs that would warrant in-depth review via site visits and interviews with key program staff members. Those criteria included the following:

- Reach: The number of people eligible for and reached by the program.
- Target population served: The program's access to underserved, underinsured, and ethnic minority populations.
- Feasibility of adoption: The potential for other, similar entities to adopt the program.
- Transportability/generalizability: The degree to which a program's strategies have the potential to be adapted for other settings that differ in size, resources, and demographics.
- Sustainability of program: The potential for the program to continue implementation over time.
- Sustainability of impact: The likelihood that the intended health effect will endure over time.

In addition to these criteria, the team also considered other important factors, including program outcomes (e.g., FOBT/FIT return rate, follow-up of nonreturned FOBTs/FITs, identification and/or recruitment of persons to be screened, rate of complete diagnostic evaluation [CDE] after positive FOBT/FIT result) and strategy type (e.g., patient-, provider-, and system-level strategies).

Results

Programs Selected for In-Depth Review

Criteria	Flu-FOBT/FIT Program	Kaiser Permanente Northern California	Veterans Affairs Minneapolis	Veterans Affairs St. Cloud	Northern Manhattan Cancer Screening Partnership	FITWAY Alabama CRC Screening Program
Reach	133–1,805 kits distributed (four studies)	724,004 kits mailed (2011)	15,371 screened[a] (3/2011–2/2012)	Unknown	841 patients educated (2010–2011)	Statewide; 752 enrolled (2010–2012)
Strategy	Bundling preventive services (flu shot and FIT)	Direct mailing, provider and patient reminders, tracking systems, performance monitoring	Provider reminders and incentives, quality improvement (QI) initiatives	Provider reminders, patient outreach and education, QI initiatives, tracking systems	Screening integration, patient education, case management, partnerships	Partnership development, provider and patient education, screening integration
Outcomes	FOBT/FIT return: 45.1%–52.1% (four studies)	• CRC screening: 80.4% • FIT return: 64.0% at 30 weeks	• CRC screening: 72.2% (all screening types) • CDE: 70.0% within 60 days	CRC screening: 92.0%[b] (all screening types)	• FIT return: 74.4% (12 months) • CDE: 100.0% (n=40)	• FIT return: 64.0% • CDE: 80.0% (n=12)
Sustainability of Impact	Currently being implemented in variety of settings, achieving similar outcomes	Currently being implemented with return rates increasing over time; timely CDE is the focus	Currently being implemented with return rates increasing over time; timely CDE is the focus	Currently being implemented with return rates increasing over time; gastroenterology capacity is an issue	Currently being implemented achieving same outcomes; funding is a concern	Began screening in May 2010; program still evolving
Target Population	Multiethnic, underinsured	Kaiser Permanente Northern California members	Veterans (predominantly male)	Veterans (predominantly male)	Uninsured (predominantly Hispanic)	Underinsured and uninsured
Setting	Community health center, managed care	Integrated, managed care	Integrated, multispecialty teaching hospital	Integrated, managed care	Community health center	Grantee; State public health department
Transferability	• Has been successfully trialed at flu shot clinics in different settings and with different population groups • Transferable to primary care clinics, safety net hospitals, integrated health care systems, pharmacies	• Most transferable to integrated health care settings • Components of intervention could be transferred to other health care systems (e.g., direct mailing, reminders)	• Most transferable to integrated health care settings • Some components (e.g., reminders, QI activities) could be implemented in other settings	• Most transferable to integrated health care settings • Some components (e.g., reminders, education, tracking) could be implemented in other rural settings	• Most transferable to other underinsured and uninsured population groups (especially Hispanic) • Education transferable to other settings where screening services are integrated	• Statewide approach • System changes (e.g., statewide FIT discounts, partnership development) transferable to other States using FOBT/FIT in their State-based screening programs
Tracking and Monitoring:						
• Patient adherence	☑	☑	☑[d]	☑[d]	☑	☑[e]
• Follow-up of positive results	☑	☑	☑	☑	☑	☑[e]
• Annual rescreening	☒[c]	☑	☑[d]	☑[d]	☑	☑[e]

[a] Source: Clinical Reminder Summary Report (includes all CRC screening test types).
[b] Source: External Peer Review Program (EPRP); systematic review of a representative sample of medical records (not whole patient sample). Includes all CRC screening types.
[c] Flu-FOBT/FIT program involved research studies; therefore, staff could not report on annual rescreening rates. For the integrated care setting, rescreening is tracked.
[d] Staff members interviewed during the site visit were not able to report FOBT/FIT-specific return rates and annual rescreening rates but indicated these were tracked.
[e] Tracked for screening provision only.

Summary of Strategy Types

Type	Strategy Examples
Grantee programs	• Partnership development • Public education and outreach • Provider education
Patient-directed programs	• Patient reminders • Direct mailing of kits • Support and navigation • Education
Provider-directed programs	• Performance feedback and incentives • Automated reminders • Delegation of responsibilities to nonphysician staff • Provider education
System level and other programs	• Infrastructure and QI • Monitoring and tracking systems • Measuring test performance
Patient- and provider-directed programs	• Patient and provider communication • Patient and provider reminders • Outreach and inreach

Characteristics of Promising FOBT/FIT Programs

- Implement a systematic approach
- Use organized outreach, supplemented by opportunistic screening
- Address patient and provider misconceptions regarding FOBT/FIT
- Have endoscopic capacity and defined processes in place to ensure timely follow-up and diagnostic evaluation
- Define target population and use a tailored approach
- Conduct provider and patient education focusing on CRC, CRC screening, FOBT/FIT, and appropriate specimen collection
- Use data systems to track and monitor program and provider performance related to quality and population management
- Use data to drive process and performance improvement
- Use electronic health record (EHR) system with clinician reminders and decisional support aids

Ensuring Quality CRC Screening Using FOBT/FIT: Preventing Overuse, Underuse, and Misuse

- **System-level changes**
  - Alerts to remind providers to recommend screening at appropriate intervals
  - Tracking and monitoring systems so queries can be run to assess quality CRC screening indicators
  - Decisional support aids (e.g., screening protocol) embedded in EHR system to help providers adhere to screening guidelines
- **Provider-level interventions**
  - Educate providers on FOBT/FIT types and factors to consider when selecting test type
  - Educate providers on appropriate use of FOBT/FIT for CRC screening
  - Monitoring and feedback systems to assess providers' adherence to screening guidelines and protocols
- **Patient-level interventions**
  - Educate patients about the importance of CRC screening and of completing the specimen collection according to instructions
  - Select a test brand that is easy for patients to use and provide simple specimen collection instructions
  - Make patients aware that a positive FOBT/FIT result requires a diagnostic colonoscopy

Conclusions

The findings from multiple sources, including site visits and published and unpublished literature, revealed themes pertaining to system-, provider- and patient-level characteristics associated with programs that implement effective FOBT/FIT CRC screening.

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