Evidenced-based Strategies to Increase Colorectal Cancer Screening Rates: Outcomes of a Targeted Funding Opportunity, 2014-2015

Jenny Kerkvliet, MA, LPC and Jenna Cowan, BS
South Dakota State University, College of Nursing

In July 2014, the South Dakota Comprehensive Cancer Control Program (SD CCCP) in partnership with the GetScreenedSD program released a funding opportunity aimed at improving colorectal cancer (CRC) screening rates in South Dakota (SD). The funding was targeted to healthcare facilities to provide patient education on screening options for CRC and to implement at least one evidence-based system or policy-level change targeting either patients or healthcare providers. Funding up to $7,500 per facility or $15,000 maximum per health system was available. Five completed applications were submitted for competitive review. Four health systems were awarded a total of $60,000, including Community Health Centers of the Black Hills, Coteau des Prairies Health Care System, Horizon Health Care, Inc., and Sanford Health. The combined healthcare systems are estimated to reach over 100,000 adults in the CRC screening age of 50 and older.

In addition to the funding for this project, the SD CCCP also provided a Technical Assistant (TA) to support project implementation and ease the burden of reporting for the awardees. This staff person was available to share best practices, meet with healthcare providers, address questions, and share lessons learned among the grantees throughout the duration of the grants.

Summary of Awardees' Projects

All awardees were required to implement patient education and small media resources for CRC screening. Additionally, all sites provided education to their healthcare providers and other staff on current colorectal cancer screening recommendations. One site provided extensive education to staff on motivational interviewing techniques to specifically reduce barriers (e.g., patient resistance) to screening.

Awardees selected the additional evidence-based interventions that were most feasible to implement and most pertinent to the population served by the facility. Provider-level interventions (provider reminders and feedback) were implemented by three of the four sites. To implement these provider-level interventions, significant changes to the health systems' electronic health record (EHR) were required. Interventions varied based on level of EHR capacity, including establishing an automated prompt to providers when a patient is due for a screening, expanding provider screening prompts to all sites and levels of staff, establishing a feedback report process at the facility level on the number of missed patients due for colorectal cancer screening, and enhancing feedback capabilities to the individual provider level in addition to feedback by practice site.

Client-level screening interventions were implemented by all four sites. Three sites enhanced the client reminder processes by dedicating a staff member to conduct reminder processes including letters and phone calls. Enhancement of EHR processes to provide client reminders was completed at the fourth site. Reducing structural barriers to screening, including improved access to screening kits, financial assistance for

transportation, and securing resources to pay for screening were implemented at two sites. Finally, one site implemented a Flu/FOBT clinic, promoting screening options in coordination with community flu shot clinics and another revised their provider pay structure to support an increase in CRC screening.

Outcome Data

Grantees were asked to provide facility-level data on a quarterly basis. The data presented in this section was compiled as provided in these reports. Efforts were made by program staff to aid sites in providing accurate data reporting; however, accuracy is not guaranteed. This quantitative data was examined as *one* aspect of the impact of this funding.

Facilities were asked to provide baseline and quarterly data on the following: the overall number of screenings (both colonoscopy and FIT/FOBT), client reminders distributed, and educational sessions with patients (either individual or group). One facility was able to provide only partial data due to limitations within the EHR, which was implemented as the project was getting underway. Two of the four grantees extended their project period for an additional quarter to complete identified efforts.

CRC Screenings

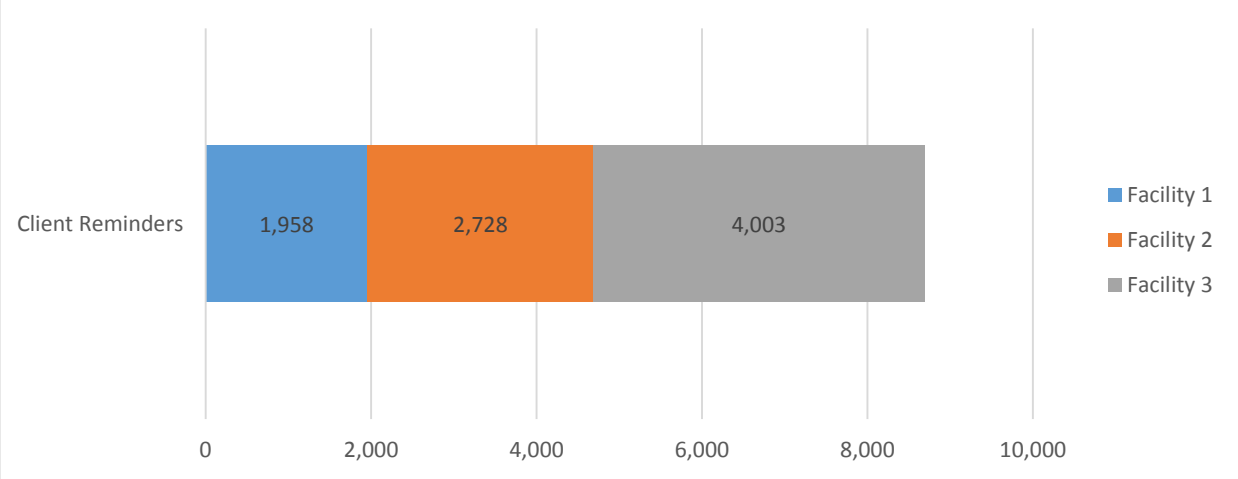
The number of screenings at baseline was compared to total screening over the grant cycle for each facility. A high level of variance existed as to how this data was collected (paper chart audit versus electronic report), which tests were included in the measurement (colonoscopy, FIT/FOBT distributed, FIT/FOBT returned), the patient population eligible for inclusion, and the number of practice sites included over the duration of the funding period. Due to these inconsistencies, an overall increase in the number of screenings is not available as an aggregate number. However, some important improvements in screening were noted:

- One grantee reported a 98% increase in the number of patients screened for CRC from baseline to end of project.
- At the onset of the project, one grantee had limited ability to run an electronic report on the number of CRC screenings, and was reporting by paper chart audit. By quarter two, this facility had developed an electronic reporting process, thereby increasing the accuracy of the data reported. The ability to generate a report of this data is an important, long-term outcome of the project.
- One grantee added the ability to track FIT/FOBT screening kits distributed (not only those returned) to the measurement of screenings offered to eligible patients.
- Provider reminder processes were enhanced to alert providers at every clinic and every appointment type when a patient is overdue for CRC screening in one grantee system.
- One facility nearly doubled the number of colonoscopy screenings from baseline to the end of project.

Client reminders

Three of the facilities dedicated a portion of the funding towards personnel to conduct mail or phone client reminder processes for CRC screening. Three facilities were able to provide an overall number of client reminders sent out during the grant period, at over 8,700 reminders, as depicted in Figure 1.

Figure 1. Number of Client Reminders by Facility



Reducing Structural Barriers

Two sites elected to provide interventions to reduce structural barriers to screening. The first arranged transportation to screening appointments, which was utilized by one patient in the grant period. The second connected patients to financial assistance for screening, which was provided to 83 patients.

Facilitators of Project Success and Barriers to Implementation

Qualitative data was collected through various methods including two interviews (one conducted at mid-point and the second after completion of the project), comments provided in quarterly reporting documents, and success stories submitted by the grantees. Responses were reviewed to identify successes, lessons learned, and barriers to project implementation. An interview was also conducted at the completion of the project with the TA.

Facilitators

Facilitators to success were identified. A prominent facilitator across sites was the availability of a quality improvement team to focus and support efforts towards improving colorectal cancer screening. These teams facilitated EHR changes, created policy and workflows related to CRC screening, developed tools for training providers on best practices for CRC screening, and enhanced patient education and motivational tools. The TA role was also identified as a common facilitator among sites. The TA was available to address reporting questions, requests for additional resources, and other facility needs as requested. One facility requested technical assistance in developing a quality improvement team as no structure was in place, while other grantees had

consistent quality improvement teams in place that simply requested scripting, handouts, or other feedback on best practices. The TA position provided an "extra hand" to supply resources and tools as needed and kept the grantees moving forward throughout the project. The grantees noted that the TA was a valuable resource.

A dedicated staff role (often referred to as a navigator) responsible for patient reminders was also seen as an important facilitator to improve CRC screening rates. Some of the grantees elected to use the funding to establish this role within their system. The personal connection through a phone-based screening reminder or a reminder to return a screening kit resulted in improvements. *"We are going to keep our patient navigator on in her current role just because we've seen successful improvements, and we are also going to be transitioning her into helping with some of our other measures as well, such as pap smears."*

Finally, more than one site noted that incorporating and training all levels of staff (from physicians to clerical staff) on CRC screening best practices, as well as EHR functionality related to screening, was a benefit toward improving screening rates. *"Initially, providers viewed this as 'one more thing' they needed to track. However, our screening rates did increase and it helped to make the importance of colorectal screening routine when working with patients."* The delivery of a coordinated message about the importance of CRC screening at all points of access was essential, and the TA noted the educational training provided to health professionals at the front-end of the grant period improved the outcomes of the grant.

Barriers

Time and skill needed to transform EHR reporting was a common barrier across sites. All of the sites undertook significant modifications to their EHR system to establish one or more of the following related to colorectal cancer screening: patient reminders, provider prompts for screening, provider feedback on screening rates, standardized reporting, or establishing workflows within the EHR. An increasing level of EHR integration and the involvement of quality improvement teams and information technology staff were critical to overcoming this barrier. Finding a way to meaningfully use EHR data is a nationally emerging issue and will continue to be an area for further training and development. One site noted, *"It would have been beneficial to have a report capturing the data needed to be collected ready at the outset of the grant so that progress toward goals could have been tracked more readily in the beginning."* The TA noted the ability to track and measure progress in a timely manner as a limitation to measuring the impact of the funding.

Provider education was offered across all sites, and all sites reported the education as helpful. Motivating staff to comply with screening policies was a challenge, however. Provider compliance, in both discussing screening with patients and documenting the screening discussion in the EHR, was noted as a barrier. One facility focused extensive effort to address provider compliance in developing a real-time feedback report on CRC screening by individual providers, accessible on a provider-specific web portal. This facility also withheld a portion of compensation for providers not meeting an established minimum rate for colorectal cancer screening. Another facility successfully

offered provider incentives (e.g., a gift card) to boost adherence to CRC screening policies and proper documentation of screening discussions in the EHR.
Patient compliance (or "*patient reluctance*") was also noted as a common barrier. Among sites that specified this, cost and lack of insurance coverage was the main rationale for delayed or avoided screening. GetScreenedSD funds ceased in the middle of this grant period, which was noted as a significant barrier to patients receiving timely CRC screening by two sites.

Satisfaction with Funding and Next Steps

Through interviews, all grantees were asked about continued needs in the area of CRC screening. Patient-level funding for screening, including funds for screening kits, is an ongoing need. Grantees identified a need to continue to support the system-level changes that have occurred as a result of this grant within each of their facilities. Interest in future funding to implement additional EHR changes and support further data mining and reports was noted by one site. One site would like to expand screening feedback to mid-level providers.

Satisfaction with the funding awarded was also reviewed. Overall, three of the four sites noted that the amount of grant funding was reasonable for the scope of work and reporting requirements. "*The amount distributed provided the 'jump-start' the organization needed to implement new processes and workflows to improve colorectal [cancer] screening."* Three of the four sites also felt the technical assistance and onsite support provided by the SD CCCP staff was useful (one site noted, "*instrumental*"), and facilitated the efforts of the interventions at each site. However, one site disagreed, noting the funding could be better utilized for supplies, and identified a significant burden in providing data for reporting purposes. *"I think that at some point you just have to trust the facility to do the work committed, and then give them the freedom and the time to implement it the way they need to for their facility."*

Reducing redundancy by streamlining the reporting across quarters was suggested by multiple sites. The TA suggested developing and distributing a grant guide or "cheat sheet" that would include a clear explanation of how to calculate baseline measures and screening rates as well as a list of resources to assist grantees. Each reporting period presented similar requests among sites to review the process for reporting data.

Project Impact on CRC Screening

The intended overall impact of these system and policy-level changes is sustained improvement in CRC screening rates. Although long-term changes in screening rates would not be expected within the brief one-year grant period, nationally reported data from the four facilities was examined as outlined in Table 2. Both Uniform Data Set (UDS) and National Quality Forum (NQF) measures are included in the data reported in Table 2. Important increases in screening rates were already demonstrated and should be monitored long-term.

Table 2. National Data on CRC Screening Rates by Facility

	Baseline CRC Screening Rate	2014 CRC Screening Rate
System 1	18.3%[1]	34.6%
System 2	41.4%[1]	51.4%
System 3	NA[3]	NA[3]
System 4	58.2%[2]	67.4%

[1] Baseline Reporting Period: January 1, 2013-December 31, 2013

[2] Baseline Reporting Period: July 1, 2013-June 30, 2014

[3] Due to EHR limitations, it was not possible to collect accurate CRC screening data for the reporting period.

Summary

All of the grantee sites implemented evidenced-based strategies toward increasing screening rates. The funding has made a measureable short-term impact. Colorectal cancer screening rates have improved across the three health systems reporting to national systems. Nearly 9,000 patient reminders were sent out from the three systems.

Yet, most important, are the notable system-level changes that have taken place due to the funding. One site developed EHR reporting capabilities, eliminating a time-intensive and imprecise chart audit that was used for reporting purposes before the funding. All systems established or enhanced work flow processes and patient reminder procedures within an EHR. Provider education was offered at all sites, and provider-specific feedback systems were developed at two sites. These system-level changes will provide a lasting impact, which is probably not yet reflected in the screening rates. The system-level changes implemented through these grants, including establishing systems and processes for provider feedback and patient reminders, will continue to impact screening rates in the future. One grantee noted the funding has provided a "*foundation for establishing ongoing processes that outlive the grant funding.*"

A large amount of diversity, in terms of size, geographic location, patient population, number of providers, and level of EHR integration, was present among the grantee health systems. Level of EHR integration, in particular, was a great contributor in how the projects progressed. Technical support for EHR changes is necessary to facilitate and support funding and should be considered in any future funding opportunities.

Significant effort on improving colorectal cancer screening in our state continues, particularly as part of the 80% by 2018 initiative. Ongoing support and education on motivating providers to comply with CRC screening standards, as well as utilizing EHR data in a meaningful way, were identified as interests among the grantees.

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1. Health Resources and Services Administration. (2015). *2014 Uniform Data Set Health Center Program Data South Dakota.* [Data Report]. Available at: http://bphc.hrsa.gov/uds/datacenter.aspx?q=d&year=2014&state=SD#glist

2. National Quality Forum. (2015). *National Quality Forum Measure #0034, Colorectal Cancer Screening Measurement Standards.* Available at: www.qualityforum.org/QPS/0034