

Performance of Colorectal Cancer Screening Steps in Primary Care

Salini Mohanty, MPH, Mona Sarfaty, MD, MPH, FAFP, Randa Sifri, MD

Thomas Jefferson University, Philadelphia, PA

BACKGROUND

- Colorectal Cancer (CRC) is the second leading cause of cancer-related deaths in the United States with an estimated 51,370 deaths in 2010.
- Screening is proven to be effective in reducing both incidence and mortality of CRC; however, screening and follow-up rates are suboptimal.
- While nearly all providers screen their patients for CRC, very few practices have existing systems that guarantee that their recommendation for screening is delivered to every age appropriate patient.
- Poorly or inconsistently implemented systems and procedures within primary care practices may contribute to these lower rates of CRC screening and follow-up.
- Offices can improve CRC screening rates by including four essential elements in practice: an office policy for CRC screening, a provider recommendation for every age appropriate patient, effective communication systems, and reminder systems.

OBJECTIVES

- To examine the office context in which CRC screening is implemented by focusing on which screening steps are being completed.
- To determine if there are differences in completion of CRC screening steps among primary care practices.
- To establish whether differences in the processes are correlated with the overall screening rates of CRC in primary care practice.

METHODS

Qualitative and quantitative analysis of CRC screening and follow-up step completion for stool blood test (SBT) and colonoscopy (CX) of 13 primary care practices.

- Data collection for each practice included:
 - Process step completion surveys completed by providers
 - Focus group discussion with providers and practice staff
 - Key informant interview with office manager

Based on average steps completed for SBT and CX steps from the survey, practices were labeled high (100-75%), medium (74-50%), and low (<50%) based on completion of process steps.

Practices that reported 100% completion of steps (n=4) for either SBT or CX and low performing practices (n=3) were further analyzed and evaluated using focus group discussion, key informant interviews and the 4 essential elements for increased CRC screening.

The quantitative data (survey responses) were analyzed to see if there was a correlation with the qualitative data (focus group discussions and key informant interviews) for these seven selected practices.

RESULTS

Table 1: Completion of Stool Blood Test Screening Test and Performance Levels

Practice	Gives SBT cards to patients	Contacts SBT non-responders	Gives SBT results to patients	Refers SBT+ for follow up	Schedules SBT+ for follow up	Contacts follow up no shows	Reschedules SBT follow up no shows	Average % completion	Performance Level
IAA	100.0	66.7	100.0	100.0	100.0	33.3	66.7	81.0	HIGH
IHD	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	HIGH
IMB	100.0	100.0	0.0	100.0	100.0	100.0	100.0	85.7	HIGH
ISC	100.0	33.3	100.0	100.0	100.0	66.7	66.7	81.0	HIGH
IUB	100.0	0.0	100.0	100.0	100.0	66.7	100.0	81.0	HIGH
IHE	100.0	85.7	100.0	100.0	100.0	85.7	85.7	93.9	HIGH
IUA	90.9	18.2	90.9	90.9	72.7	18.2	27.3	58.4	MED
IHA	75.0	50.0	75.0	75.0	75.0	75.0	75.0	71.4	MED
IHH	100.0	75.0	100.0	100.0	100.0	100.0	100.0	96.4	HIGH
IHI	71.4	28.6	71.4	85.7	71.4	28.6	14.3	53.1	MED
ISA	100.0	0.0	100.0	100.0	33.3	0.0	0.0	47.6	LOW
ISB	100.0	0.0	100.0	100.0	75.0	25.0	0.0	57.1	MED
ISD	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	HIGH

Table 2: Completion of Colonoscopy Screening Test and Performance Levels

Practice	Orders screening Colonoscopy	Schedules Colonoscopy	Contacts Colonoscopy no shows	Reschedule Colonoscopy no shows	Average % completion	Performance Level
IAA	100.0	100.0	100.0	100.0	100.0	HIGH
IHD	100.0	100.0	100.0	100.0	100.0	HIGH
IMB	100.0	100.0	100.0	100.0	100.0	HIGH
ISC	100.0	66.7	100.0	66.7	83.3	HIGH
IUB	100.0	100.0	33.3	100.0	83.3	HIGH
IHE	85.7	57.1	14.3	28.6	46.4	LOW
IUA	100.0	81.8	0.0	0.0	45.5	LOW
IHA	100.0	50.0	25.0	25.0	50.0	MED
IHH	75.0	75.0	50.0	25.0	56.3	MED
IHI	100.0	85.7	42.9	42.9	67.9	MED
ISA	100.0	100.0	0.0	0.0	50.0	MED
ISB	100.0	75.0	25.0	0.0	50.0	MED
ISD	50.0	50.0	50.0	50.0	50.0	MED

Table 3: Characteristics of Selected High and Low Performing Practices

Level	Practice	Specialty*	Size**	Location	EMR
LOW	ISA	FM	Large	Suburban	No
	IUA	FM	Large	Urban	Yes
	IHE	FM	Large	Suburban	Yes
HIGH	IAA	FM	Small	Rural	No
	IMB	FM/GIM	Small	Suburban	No
	IHD	FM	Small	Suburban	Yes
	ISD	FM	Small	Suburban	No

*Specialty of medicine- FM=Family Medicine, GIM=General Internal Medicine
**Number of providers in practice: small (≤3) and large (≥4)

Table 4: Checklist of Essential Office Elements for Increased Colorectal Cancer Screening

Practice	Office Policy	Provider Recommendation	Reminder System	Effective Communication System	# of Elements
ISA		X			1
IUA		X			1
ISD		X	X		2
IAA		X	X		2
IHE		X		X	2
IHD	X	X	X	X	4
IMB	X	X	X	X	4

- All of the larger practices are low performing for either SBT or CX steps.
- Practices that perform 100% of SBT or CX steps are smaller practices.
- No other correlations between selected high and low performing practices regarding specialty of practice, location or practice or use of electronic medical records were found.

Table 5: Colorectal Cancer Screening Tool Use Average Percentage in comparison to Essential Elements for Increased Screening

Practice	SBT Average Percentage	CX Average Percentage	CRC Average Percentage*	# of Essential Office Elements
ISA	50	47.6	48.8	1
ISD	50	100	50	2
IUA	45.5	58.4	51.95	1
IHE	46.4	93.9	70.15	2
IAA	100	81	90.5	2
IMB	100	85.7	92.85	4
IHD	100	100	100	4

* Average Percentage of SBT and CX screening steps

- Practices ISD and IHE reported varying completion of steps based on screening method. CX steps were completed at a higher rate than SBT steps.
- Practices ISA and IUA only possessed 1 essential element for increased screening and had the lowest CRC average percentages.
- Those practices that reported higher completion rates of SBT and CX screening steps were found, through qualitative analysis, to possess more of the essential elements.

DISCUSSION

- This analysis revealed the differences in which physicians in primary care complete CRC screening steps. The approach and completion of screening steps varied greatly among practices.
- There was a correlation between the quantitative data and the qualitative data. The analysis from both methodologies produced similar results and supports each other's assessment.
- All of the practices analyzed possessed one of the essential elements (a physicians recommendation) which is the foundation for increased screening. All of the practices have the potential to expand upon this foundation in order to ensure that all eligible patients are approached and screened for CRC.
- The correlation between the essential elements and completion of screening will be further explored in future research.