

Factors Affecting the Implementation of an Evidence-Based Colorectal Cancer Screening Intervention:

A Report from the CNA Health ACTION Partnership

Amanda Borsky, MPP^a; Daniel M. Harris, PhD^a; Mona Sarfaty, MD^b; Ronald Myers, PhD^b; Randa Sifri, MD^b; Brian Stello, MD^c; Melanie Johnson, MPA^c; James Cocroft, MA^b; Nancy Gratz, MPA^c; Martha Kasper-Keintz, ScM^b, and Valerie Pracilio, MPH^b
^a CNA; ^b Thomas Jefferson University; ^c Lehigh Valley Health Network

Background

- ▶ Screening for colorectal cancer (CRC) can prevent morbidity and mortality; however, screening is sub-optimal.
- ▶ To improve CRC screening and follow up, we implemented the System Approach To Increasing Screening for Public Health Improvement of ColoRectal Cancer (SATIS-PHI/CRC) intervention.
 - We assessed the implementation using the Practical, Robust, Implementation and Sustainability Model (PRISM) (Feldstein & Glasgow, 2008).

Learning Objectives

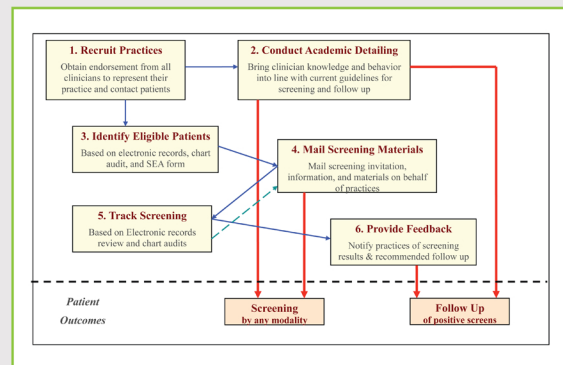
After viewing this poster, we hope that participants will be able to:

- ▶ Identify and assess individual, community, and environmental factors that can affect the implementation of preventative interventions.
- ▶ Explain how PRISM can be used to evaluate interventions.
- ▶ Assess the likelihood of other CRC screening interventions being successfully implemented by understanding factors that influence implementation.

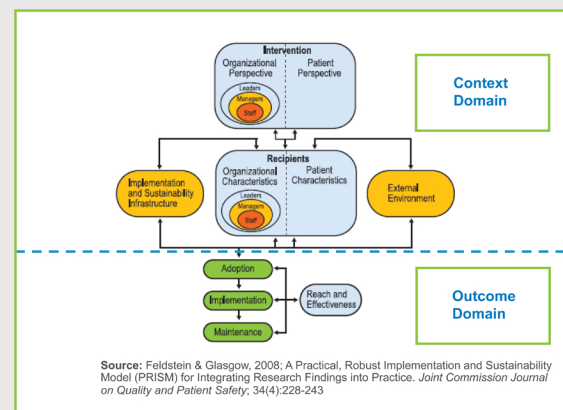
Study Design

- ▶ Population: 7,965 patients as study participants from 15 primary care practices in Pennsylvania's Lehigh Valley.
- ▶ Quasi-experimental design to assess intervention implementation and effectiveness.
 - Mixed methods analytical approach using PRISM.

The Six Steps of SATIS-PHI/CRC



The PRISM Framework



Principal Findings—Factors Affecting the Implementation

Intervention

Organizational Perspective

- ▶ Evidence and guideline based (+)
- ▶ Size and scope (-)
- ▶ IT requirement (-)
- ▶ Designed to minimize burden & avoid barriers (+)
- ▶ Lacked readiness for population-based outreach (-)

Patient Perspective

- ▶ Patient-centered (+)
- ▶ Screening Eligibility Assessment (SEA) form (+/-)
- ▶ Own provider available to respond to questions/concerns (+)
- ▶ Intervention material sent on behalf of own provider's practice (+)
- ▶ Provider feedback to patient (+/-)

Infrastructure

Implementation Infrastructure

- ▶ Dedicated team from existing staff (+)
- ▶ Strong training staff (+)
- ▶ Established administrative point of contact (POC) at each practice (+)
- ▶ Lacked clear clinical POC/champion at practices (-)
- ▶ HIT system and staffing limitations (-)

Sustainability Infrastructure

- ▶ Lacking sustainability (-)
- ▶ Provision of intervention as one-time "add on" with no resources devoted to maintenance (-)

Recipients

Organizational Characteristics

- ▶ Differing practice ownership and affiliations (-)
- ▶ Incompatible electronic health record (EHR) systems (-)
- ▶ No existing robust screening practices and policies in place (+/-)
- ▶ Some clinicians recommended/used screening modalities not supported by guidelines (-)

Patient Characteristics

- ▶ Sizeable proportion of non-English speaking or English as second language patients (+/-)
- ▶ Mix of insurance (including no insurance) (+/-)
- ▶ Age 50-79 and otherwise eligible for "average risk" screening but not up-to-date in screening (-)

Environment

External Environment

- ▶ Factors impacting timing of intervention (-)
- ▶ Economic conditions (-)
- ▶ Increasing interest in CRC screening by local insurers (+)
- ▶ Limited supply of local providers of colonoscopy (-)
- ▶ Stool test kit supplier reduced kits available (+/-)
 - Led to salvage strategy of requiring most patients to use a mail-back card to request a kit (-)
 - Provided opportunity to compare card strategy with strategy of directly mailing kits (+)

Legend
 + = Facilitators to implementation
 - = Barriers to implementation

Outcomes (RE-AIM)

Adoption

- ▶ 20 out of 43 (46.5%) contacted practices participated in study
- ▶ 15 out of 20 (75%) practices assigned to intervention participated

Reach

- ▶ 7,965 out of 8,320 (95.7%) patients deemed eligible received intervention materials

Effectiveness

- ▶ Both intervention modalities (card and kit) increased odds of screening by stool test and any test compared with comparison group
 - Card intervention also increased odds of screening by colonoscopy
- ▶ Kit intervention increased odds of screening by stool test and any test compared with card intervention
 - No difference for colonoscopy

Effectiveness Odds Ratios

	Intervention Group vs. Comparison Group			Kit Intervention vs. Card Intervention		
	Adj. OR	95% CI	P	Adj. OR	95% CI	P
Stool Test						
Comparison	---	---	---	Card Intervention	---	---
Card Intervention	6.33	1.90 - 21.11	0.00	Kit Intervention	3.39	1.97 - 5.83
Kit Intervention	15.58	3.75 - 64.92	0.00			
Colonoscopy						
Comparison	---	---	---	Card Intervention	---	---
Card Intervention	2.28	1.53 - 3.40	0.00	Kit Intervention	0.35	0.04 - 2.73
Kit Intervention	0.89	0.59 - 1.34	0.59			
Any Test						
Comparison	---	---	---	Card Intervention	---	---
Card Intervention	2.77	2.08 - 3.69	0.00	Kit Intervention	2.58	1.56 - 4.27
Kit Intervention	6.02	3.38 - 10.71	0.00			

Odds ratios adjusted for patient age and gender, and for practice specialty, size, location, and data sources

Conclusion

- ▶ Despite some implementation challenges, the intervention was effective.
- ▶ Busy primary care practices can benefit from centralized approach.
- ▶ Central organization and practices need readiness for population-based interventions.
 - E.g., have valid and complete patient records and knowledgeable HIT staff, and have adequate staff resources available.
- ▶ Supportive environmental conditions needed.
 - E.g., support from clinical and administrative leadership.
- ▶ It's important to identify and learn from these contextual factors affecting the intervention implementation.
 - Using PRISM facilitated this process.
- ▶ These findings will assist other organizations implementing similar cancer screening interventions and help improve the intervention's sustainability.

Translational Implementation Practices (TIPs)

- ▶ Assure practices are aware of their role.
- ▶ Sustain practice involvement.
- ▶ Sustain stool test kit supplier support.
- ▶ Be mindful of prevailing screening preferences.
- ▶ Use academic detailing "boosters" as needed.
- ▶ Be mindful of timing of intervention steps.
- ▶ Don't underestimate effort needed for data access, extraction, cleaning, processing; also for mailing.
- ▶ Provide sufficient time between mailings to assure receipt and processing of information from previous step.
- ▶ Seek a clinician POC/champion at each practice.
- ▶ Encourage clinician follow up with patients.

Funding Source and Acknowledgements

- ▶ Centers for Disease Control and Prevention under an Agency for Healthcare Research and Quality ACTION Task Order contract, #HH5A290200600014-1.
- ▶ Primary care practices affiliated with the Lehigh Valley Physician-Hospital Organization (LVPHO) and the Eastern Pennsylvania Inquiry Collaborative Network (EPICNet) served as the sole clinical setting for this project. LVPHO and EPICNet conducted data collection for this project.

For More Information:

- ▶ About the research study, its methodology, and its findings go to: <http://www.ahrq.gov/research/crcscreeningrpt/>.
- ▶ About how to implement the SATIS-PHI/CRC intervention in future settings, including the intervention materials, go to <http://www.ahrq.gov/research/crc toolkit/>.

Contact Information

- ▶ Amanda Borsky, MPP, 703-824-2209; borskya@cna.org
- ▶ Daniel Harris, PhD, 703-824-2283; harrisd@cna.org