

Factors Affecting the Implementation of a Colorectal Cancer Screening Intervention: A Report from the CNA Health ACTION Partnership

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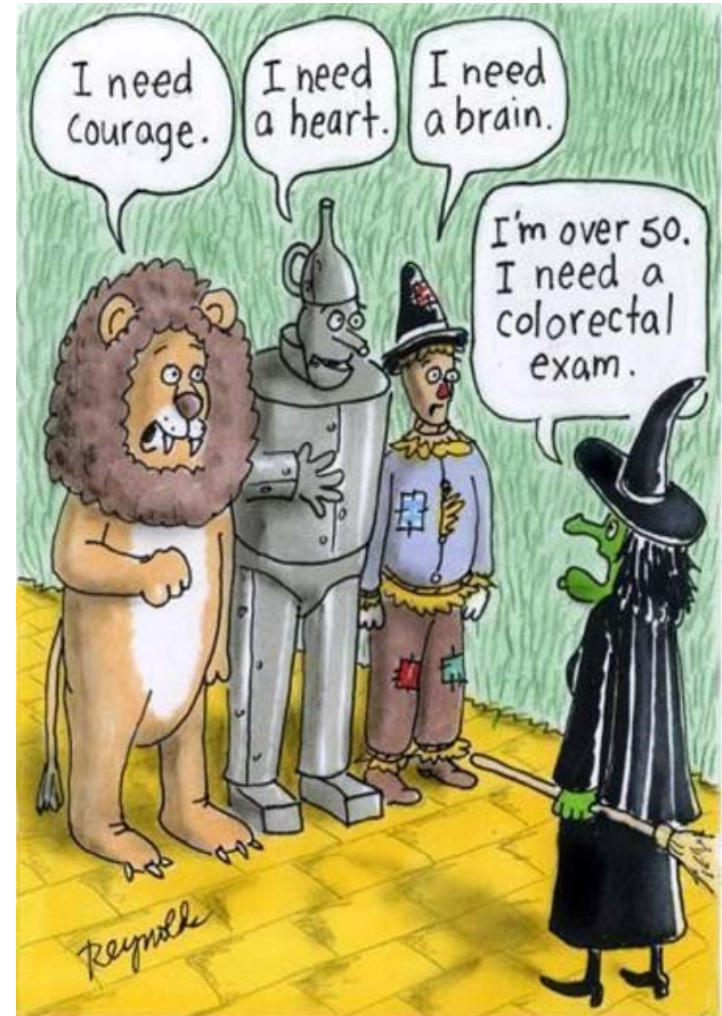
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Outline

- Introduction, background, and research questions
- The SATIS-PHI/CRC intervention
- Methodology
- Factors affecting implementation of SATIS-PHI/CRC
 - ❖ The intervention
 - ❖ Recipients
 - ❖ Infrastructure
 - ❖ environment
- Results of implementing SATIS-PHI/CRC
 - ❖ Adoption, implementation, maintenance
 - ❖ Reach, effectiveness
- Lessons learned and Translational Implementation Practices

Introduction

- Colorectal cancer (CRC) is the second leading cancer killer in the U.S. among cancers affecting both men and women
- Screening has been shown to cost-effectively reduce morbidity and mortality from CRC
- Multiple effective screening modalities exist as do guidelines for their use
- Screening for CRC is sub-optimal despite evidence-based principles for successful screening programs



For more information on the different ways you can be tested, call 1.800.227.2345 or visit www.cancer.org/NYNJ.

Background

- CDC interested in an evidence-based system re-design approach to improving CRC screening and follow-up
 - ❖ Study both implementation process and outcome
 - ❖ Identify implementation lessons learned and develop toolkit
 - ❖ Assess effectiveness of the implemented intervention
- CDC funded a task order through AHRQ's *ACTION* program
- The CNA Health ACTION Partnership executed the task order between Oct 2007 – July 2010
 - ❖ Study team included CNA, Thomas Jefferson University (TJU), Lehigh Valley Health Network (LVHN)
 - ❖ Conducted actual intervention Jan 2009 - Feb 2010
 - ❖ Conducted in a sample of primary care practices affiliated with Lehigh Valley (PA) PHO and EPICNet

Primary research questions

- Was intervention able to be implemented?
 - ❖ What factors affected implementation?
 - ❖ What lessons learned from implementation process?
- Did intervention as implemented achieve its intended outcomes?
 - ❖ Did intervention increase odds of being screened?
 - ❖ What patient-level and practice-level characteristics are associated with screening?

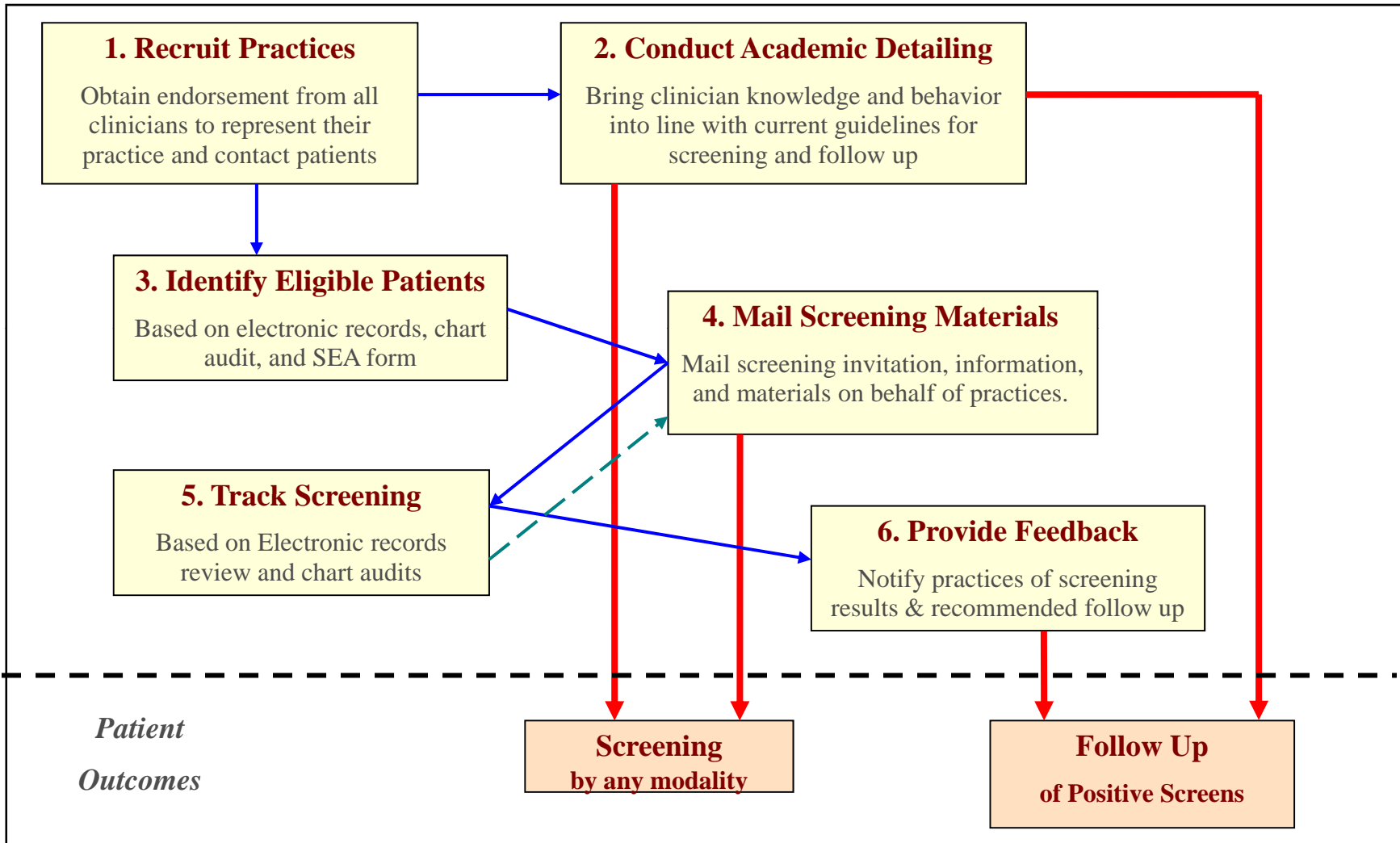
SATIS-PHI/CRC (1 of 2)

- **S**ystem **A**pproach **T**o **I**ncreasing **S**creening for **P**ublic **H**ealth **I**mprovement of **C**olo**R**ectal **C**ancer
- Evidence-based
 - ❖ Evidence comes from interventions developed at TJU
- Population-based
 - ❖ All patients visiting practices at least once within previous 2 yrs
 - ❖ Not limited to patients visiting practices during intervention period
- System approach – requires “central organization”
 - ❖ Performed on behalf and w/cooperation of affiliated PC practices
- Designed to improve screening and follow up of positive screens

SATIS-PHI/CRC (2 of 2)

- Seeks to influence behavior of providers and patients
 - ❖ Educational component
 - Academic detailing about screening and follow up to clinicians/practices
 - Mailed information about CRC and screening to patients
- Incorporates prevailing preventive guidelines
 - ❖ USPSTF and Joint Society Task Force
- Facilitates screening and follow up processes
 - ❖ Eligibility identification
 - ❖ Screening tracking and feedback
 - ❖ Provides means of screening (e.g., FIT and Cx)
 - Two modalities for FIT test kit - mail kit or mail card to request kit
 - Provide list of available colonoscopy providers practice refers to

The six steps of SATIS-PHI/CRC



Methodology

➤ **P**actical, **R**obust **I**ntervention and **S**ustainability **M**odel

- ❖ Context domain – intervention, recipients, infrastructure for implementation and sustainability, external environment
- ❖ Outcome domain – RE-AIM
- ❖ Guide both design and assessment of SATIS-PHI/CRC

➤ Data sources

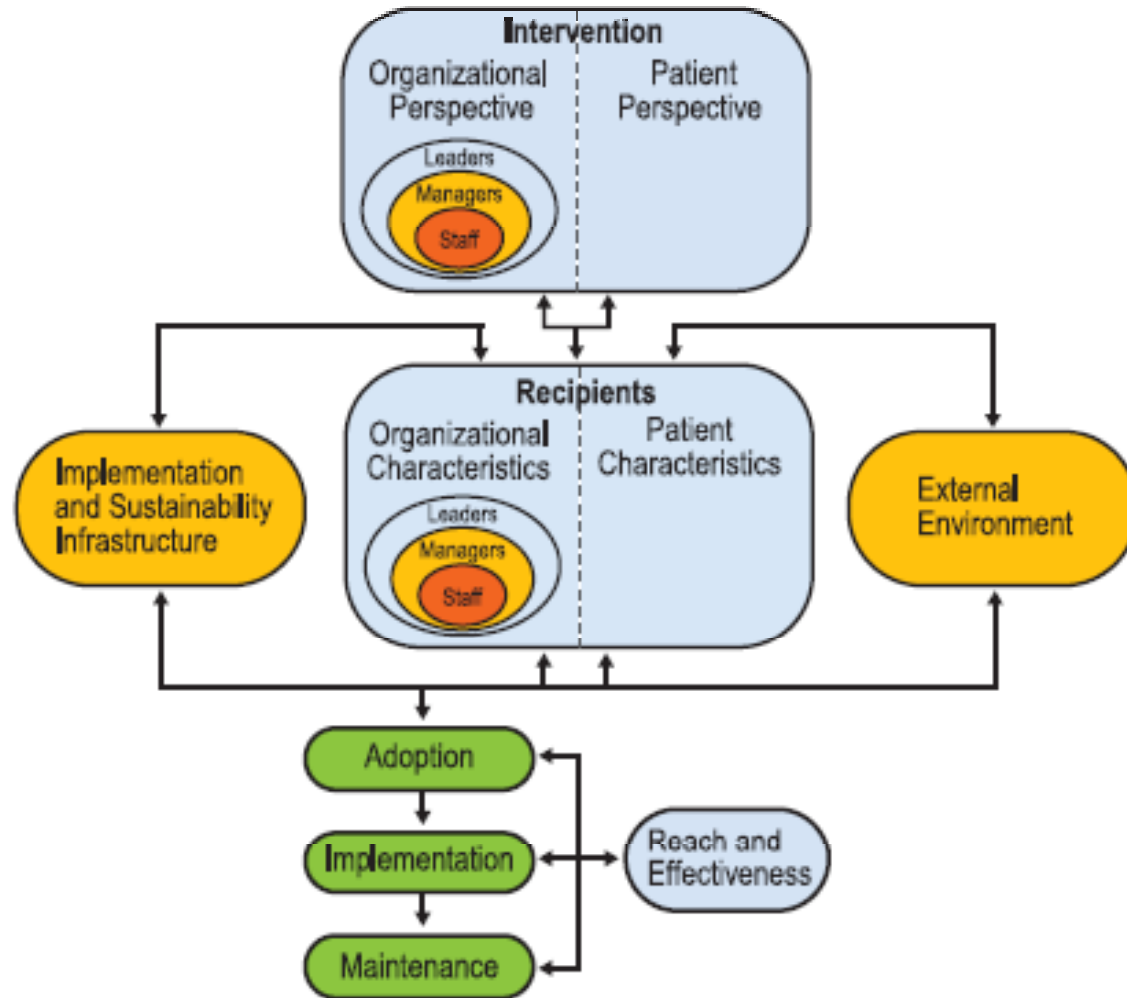
- ❖ Electronic records, chart audits, Screening Eligibility Assessment (SEA) of patients, laboratory stool test reports, surveys and interviews of practices, focus groups of practices and patients

➤ Mixed methods analytic approach

➤ Quasi-experimental design to assess effectiveness

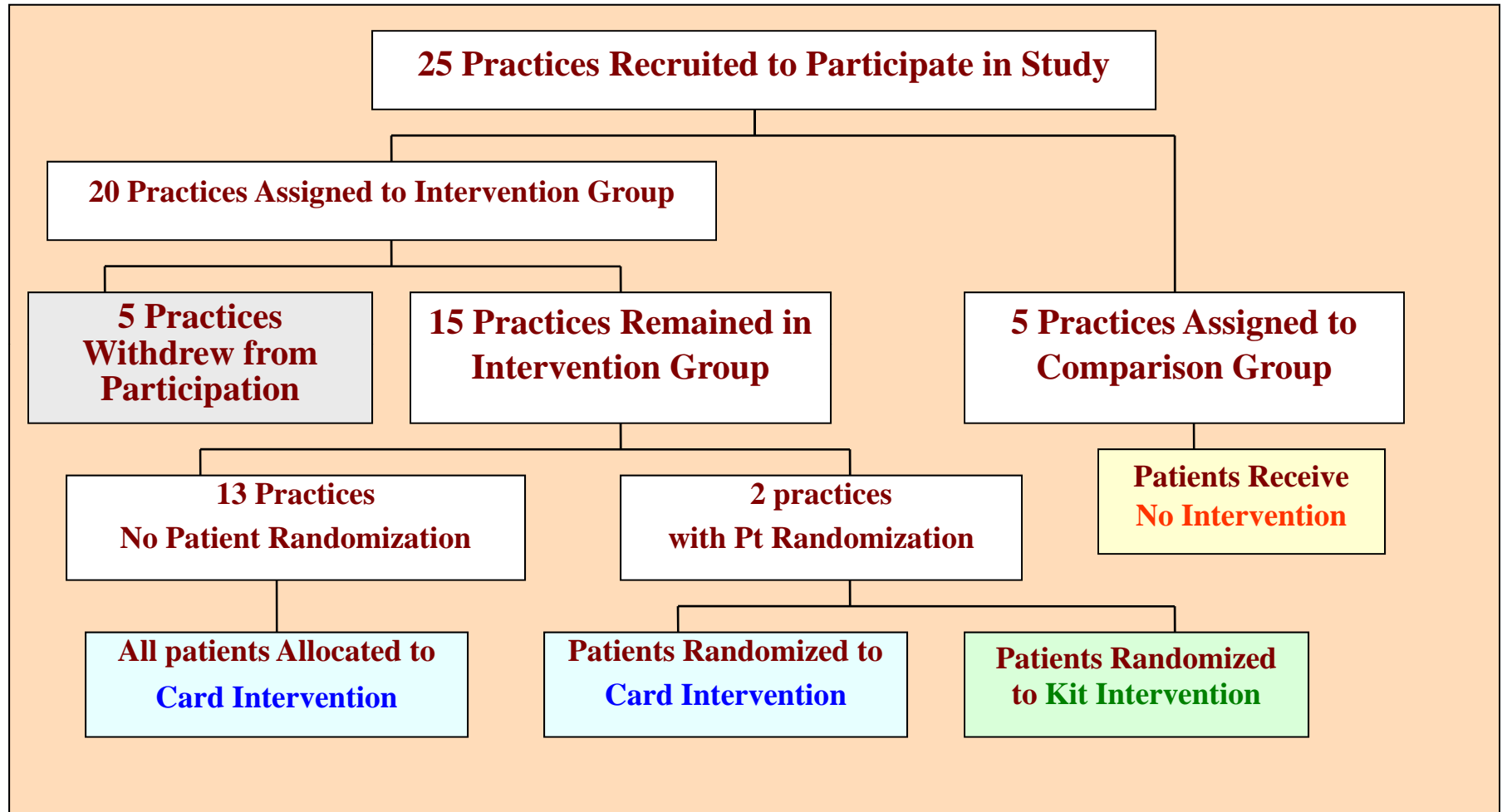
- ❖ Participating practices assigned to intervention or comparison
 - Supplier of FIT kits decided not to provide kits for all patients
 - ✓ Agreed to supply kits for those requesting them and also to allow us to directly mail kits to a limited number of patients
 - Required “salvage” strategy and provided opportunity to test alternative approaches

The PRISM framework



Source: Feldstein & Glasgow, 2008; A Practical, Robust Implementation and Sustainability Model (PRISM) for Integrating Research Findings into Practice. *Joint Commission Journal on Quality and Patient Safety*, 34(4):228-243

Flow of participants through stages of the study



Factors affecting implementation – the intervention

➤ Organizational perspective

- ❖ Evidence and guideline based (+)
- ❖ Size and scope (-)
- ❖ IT requirement (-)
- ❖ Designed to minimize burden & avoid barriers (+)
 - But added coordination and communication requirements (-)
- ❖ Lacked readiness for population-based outreach (-)

➤ Patient perspective

- ❖ Patient-centered (choice and reduce barriers) (+)
- ❖ SEA form (+/-)
- ❖ Own provider available to respond to questions/concerns (+)
- ❖ Intervention material sent on behalf of own provider's practice (+)
- ❖ Provider feedback to patient (+/-)

Factors affecting implementation – recipients

➤ Organizational characteristics

- ❖ Differing practice ownership and affiliations (-)
 - But all with strong relationship with central organization (+)
- ❖ Differing EHR systems (lack of compatibility) (-)
- ❖ No existing robust screening practices and policies in place (+/-)
- ❖ Some clinicians recommending/using screening modalities not supported by guidelines (-)

➤ Patient characteristics

- ❖ Sizeable proportion of non-English speaking or English as second language patients (-)
 - Translated all intervention material into Spanish (+)
- ❖ Mix of insurance (including no insurance) (+/-)
- ❖ Age 50-79 and otherwise eligible for “average risk” screening but not up-to-date in screening (-)


Factors affecting implementation – infrastructure

➤ Implementation infrastructure

- ❖ Dedicated team – existing PHO and EPICNet staff (+)
 - But lacked dedicated patient outreach (mailing) staff (-)
- ❖ Strong training staff (TJU and PBRN) (+)
- ❖ Established administrative POC at each practice (+)
- ❖ Lacked clear clinical POC/champion at practices (-)
- ❖ HIT system and staffing limitations (-)
 - Not experienced with population-based data extraction/queries
 - Period of EHR transition at many practices

➤ Sustainability infrastructure

- ❖ Lacking (-)
 - Planned implementation at comparison practices not carried out
- ❖ Provision of intervention as one-time “add on” with no resources devoted to maintenance (-)

 ❖ However, coming to be seen as an element of PCMH (+)

Factors affecting implementation – environment

- Factors impacting timing of intervention (-)
 - ❖ OMB clearance requirements delayed start
 - ❖ Open enrollment period delayed start
 - ❖ Requirements of task order delivery schedule reduced timeframe
- Economic conditions (-)
 - ❖ Restricted resources available for intervention
 - Central organization and practices
 - ❖ Stool test kit supplier puts conditions on provision of kits
 - Based on pilot experience
 - Required “salvage” strategy
 - ❖ Loss of employer-based insurance or higher co-payments
- Increasing interest in CRC screening by local insurers (+)
 - ❖ But “competing” local emphases for PCMH certification & P4P (-)
- Limited supply of local providers of colonoscopy (-)

Outcome – adoption

➤ Adoption

- ❖ 20 out of 43 (46.5%) contacted practices participated in study
 - 21 out of 44 (47.7%) if counting the pilot practice
- ❖ 15 out of 20 (75%) practices assigned to intervention participated
 - LVHN owned practices over-represented
 - Practices concerned that participation would require too much effort or too many staff or HIT resources somewhat under-represented

Outcome –implementation and maintenance

➤ Implementation

- ❖ Program fidelity with “salvage” good but not excellent
 - Difficulty identifying eligible patients in some practices
 - Information not always distributed throughout practice by POC
 - Problems with mailings and timing of intervention steps
- ❖ Academic detailing “booster” conducted
 - Based on results of pre-intervention survey of practices
- ❖ Screening follow-up curtailed
- ❖ Screening tracking sheet not used

➤ Maintenance (sustainability)

- ❖ Implementation toolkit produced and available
- ❖ Some indications of lasting changes in beliefs or behavior
- ❖ Annual stool test not centrally conducted in following year, but ...
- ❖ Large region-wide multi-site, multi-specialty group practice with several clinics participating in study planning to adopt SATIS-PHI/CRC for all of its primary care sites (FM, IM, OB) in FY12

Outcome – reach and effectiveness

➤ Reach

- ❖ 7,965 out of 8,320 (95.7%) deemed eligible patients received intervention materials
 - 300 opt outs and 55 undeliverables
- ❖ However, unknown number of potentially eligible not included
 - Inability to find them with record systems available to us

➤ Effectiveness – increased adjusted odds of screening

- ❖ Card and kit interventions both increase odds of screening by stool test and any test compared with comparison group
 - Card intervention also increases odds of screening by colonoscopy
- ❖ Card intervention increases odds of screening by stool test and any test compared with kit intervention
 - No difference for colonoscopy
- ❖ Intervention effectiveness associated with selected characteristics

Effectiveness odds ratios

Intervention Group vs. Comparison Group			
	Adj OR	95% CI	p
Stool Test			
Comparison	---	---	---
Card Intervention	6.33	1.90 - 21.11	0.00
Kit Intervention	15.58	3.75 - 64.82	0.00
Colonoscopy			
Comparison	---	---	---
Card Intervention	2.28	1.53 - 3.40	0.00
Kit Intervention	0.89	0.59 - 1.34	0.59
Any Test			
Comparison	---	---	---
Card Intervention	2.77	2.08 - 3.69	0.00
Kit Intervention	6.02	3.38 - 10.71	0.00

Odds ratios adjusted for Age, Gender, and Practice Specialty, Size, Location, and Data Sources

Kit Intervention vs. Card Intervention			
	Adj OR	95% CI	p
Stool Test			
Card Intervention	---	---	---
Kit Intervention	3.39	1.97 - 5.83	0.00
Colonoscopy			
Card Intervention	---	---	---
Kit Intervention	0.35	0.04 - 2.73	0.32
Any Test			
Card Intervention	---	---	---
Kit Intervention	2.58	1.56 - 4.27	0.00

Odds ratios adjusted for Age, Gender, and Insurance Status

Characteristics associated with intervention screening

- Patient and practice characteristics associated with higher odds of screening after being exposed to the SATIS-PHI/CRC intervention:
 - ❖ Older age (for stool test and any test)
 - ❖ Female gender (for colonoscopy)
 - ❖ Commercial insurance (for stool test and any test)
 - ❖ Internal medicine specialty (for colonoscopy)
 - ❖ Larger practices (for stool test and any test)
 - ❖ Rural and suburban practices (for colonoscopy and all tests)
 - ❖ Above multivariable adjusted odds ratio results controlled for all variables in the model (age, gender, insurance status, and practice specialty, size, location, and data sources)

Lessons learned

- Central organization should be able to:
 - ❖ Establish or have strong relationship with primary care practices
 - ❖ Easily access up-to-date and complete patient records
 - ❖ Determine patient eligibility and track patient screening
 - ❖ Contact patients
 - By mail, email or other electronic means, etc
 - ❖ Contact practices with screening results
 - ❖ Have or obtain resources for intervention
 - ❖ Recruit stool test kit supplier
 - ❖ Have or establish relationship with clinical lab
 - ❖ Obtain support of local colonoscopy providers
 - ❖ And in the era of health care reform, generally function as an Accountable Care Organization (ACO)

Lessons learned – continued

- Busy PC practices can benefit from centralized approach
 - ❖ Especially with population health related functions
- Need for “readiness” for population-based interventions and population health by both central org and practices
 - ❖ Can be very resource intensive
- Valid and complete patient records are essential
 - ❖ So are stable and knowledgeable HIT staff
- Intervention built-into the system better than added on
- Supportive environmental conditions needed
- Likely expandable to other conditions having EBPs for screening and follow up
 - ❖ e.g., SATIS-PHI/HTN, SATIS-PHI/DM, ...

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

Questions



Acknowledgements and contact information

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➤ Report:
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➤ Toolkit:
www.ahrq.gov/research/crctoolkit