

Implementation Strategies

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*Implementation Science
National Cancer Institute*

Overview

- What are implementation strategies?
- What is their role in implementation science?
- How are they categorized, classified, and measured?
- Example research questions
- Example project: Colorectal Cancer Screening Program in South Carolina (CCSPSC) – Dr. Heather Brandt

NIH defines implementation research as...

“scientific study of the use of strategies to adopt and integrate evidence-based health interventions into clinical and community settings in order to improve patient outcomes and benefit population health”

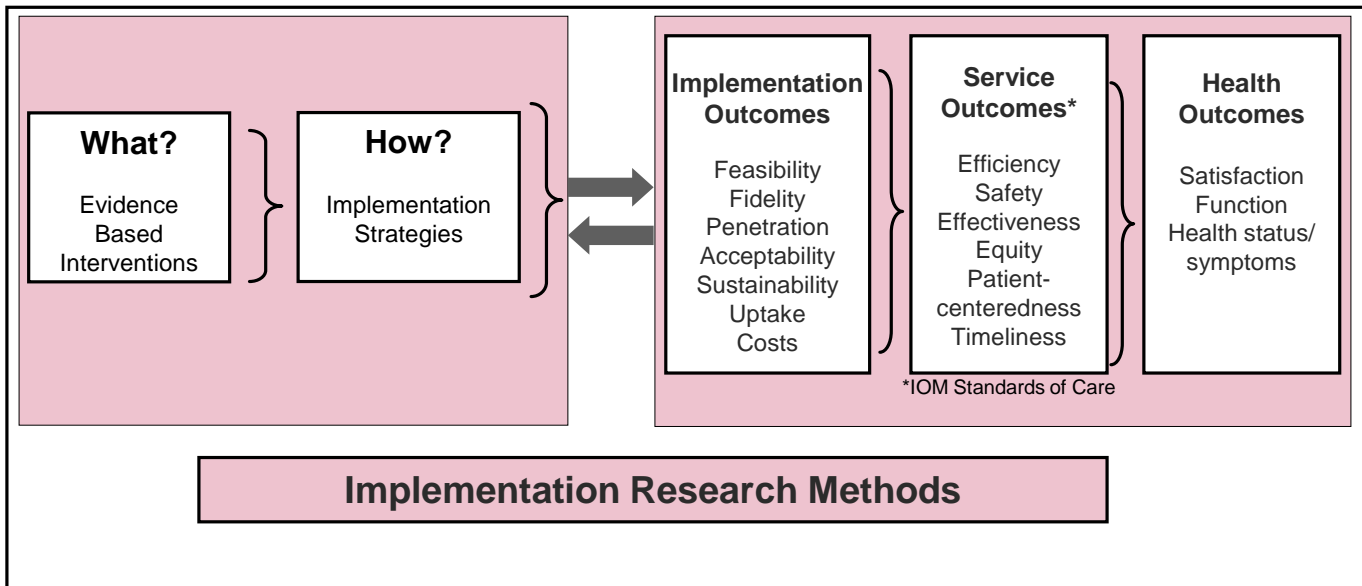
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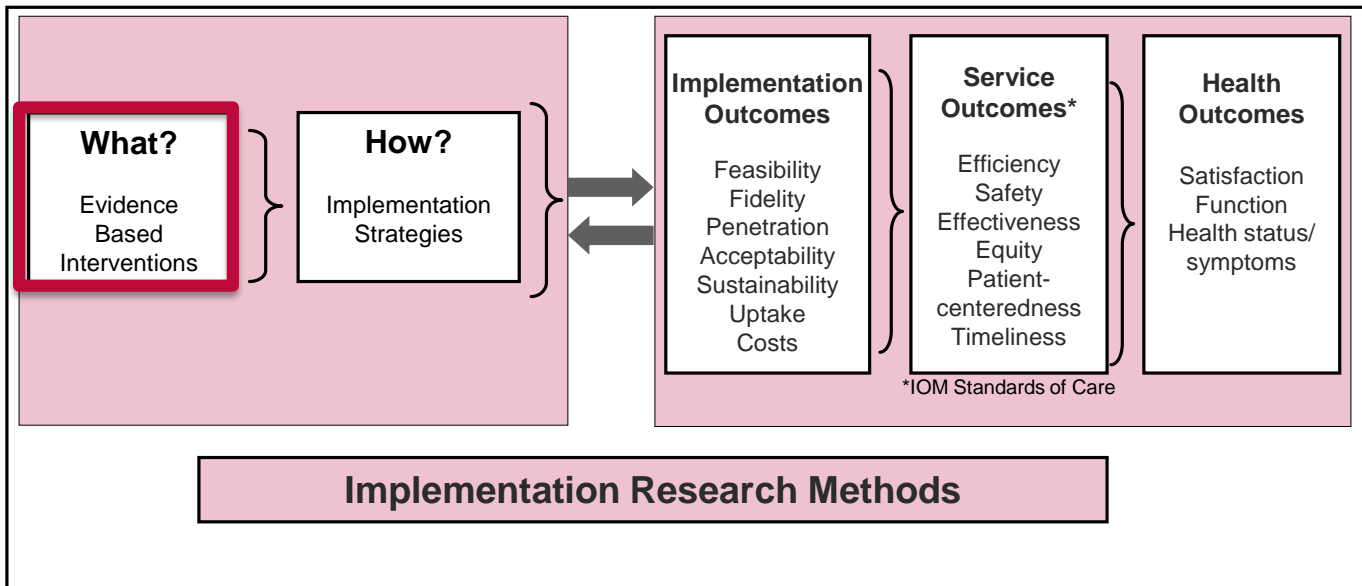
Implementation Research Methods



Implementation Research Methods

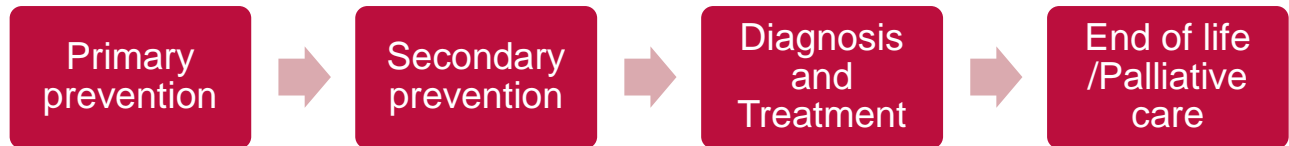


Implementation Research Methods

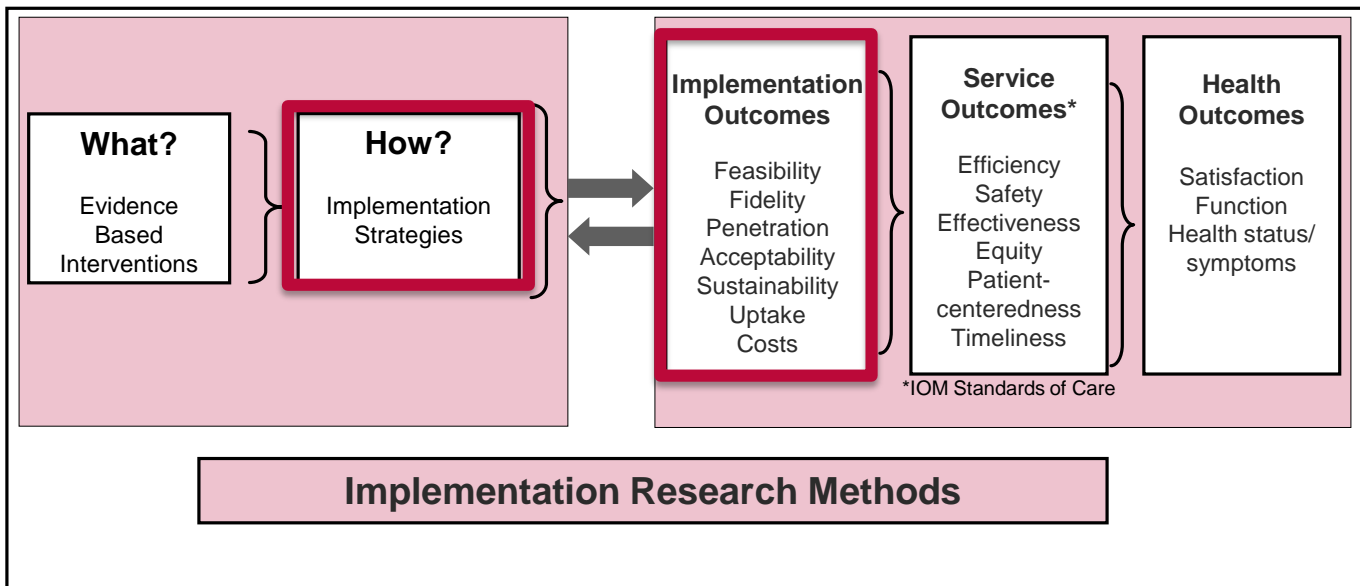


Evidence based interventions

- Interventions that have demonstrated impact in changing health behaviors and/or health outcomes
- Intervention could include programs, practices, policies and guidelines
- Examples across the cancer control continuum



Implementation Research Methods



Implementation strategies are...

- “Methods or techniques used to enhance the adoption, implementation and sustainability of a evidence based program or practice”
- *Focus on improving implementation outcomes (Feasibility, Fidelity, Penetration, Acceptability, Sustainability, Uptake, Costs)*

Resources for implementation strategies

ann. behav. med. (2013) 46:81–95
DOI 10.1007/s12160-013-9486-6

ORIGINAL ARTICLE

The Behavior Change Technique Taxonomy (v1) of 93 Hierarchically Clustered Techniques: Building an International Consensus for the Reporting of Behavior Change Interventions

Susan Michie, DPhil, CPsychol • Michelle Richardson, PhD • Marie Johnston, PhD, CPsychol • Charles Abraham, DPhil, CPsychol • Jill Francis, PhD, CPsychol • Wendy Hardeman, PhD • Martin P. Eccles, MD • James Cane, PhD • Caroline E. Wood, PhD

Cochrane Effective Practice and Organisation of Care Review Group

DATA COLLECTION CHECKLIST



Implementation Science 2013, 8:32
<http://www.implementationscience.com/content/8/1/32>

RESEARCH

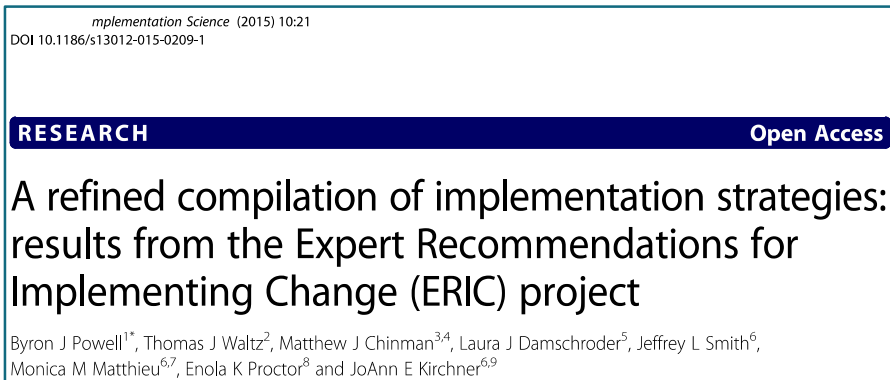
Open Access

Refining a taxonomy for guideline implementation: results of an exercise in abstract classification

Danielle Mazza^{1*}, Phillip Bairstow², Heather Buchan³, Samantha Paubrey Chakraborty¹, Oliver Van Hecke¹, Cathy Grech¹ and Ilkka Kunnamo⁴

Identifying Implementation Strategies

- Compilation (2012)
- Expert Recommendations for Implementing Change (ERIC) study
 - Expert panel - Delphi technique to generate consensus
- Refining
 - 73 strategies



Nine categories of implementation strategies

1. Evaluation and iterative strategies

- Assess for readiness
- Identify barriers and facilitators
- Audit & feedback

2. Interactive assistance

- Facilitation
- Technical assistance
- Clinical supervision

3. Adapting and tailoring to context

- Tailor strategies
- Promote adaptability
- Use data experts

4. Develop stakeholder relationships

- Identify and prepare champions
- Inform local opinion leaders
- Build coalitions

5. Train/educate stakeholders

- Conduct ongoing training
- Develop educational materials
- Create learning collaborative

6. Supporting clinicians

- Remind clinicians
- Develop resource sharing agreements
- Revise professional roles

7. Engage consumers

- Involve consumers and family members
- Intervene to enhance uptake and adherence
- Use mass media

8. Use financial strategies

- Access new funding
- Alter incentive/allowance structures
- Develop disincentives

9. Change infrastructure

- Mandate change
- Change physical structures
- Start dissemination organization

Examples of implementation strategies (contd.)

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Why are implementation strategies important to study?

- Identifying “building blocks” of multi-level strategies for research
- Specifying “active ingredients” of what impacts implementation outcomes
- Tracking strategy use in various phases of implementation
- Highlighting under-researched strategies

How implementation strategies are often selected



Martin Eccles
Prof of Clinical Effectiveness
Newcastle University (UK)

Most frequently used model of change: ***ISLAGIATT*** model

How implementation strategies are often selected

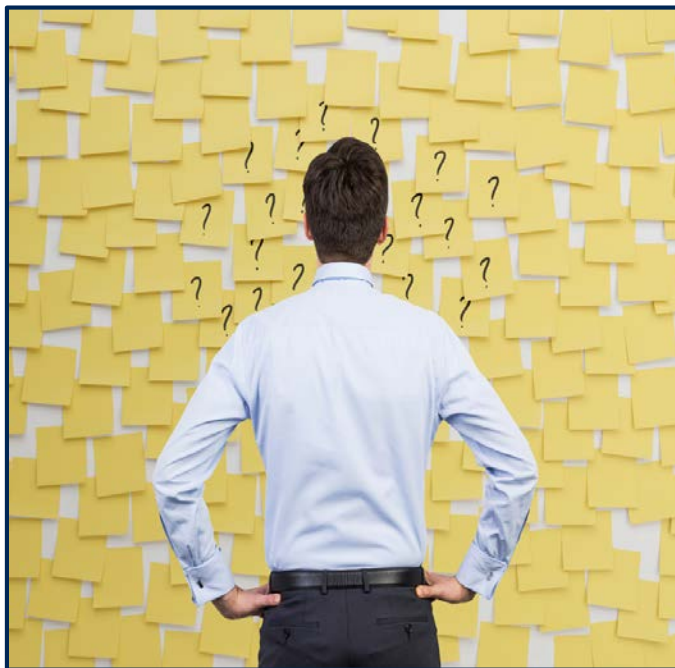


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Prof of Clinical Effectiveness
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Most frequently used model of change: **ISLAGIATT** model

(It Seemed Like A Good Idea At The Time)

How do you select strategies for your research?



Consider...

Context



Stakeholders



Theory

Evidence



Helpful resources for selecting strategies

- Conceptual frameworks (e.g., [CFIR](#), [EPIS](#), etc.)
- Checklist of determinants ([Flottorp et al., 2013](#))
- Methods: Literature reviews; Qualitative and qualitative methods
 - Specific approaches: concept mapping and intervention mapping ([Powell, B. et al., 2017](#))

Beware of the mismatch...

Most studies identified barriers at team and organizational levels, but selected educational strategies...



...results suggest a mismatch between identified barriers and the interventions selected for use.

Examples of matching strategies to determinants

Identified Determinants → Implementation Strategies

Lack of knowledge → Interactive education sessions

Perception/reality mismatch → Audit and feedback

Lack of motivation → Incentives/sanctions

Beliefs/attitudes → Peer influence/opinion leaders

Systems of care → Process redesign

Recommendations for specifying implementation strategies

- Name & define the strategy
- Specify the strategy (7 domains)
 - The actor (who enacts the strategy)
 - The action (use active verb statements for specific actions, steps, or processes that need to be enacted)
 - Action target (specify targets and identify units of analysis)
 - Temporality (when the strategy is used)
 - Dosage
 - Implementation outcome affected
 - Justification

Example of specifying and reporting

Domain	Strategy: Clinical Supervision
Actor(s)	Clinician who is expert in the clinical innovation and recommended by the treatment developer.
Action(s)	Provides clinical supervision via phone to answer questions, review case implementation, make suggestions, and provide encouragement.
Target(s) of the action	<p>Clinicians newly trained in the innovation.</p> <p>Knowledge about the innovation, skills to use the innovation, optimism that the innovation will be effective, and improved ability to access details about how to use the innovation without prompts.</p>
Temporality	Clinical supervision should begin within one week following the end of didactic training.
Dose	Once per week for 15 minutes for 12 weeks, plus follow-up booster sessions at 20 and 36 weeks.
Implementation outcome(s) affected	Uptake of the innovation, penetration among eligible clients/patients, fidelity to the protocol of the clinical innovation.
Justification	Research that suggests that post-training coaching is more important than quality or type of training received [70] .

Examples in Cancer Research

Health Psychology
2005, Vol. 24, No. 5, 477–487

Copyright 2005 by the American Psychological Association
0278-6133/05/\$12.00 DOI: 10.1037/0278-6133.24.5.477

Diffusion of an Effective Skin Cancer Prevention Program: Design, Theoretical Foundations, and First-Year Implementation

Karen Glanz
Emory University

Alana Steffen
University of Hawaii

Tom Elliott
Emory University

David O'Riordan
University of Hawaii

Theories of organizational change

Implementation strategies

Methods to increase organizational adoption of program

Enhanced strategies for maintenance and sustainability

Intervention to improve diffusion

Organizational predictors of implementation, maintenance, and sustainability

Systems for sustainability

Strategies and relationships to ensure sustainability

Skill training, modeling, reinforcement, persuasion

Problem solving, reinforcement, support, community linkage systems

Organizational (pool) characteristics

Environmental supports and barriers

Community-wide acceptance

Collaborative relationships

Process evaluation

FC logs

Process evaluation

FC and staff logs

Sustainability Index (PM survey)

Location, pool usage, staff size, and turnover (PM survey)

Parent agency support for activities, financial resources (PM survey)

Sustainability Index (PM survey)

Process evaluation: site visits and interviews

Note. PM = pool manager; AI = aquatic instructor; FC = field coordinator.

Examples found at:



Research-Tested Intervention Programs (RTIPs)

[Home](#)

[Search for Programs](#) ▼

[Submit a Program](#) ▼

[Topic Areas](#) ▼

[Tools and Resources](#) ▼

[About](#) ▼

Intervention Programs

Colorectal cancer screening

Examples found at:



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Intervention Programs

Colorectal cancer screening

- Automated telephone calls improve completion of fecal occult blood testing
- Mailed brochure on appointment keeping for screening colonoscopy

Examples of Research Questions

- Does a set of strategies work compared to another set of strategies in a particular research context?
- What are the mechanisms by which implementation strategies impact implementation outcomes?
- What implementation strategies work best for particular interventions and settings?

Colorectal Cancer Screening Program in South Carolina (CCSPSC)



Colorectal Cancer Screening Program in South Carolina (CCSPSC): Implementation Strategies

Heather M. Brandt, PhD, CHES

Associate Dean for Professional Development, Graduate School

Associate Professor, Arnold School of Public Health

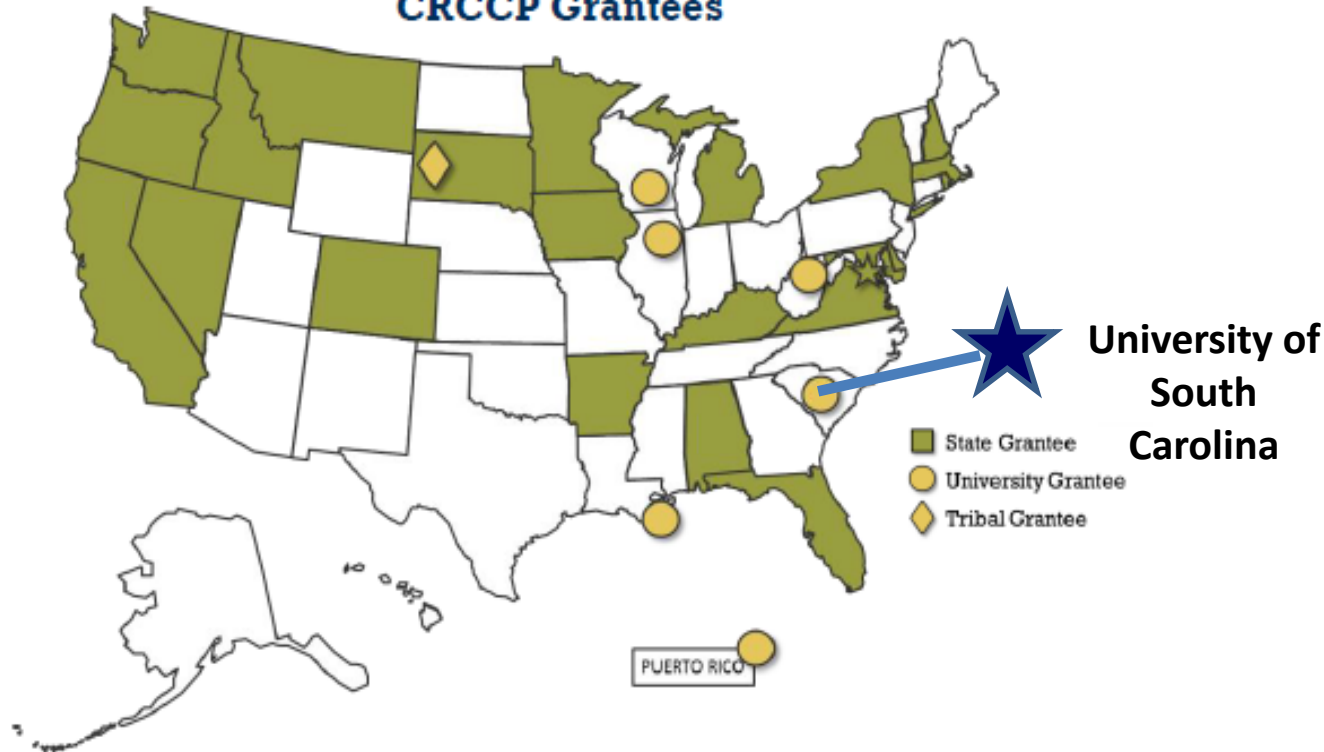
University of South Carolina

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The Colorectal Cancer Screening Program in South Carolina is funded by the Centers for Disease Control and Prevention (Grant #: NU58DP006137). The grant is awarded to Dr. Heather Brandt in the Arnold School of Public Health and Dr. Frank Berger of the Center for Colon Cancer Research at the University of South Carolina. Contact: Hiluv Johnson, program coordinator, hsjohnso@mailbox.sc.edu

CRCCP Grantees



Programs in 23 state health departments, 1 American Indian tribe, and 6 universities

<https://www.cdc.gov/cancer/crccp/>

CCSPSC

Long-term Outcome: Decreased CRC mortality through increased participation in CRC screening

The purpose of the Colorectal Cancer Screening Program in South Carolina (CCSPSC) is to increase participation in CRC screening by working with partner health systems to implement priority evidence-based strategies.

COLORECTAL CANCER SCREENING PROGRAM IN SOUTH CAROLINA

BASELINE DATA SNAPSHOT

PROGRAM REACH

15

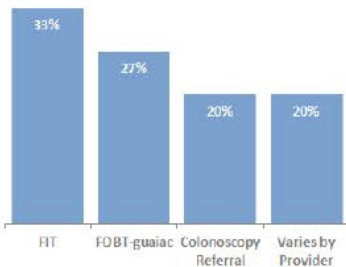
FEDERALLY QUALIFIED HEALTH CARE CLINICS ARE CURRENTLY PARTICIPATING IN THE CCSPSC PROGRAM.

The 15 clinics represent 8 systems.
100% of clinic sites are PCMH certified.

72

PRIMARY HEALTHCARE PROVIDERS SEE PATIENTS IN THESE 15 CLINICS.

PRIMARY TEST TYPE USED



PATIENT POPULATION

18,845

PATIENTS AGED 50-75 RECEIVE CARE AT THE PARTICIPATING CLINICS.

Patient populations by clinic ranged from 321-2,921.

27%

OF THE PATIENT POPULATION IS UNINSURED.

Uninsured patient populations in the clinics range from 5-82%.

33%

OF SCREENING ELIGIBLE ADULTS HAVE BEEN SCREENED FOR COLORECTAL CANCER.

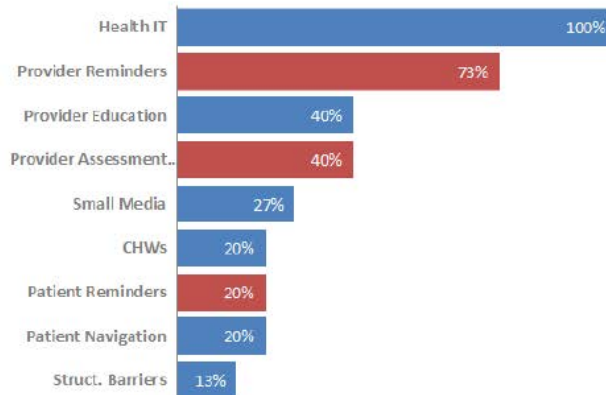
Screening rates ranged from 3% to 73%. The median is 26%.

73%

OF CLINICS USED THE UDS MEASURE TO CALCULATE SCREENING RATES.

Other clinics used HEDIS (20%) and chart review (7%).

EBI & SUPPORTING STRATEGIES IN PLACE AT CLINICS AT BASELINE



REFERRAL NETWORKS FOR COLORECTAL CANCER SCREENING

71%

OF CLINICS REPORTED THAT THEIR CLINIC HAS AN ADEQUATE REFERRAL NETWORK FOR COLORECTAL CANCER SCREENING.

Evidence-Based Strategies to Increase CRC Screening

Select at least two priority, evidence-based strategies:

- Provider assessment and feedback
- Provider reminders and recall
- Client (patient) reminders



**Multi-
component
interventions**

Optional supportive activities:

- Professional education
- Small media

Additional activities:

- Standard procedures (policies)
- 80% by 2018 pledge

Implementation Challenges

- What constitutes each strategy? For example, what constitutes a provider reminder?
 - **SOLUTIONS:**
 - Determine key components for each priority strategy.
 - Examine and monitor “intensity” of each strategy.
 - Document, document, document.
- How is a flexible and adaptive approach congruent with fidelity? (Or is it even possible?)
 - **SOLUTIONS:**
 - Approach fidelity with key components of each strategy within each partner FQHC site as the main determinants.
 - Observe regularly.
 - Document, document, document.

CCSPSC Implementation Strategies

- Evidence-based strategies that need to be implemented with FQHCs.
- *How to do this?*
- Factors to consider:
 - Retain flexible, adaptive, and iterative approach to implementation
 - Ensure high quality implementation
 - Working with busy partners, busy settings, busy people

CCSPSC Implementation Strategies

- Initial strategies inherent to our approach (planned), e.g.,
 - Assess for readiness and identify barriers and facilitators (assess contextual factors)
 - Develop a formal implementation blueprint
 - Conduct educational meetings and outreach visits
 - Became program's **PRIMARY IMPLEMENTATION STRATEGIES**
- Strategies as a result of our approach (emergent), e.g.,
 - Champions
 - Change record systems
 - Create new clinical teams
 - Became program's **SECONDARY IMPLEMENTATION STRATEGIES**

CCSPSC Implementation Strategies, getting specific

- Name it:
 - Assessment of contextual factors
- Define it:
 - Assess contextual factors at the organizational and individual levels in partner FQHCs to determine degree of readiness to implement, barriers that may impede implementation, and strengths that can be used in the implementation effort
- Operationalize it:
 - *next slide*

CCSPSC Implementation Strategies, getting specific

Domain	Strategy: Assessment of contextual factors (Assess for readiness and identify barriers and facilitators)
Actor(s)	UofSC implementation staff, supported by American Cancer Society
Action(s)	Conduct the following assessments: 1) Organizational assessment / environmental scan 2) Readiness assessment 3) Other efforts to document (e.g., site visit summaries, implementation plan, training materials, process maps)
Target(s) of the action	Organization (partner FQHC clinic/site)
Temporality	Phase 2: Collecting baseline data and planning (usually within first month); Phase 5: Sustainability and maintenance (one year from GO LIVE data and annually thereafter)
Dose	Baseline, annually thereafter for duration of program
Implementation outcome(s) affected	Uptake of selected evidence-based interventions to increase CRC screening; content of training for implementation
Justification	Contextual factors are important considerations to guide tailoring of evidence-based intervention implementation processes.

Primary implementation strategies: 22 (1 desired)

- Program-wide implementation strategies

Secondary implementation strategies: 7

- Used variably throughout the program, not program-wide

**Provider
Assessment
and
Feedback**

**Provider
Reminders**

**Client
Reminders**

**Increase
CRC
Screening
per USPSTF
guidelines**

**Implementation
Strategies**

EBI Strategies

**EBI
Intervention**

CCSPSC Phased Approach to Implementation with Partners



Overall Increases in CRC Screening



34%

Baseline CRC Screening



42%

Annual CRC Screening

This represents an actual increase of 8%
and percent change of 25%.

*As of June 2017; across entire program;
includes data from 9 of 15 sites*



**Working together to
increase colorectal cancer
screening in South
Carolina!**



Acknowledgments

- Hiluv Johnson, Cindy Calef, Ranina Outing, Minjee Lee, Maria Zubizarreta
- Core for Applied Research and Evaluation (CARE), Arnold School of Public Health, University of South Carolina (led by Dr. Lauren Workman)
- South Carolina Primary Health Care Association
- American Cancer Society
- Colorectal Cancer Prevention Network of the Center for Colon Cancer Research
- Eight federally-qualified health center (FQHC) systems in South Carolina (15 FQHC sites across the eight systems)
- Advisory Council
- Evaluation Committee
- Other partners

The Colorectal Cancer Screening Program in South Carolina is funded by the Centers for Disease Control and Prevention (Grant #: NU58DP006137). The grant is awarded to Dr. Heather Brandt in the Arnold School of Public Health and Dr. Frank Berger of the Center for Colon Cancer Research at the University of South Carolina. Contact: Hiluv Johnson, program coordinator, hsjohnso@mailbox.sc.edu

Questions

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