UTHealth Houston

IMPLEMENTATION MAPPING
Designing Strategies to Improve Adoption, Implementation and Sustainment

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COERE Annual Methods Symposium

January 18, 2024

GOALS

1. INTRODUCE

Implementation Strategies and some challenges

2. DESCRIBE

Implementation Mapping as a method for designing and tailoring implementation strategies

3. DEMONSTRATE

How Implementation Mapping is used in the real world

“A LITTLE KNOWLEDGE THAT ACTS IS WORTH INFINITELY MORE THAN MUCH KNOWLEDGE THAT IS IDLE.”

-Kahlil Gibran

INTERVENTION IMPACT

Health Education & Behavior

SOPHE

Impact Factor: **4.2** / 5-Year Impact Factor: **3.8**

JOURNAL HOMEPAGE

Available access | Research article | First published December 1997

The Child and Adolescent Trial for Cardiovascular Health (CATCH): Intervention, Implementation, and Feasibility for Elementary Schools in the United States

Cheryl L. Perry, PhD, Deborah E. Sellers, PhD, [...], and Kathleen Cook, MEd +8 View all authors and affiliations

Volume 24, Issue 6 | https://doi.org/10.1177/109019819702400607

MULTIFACETED STRATEGY

MULTIPLE DISCRETE STRATEGIES

IMPLEMENTATION STRATEGIES

Methods or techniques used to enhance the adoption, implementation, sustainment & scale-up of program or practice.

"Making the right thing to do the easy thing to do"
Dr. Carolyn Clancy

DISCRETE STRATEGY

SINGLE ACTION OR PROCESS

Powell et al. (2012; 2015; 2019); Proctor et al. (2013

MULTIPLE LEVELS OF INFLUENCE

NATIONAL HEALTH POLICY

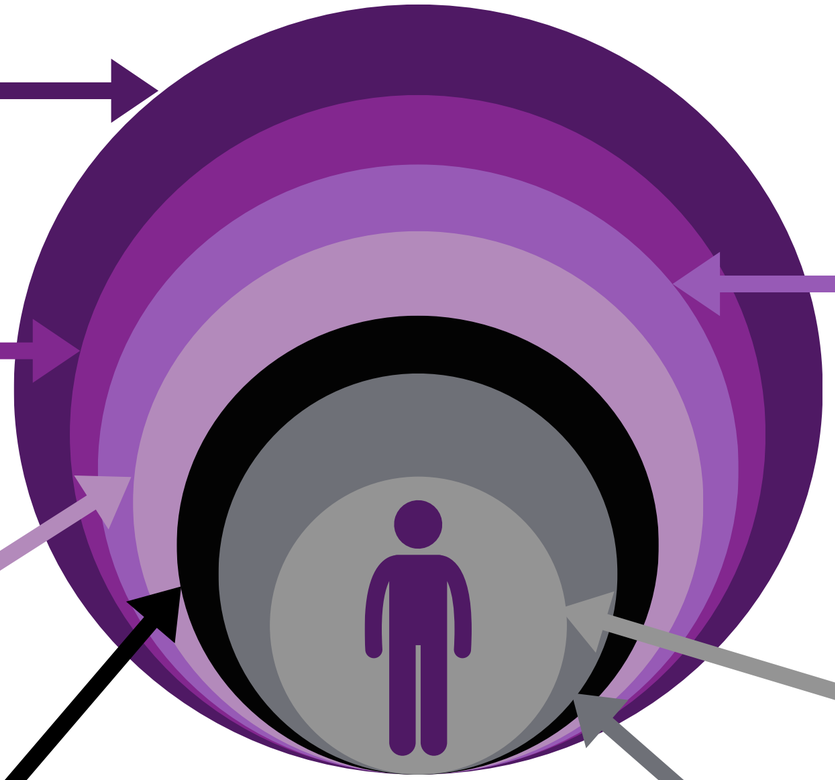
- Medicare reimbursement
- Federal efforts to reform healthcare
- National cancer initiatives
- Accreditations
- Professional standards

STATE HEALTH POLICY

- Medicaid reimbursement
- Hospital performance data policies
- (dissemination, visibility, etc.)
- State cancer plans/programs
- Regulations/limitations on
- reimbursement of clinical trials
- Activities of state-wide advocacy
- groups

ORGANIZATION/ PRACTICE SETTING

- Leadership
- Organizational structure, policies
- and incentives
- Delivery system design
- Clinical decision support
- Clinical information systems
- Patient education & navigation



IMPROVED QUALITY OF CANCER CARE

Improved Cancer-Related Health Outcomes

PROVIDER/TEAM

- Knowledge, communication skills
- Perceived barriers, norms, test efficacy
- Cultural competency
- Staffing mix & turnover
- Role definition
- Teamwork

LOCAL COMMUNITY

- Community Level Resources
- Medical care offerings
- Population SES
- Lay support networks
- Private cancer organizations
- Local Hospital & Cancer Services Market
- Market structure
- Level of competition
- Third-party payers/insurance
- Pay for performance initiatives
- HMO / managed care penetration
- Percent non-profit
- Specialty mix
- Local Professional Norms
- MD practice organizations
- Use of guidelines
- Practice patterns

FAMILY/SOCIAL SUPPORTS

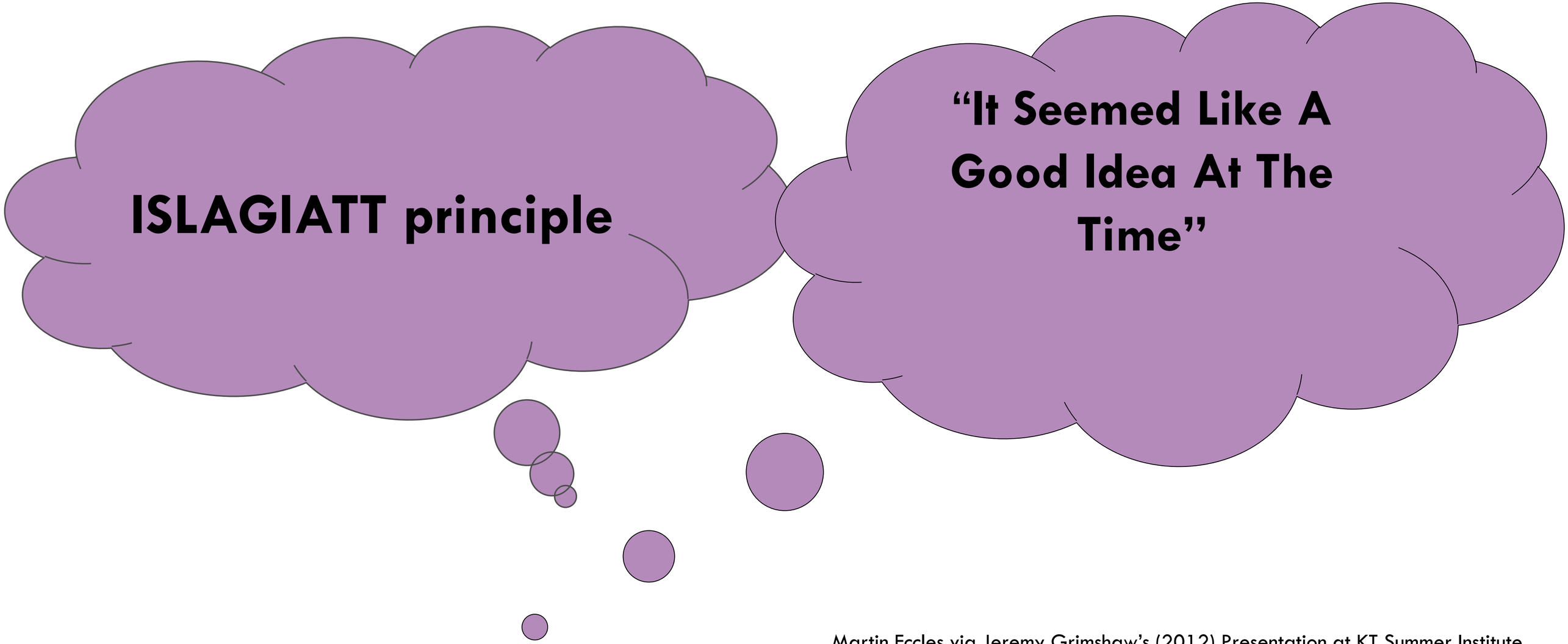
- Family dynamics
- Friends, network support

INDIVIDUAL PATIENT

- Biological factors
- Socio-demographics
- Insurance coverage
- Risk status
- Co-morbidities
- Knowledge, attitudes, beliefs
- Decision-making preferences
- Psychological reaction/coping

(Bronfenbrenner, 1979; Taplin, et al., 2012)

A Process Too Often Haphazard

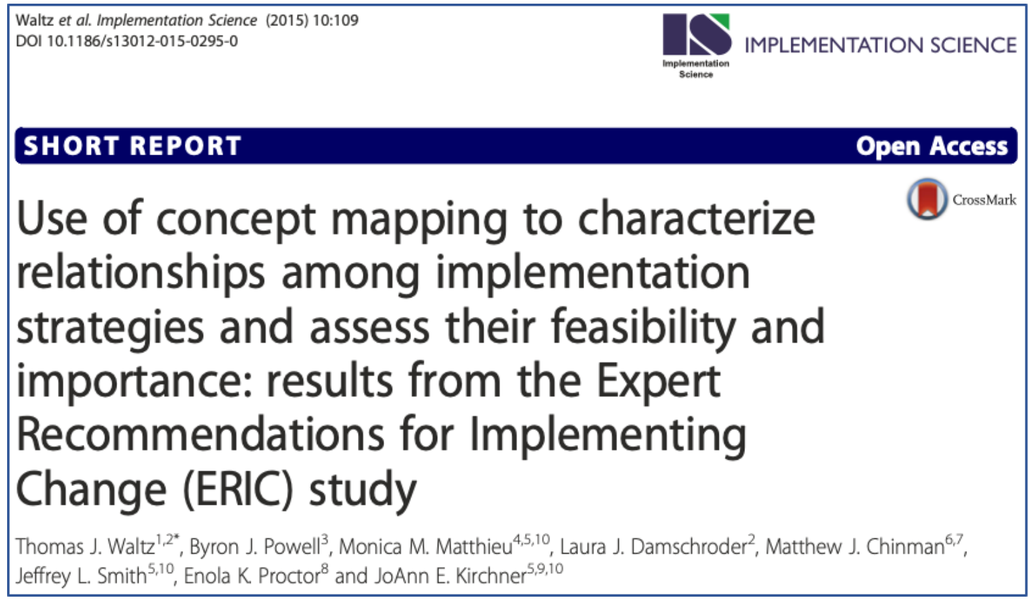


Martin Eccles via Jeremy Grimshaw's (2012) Presentation at KT Summer Institute

DEVELOPING & REFINING A COMPILATION OF IMPLEMENTATION STRATEGIES

Expert consensus

"On a common nomenclature for implementation strategy terms, definitions, and categories that can be used to guide implementation research and practice in mental health service settings"



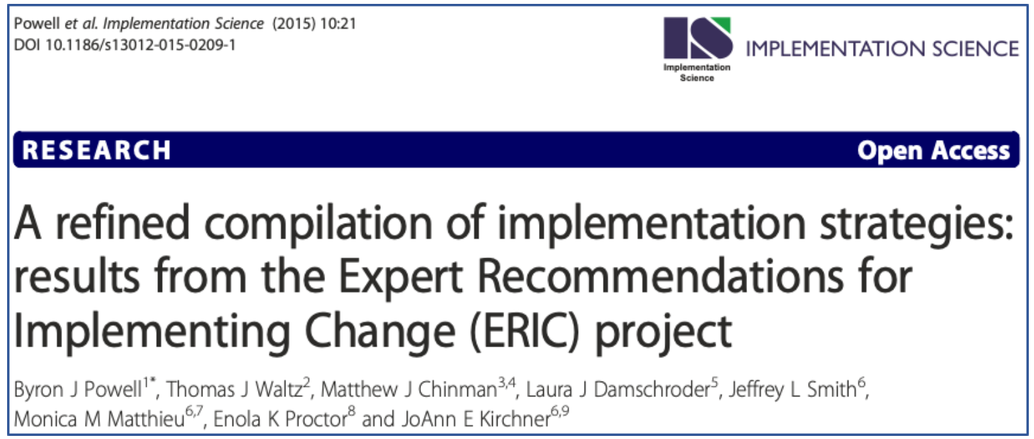
Waltz *et al. Implementation Science* (2015) 10:109
DOI 10.1186/s13012-015-0295-0

IMPLEMENTATION SCIENCE

SHORT REPORT Open Access

Use of concept mapping to characterize relationships among implementation strategies and assess their feasibility and importance: results from the Expert Recommendations for Implementing Change (ERIC) study

Thomas J. Waltz[1,2*], Byron J. Powell[3], Monica M. Matthieu[4,5,10], Laura J. Damschroder[2], Matthew J. Chinman[6,7], Jeffrey L. Smith[5,10], Enola K. Proctor[8] and JoAnn E. Kirchner[5,9,10]



Powell *et al. Implementation Science* (2015) 10:21
DOI 10.1186/s13012-015-0209-1

IMPLEMENTATION SCIENCE

RESEARCH Open Access

A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project

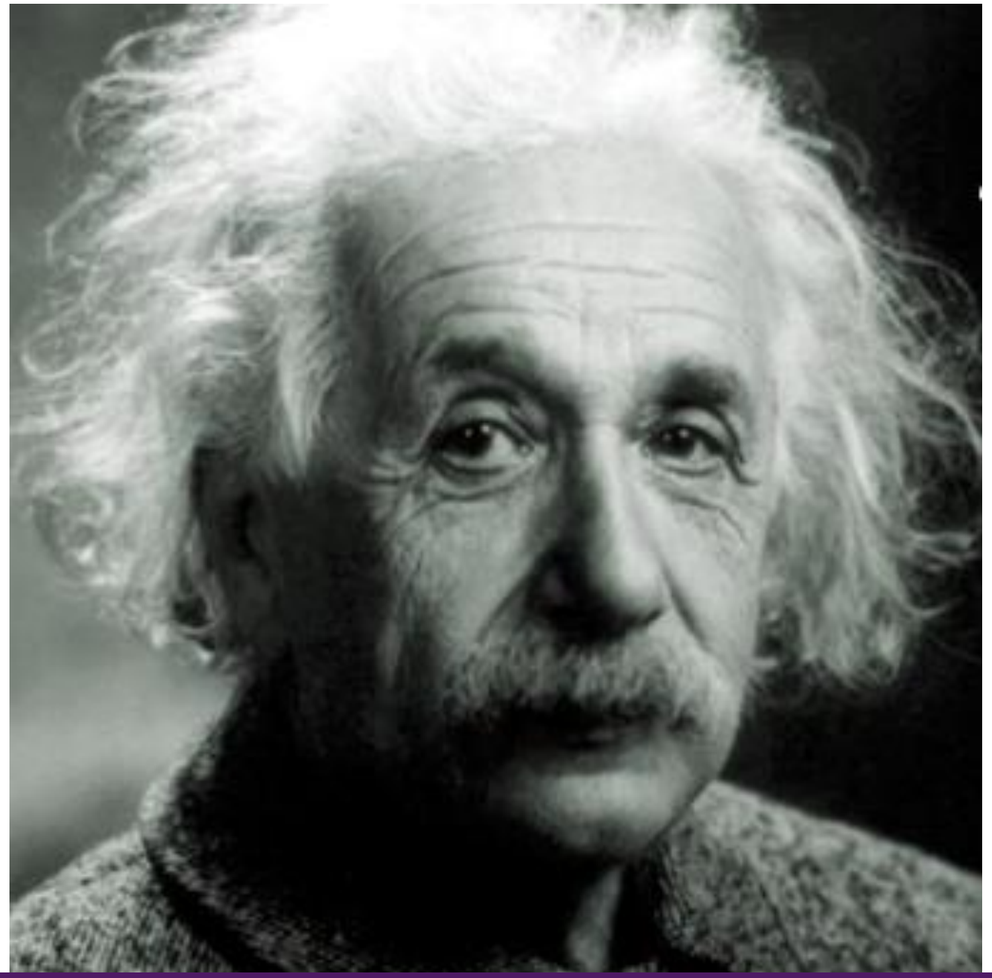
Byron J Powell[1*], Thomas J Waltz[2], Matthew J Chinman[3,4], Laura J Damschroder[5], Jeffrey L Smith[6], Monica M Matthieu[6,7], Enola K Proctor[8] and JoAnn E Kirchner[6,9]

Powell, et al. 2012; Powell, 2015; Waltz

Challenges in Selecting Implementation Strategies

1. Some compilations may be less relevant for certain settings
2. Strategies included in compilations are broad and may represent qualitatively different things (delivery channel, assessments, processes)
3. Limitations of the empirical literature in describing strategies
4. Underutilization of conceptual models and theories in the literature
5. Implementation behaviors and conditions are not clearly specified.

Waltz TJ, Powell, BJ, Fernández ME, Abadie, B, Damschroder, LJ. Choosing implementation strategies to address contextual barriers: Diversity in recommendations and future directions. *Implementation Science,* 2019, 14(1):42.



"Make everything as simple as possible, but not simpler.

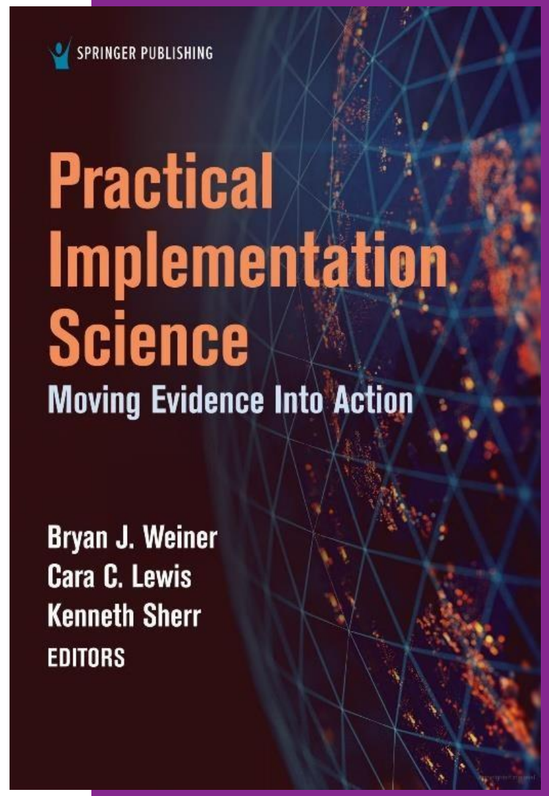
Albert Einstein

DEVELOPING IMPLEMENTATION STRATEGIES

1. Conduct an assessment of factors that influence implementation processes and outcomes (e.g. characteristics of the innovation, setting, preferences of involved stakeholders, barriers, & facilitators).

2. Develop or select & tailor strategies.

Practical Implementation Science
Moving Evidence Into Action



Bryan J. Weiner, Ph.D. Cara C. Lewis, Ph.D. Kenneth Sherr, Ph.D. *Editors*

Chapter 5: Understanding barriers and facilitators for implementation across settings

Maria E. Fernandez, Laura Damschroder, Bijal Balasubramanian

.

Community and stakeholder engagement should be integrated with four main core processes:

1. *Brainstorm potential barriers and facilitators (based on experience, past needs assessments, and published literature)*
1. *Use theories and frameworks*
2. *Collect new data*
3. *Prioritize the most important and changeable factors*

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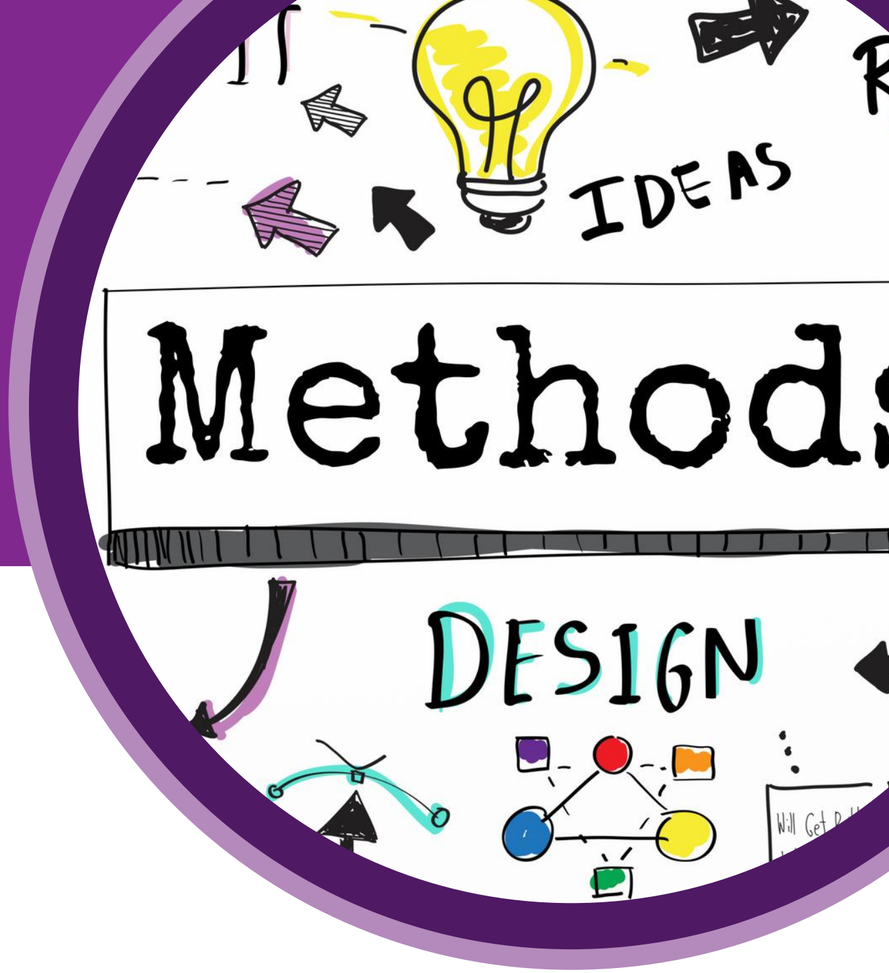
METHODS FOR DESIGNING & TAILORING IMPLEMENTATION STRATEGIES



- Group Model Building
- Conjoint Analysis
- Concept Mapping
- Intervention Mapping

Methods to Improve the Selection and Tailoring of Implementation Strategies

Baker et al. (2015); Bosch et al. (2007); Colquhoun et al. (2017); Grol et al. (2013); Powell et al. (2017)

WHAT IS INTERVENTION MAPPING?

A systematic approach to multilevel intervention development, implementation & evaluation.

INTERVENTION MAPPING

HOW & WHEN

- Ecological approach to program planning
- Use theory and frameworks to inform planning
- Incorporate empirical evidence
- Change the behavior of people in the environment
- Complexity of multi-causation of problems and multi-level intervention
- Effective behavior or systems change interventions

ECOLOGICAL APPROACH

FRAMEWORK FOR DECISION-MAKING

COMMUNITY PARTICIPATORY PROCESSES

Bartholomew Eldredge, LK, Markham, CM, Ruiter, RAC, Fernández, M.E., Kok, G, Parcel, GS (Eds.). Jan 2016. Planning health promotion programs: An Intervention Mapping approach (4th ed.). San Francisco, CA: Jossey-Bass

START HERE
Problem

FROM UNDERSTANDING TO INTERVENING

A framework for the planning, development, implementation & evaluation of interventions and programs

ARRIVE
Solution

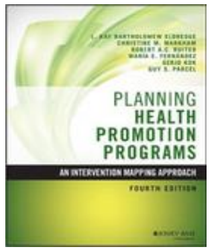
INTERVENTION MAPPING

A systematic approach to multilevel intervention development, adaptation, implementation, and evaluation.

DESIGNING

Designing interventions based on theory, evidence, new data, and community engagement.

Planning Health Promotion Programs: An Intervention Mapping Approach, 4th Edition



ADAPTING

Adapting interventions using IM Adapt to improve fit of evidence-based interventions.

www.imadapt.org

STRATEGIES

Designing implementation strategies to influence the adoption, implementation, and sustainment of evidence-based interventions (Implementation Mapping).

Implementation Mapping: Using Intervention Mapping to Develop Implementation Strategies.

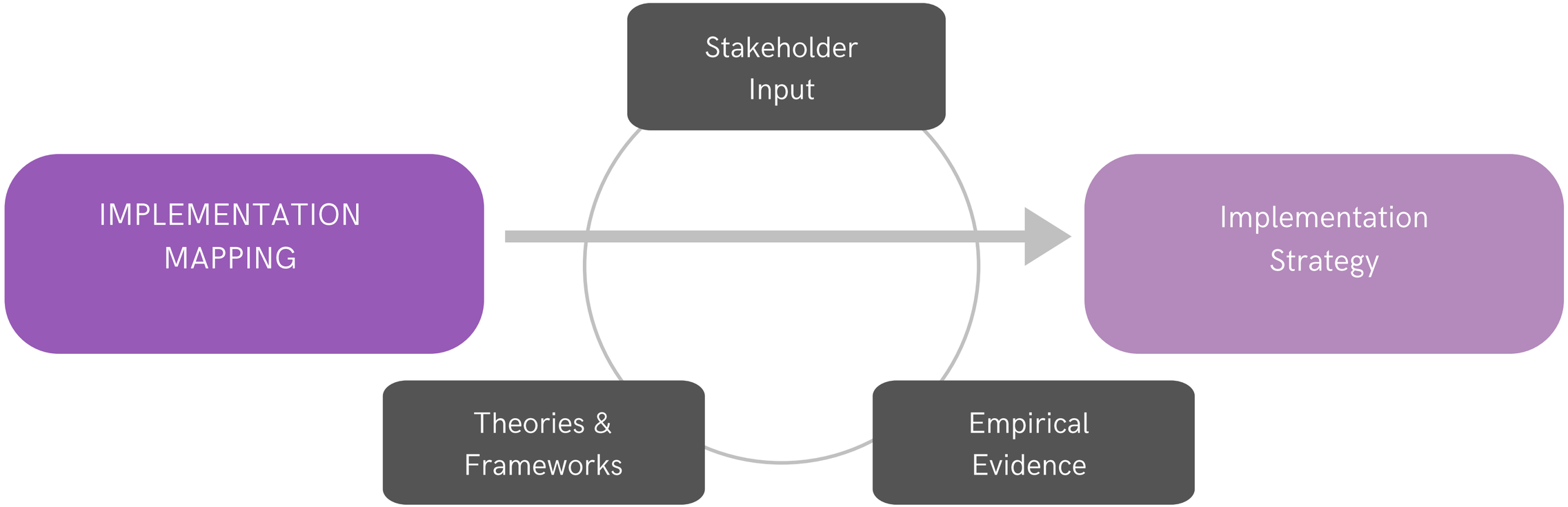
Bartholomew Eldredge, LK, et al. Planning health promotion programs: An Intervention Mapping approach (4th ed.). San Francisco, CA: Jossey-Bass. 2016; Fernández ME, Ruiter RAC, Markham CM and Kok G. Intervention Mapping: Theory- and Evidence-Based Health Promotion Program Planning: Perspective and Examples. Frontiers in Public Health. 2019; Fernández ME, , et al. Implementation Mapping: Using Intervention Mapping to Develop Implementation Strategies, Frontiers in Public Health, 2019

IMPLEMENTATION MAPPING

The Use of the Intervention Mapping Protocol for planning Implementation Strategies (Implementation Interventions).

Implementation Science + Intervention Mapping = IMPLEMENTATION MAPPING

IMPLEMENTATION MAPPING



COMMUNITY & STAKEHOLDER ENGAGEMENT

Cancer causes & control : CCC
Author Manuscript HHS Public Access

Participatory implementation science to increase the impact of evidence-based cancer prevention and control

Shoba Ramanadhan, ScD, MPH, Melinda M. Davis, PhD, [...], and Ross C. Brownson, PhD

Knowledge generation comes from the hands of practitioners/implementers as much as it comes from those usually playing the role of intervention researcher.

Hawe, P. (2015). Lessons from Complex Interventions to Improve Health. Annual Review of Public Health, 36(1), 307-323. doi: 10.1146/annurev-publhealth-031912-114421

Typical Activities in Our Work with Partners

- Identification of factors influencing implementation and effectiveness outcomes
- Designing, identifying, adapting and implementing interventions
- Designing or selecting and tailoring implementation strategies
- Developing and/or adapting measures of implementation and effectiveness outcomes and determinants
- Conducting implementation research studies within practice settings (from hypothesis generation to evaluation multi-level trials to broad scale up)

Implementation Science to Address Inequities

- Focus on reach from the very beginning
- Design and select interventions for vulnerable populations and low-resource communities with implementation in mind
- Implement what works and develop implementation strategies that can help reduce inequities in care
- Develop the science of adaptations
- Use an equity lens for implementation outcomes.

Baumann and Cabassa *BMC Health Services Research* (2020) 20:190
https://doi.org/10.1186/s12913-020-4975-3

BMC Health Services Research

DEBATE Open Access

Reframing implementation science to address inequities in healthcare delivery

Ana A. Baumann† and Leopoldo J. Cabassa*†

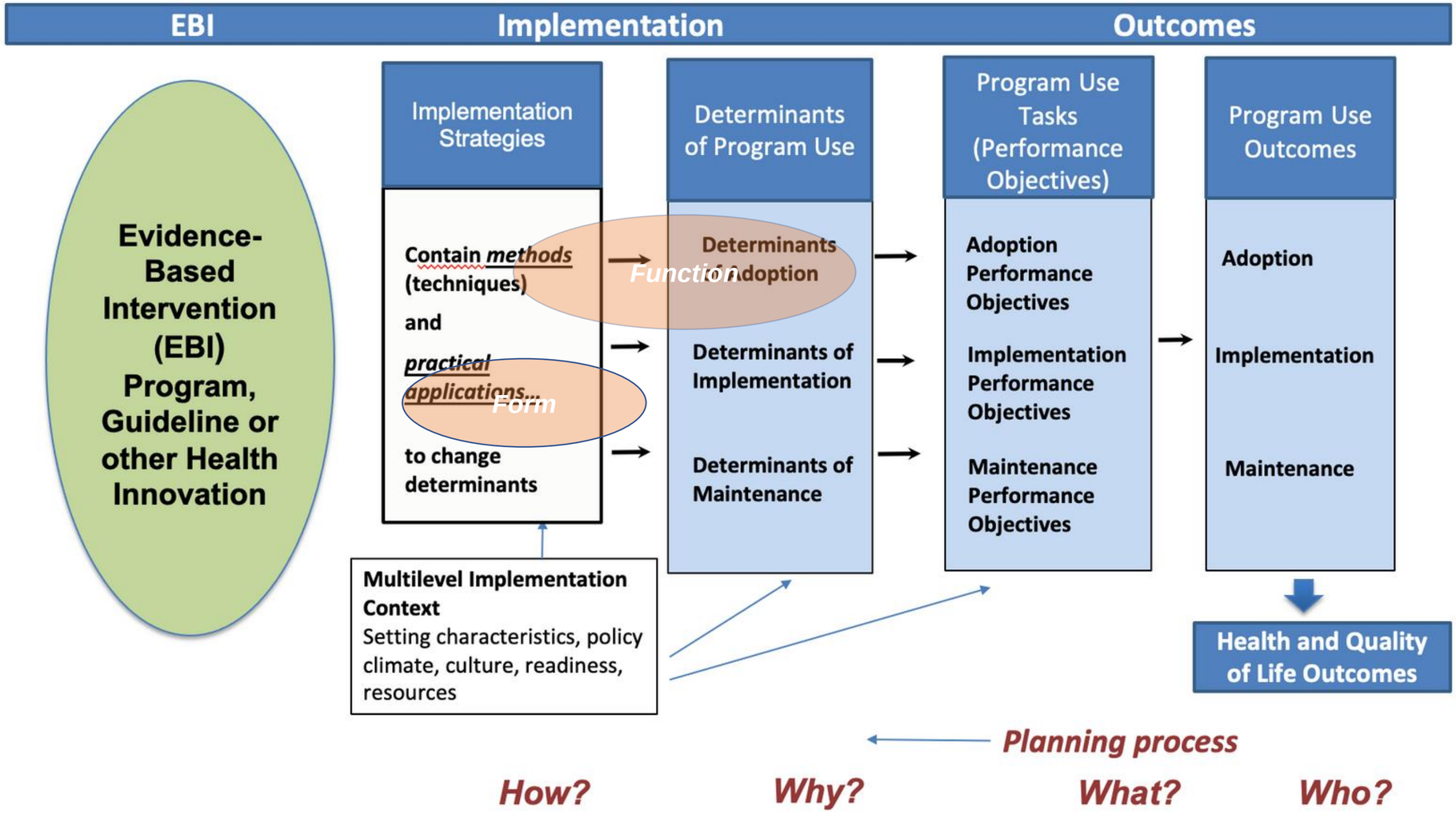
Baumann et al. (2020)

IMPLEMENTATION MAPPING TASKS

WHO?	1	CONDUCT A NEEDS AND ASSETS ASSESSMENT AND IDENTIFY ADOPTERS AND IMPLEMENTERS	Understanding needs & assets
WHAT & WHY?	2	IDENTIFY ADOPTION & IMPLEMENTATION OUTCOMES, PERFORMANCE OBJECTIVES, & DETERMINANTS; CREATE MATRICES OF CHANGE	Planning change
HOW?	3	CHOOSE THEORETICAL METHODS; SELECT OR CREATE IMPLEMENTATION STRATEGIES	Understanding needs & assets
	4	DEVELOP IMPLEMENTATION PROTOCOLS AND MATERIALS	Choosing & operationalizing implementation strategies
IS IT WORKING?	5	EVALUATE IMPLEMENTATION OUTCOMES	Evaluating

Fernandez, Maria E., et al. "Implementation mapping: using intervention mapping to develop implementation strategies." Frontiers in public health 7 (2019): 158.

IMPLEMENTATION MAPPING LOGIC MODEL



Implementation Strategies have change *Methods* and *Practical Applications*

- A *method* is a general process for influencing changes in the determinants of behavior and environmental conditions

  (*element of core functions*)

- A *practical application* is a concrete, real-word technique for the operationalizing methods in ways that fit with the intervention group and the context in which the intervention will be conducted

  =how you will present and deliver the theoretical method

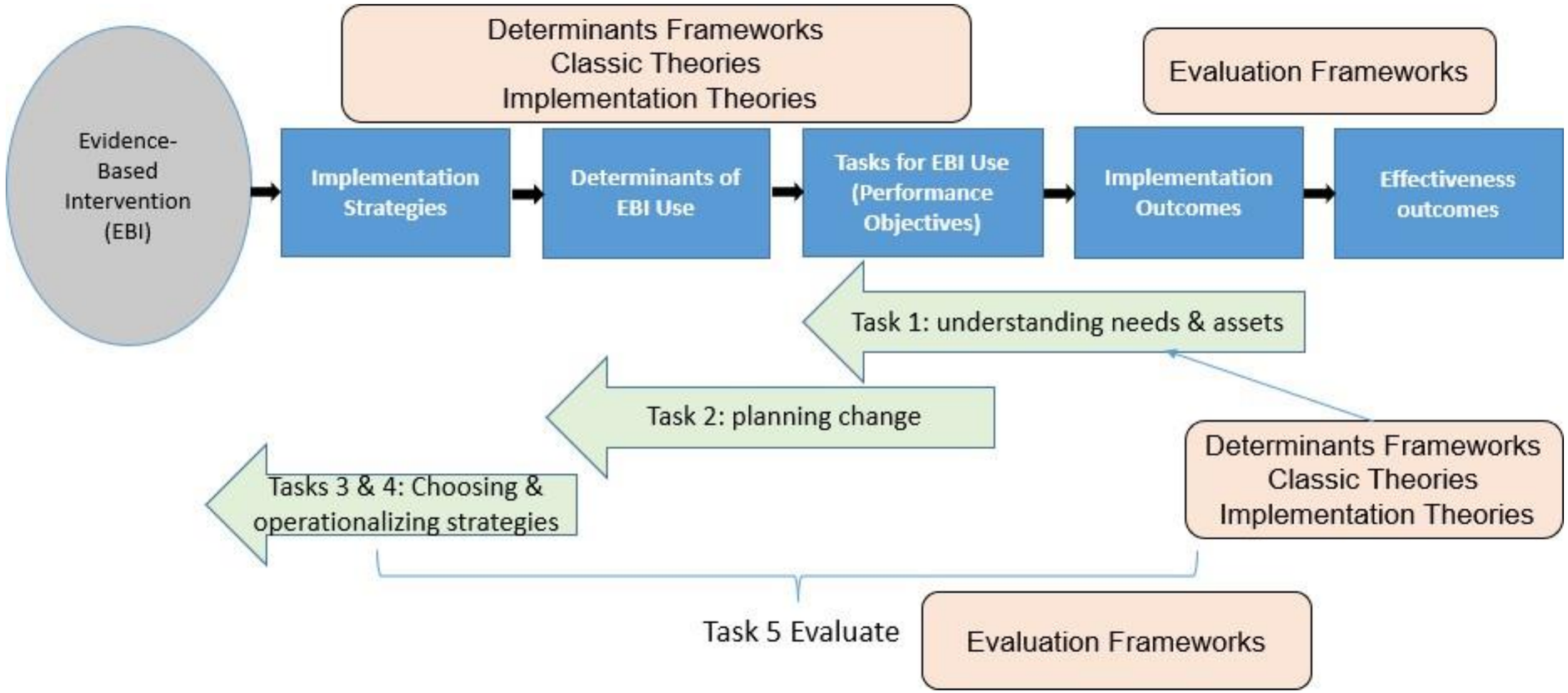
  (Forms- activities that operationalize, carry out & achieve the functions)

Review > Health Psychol Rev. 2016 Sep;10(3):297-312. doi: 10.1080/17437199.2015.1077155.
Epub 2015 Oct 15.

A taxonomy of behaviour change methods: an Intervention Mapping approach

Gerjo Kok [1], Nell H Gottlieb [2], Gjalt-Jorn Y Peters [1 3], Patricia Dolan Mullen [2], Guy S Parcel [2], Robert A C Ruiter [1], María E Fernández [2], Christine Markham [2], L Kay Bartholomew [2]

Applying Theory at Different Steps



Fernandez, Maria E., et al. "Implementation mapping: using intervention mapping to develop implementation strategies." *Frontiers in public health* 7 (2019): 158.

Using Implementation Mapping Logic Models Helps Articulate Mechanisms

- Mechanisms
  - "Process through which an implementation strategy operates…" (Lewis et al., 2018)
  - Greater expectation to focus on this in Type 3 studies

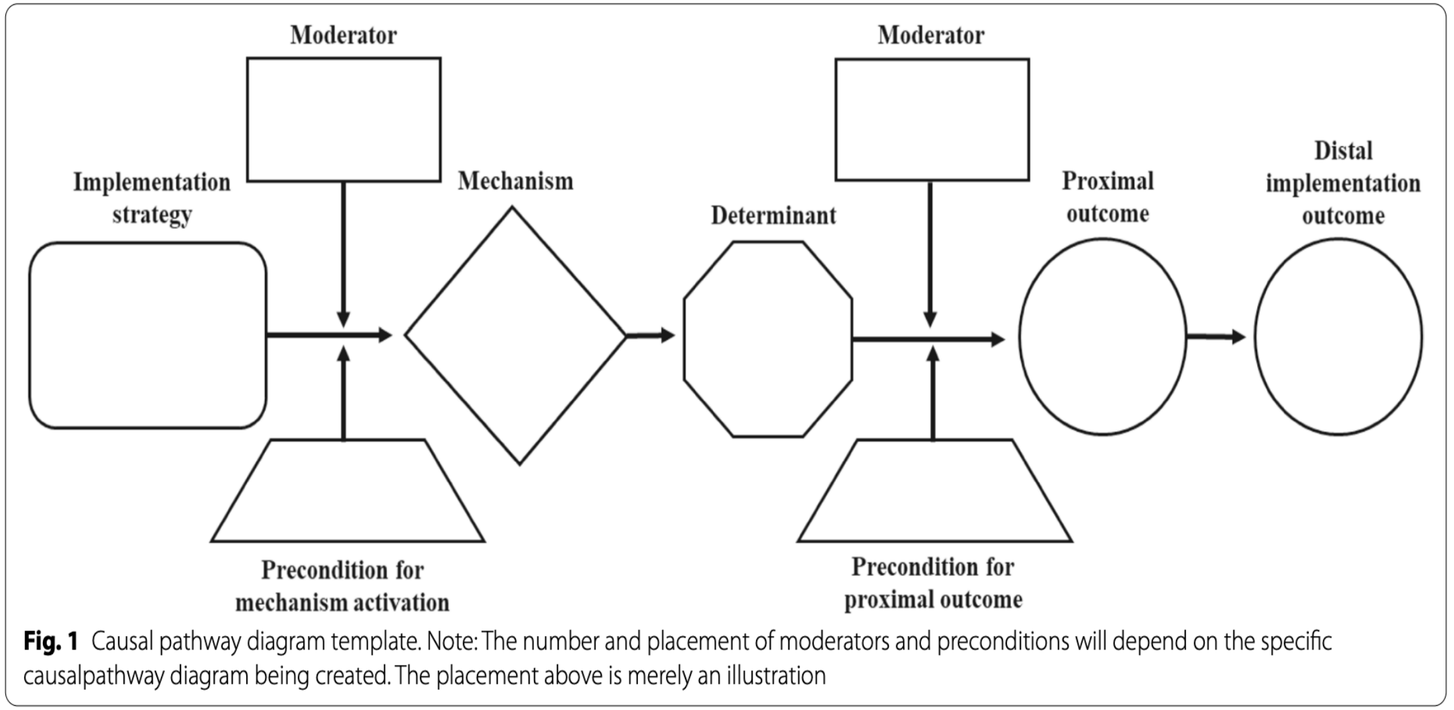
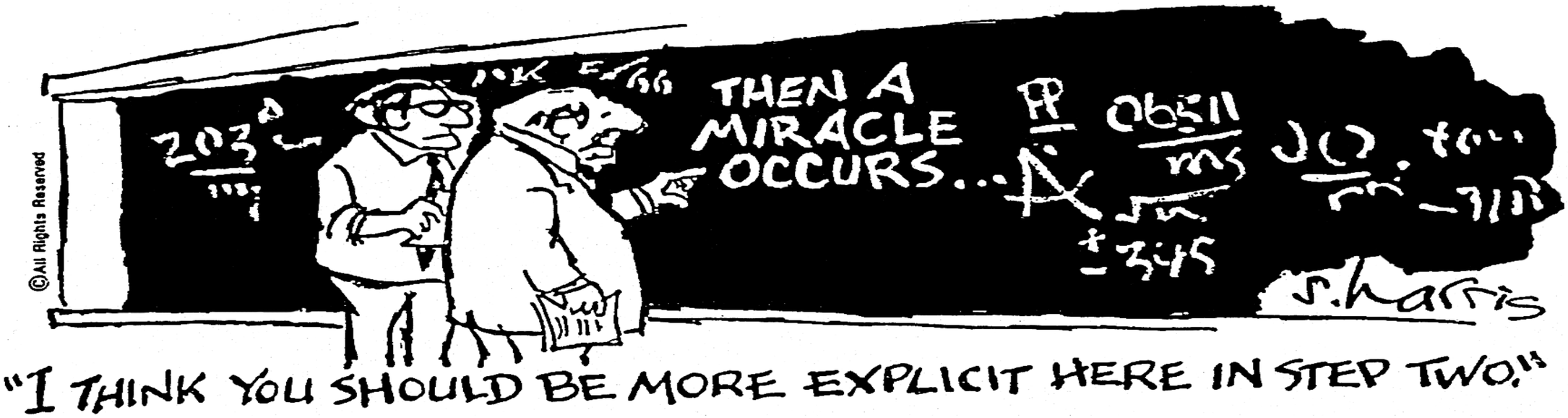


Fig. 1 Causal pathway diagram template. Note: The number and placement of moderators and preconditions will depend on the specific causalpathway diagram being created. The placement above is merely an illustration

Lewis et al. 2022

Great talk by Cara Lewis 1/17/24 https://www.uth.edu/implementation-science/our-work/training/annual-workshop

Demystifying the ‘Black Box’



"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."

frontiers in Public Health

PERSPECTIVE
published: 07 May 2018
doi: 10.3389/fpubh.2018.00136

From Classification to Causality: Advancing Understanding of Mechanisms of Change in Implementation Science

Cara C. Lewis[1,2,3†], Predrag Klasnja[1†], Byron J. Powell[4], Aaron R. Lyon[3], Leah Tuzzio[1], Salene Jones[5], Callie Walsh-Bailey[1] and Bryan Weiner[6]*

Theorizing is for everybody: Advancing the process of theorizing in implementation science

Rosemary D. Meza[1*], James C. Moreland[2], Michael D. Pullmann[3], Predrag Klasnja[4], Cara C. Lewis[1,3,5] and Bryan J. Weiner[5,6]

Lewis *et al.*
Implementation Science Communications (2022) 3:114
https://doi.org/10.1186/s43058-022-00358-3

Implementation Science Communications

STUDY PROTOCOL Open Access

The mechanics of implementation strategies and measures: advancing the study of implementation mechanisms

Cara C. Lewis[1*], Predrag Klasnja[2], Aaron R. Lyon[3], Byron J. Powell[4,5,6], Rebecca Lengnick-Hall[4], Gretchen Buchanan[4], Rosemary D. Meza[1], Michelle C. Chan[1], Marcella H. Boynton[7,8,9] and Bryan J. Weiner[10]

Slide curtesy of Dr. Cara Lewis see her presentation at: https://www.uth.edu/implementation-science/our-work/training/annual-workshop

Advancing Science and Practice through the Study of Implementation Mechanisms

Collection published in *Implementation Science* and *Implementation Science Communications*

METHODOLOGY **Open Access**

How does facilitation in healthcare work? Using mechanism mapping to illuminate the black box of a meta-implementation strategy

Amy M. Kilbourne[1*], Elvin Geng[2], Ingrid Eshun-Wilson[2], Shannon Sweeney[3], Donna Shelley[4], Deborah J. Cohen[3], JoAnn E. Kirchner[5], Maria E. Fernandez[6] and Michael L. Parchman[7]

METHODOLOGY **Open Access**

A structured approach to applying systems analysis methods for examining implementation mechanisms

Bo Kim[1,2*], Gracelyn Cruden[3], Erika L. Crable[4,5,6], Andrew Quanbeck[7], Brian S. Mittman[8,9,10] and Anjuli D. Wagner[11]

Slide curtesy of Dr. Cara Lewis see her presentation at: https://www.uth.edu/implementation-science/our-work/training/annual-workshop

IMPLEMENTATION OUTCOME

The health care provider will refer patients with prediabetes to the NDPP following the referral workflow and eligibility criteria.

CHANGE OBJECTIVES

PO2: Identifies patients with prediabetes.

DETERMINANTS

Attitudes

PA2. Believes that understanding the inclusion criteria for NDPP participation is key to making an NDPP referral.

Outcome Expectations

OE2. Expects that the identification process will help refer the patient population at risk of diabetes.

THEORETICAL CHANGE METHODS

Modeling
Social Cognitive Theory
Framing
Protection Motivation Theory
Tailoring
Communication-Persuasion Matrix
Discussion
Elaboration Likelihood Model

PRACTICAL APPLICATIONS

Develop & distribute tailored educational materials. Including, gain-framed messages highlighting the NDPP eligibility criteria, policies & EHR referral pathways.
Testimonials from health care provider about the impact of the NDPP.
Monthly meetings between the clinic staff, NDPP, & the UTHealth to share knowledge.
Presentations & discussions to describe how to conduct referrals, including the use of decision support tools & benefits on patient outcomes.
Provider-to-provider mentoring
Meetings on the progress of the providers' goals & referrals

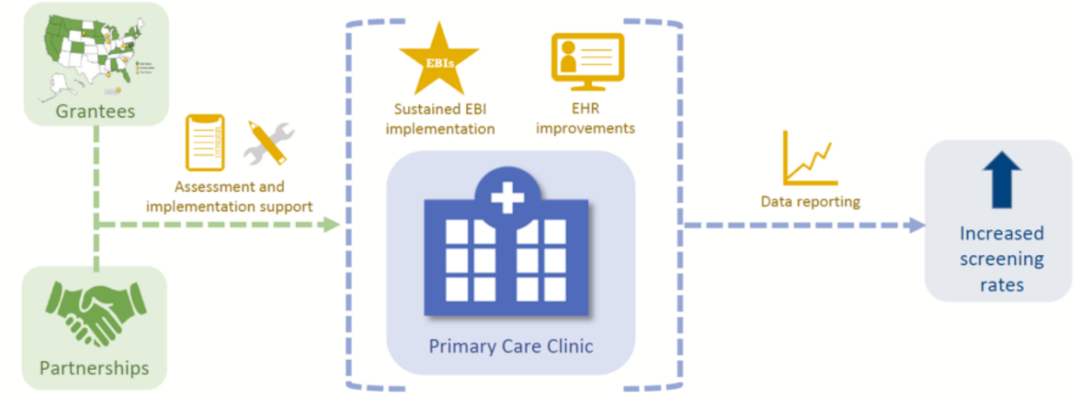
**Example

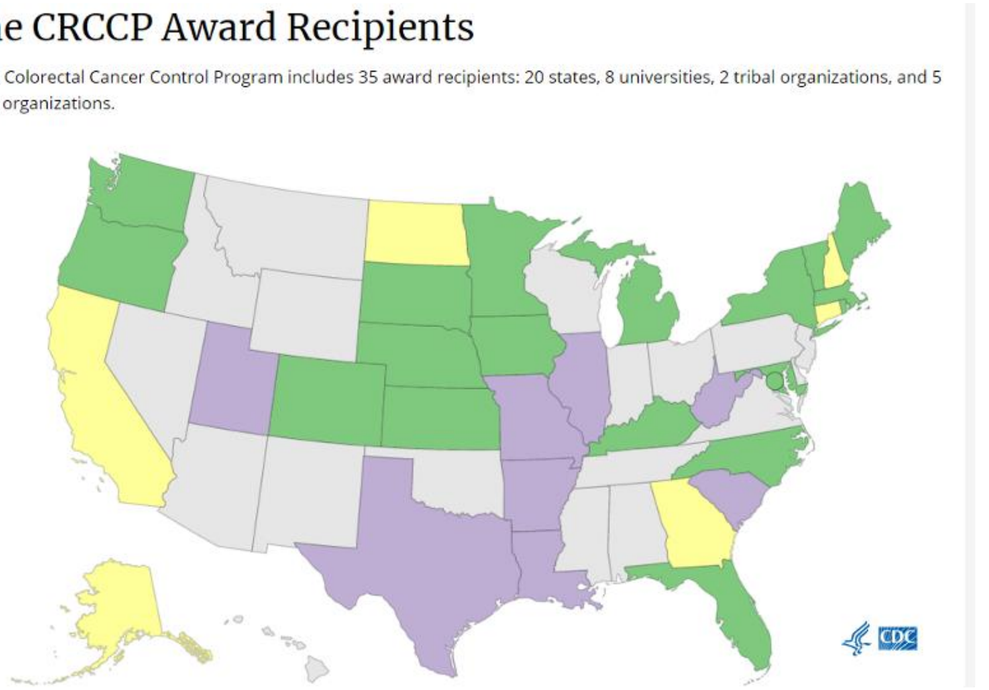
Examples

COLORECTAL CANCER CONTROL PROGRAM (CRCCP)

Project Goal

Improve effective use of EBIs recommended by the Guide to Community Preventive Services to overcome system-, provider-, and patient-level barriers to CRCS





UTHealth Houston

UTHealth
The University of Texas Health Science Center at Tyler

CDC
Centers for Disease Control and Prevention

The University of Texas MD Anderson Cancer Center
Making Cancer History®

FQHCS

Federally Qualified Health Centers provide health services to patients below the poverty level.

These factors can have a negative impact on providing optimal patient care and patient outcomes.

SERVICE PATIENTS

Comorbidities

Low health literacy

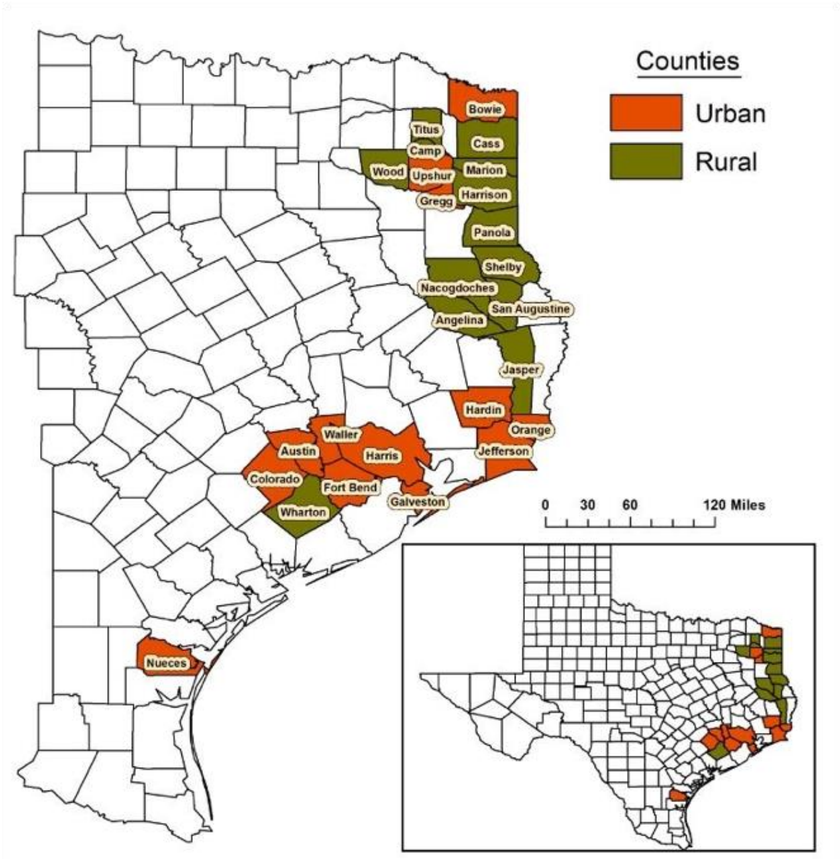
UNDERSTAFFED

High staff turnover

UNDERFUNDED

COLORECTAL CANCER CONTROL PROGRAM (CRCCP)

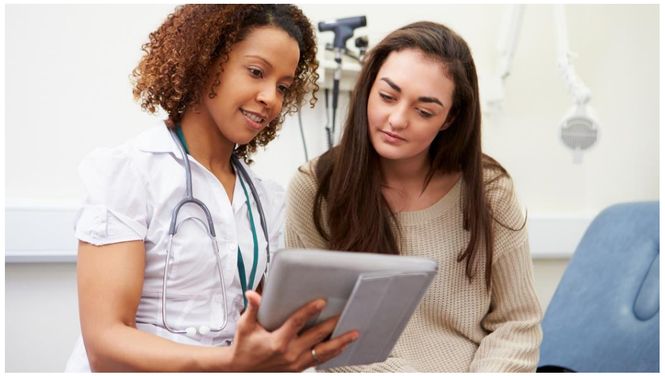
Texas FQHC Partners	Counties Served Urban/Rural	# of Clinic Sites	CRCS Rate (%)	CPRIT CRCS Program	1115 Waiver CRCS Program
TEXAS GULF COAST REGION					
Gulf Coast Health Center	Jefferson, Orange, Hardin/Jasper	5	4.8	X	
Coastal Health & Wellness	Galveston	2	15.4	X	
Amistad Community Health Center	Nueces	1	18.8	X	
Access Health	Austin, Colorado, Fort Bend, Waller/Wharton	5	31.8		X
Avenue 360	Harris	6	34.4		X
EAST TEXAS REGION					
Hope Community Medicine	Panola, Shelby, San Augustine	3	6.0	X	
Genesis PrimeCare	Bowie, Gregg/Cass, Harrison, Marion	3	25.6	X	
Wellness Pointe	Gregg, Upshur/Camp, Titus, Wood	5	27.8	X	
East Texas Community Health Services	Angelina, Nacogdoches	3	53.0	X	
Carevide	Collin, Hunt, Fannin, Delta, Kaufman, Hopkins	6	29.0	X	
Total: 10 FQHCs	**Urban: 16** **Rural: 16** **Total: 32**	**39**	**24.7**		



Evidence-Based Interventions (EBIs) for Increasing Colorectal Cancer Screenings

Primary EBIs

- Patient (or client) reminders
- Provider reminders
- Provider assessment & feedback strategies
- Reducing structural barriers



Supportive EBIs

- Small media
- Patient navigators
- One-on-one education

CONCEPTUAL FRAMEWORK FOR IMPLEMENTATION STRATEGY DESIGN AND TAILORING

FORMATIVE WORK

Theories/Frameworks
Social Cognitive Theory, Interactive Systems Framework, R=MC2

Organizational Needs & Readiness Assessment

Community Engagements/ Stakeholder Input

IMPLEMENTATION MAPPING

- Identify performance objectives (PO) (i.e., who has to do what to implement the EBI) & determinants for each implementation behavior and contextual factor.
- Create matrices of change objectives (determinants x PO).
- Identify methods and strategies to influence determinants.
- Plan implementation strategies.
- Develop implementation protocols & materials for implementation strategies.

IMPLEMENTATION PLAN

Implementation Strategies.

- Practice facilitation.
- EHR Optimization.
- Telementoring (via ECHO).
- Use of Champions.
- Professional training & technical assistance.

RE-AIM OUTCOMES

Reach
- Eligible patients who receive CRCS recommendation

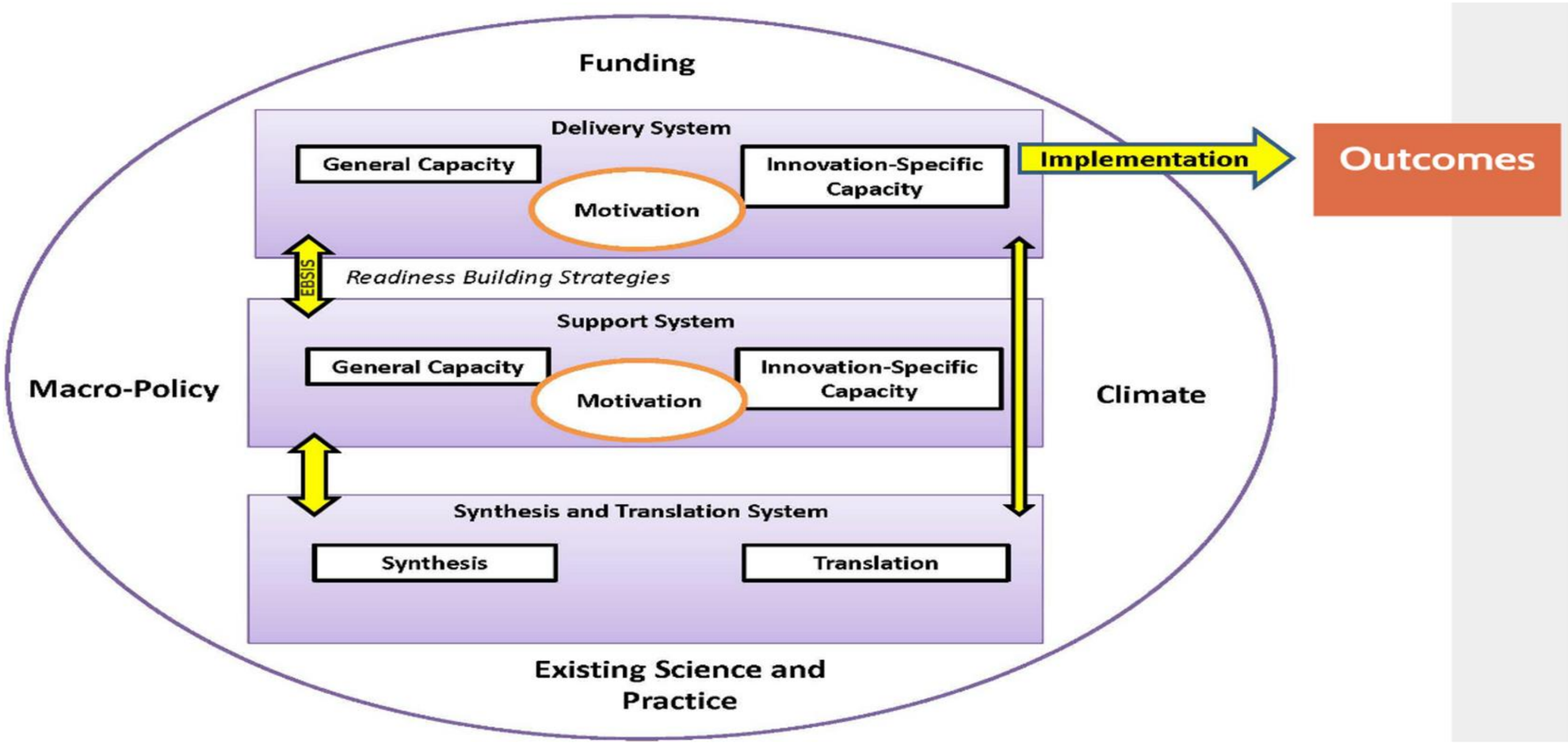
Effectiveness
- Screened eligible patients
- Followed-up with colonoscopy among those who screen positive

Adoption
- All EBI components
- Implementation
- Fidelity, Implementation level

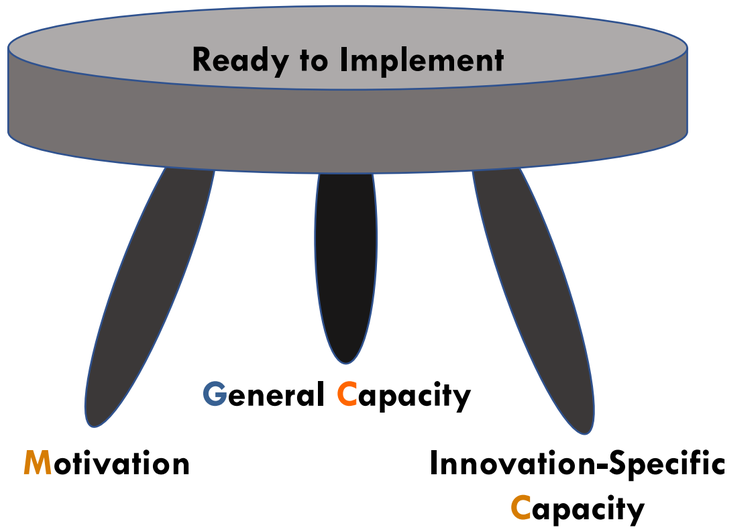
Adapted from: Fernandez ME, Schlechter CR, …Wetter DW. QuitSMART Utah: an implementation study protocol for a cluster-randomized, multi-level Sequential Multiple Assignment Randomized Trial to increase Reach and Impact of tobacco cessation in Community Health Centers. Implementation Science. 2020; 15: 9.

INTERACTIVE SYSTEM FRAMEWORK

Presentations are communication tools that can be used as lectures, speeches, reports, and more.
It all depends on the purpose of your presentation.



$R=MC^2$



Readiness

=

Motivation

x

Capacity (Innovation-Specific)

x

Capacity (General)

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- **Motivation:** Degree to which we want the innovation to happen, given all priorities
- **Innovation-specific capacity:** The human, technical and fiscal conditions important to the successful implementation of a particular innovation.
- **General capacity:** Pertains to aspects of organizational functioning (e.g., culture, climate, staff capacity, leadership)

(Scaccia, Cook, Lamont, Wandersman, Castellow, Katz, & Beidas, 2015)

R=MC2

Measure readiness subcomponents

MOTIVATION

- Compatibility
- Priority
- Simplicity
- Relative Advantage
- Trialability
- Observability

INNOVATION-SPECIFIC CAPACITY

- Knowledge, Skills, Abilities
- Implementation Climate
- Program Champion
- Inter-Organizational Relationships
- Intra-Organizational Relationships

GENERAL CAPACITY

- Leadership
- Organizational
  - Culture
  - Climate
  - Innovativeness
  - Structure
- Staff Capacities
- Learning Climate
- Resource Utilization

NCI R01 Development and Validation of a Measure of Organizational Readiness

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PI
UTHealth

Timothy Walker, PhD
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Director, HPV Cancer Prevention Program Co-associate Director for Outreach, St. Jude Comprehensive Cancer Center

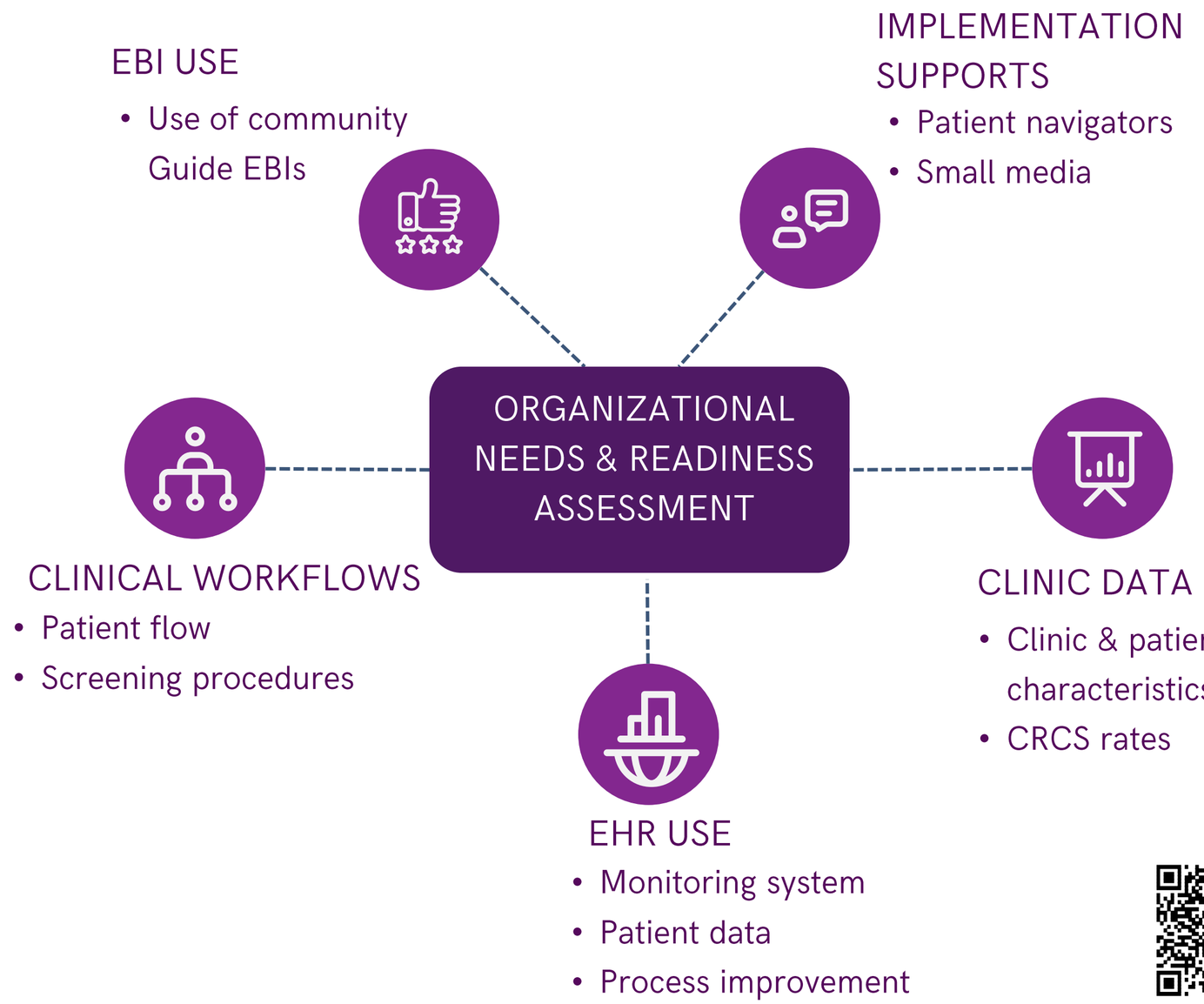
Abraham Wandersman
Wandersman Center

TEXAS CRCCP READINESS ASSESSMENT

R=MC2

- MOTIVATION
- CAPACITY (GENERAL)
- CAPACITY (INNOVATION-SPECIFIC)

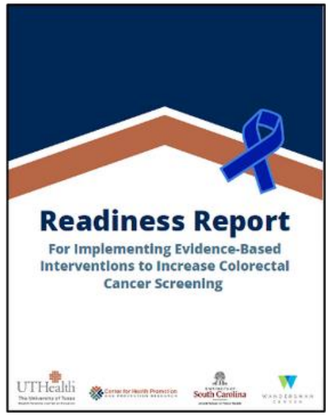
Multi-method approach: in-depth interviews, clinic-level surveys, and direct workflow observations.

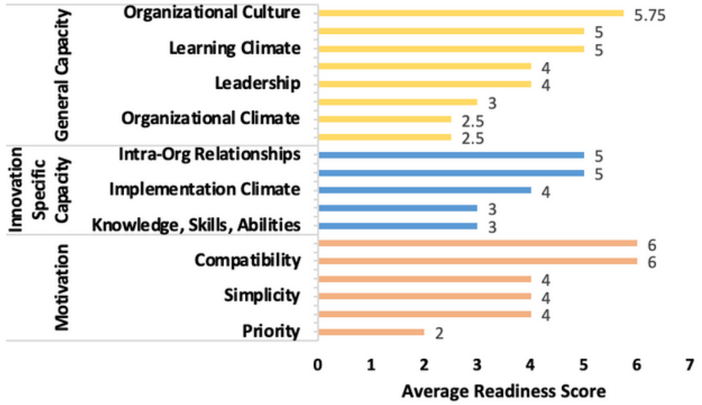


Scaccia, Cook, Lamont, Wandersman, Castellow, Katz, & Beidas, 2015

Using Implementation Mapping to Build Organizational Readiness

READINESS REPORTS





Clinic	Organizational Culture	Leadership	Organizational Innovativeness	Organizational Climate	Staff Capacities	Organizational Structure	Learning Climate	Resource Utilization	Mean General Capacity Score
5	6.7	6.5	6.4	6.6	6.6	6.6	6.6	6.6	6.6
7	6.5	6.2	6.4	6.2	6	6.2	6.3	6.4	6.3
6	6.4	6.4	6.2	6.2	5.8	6.2	6.2	6.2	6.2
2	6.3	6	6.3	6	6	6.3	5.8	5.3	6.0
1	5.6	5.4	5.2	5.2	5.2	5.2	5.1	5	5.2
4	5.2	4.9	4.7	5.1	5.1	4.9	4.7	4.6	4.9
3	4.6	4.8	4.3	4.6	4.2	4.4	4.4	4.1	4.4

READINESS REPORT CAN BE USED TO HELP CLINICS:

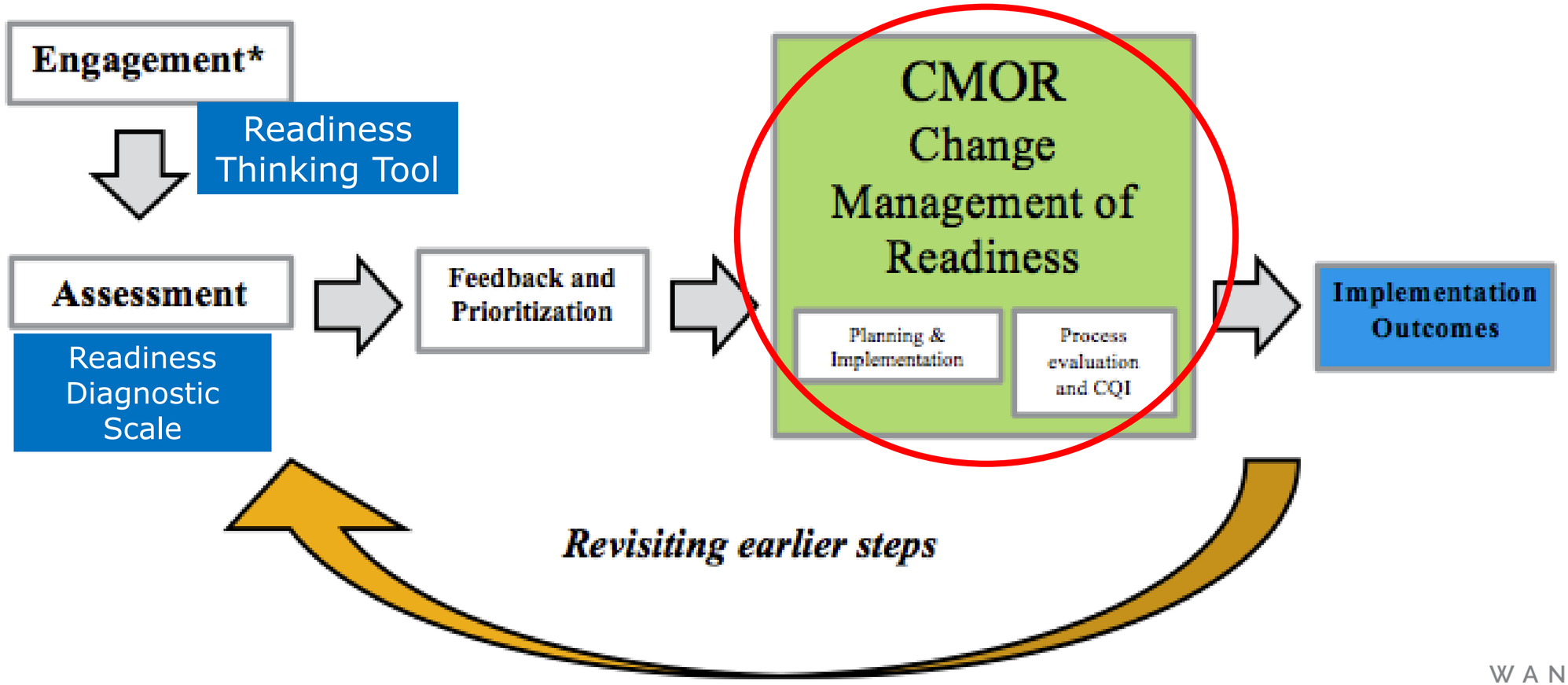
Understand strengths & areas for improvement

Determine which aspects of readiness to focus efforts on & why

Develop a plan for building and/or maintaining readiness

Develop a plan for building and/or maintaining readiness

Readiness Building System



*Engagement is crucial in all areas of RBS

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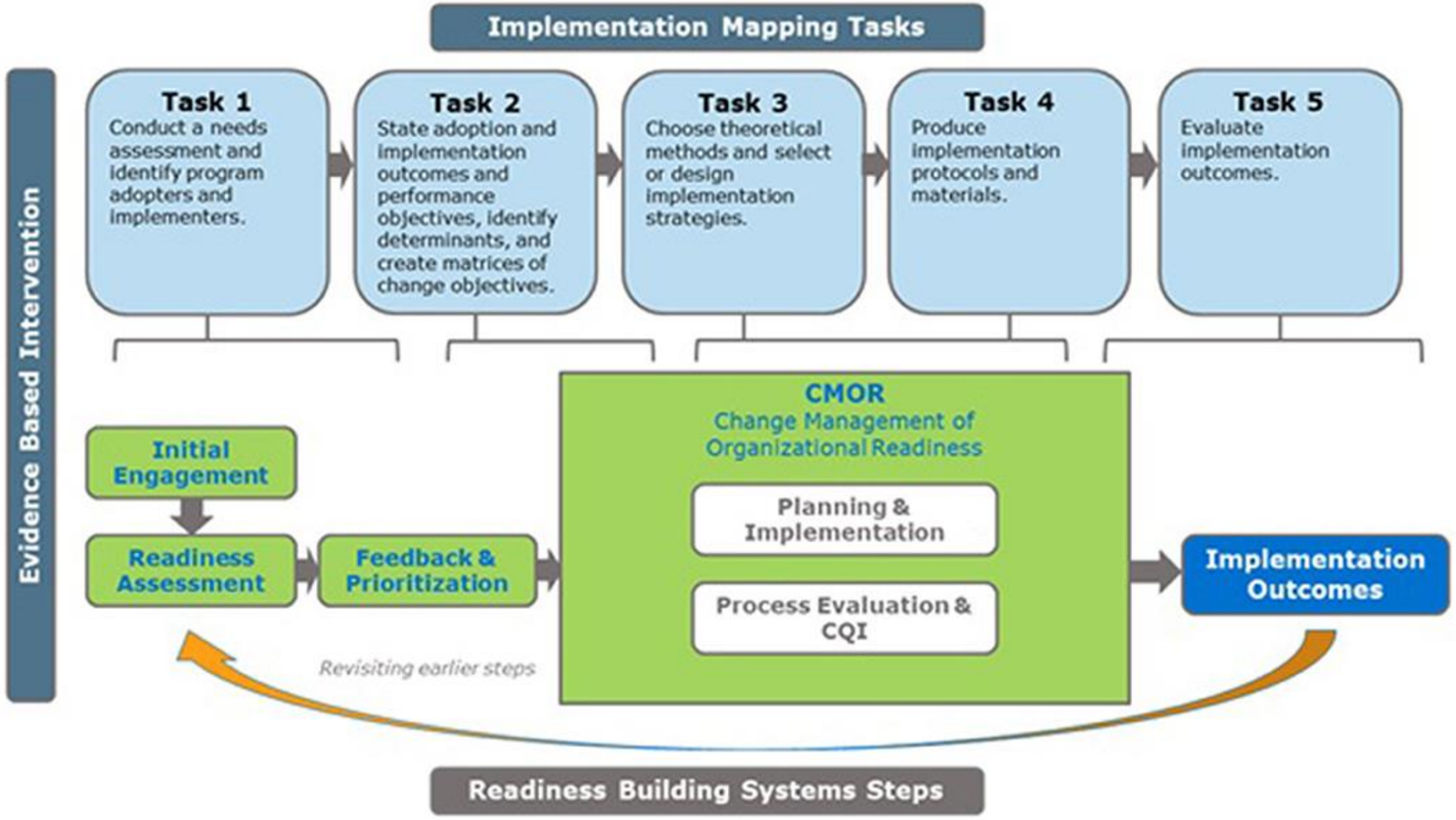
Building Organizational Readiness



ORIGINAL RESEARCH article

Front. Public Health, 12 May 2022
Sec. Public Health Education and Promotion
Volume 10 - 2022 | https://doi.org/10.3389/fpubh.2022.904652

This article is part of the Research Topic
Implementation Mapping for Selecting, Adapting and Developing Implementation Strategies
View all 16 Articles ›

Using Implementation Mapping to Build Organizational Readiness

Amber K. Watson[1*] Belinda F. Hernandez[2] Jenny Kolodny-Goetz[1] Timothy J. Walker[2]
Andrea Lamont[1] Pam Imm[1] Abraham Wandersman[1] Maria E. Fernandez[2]

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CONCEPTUAL FRAMEWORK FOR IMPLEMENTATION STRATEGY DEVELOPMENT AND TAILORING

FORMATIVE WORK

Theories/Frameworks
Social Cognitive Theory, Interactive Systems Framework, R=MC2

Organizational Needs & Readiness Assessment

Community Engagements/ Stakeholder Input

IMPLEMENTATION MAPPING

- Identify performance objectives (PO) (i.e., who has to do what to implement the EBI) & determinants for each implementation behavior and contextual factor.
- Create matrices of change objectives (determinants x PO).
- Identify methods and strategies to influence determinants.
- Plan implementation strategies.
- Develop implementation protocols & materials for implementation strategies.

IMPLEMENTATION PLAN

Implementation Strategies.

- Practice facilitation.
- EHR Optimization.
- Telementoring (via ECHO).
- Use of Champions.
- Professional training & technical assistance.

RE-AIM OUTCOMES

Reach

- Eligible patients who receive CRCS recommendation

Effectiveness

- Screened eligible patients
- Followed-up with colonoscopy among those who screen positive

Adoption

- All EBI components
- Implementation
- Fidelity, Implementation level

Adapted from: Fernandez ME, Schlechter CR, …Wetter DW. QuitSMART Utah: an implementation study protocol for a cluster-randomized, multi-level Sequential Multiple Assignment Randomized Trial to increase Reach and Impact of tobacco cessation in Community Health Centers. Implementation Science. 2020; 15: 9.

IDENTIFY PROGRAM ADOPTERS & IMPLEMENTERS

Different people implemented different or multiple components.

ADOPTERS

WHO WILL DECIDE TO ADOPT THIS INTERVENTION?

- Decision-making authority to start using the program.
- Directly involved in deciding to set up program components.

IMPLEMENTERS

WHO WILL IMPLEMENT THE INTERVENTION?

- Educate staff and patients.
- Communicate with technical support personnel to ensure EHR changes.
- Strong recommendation for HPV vac.
- Providing feedback about performance to clinic staff.

MAINTAINERS

WHO WILL ASSURE THE INTERVENTION CONTINUES OVER TIME?

- Ongoing staff education
- Quality measures
- Incorporate into performance reviews.

Key questions…

BEFORE…

Generating ideas about HOW

OUTCOMES

Specific goals to each adopter, implementer, and maintainer to adopt, implement, and maintain the intervention.

PERFORMANCE OBJECTIVES (PO)

Who needs to do what to adopt, implement, and maintain the intervention?

DETERMINANTS

Why would clinic leadership adopt, implement or maintain the intervention at the clinic?

MATRICES OF CHANGE

Blueprint for identifying, selecting, or developing implementation strategies.
What needs to change in implementation determinants to achieve implementation tasks?

IMPLEMENTATION STRATEGIES

Examples of implementation strategies

PRACTICE FACILITATION

PROJECT ECHO

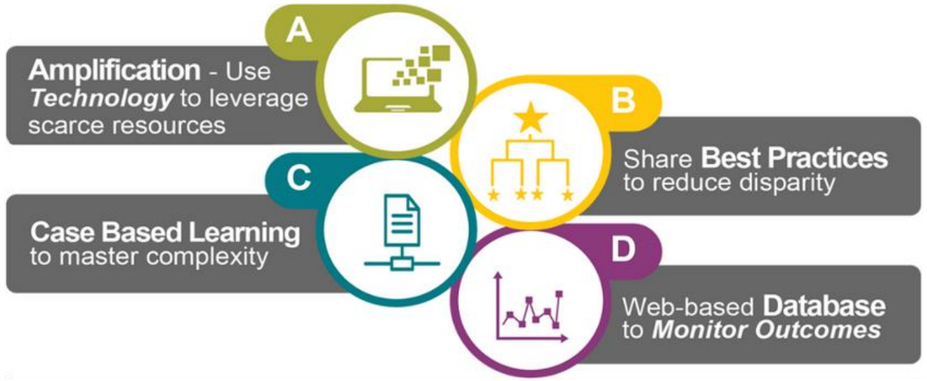
PROGRAM CHAMPION

PROVIDER AND STAFF TRAINING

LINKING WITH EXTERNAL PARTNERS

PROJECT ECHO

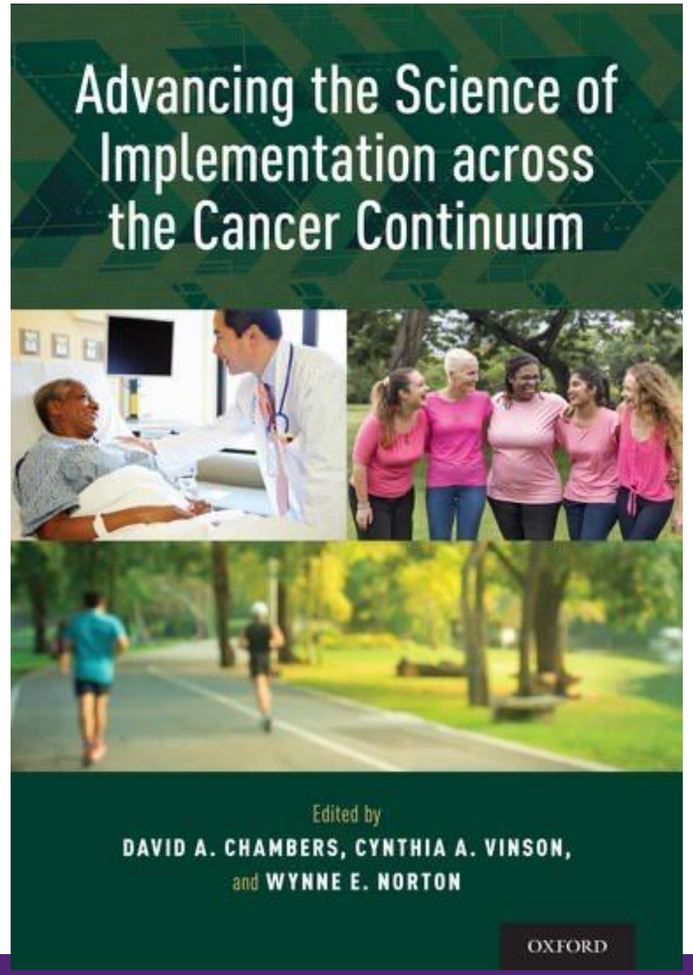
5-Step Project ECHO (Extension for Community Healthcare Outcomes) is an innovative healthcare movement, whose mission is to develop the capacity to leverage knowledge and amplify the capacity to provide best-practice care for underserved people all over the world.

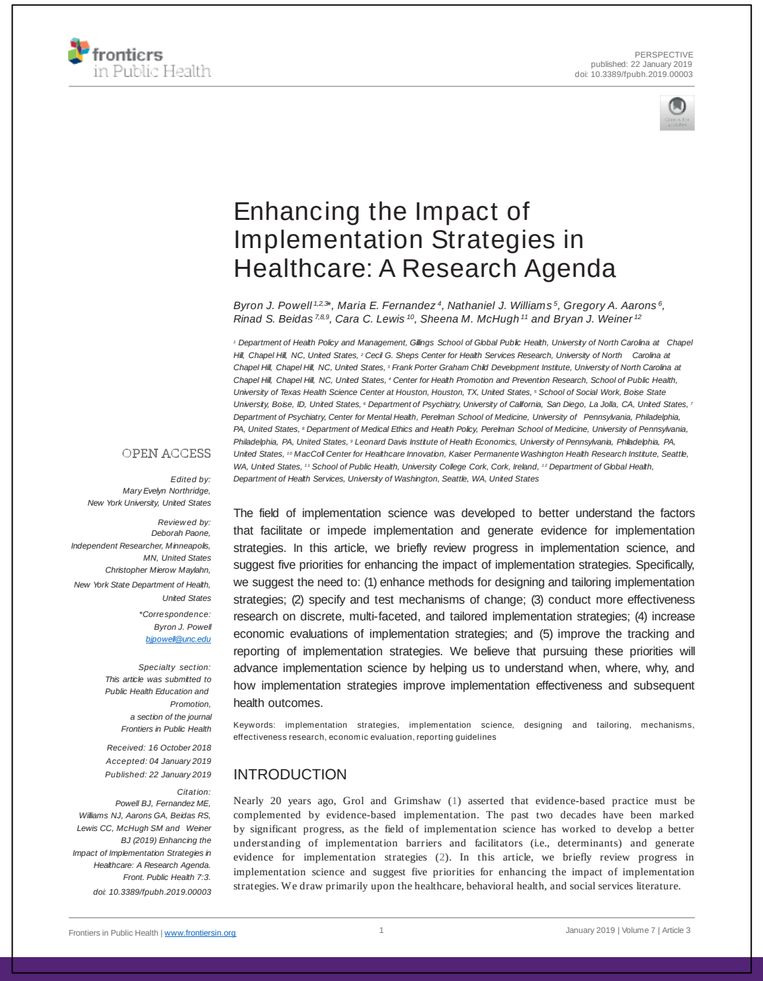


Spring 2021 to Fall 2022 – Monthly every 3rd Thursday from 12:00 PM to 1:00 PM CST		
Date	**Topic**	**Presenter**
5/20/21	Getting started	**Allison Rosen, MS** - Project Director, Center for Health Promotion & Prevention Research; UTHealth School of Public Health
6/17/21	Data Collection	**Susan Fenton, PhD, RHIA, FAHIMA** - Faculty Director – Gulf Coast Regional Extension Center; UTHealth School of Biomedical Informatics
7/15/21	CRC screening policy/testing options	**Durado Brooks, MD, MPH** - Deputy Chief Medical Officer, Screening Business Unit, Exact Sciences
8/19/21	EBIs for CRCS and COVID-19	**Emily Butler Bell, MPH** - Director, NCCRT, Colorectal Cancer Interventions
9/16/21	EBI: Provider Reminders	**Keith L. Winfrey, MD, MPH, FACP** - Chief Medical Officer, NOELA Community Health Center
10/21/21	EBI: Patient Reminders	**Gloria Coronado, PhD** - Distinguished Investigator, Mitch Greenlick Endowed Scientist for Health Disparities

Project ECHO®

Enhancing the Impact of Implementation Strategies





frontiers in Public Health

PERSPECTIVE
published: 22 January 2019
doi: 10.3389/fpubh.2019.00003

Enhancing the Impact of Implementation Strategies in Healthcare: A Research Agenda

Byron J. Powell[1,2,3], Maria E. Fernandez[4], Nathaniel J. Williams[5], Gregory A. Aarons[6], Rinad S. Beidas[7,8,9], Cara C. Lewis[10], Sheena M. McHugh[11] and Bryan J. Weiner[12]*

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Edited by:
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Reviewed by:
Deborah Paone, Independent Researcher, Minneapolis, MN, United States
Christopher Mierow Maylahn, New York State Department of Health, United States

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Specialty section:
This article was submitted to Public Health Education and Promotion, a section of the journal Frontiers in Public Health

Received: 16 October 2018
Accepted: 04 January 2019
Published: 22 January 2019

Citation:
Powell BJ, Fernandez ME, Williams NJ, Aarons GA, Beidas RS, Lewis CC, McHugh SM and Weiner BJ (2019) Enhancing the Impact of Implementation Strategies in Healthcare: A Research Agenda. Front. Public Health 7:3. doi: 10.3389/fpubh.2019.00003

The field of implementation science was developed to better understand the factors that facilitate or impede implementation and generate evidence for implementation strategies. In this article, we briefly review progress in implementation science, and suggest five priorities for enhancing the impact of implementation strategies. Specifically, we suggest the need to: (1) enhance methods for designing and tailoring implementation strategies; (2) specify and test mechanisms of change; (3) conduct more effectiveness research on discrete, multi-faceted, and tailored implementation strategies; (4) increase economic evaluations of implementation strategies; and (5) improve the tracking and reporting of implementation strategies. We believe that pursuing these priorities will advance implementation science by helping us to understand when, where, why, and how implementation strategies improve implementation effectiveness and subsequent health outcomes.

Keywords: implementation strategies, implementation science, designing and tailoring, mechanisms, effectiveness research, economic evaluation, reporting guidelines

INTRODUCTION

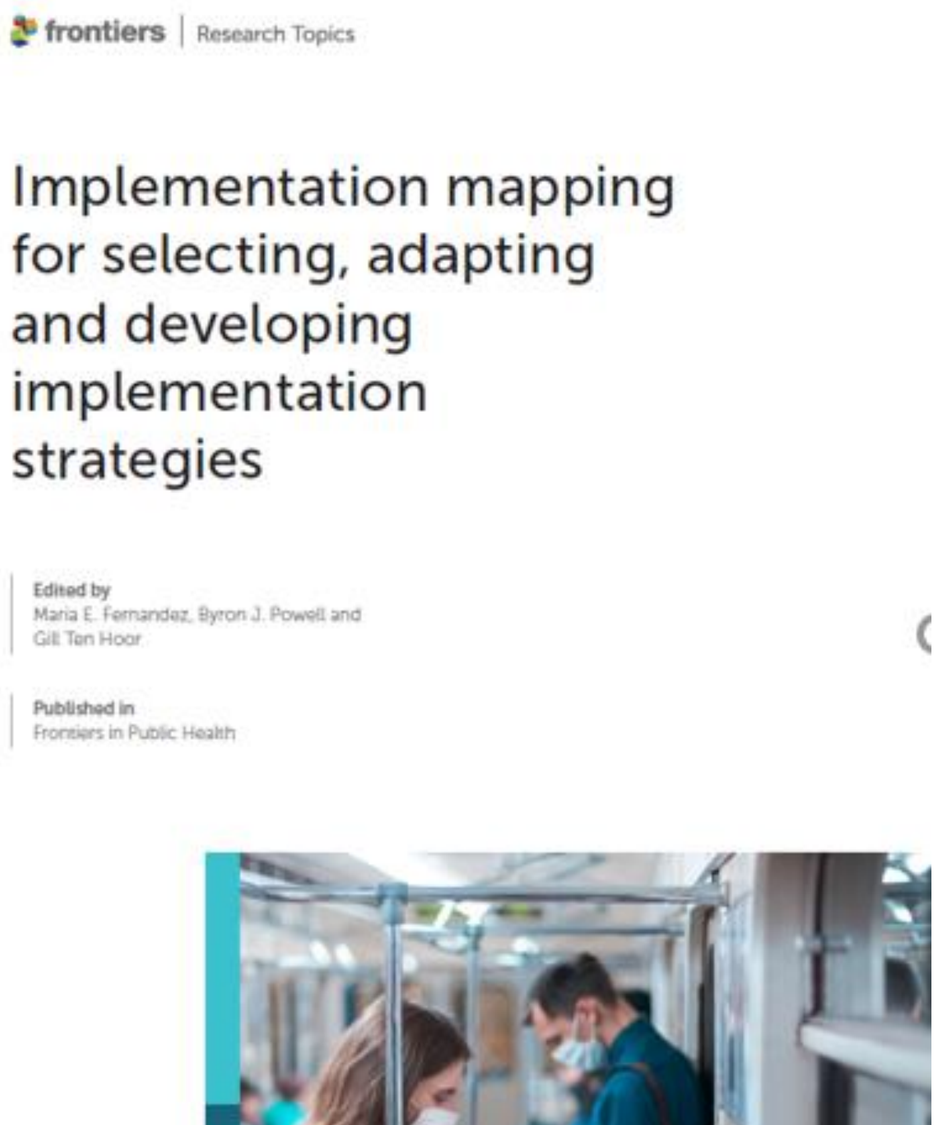
Nearly 20 years ago, Grol and Grimshaw (1) asserted that evidence-based practice must be complemented by evidence-based implementation. The past two decades have been marked by significant progress, as the field of implementation science has worked to develop a better understanding of implementation barriers and facilitators (i.e., determinants) and generate evidence for implementation strategies (2). In this article, we briefly review progress in implementation science and suggest five priorities for enhancing the impact of implementation strategies. We draw primarily upon the healthcare, behavioral health, and social services literature.

1) Enhance methods for designing and tailoring
2) Specify and test mechanisms of change
3) Improve tracking and reporting of strategies
4) Conduct more effectiveness research
5) Increase economic evaluations

Powell, Garcia, & Fernandez (2019)

Special Topic Issue on Implementation Mapping

frontiers in Public Health



05 **Editorial: Implementation Mapping for selecting, adapting and developing implementation strategies**
Maria E. Fernandez, Byron J. Powell and Gill A. Ten Hoor

09 **A Modified Implementation Mapping Methodology for Evaluating and Learning From Existing Implementation**
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15 **Theory-Informed Design of a Tailored Strategy for Implementing Household TB Contact Investigation in Uganda**
J. Lucian Davis, Irene Ayakaka, Joseph M. Ggita, Emmanuel Ochom, Diana Babirye, Patricia Turimumahoro, Amanda J. Gupta, Frank R. Mugabe, Mari Armstrong-Hough, Adithya Cattamanchi and Achilles Katamba

28 **Applying Implementation Mapping to Expand a Care Coordination Program at a Federally Qualified Health Center**
Kelsey S. Dickson, Tana Holt and Elva Arredondo

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49 **Using Implementation Mapping to Build Organizational Readiness**
Amber K. Watson, Belinda F. Hernandez, Jenny Kolodny-Goetz, Timothy J. Walker, Andrea Lamont, Pam Imm, Abraham Wandersman and Maria E. Fernandez

59 **Leveraging Stakeholder Engagement and Virtual Environments to Develop a Strategy for Implementation of Adolescent Depression Services Integrated Within Primary**

Acknowledgements

Bijal Balasubramanian, MBBS, PhD
Lara Savas, PhD
Paula Cuccaro, PhD
Tim Walker, PhD
Cici Bauer, PhD, MS
Belinda Reininger, DrPH
Susan Fenton, PhD, RHIA, FAHIMA
Devakar Rohit, PhD
Serena Rodriguez, PhD, MA, MPH
Natalia Heredia, PhD, MPH
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Ileska Valencia Torres
Joe Padilla, MPH
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SUMMARY

IMPLEMENTATION MAPPING ADVANCES THE FIELD OF IMPLEMENTATION SCIENCE BY:

- Providing a systematic process for designing new strategies using theory, evidence, and community and stakeholder engagement
- Ensuring that strategies developed or selected address barriers to adoption, implementation, and sustainment of EBIs
- Building an actionable and pragmatic knowledge base about what strategies work for what, including clarity on the mechanisms of action
- Advancing models and frameworks to understand relationships between constructs; predictors of

Graduate Certificate in Dissemination and Implementation Science

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School of Public Health

OVERVIEW

This 15-credit hour certificate introduces the concepts of dissemination and implementation to students and other health professionals. The concepts learned while pursuing this certificate will assist researchers and practitioners in translating and testing research advances in public health and healthcare delivery to effective and efficient interventions in multiple settings.

LEARN HOW TO

- Describe the foundations of dissemination and implementation (D&I) science
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- Gain knowledge to adapt health interventions to improve fit in new settings.

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- Designing and Tailoring Implementation Strategies (3 Credit Hours)

ELECTIVE COURSES

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- Health Services Delivery and Performance
- (3 Credit Hours)
- Program Evaluation (3 Credit Hours)
- Evaluation and Improvement of Healthcare Quality (3 Credit Hours)
- Qualitative Research Methods (2 Credit Hours)
- Applied Measurement Theory (3 Credit Hours)
- Community Engagement/ Community-based Participatory Research (3 Credit Hours)

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May 6-9, 2024
9AM - 4PM CST

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COURSE OBJECTIVE
Learn about Intervention Mapping, which offers a step-by-step framework for developing theory-informed and evidence-based health promotion programs and interventions rooted in the behavioral and social sciences.

COURSE DETAILS
Students will:

- Build knowledge and skills in developing, adapting, and implementing theory-informed and evidence-based health promotion programs and interventions rooted in the behavioral and social sciences.
- Focus on a topic of their interest to craft an initial evaluation plan by compiling a needs assessment, program development and implementation strategies.

The course format includes lectures, small group work using problem-based learning, group discussions, and presentations of participant projects.

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PRC PREVENTION RESEARCH CENTERS

IMPLEMENTATION MAPPING: USING INTERVENTION MAPPING TO PLAN IMPLEMENTATION STRATEGIES

UTHealth Houston School of Public Health

May 30-31, 2024
9AM - 4PM CST

This Hybrid Course will be available Virtually or In-Person at UTHealth Houston School of Public Health

COURSE OBJECTIVE
Learn about Implementation Mapping, a systematic approach for planning implementation strategies.

LEARNING OBJECTIVES
1. Explain how use of Implementation Mapping can facilitate implementation strategy design or selection.
2. Describe how implementation science theory and frameworks can inform the Implementation Mapping process and strategy design.
3. Demonstrate an ability to articulate implementation outcomes and tasks for various implementors.
4. Describe how to select theory-based methods and practical applications to influence determinants of implementation.
5. Describe considerations for evaluating implementation outcomes.

REGISTRATION

2-Day Course:
$500

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