

## The Implementation Research Logic Model (IRLM)

A Method for Planning, Executing, Reporting, and Synthesizing Implementation Projects

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OR DRUG ABUSE AND HIV



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RESEARCH

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The Implementation Research Logic Model: a method for planning, executing, reporting, and synthesizing implementation projects

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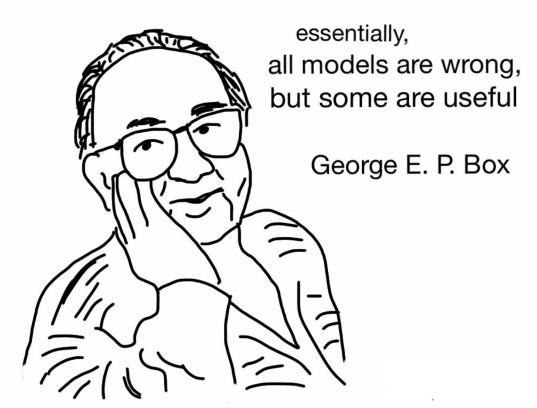
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## Do We Really Need Another Model?







## Yes, We Need Another Model



- Logic models often required by funders (EHE supplements!)
- Integrating the necessary conceptual elements of implementation research, which often involves multiple models, frameworks, and theories, is an ongoing challenge
- Transparency, Rigor, Openness, Specification, & Reproducibility
  - Rigor—the strict application of the scientific method to ensure robust and unbiased experimental design, methodology, analysis, interpretation and reporting of results
  - Improving the specification of phenomena in implementation research is necessary to inform our understanding of how implementation strategies work, for whom, under what determinant conditions, and on what implementation and clinical outcomes (Smith, Li, & Rafferty, 2020)
  - Testable way of explaining phenomena by specifying relations among variables, thus enabling prediction of outcomes (Glanz & Bishop, 2010)



## Logic Models (in general)



- A graphic depiction that presents the shared relationships among various elements of a program or study
- Develop agreement among diverse stakeholders of the "what" and the "how"
- Improve planning by highlighting theoretical and practical gaps
- Support the development of meaningful process indicators for tracking
- Reproduce successful studies / identify failures of unsuccessful studies

Petersen, Taylor, & Peikes, 2013





## Development of the IR Logic Model

**Uses and Elements** 







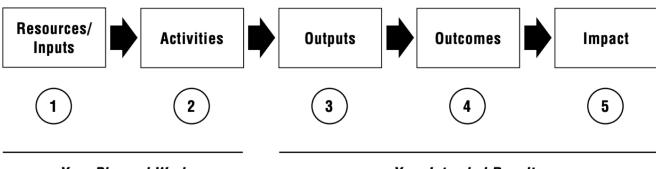
- Used in the study of implementing a new model of patient care in a new physical space Implementation strategies
- Used in the first 6 months of three already-funded implementation research projects to plan for and describe the prospective implementation research aspects of the trials
- Applied in the later stages of a nearly completed implementation research project
- Used in a two-day training hosted by ISC<sup>3</sup>i EHE planning project grantees (post-training survey results will be presented)



## Structure of the IRLM



- Began with the common "pipeline" logic model format used by AHRQ, CDC, NIH, PCORI, and others
  - Familiar to funders, investigators, readers, and reviewers
  - Adapted to integrate existing implementation science frameworks as its core elements with an eye toward facilitating causal modeling



Your Planned Work

Your Intended Results

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- Generalized theory of the IRLM :
  - (1) implementation strategies selected for a given EBP are related to the implementation determinants (context-specific barriers and facilitators)
  - (2) strategies work through specific mechanisms of action to change the context or the behaviors of those within the context
  - (3) implementation outcomes are the proximal impacts of the strategy and its mechanisms, which then relate to the clinical outcomes of the EBP
- IRLM: Aid in the specification of the relationship between foundational elements of an IR study
  - Determinant(s) → Implementation Strategy → Mechanism of Action → Outcomes



## **Definitions of IRLM Elements**



### Determinants

Factors that might prevent or enable improvements (barriers & facilitators); may act
as moderators or 'effect modifiers,' or as mediators; indicating that they are links in
a chain of causal mechanisms (CFIR, Damschroder et al. 2009)

### Implementation Strategies

 Supports, changes to, and interventions on the system to increase adoption of EBPs into usual care (Powell et al. 2012; Powell et al. 2015)

### Mechanisms of Action

 Processes or events through which an implementation strategy operates to affect desired implementation outcomes (Lewis et al. 2018)

### Outcomes

- **Implementation:** the effects of deliberate and purposive actions to implement new treatments, practices, and services (Proctor et al. 2011)
- Clinical: the direct effects on participants of the EBP (e.g., symptoms, infection)



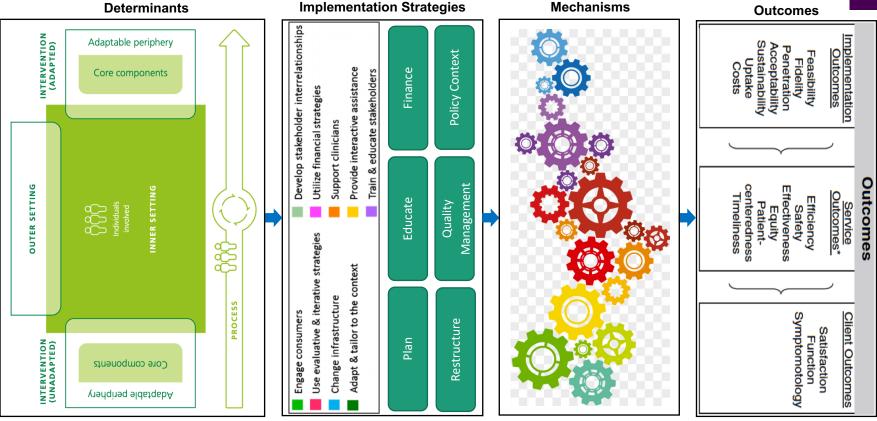


## **IRLM Formats**



### The Implementation Research Logic Model (IRLM)

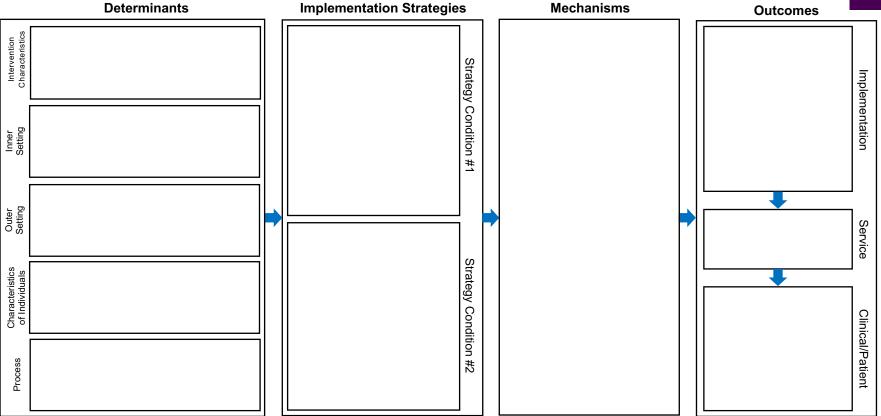






## **IRLM for Comparative Implementation**

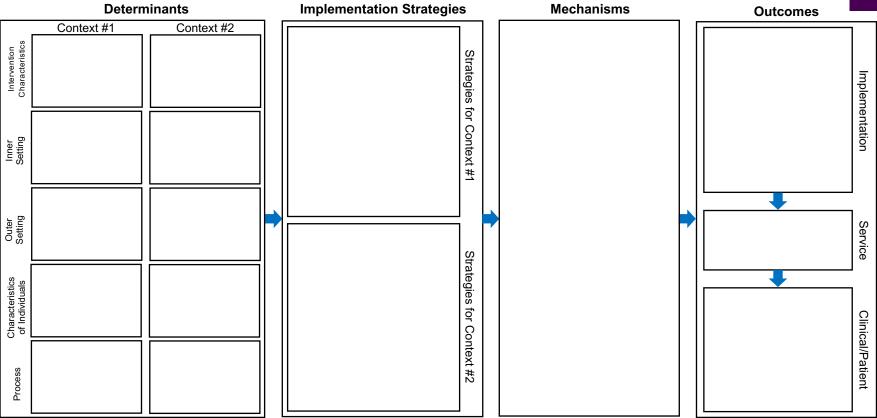






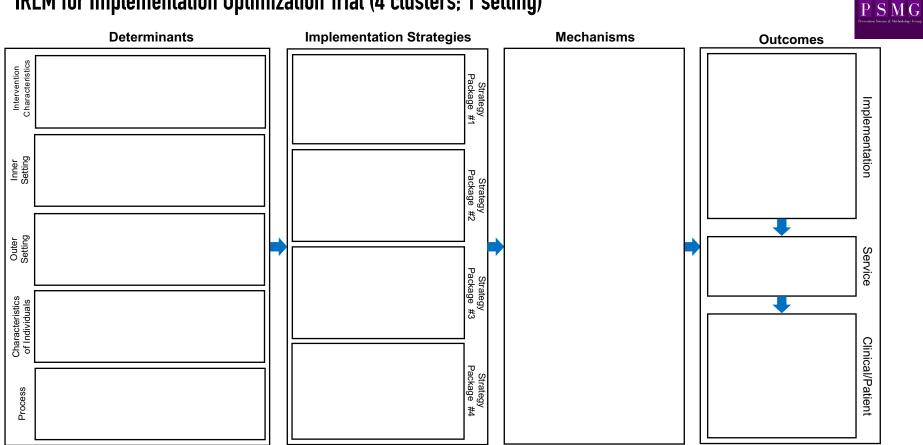
### IRLM for Multi-Context Implementation of Single Intervention





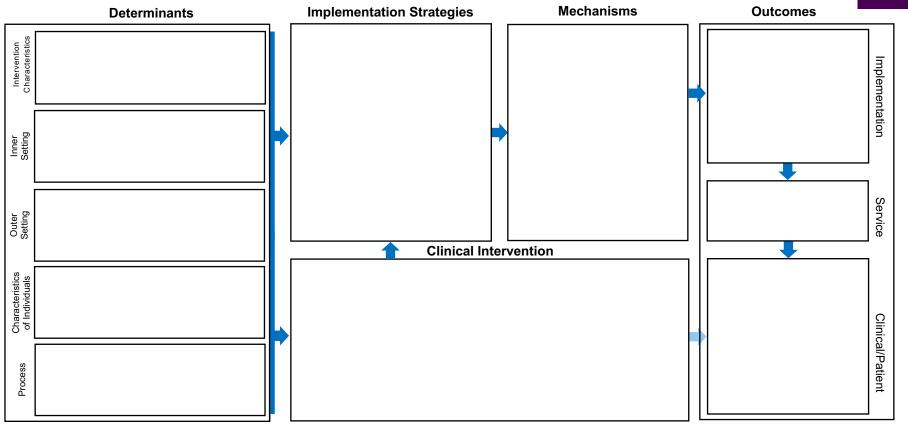


### IRLM for Implementation Optimization Trial (4 clusters; 1 setting)



## **IRLM** with Clinical Intervention



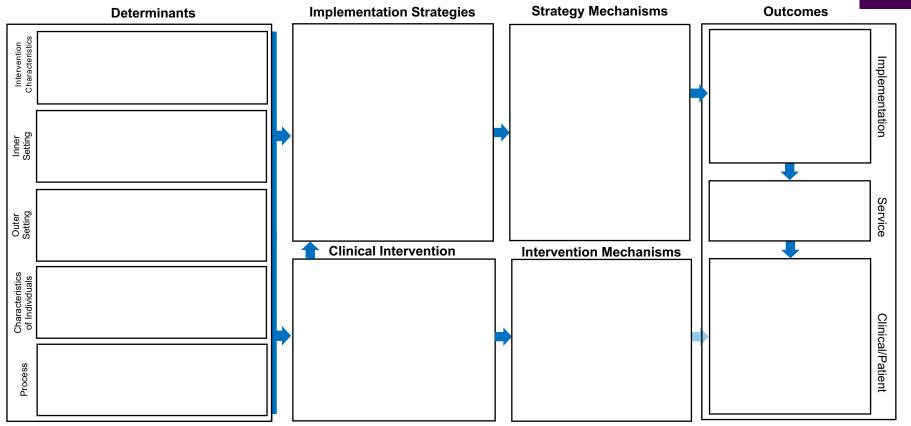


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### **IRLM with Clinical Intervention and Intervention Mechanisms**





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## Using the IRLM

**Guiding Principles** 





## Principle 1: Strive for Comprehensiveness

### Determinants

- Include all relevant determinants and not simply limit reporting to those that are hypothesized to be related to the strategies and outcomes
- Valence should be noted
  - Simply adding plus (+) or minus (–) signs for facilitators and barriers, respectively
  - Using a coding system, such as that developed by Damschroder et al. 2013, to indicate the relative strength of the determinant
    - –2 (strong negative impact)
    - –1 (weak negative impact)
    - 0 (neutral or mixed influence)
    - 1 (weak positive impact)
    - 2 (strong positive impact)
- Try not to use study-specific adjectives or change the name of the determinant (e.g., greater relative priority, addresses patient needs, good climate for implementation)





## Principle 1: Strive for Comprehensiveness

- Implementation strategies
  - First, list all strategies in the system
  - Second, strategies should be labeled to indicate whether they were:
    - (a) in place in the system prior to the study;
    - (b) initiated prospectively for the purposes of the study (particularly for experimental study designs);
    - (c) removed as a result of being ineffective or onerous; or
    - (d) introduced during the study to address an emergent barrier or supplement other strategies because of low initial impact
  - Relevant for IRLM used during planning, as an ongoing tracking system (article in process), for retrospective application to a completed study, and in the final reporting of a study





## Principle 1: Strive for Comprehensiveness

- Outcomes
  - List all measured outcomes.



## Principle 2: Indicate Key Conceptual Relationship

- Indicate the relationships between elements in a manner aligning with the specific theory of change for the study
  - Provide some form of notation to indicate these conceptual relationships using superscripts (preferred), color-coding, arrows (limited), or a combination of the three
    - Such notations in the IRLM facilitate reference in text to the study hypotheses, tests of effects, causal chain modeling, and other forms of elaboration
  - When presenting the IRLM using presentation programs (e.g., PowerPoint, Keynote, Prezi), colors and arrows can be helpful, and animations can make these connections dynamic and sequential without adding to visual complexity







- Primary Outcomes
  - Indicate the primary outcome(s) at each relevant level of the study design (i.e., clinician, clinic, organization, county, state, nation)
  - The levels should align with the specific aims and the level(s) targeted by the implementation strategy/ies
  - Suggestion: Include downstream health services and clinical outcomes even if they are not measured, as these are important for understanding the logic of the study and the ultimate healthrelated targets

## Principle 3: Specify Critical <u>Study Design</u> <u>Elements</u>



- For quasi/experimental designs
  - Clearly label the independent variable(s) (i.e., the strategies that are introduced or manipulated or that otherwise differentiate study conditions)
    - important for internal validity and for differentiating conditions in multi-arm studies
- For comparative implementation trials
  - Indicate the determinants, strategies, mechanisms, and (potentially) the outcomes that differentiate the conditions
  - Might need to use an IRLM for each arm when the strategies either occur across two delivery systems or are simply were very different, by design
- For implementation optimization designs
  - Specify the different combinations, packages, or conditions being tested



## Principle 3: Specify Critical <u>Study Design</u> <u>Elements</u>



- Additional specification options
  - Users of the IRLM can specify any number of additional elements that may be important to their study
    - Notate those elements of the IRLM that have been or will be measured versus those that were based on the researcher's prior studies or inferred from findings reported in the literature
    - Indicate when implementation strategies differ by level or unit within the study (in large multisite studies, strategies might not be uniform across all units, particularly those strategies that already exist within the systems)
    - Be creative ©





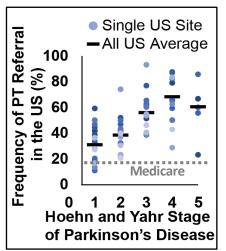
## PSMG IRLM Example

Sustaining Proactive Physical Therapy (PT) for People with Early Parkinson's Disease (PwEPD)



## Implementing an Evidence-Based Clinical Intervention

- Sustaining regular exercise is associated with a slower decline in mobility and quality of life in people with Parkinson's.
- How do we get people with Parkinson's to exercise?
  - Physical therapy (PT) is a sustainable existing intervention that isn't reliant on grant funding.
  - Clinical Practice Guidelines support PT soon after diagnosis for exercise advice.
  - But people with Parkinson's don't regularly go to PT, especially not early after diagnosis.





**Project Context and Timeline** 

> Phys Ther. 2019 Dec 16;99(12):1644-1655. doi: 10.1093/ptj/pzz129.

**Using Implementation Frameworks to Provide Proactive Physical Therapy for People With Parkinson Disease: Case Report** Miriam R Rafferty 1, Jillian MacDonald 2, Alexandria Byskosh 3, Laura Sloan 4, Santiago Toledo 5 , Christina Marciniak <sup>6</sup> , Tanya Simuni <sup>7</sup>

Affiliations + expand

PMID: 31508801 PMCID: PMC7372734 DOI: 10.1093/ptj/pzz129

Free PMC article

Fall Fall Fall 2015 2016

2017

Fall Fall 2018 2019

Chicago

Lake Michigan

Blk Grove Village

P S M G

2016

Proactive PD

Program established

Spread in 2018

**Local Implementation of Proactive PT for Early PD** 

**Study Spread & Sustainment in Health System** 

**IRLM Spread & Sustain Beyond Health System** 

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### Sustaining Proactive Physical Therapy (PT) for People with Early Parkinson's Disease (PwEPD)



Implementation

#### **Determinants**

#### **Evidence-Based Clinical Intervention**

#### Mechanisms

### Outcomes

## Intervention Characteristics

- + CPGs support this EBI explicitly
- + Uses institutional processes
- Weak objective measures of exercise and physical activity

### Inner Setting

- +/- Organizational endorsement of EBIs & learning health system
- +/- Networks of clinics promote communication & collaboration

### Outer Setting

- + Demand from patients and MDs
- +/- Collaborations between therapy, PM&R, and neurology
- - Insurance coverages varies

## Characteristics of Individuals

- +/- Site champions needed, bandwidth for professional growth
- +/- Clinical manager support
- +/- Informed patients

### -/+ Training, staffing, scheduling, adaptation, and sustainment barriers

 +/- Facilitator and site champions address barriers iteratively

- 1. MD refers PwEPD to PT
- 2. Physical therapists assesses exercise, gait, and balance
- Therapist prescribes, trains, and facilitates comprehensive exercise plan in 1-4 visits
- Therapist monitors patients' exercise participation and progression with regular rechecks every 3-12 mo

### Key Implementation Strategies

#### **Process**

- Local needs assessment
- Adaptable infrastructure changes (schedule triggers)
- · Record OM in EMR or other

### Organization/System

- Market to PwEPD and MD
- Engage consumers and leaders

#### Staff

- Training & shared materials
- Regular champion calls
- Audit & feedback

- Increasing MD referrals increases access to PT
- Trained and supported physical therapists will effectively guide patients to effective, individuallytailored, and supported exercise participation
- Increased knowledge of Proactive PT approach through system increases buy-in and proportion of PWEPD accepting PT referrals
- PwEPD who are wellinformed of their functional status and exercise strategies, and how have regular touch-points with physical therapists, will be more likely to increase and maintain regular exercise
- PwEPD better able to identify barriers and contact team

- Increased MD referrals to PT in PwEPD
- High program fidelity from physical therapists
- Increased adoption of Proactive PT by referrers, physical therapists and patients over long-term



- · Access to PT
- PT effectiveness
- Sustainable

### +

### Proximal (Measured):

- High # of PwEPD exercising 150 min/wk
- Increased duration & intensity of exercise

Distal (Not Measured):

Slower functional decline

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Abbreviations: CPG=clinical practice guidelines; EBI=evidenced based intervention; EMR= electronic medical record; MD= medical doctor; OM=outcome measures; PM&R=physical medicine and rehabilitation; PwEPD=people with early PD; PT=physical therapy Reference: Rafferty MR, MacDonald J, Byskosh A, Sloan L, Toledo S, Marciniak C, et al. Using Implementation Frameworks to Provide Proactive Physical Therapy for People With Parkinson Disease: Case Report. Phys Ther. 2019;99(12):1644-55.

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Clinical/Patient

Service

### Completed Hypothetical IRLM

### Obesity Management Intervention implemented in Community Health Centers (CHCs)



Implementation

Service

#### **Determinants**

Intervention Source +2 care +2 Adaptability -1 B,F Relative Advantage +2 Complexity (budget) -1 A, L Evidence Strength & Design quality & packaging quality +2 Competing demands -1 D,K Evidence Based +1 Appropriate in primary

Implementation climate Structural Characteristics +1 Networks & communications - Tension for change +1 +1 K - Compatibility -

Readiness for Implementation J -Tangible fit +2 Leadership engagement Alignment +1 +2 D Workflow -1 L

Available Resources +1 - Learning climate +1

Patient needs & resources -2 C Cosmopolitanism 0/-1 B, C

Setting

Inner :

Char. of Individuals

External policy & incentives (ability to get reimbursed)

- CHW +1 / MD +1 / Health Promotors -2
- State-wide initiatives/task forces, etc. +1 E

Knowledge & Beliefs about Intervention +1 A Self-efficacy +1 B, F Training +2 A, B, F, G, I, K

Engaging +1 Opinion Leaders +2 D Champions +2 A

External Change Agents. +2 E Reflecting & Evaluating

Planning +1 F +1 G, H, J Implementation Strategies

Training

Training modules A

Learning collaborative B

Community Resources Engagement capturing local knowledge c

Engaging CHC Leadership D

Engaging External, state-level organizations, national organizations E

Ongoing meetings F

Technical Assistance

Local CHC Champions

Fidelity monitoring – quarterly checklist <sup>G</sup>

Data monitoring and feedback H

Utilize financial strategies Making billing easier

Accessing funding?

Quality Improvement J

10. Identify and form new clinical teams K

11. Clinician reminders (BMI alerts, labs, counseling, referrals) L

**Mechanisms** 

Knowledge and skill set improved for clinic staff (complexity) A, B (G, H, J, K, F, L)

Self-efficacy improved of clinic staff B, K, F, H (G, J, L)

Flexibility of the package is continually adapted (adaptability, complexity) J (D, E)

Internal structural barriers are reduced (competing demands) D(K)

External support for patient needs are identified, leveraged, and made available (external policy and incentives) C(E)

External policies and incentives for reimbursement are accessed E(I)

\*primary (secondary)

**Behavioral Obesity Management Program** 

1. Individual/group visits

2. Multidisciplinary team

Centralized case management

b. Clinician champion

3. Bluetooth-enabled home scales

2-way Automated Text Messaging

On-site recruitment/enrollment

6. Online Community Resources Guide

7. Online Self-Guided Nutrition Resources

8. EHR support tool build

BMI alert

BMI longitudinal tracking

Alerts for labs

Physical Activity/Nutrition Counseling

**Outcomes** 

Reach A, B, F, H, L

Enrollment

Clinic population

Referrals (within provider)

Adoption A,D

Training components

Program element use c

Implementation F, J

Acceptability (program, strategies) A,D

Feasibility (program, strategies)

Fidelity (program, strategies) A, B,

Maintenance/Sustainability B,D, E,F, G, I, Retention Rate (program) C, H, J Budget Impact Analysis E, I

\*BOLD = primary outcomes

Equity (reach rates by race, age, BMI)

Timeliness (time from identification to program enrollment) H, L



BMI C, H, K, L Quality of Life C, K, L

Home health routines C, K, L

Binge Eating K, L Stress C, K, L

Acceptability (program, strategies) K, Feasibility (program, strategies) K, L

Satisfaction (program) H, K, L Retention/Completion C, H, K, L

Cost Effectiveness 1

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# Using the IRLM for Different Purposes and Stages of Research

Planning, Executing, Reporting, Synthesizing





## **Planning**

- Often begins with the known parameter(s) of the study
  - Working from the two "bookends" of the IRLM (context and outcomes often known; strategies, mechanisms, and even the EBP often are not)

 Work with community partners and/or organization stakeholders to fill in the implementation strategies that are likely to be feasible and effective (Waltz et al. 2015)

 Posit conceptually derived mechanisms of action based on determinants, strategies, and targeted outcomes



## Executing

- Majority of the parameters will be known
- However, through completing the IRLM prior to the start of studies, we found that:
  - IRLM helped to reveal important contextual factors
  - Additional implementation strategies were needed to complement the primary ones proposed
  - Mechanisms needed to be added and measured
- Completed IRLM serves as "protocol" and can form the basis for ongoing tracking of what occurs, what is altered, deviations, etc.





## Reporting

- Nearly all elements of the IRLM will be known
- Means of showing what happened during the study
- Accurate reporting of the hypothesized relationships that were observed
- Facilitates communication of the findings





## Synthesizing

• **Purpose:** draw conclusions for the implementation of an EBP/similar EBPs in a particular context (or across contexts) that are shared and generalizable to provide a guide for future research and implementation

Being applied in a NCI-funded research consortium

# Supporting Text and Resources



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•	Data	re:	deteri	mına	ints

•	M	lea	as	u	r	е	S
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<ul> <li>Strategy specification (</li> </ul>	(Proctor, Powell, & McMillen, 2013	3)
--	------------------------------------	----

- Trial design description and methods
- Implementation plan/process model (e.g., EPIS)

Text	Table	Figure
✓	<b>√</b>	<b>√</b>
✓	✓	
<b>√</b>	<b>√</b>	
<b>√</b>	<b>√</b>	<b>√</b>
<b>√</b>		<b>√</b>
<b>√</b>	✓	✓

By utilizing superscripts, subscripts, color, and other notations within the IRLM, it is easy to refer to (a) hypothesized causal paths in theoretical overviews and analytic plan sections; (b) planned measures for determinants and outcomes; and (c) specific implementation strategies in text, tables, and figures.





# Acceptability and Usability of the IRLM

Results of a Post-Training Survey of EHE Planning Project Grantees

# ISC<sup>3</sup>I's Ending the HIV Epidemic Summit



- Coordinating and technical assistance center for grantees funded under the national EHE plan
- 2-day in-person training in Chicago, IL, in October 2019
- *N*=132 participants from 63 projects
  - *n*=129 pre-training survey
  - n=66 post-training survey 6 weeks after
    - 42 investigators, 24 implementation partners; 68.2% women
    - 44.6% indicated having completed a full draft of the IRLM for their project
- 10 items related to the IRLM plus one about the general logic of implementation research
  - Rated on a 4-point scale from 1 (not at all) to 4 (very much)





# IRLM was either "moderately" or "very" helpful in:

1)	Improving the rigor and reproducibility	77.7%, <i>M</i> =3.05*
2)	Serving as a "roadmap" for the project	74.0%, <i>M</i> =3.08
3)	Clearly reporting and specifying the project plan	67.8%, <i>M</i> =2.94
4)	Understanding connections between determinants, strategies, mechanisms, and outcomes	66.3%, <i>M</i> =2.92
5)	Identifying gaps in the IR logic of their project	64.2%, <i>M</i> =2.86
6)	Deepening their knowledge of IR methods	62.9%, <i>M</i> =2.83
7)	Planning the project	61.3%, <i>M</i> =2.82
8)	Developing consensus and understanding of the project among diverse stakeholders involved	58.8%, <i>M</i> =2.75

51.3%, *M*=2.54

9) Identifying gaps in research questions/analyses

## Additional Results



- 74.1% (*M*=3.02, *SD*=.886) said the <u>worksheets</u> provided during the summit were "*moderately*" or "*very*" helpful in completing the IRLM
- 77.6% (*M*=3.18, *SD*=.827) said their <u>knowledge on the logic of implementation research</u> increased "*moderately*" or "*very much*" after the two-day training
- No statistically significant difference between investigators and implementation partners
  - Approached significance: Investigators scored higher on project planning, reporting/specifying project plan, and knowledge of IR logic

## EHE Year 2 RFA



plans to monitor and evaluate the ability of the activities to achieve the outcome. Most importantly, applicants must clearly indicate how the proposed activities outlined in the supplement requests are expected to lead to development of the stated goals.

c. Provide an implementation logic model and describe what aspects of the logic model are being studied and with emphasis on implementation barriers/facilitators (determinants), how implementation strategies will address these determinants, and which implementation outcomes will be measured and expected to improve. Describe the implementation science framework or model utilized to support the logic model and to guide the study design and evaluation model.



# Resources for Using the IRLM

Quick Reference Guide, Worksheets, Templates, Examples

**IRLM** Website



# Guide Reference uick

#### **Determinants** Factors that might prevent or enable improvements (barriers & facilitators). May act as moderators, effect modifiers, or mediators, indicating that they are links in a chain of causal mechanisms. Intervention source; Evidence Intervention strength and quality: Relative advantage; Adaptability; Trialability; Complexity; Design quality and packaging; Cost Structural characteristics: Networks and communication; Culture: Implementation climate; Readiness for implementation Patient needs and resources: Cosmopolitanism; Peer pressure: External policies and incentives Characteristics of Individuals Knowledge/beliefs about

#### Implementation Strategies

Interventions on the system to increase adoption of evidencebased innovations into usual care. A theory- or logic-driven connection should link an implementation strategy to (a) the barriers it will attempt to overcome and/or (b) the facilitators it will attempt to leverage.

#### **Types**

- 1. Plan; Educate; Finance; Restructure; Quality management; Policy context (Powell et al., 2012; Bunger et al., 2017)
- 2. Engage consumers; Evaluate; Change infrastructure; Stakeholder interrelationships; Financial strategies: Clinician support; Interactive assistance; Train and educate: Adapt (Powell et al., 2015; Waltz et al., 2015)

Strategies should be specified by the following characteristics:

Actor; Action; Action target; Temporality: Dose: Outcome affected; Justification for use (Proctor et al., 2013)

#### Mechanisms

Processes or events through which an implementation strategy operates to affect desired implementation outcomes (Lewis et al. 2018)

Mechanisms explain how an implementation strategy has an effect by describing the actions that lead from the administration of the strategy to the most proximal behavioral (individual. system) and/or implementation outcomes (i.e., mechanisms are the exact series of steps through which the change came about; Kazdin, 2007).

Some potential mechanisms:

- 1. Altering the status of a determinant.
- 2. Changing the behavior or attitude of an implementer (i.e., a proximal outcome that precedes an implementation outcome)

Note. Although mediation analysis can be informative, mediators identified statistically are not necessarily mechanistic.

#### **Outcomes**

P S M G

The effects of deliberate actions to implement an EBI.

#### Types

- 1. Reach; Adoption; Implementation; Maintenance
- (RE-AIM; Glasgow et al., 1999) 2. Acceptability; Adoption;
- Appropriateness; Cost; Feasibility, Penetration; Fidelity; Sustainability (Proctor et al., 2011)
- 3. Speed and Quantity (Chamberlain, Brown, & Saldana, 2011)

Efficiency; Safety; Equity; Effectiveness: Patientcenteredness: Timeliness (IOM Standards of Care, 2006)

Satisfaction **Functioning** Symptomatology ...many others

Clinical/Patient



Individual

identification with the

intervention; Individual

stage of change; Self-efficacy;

organization; Other attributes

Engaging; Planning; Executing;

Reflecting and Evaluating

	Implementation Research L	Inner Setting	Implementation Research Logic		From the list of ir	Implementation Research Lo		Expert Recommendations for Imple	menting Change (ERIC; Powell et al., 2015; Waltz et al
	IRLM — Deter	Structural character	IRLM — Impleme		to your project. F	IRLM — Impler	┰	Use evaluative and iterative	- Assess for readiness and identify barriers and fa
	Smith, Li, & Rafferty, 2	Networks and	Smith, Li, & Rafferty, 2020		Implementatio	Smith, Li, & Rafferty, 2	0	strategies	- Audit and provide feedback
-1/1/1	Determinants of imple	communication			RE-AIM Framev	In implementation res	•		- Develop and implement tools for quality monitor $P \mid S \mid M \mid G$
V V	Often, researchers thi	Culture	Implementation outcome			- An evidence-based in	n		- Conduct local need assessment Prevention Science & Methodology Group
	mediators, moderator	Implementation clir	treatments, practices, and		Reach	- An implementation i			- Obtain and use patients/consumers and family
	comes from the Conso		success, (2) proximal indications service and clinical/patien			To avoid inevitable co		Provide interactive assistance	- Facilitation
	1. From the list of CF	- Compatibility	service and clinical/patien	—	(Effectiveness)	To avoid inevitable col	1		- Provide local technical assistance
	project. It is impor	- Relative priority	,		(Effectiveness)	When implementing a	r		- Provide clinical supervision
	p. 0,000 10po	- Incentives & rev				strategies exist in the	⊩	Adapt and tailor to context	- Centralize technical assistance - Tailor strategies
	2. Circle any determi	- Goals and feedb		—	Adaption	From either taxono		Adapt and tailor to context	- Promote adaptability
	.	- Learning climate	1		Adoption	considering for you			- Use data experts
	3. For each determin	Readiness for	1			a. For help sel			- Use data experts - Use data warehousing techniques
		implementation		I—		ERIC Match		Develop stakeholder	- Identify and prepare champions
	√ Determin	- Leadership enga	,		Implementation	2. For each strategy of		interrelationships	- Organize clinician implementation team meetings
	Intervention Cha	- Available resour	1			a. A full list of		- men ciacionsimps	- Recruit, designate, and train for leadership
	intervention soul	- Access to knowle				https://link			- Inform local opinion leaders
	Evidence strengt	Characteristics of Ir				b. A full list of	1		- Build a coalition
	quality	Knowledge/beliefs	-	Щ		https://imp	4		- Obtain formal commitments
	Relative advanta	intervention	Unlike clinical/patient out		Maintenance	3. Add your discrete s		Train and educate stakeholders	- Conduct ongoing training
	Theracire durantes	Individual stage of o	service provider and typic			PrEP example proje providers/staff on			- Provide ongoing consultation
	Adaptability	individual stage of C	researchers, whereas oth			providers/stair off			- Develop educational materials
		Self-efficacy	-			√ Strategy	4		- Distribute educational materials
	Trialability	Jen-emcacy	To identify implementation			Bunger et al., 2017			- Use train-the-trainer strategies
		Individual identifica	downstream/ distal/long-		Dunatau at al. 0	Planning	╙		- Create a learning collaborative
	Complexity	with the organization	1. For the evidence-base		Proctor et al., 2		ı	Support clinicians	- Facilitate relay of clinical data to providers
		Other attributes	outcomes you are inte		Acceptability		ı		- Remind clinicians
		Other attributes	outcomes, etc. Add th				1		- Develop resource sharing agreements
	Design quality an			—	A -1 1'	Education	1		- Revise professional roles
	packaging	Draces	2. From the list of service		Adoption	Ladeation	⊢	Engago consumors	Create new clinical teams     Involve patients/consumers and family members
	Cost	Process	project. Add these to	$\vdash$	A			Engage consumers	- Involve patients/consumers and family members - Intervene with patients/consumers to enhance uptake and
	Outer Setting	Engaging Oninion loaders	۷ Service		Appropriateness				adherence
	Patient needs an	- Opinion leaders - Formal internal	V Service outcome			Finance			- Prepare patients/consumers to be active participants
	resources						-		- Increase demand
	. coources	implementation - Champions	Safety Av	$\vdash$	Cont	Restructure			- Use mass media
	Cosmopolitanism	- External change		$\vdash$	Cost			Utilize financial strategies	- Fund and contract for the clinical innovation
			re		Feasibility	Quality managem	1		- Access new funding
	Peer pressure	Planning			e: 1 Pr	Quality managem	1		- Alter incentive/allowance structures
			Equity Pr		Fidelity				- Make billing easier
		Consulting	- as				$\perp$		- Alter patient/consumer fees
	External policies	Executing	Patient- Pr					Change infrastructure	- Mandate change
	incentives	Reflecting and evalu	CCITCCICCICSS   III	$\vdash$	Penetration/Upt	Policy			- Change record systems
			Timeliness Re		Sustainability				- Change physical structure and equipment
			W				$\perp$		- Change service sites

## **IRLM** Website





https://cepim.northwestern.edu/implementationresearchlogicmodel/





# **Concluding Thoughts**



# **Concluding Thoughts**

- Visual depiction of implementation project
- Usability is high for seasoned and novice implementation researchers alike
- Could increase the rigor and transparency of complex studies that ultimately could improve reproducibility
- Common structure to increase consistency
- Method for more clearly specifying links and pathways to test theories
- Simplified format balance depth and detail
- May inhibit creative thinking if applied too rigidly



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