Implementation Science Coordination, Consultation, & Collaboration Initiative

Iterative pragmatic approaches to guiding and evaluating adaptations in real-world settings with implications to the research within the EHE Initiative

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ACCORDS
ADULT AND CHILD CONSORTIUM FOR HEALTH OUTCOMES RESEARCH AND DELIVERY SCIENCE
UNIVERSITY OF COLORADO | CHILDREN'S HOSPITAL COLORADO

UC San Diego
ACTRI DISC

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Collaborators and colleagues:

- Ana, Bauman, Shannon Wiltsey Stirman**,** Christopher Miller
- Marina McCreight, Michaela McCarthy, Lexus Ujano-DeMotta, Catherine Battaglia, Nicole Stadnick, Clare Viglione, Jessica Montoya, and many others

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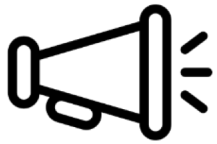
Topics for today

- Overview of key concepts of adaptations as they relate to complex, real-world interventions
- Overview of approaches for the planning of adaptations prior to implementation
- Documenting and analyzing adaptations including their impact
- Introduce one pragmatic way to guide adaptations: Iterative RE-AIM
- Reflections on current status and future directions and opportunities

Poll the Audience 

1.What is your experience with adaptations in your current projects?

- My project has made **planned adaptations**
- My project has made **unplanned adaptations**
- My project has made both **planned and unplanned adaptations**
- My project did not make any adaptations but they are **happening on the ground**
- My project **did not make any adaptations** at all

___

_____

_____

Adaptation defined

#1: Adaptations are changes or modifications to **an intervention, an implementation strategy,** or the context.

#2: Changes or modifications can be *deliberate or accidental (i.e., drift).*

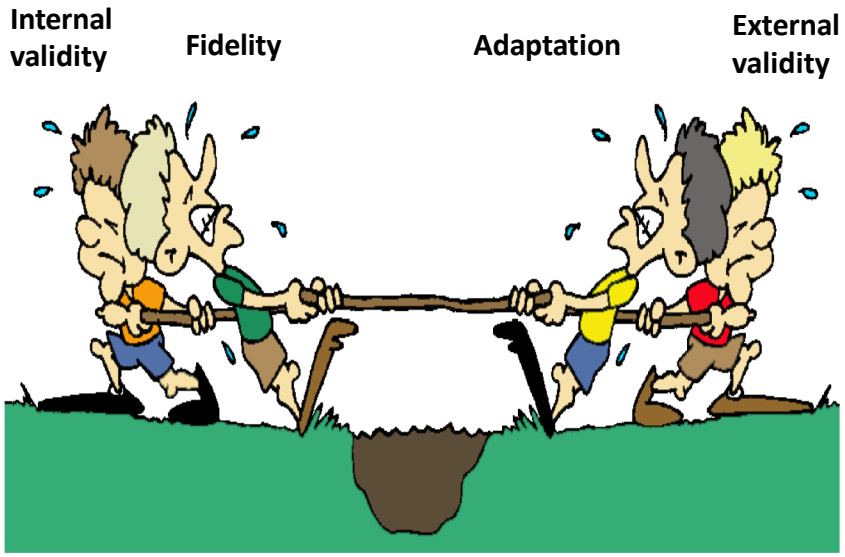
#2: Adaptation often occur **to improve the fit** (or compatibility) of the intervention/implementation strategy to a new context (e.g., population, setting, etc).

#3: Adaptations are **common and** (some researchers suggest) **inevitable** to meet the needs of a specific context.

#4: Adaptations might **lessen the effectiveness** if they compromise the core elements and underlying logic of the intervention.

[1] *http://www.csun.edu/sites/default/files/FindingBalance1.pdf*
[2] Carvalho et al. *J Public Health Manag Pract 2013; 19(4):348-56.*

Historical view of fidelity and adaptation



A mature view of fidelity and adaptation

Attention to BOTH program fidelity and adaptation during the complex process of program implementation is critical to successful, sustained implementation of evidence-based programs.

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Adaptation is not good or bad, it just happens…

Adaptation as inherent – perhaps crucial – to the implementation process

Regarding local adaptations, cultural adaptation, and other efforts to improve fit as flaws in implementation fidelity is ***at best a missed opportunity, and at worst, a recipe for implementation failure***

Baumann, A. A., Cabassa, L. J., & Stirman, S. W. (2017). Adaptation in dissemination and implementation science. *Dissemination and implementation research in health: translating science to practice*, *2*, 286-300.

Baumann, A., Mejia, A., Lachman, J., Parra-Cardona, R., Lopez-Zeron, G., Amador Buenabad, N. G., ... & Domenech Rodrigeuz, M. M. (2018). Parenting programs for underserved populations: Issues of scientific integrity and social justice. *Global Social Welfare*.

Parra-Cardona, R., Leijten, P., Lachman, J. M., Mejía, A., Baumann, A. A., Buenabad, N. G. A., ... & Ward, C. L. (2018). Strengthening a culture of prevention in low-and middle-income countries: Balancing scientific expectations and contextual realities. *Prevention Science*, 1-11.

Adaptations – when and what?

Focus of Adaptation	Timing of Adaptation - Point in the Study: Planning Pre-implementation	During Implementation	Following Sustainment
Intervention			
Implementation Strategy			
Context			

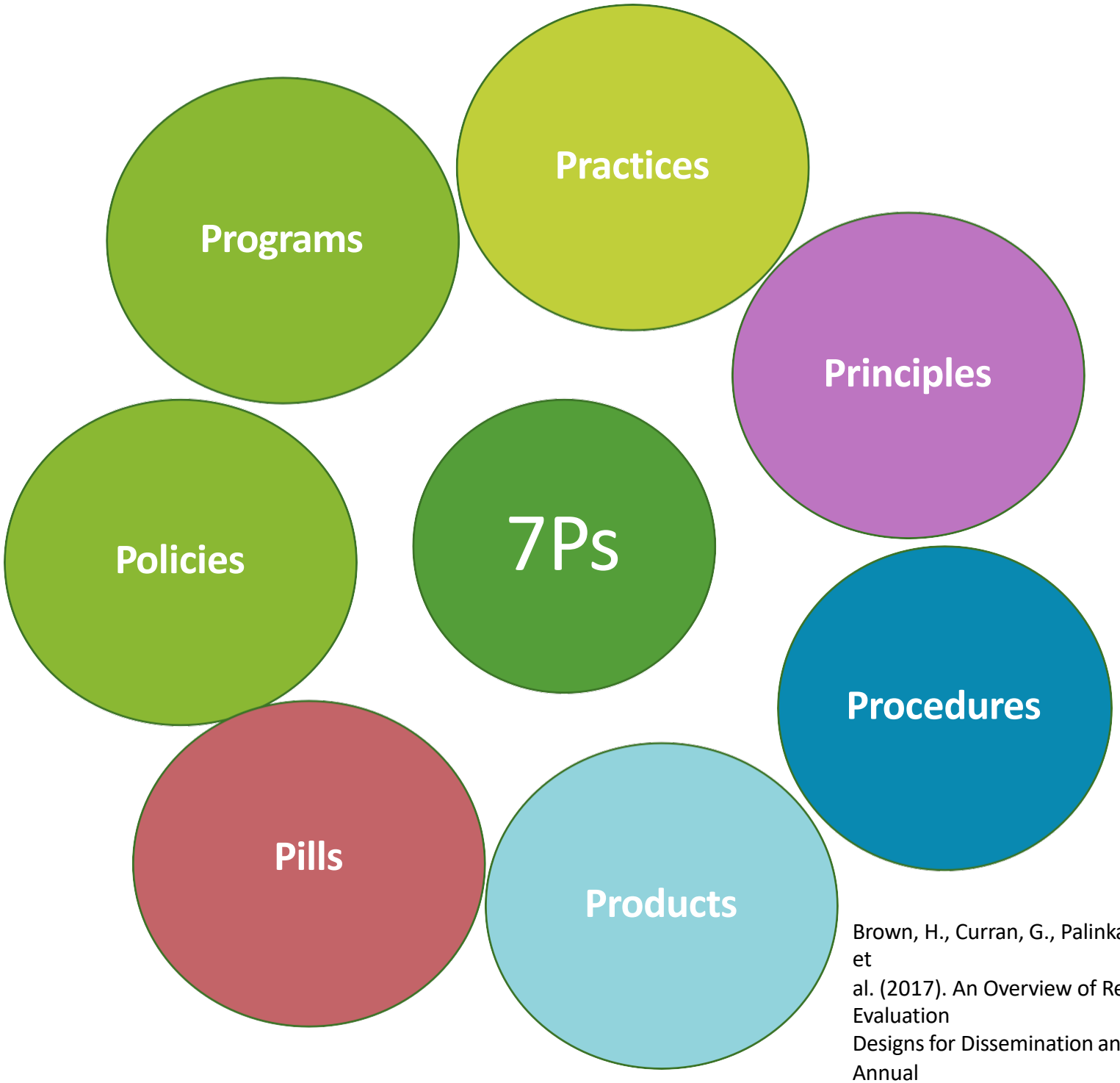
Rabin BA, McCreight M, Battaglia C, et al. Systematic, Multimethod Assessment of Adaptations Across Four Diverse Health Systems Interventions. *Front Public Health*. 2018;6:102.

Balancing fidelity and adaptation

#1: Identify **core components/functions and flexible components/forms** of the intervention

#2: Make **adaptations intentional** through planning and based on data

#3: **Assess and document adaptations** throughout the process



Brown, H., Curran, G., Palinkas, L.A., Aarons, G.A. et
al. (2017). An Overview of Research and Evaluation
Designs for Dissemination and Implementation. Annual
Review of Public Health 38;1-22.

What makes an intervention complex?

Hawe et al. Complex interventions: how "out of control" can a randomised controlled trial be? BMJ 2004;328:1561–3

Craig et al. Developing and evaluating complex interventions: the new Medical Research Council guidance
BMJ 2008;337:a1655

Guise et al AHRQ series on complex intervention systematic reviewsdpaper 1: an introduction to a series of articles that provide guidance and tools for reviews of complex interventions JCE 2017;90:43-50.

UK Medical Research Council: Developing and Evaluating Complex Interventions
https://mrc.ukri.org/documents/pdf/complex-interventions-guidance/

PCORI Methodology Standards:
https://www.pcori.org/research-results/about-our-research/research-methodology/pcori-methodology-standards

Definition of complex interventions

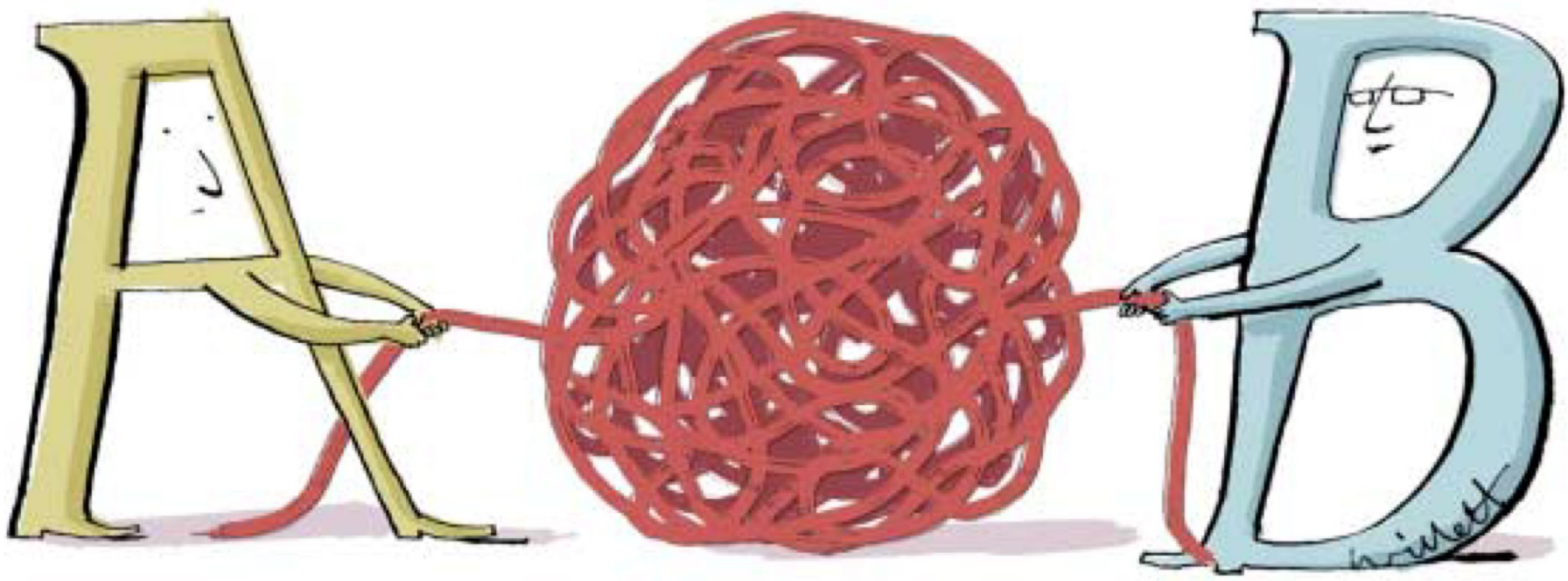
All complex interventions have two common characteristics; they have multiple components (*intervention complexity*) and complicated/multiple causal pathways, feedback loops, synergies, and/or mediators and moderators of effect (*pathway complexity*). In addition, they may also have one or more of the following three additional characteristics; target multiple participants, groups, or organizational levels (*population complexity*); require multifaceted adoption, uptake, or integration strategies (*implementation complexity*); or work in a dynamic multidimensional environment (*contextual complexity*)

- Number of interacting components within the experimental and control interventions
- Number and difficulty of behaviors required by those delivering or receiving the intervention
- Number of groups or organizational levels targeted by the intervention
- Number and variability of outcomes
- Degree of flexibility or tailoring of the intervention permitted

It is not easy to untangle….

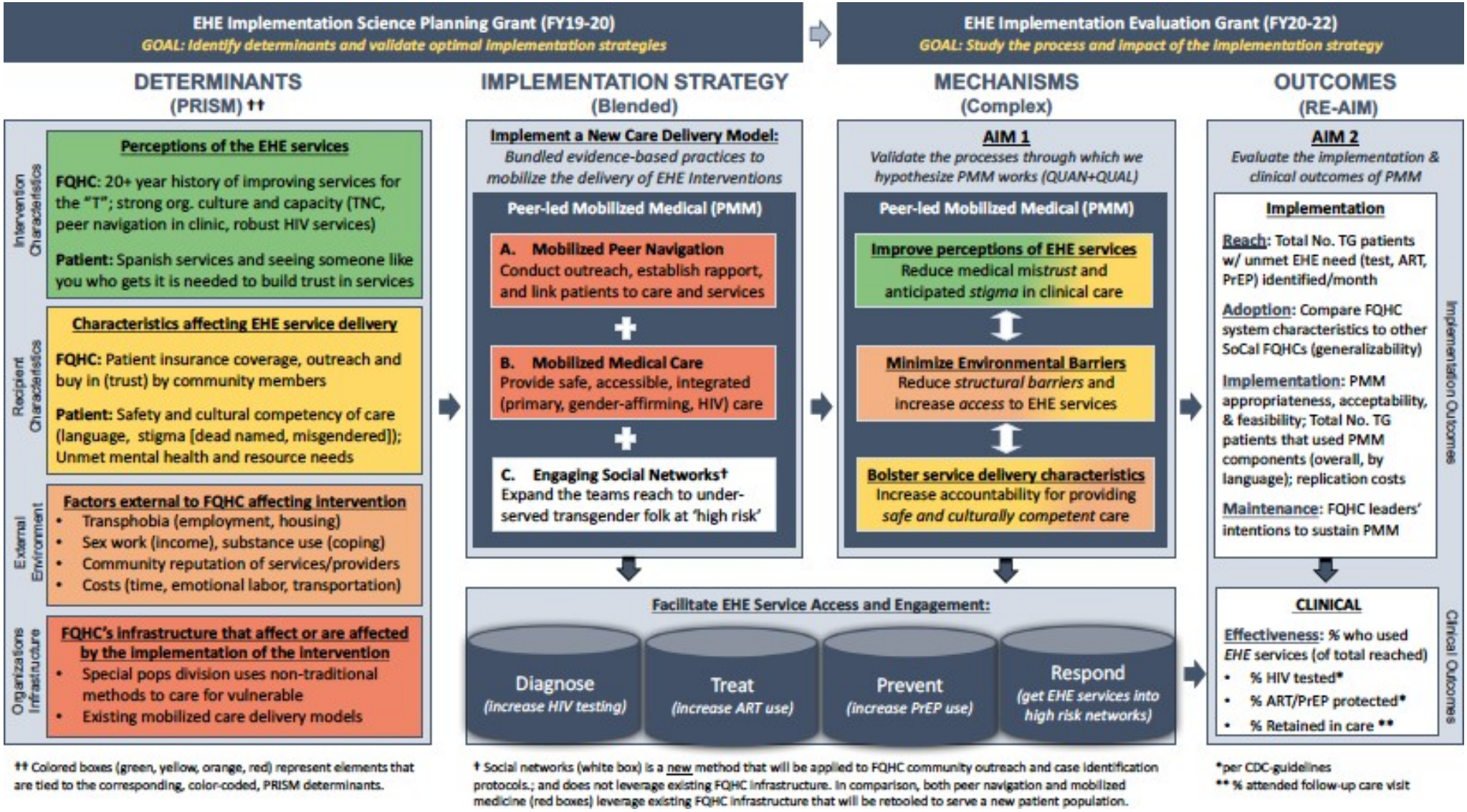
AND

CORE COMPONENTS **DISCRETIONARY COMPONENTS**



Hawe et al. BMJ 2004;328:1561–3

TRANS(ending) the HIV Epidemic – Drs. Laramie Smith and Jill Blumenthal

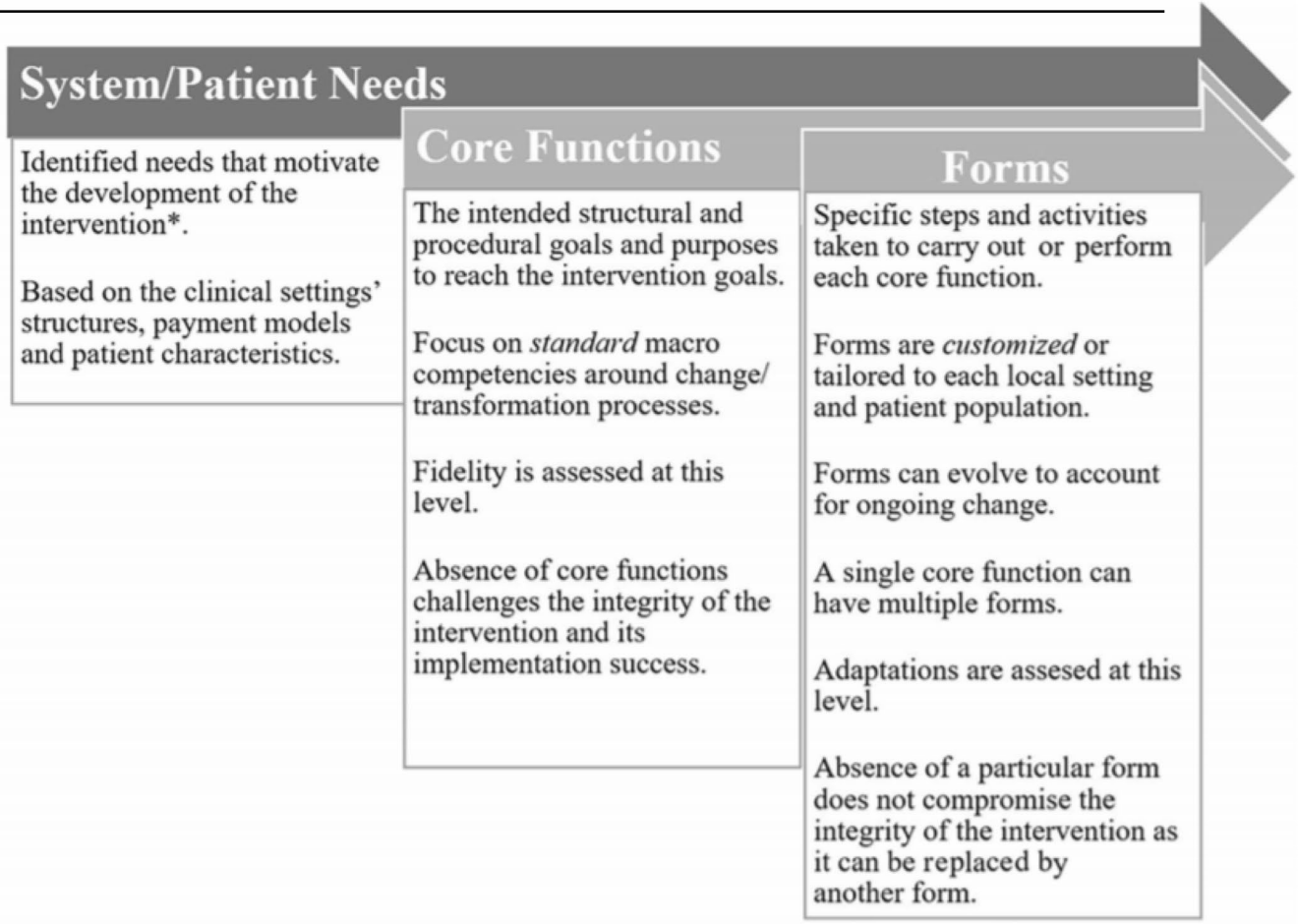


Adapted based on Smith, J.D., Li, D.H. & Rafferty, M.R. The Implementation Research Logic Model: a method for planning, executing, reporting, and synthesizing implementation projects. *Implementation Sci* **15,** 84 (2020).

Function and Form: A different paradigm to conceptualize complex interventions

Core functions = the key processes/mechanisms of an intervention

Forms = specific activities that may be customized to local contexts that are needed to carry out the core functions



*Intervention is defined broadly as a clinical or social evidence-based practice, public health prevention initiative or health delivery arrangement.

Fig. 2 Key concepts of the complex health intervention framework.

Hawe et al. Complex interventions: how "out of control" can a randomised controlled trial be? BMJ 2004;328:1561–3

Jolles et al. 2019 in *Journal of General Internal Medicine* "Core functions and forms of complex health interventions: a patient-centered medical home"

Tool to clarify function and form

Motivating need/problem	Core function (standardized)	Form (locally defined)
EBP = PrEP peer navigation program		
<u>Patient-centered care</u> Lack of provider-patient relationship that is based on mutual trust and responsibility	A. Foster a relationship-based care (vs. impersonal)	I. Peer navigator shares personal experience accessing PrEP with patient, which is then used as a guide to develop the patient's action plan for addressing barriers to accessing PrEP
	B. Educate and support patients in learning to manage their own care	II. Peer navigator models skills (e.g., role play conversations) for patient

Adapted from Jolles et al. 2019 in *Journal of General Internal Medicine*

"Core functions and forms of complex health interventions: a patient-centered medical home"

TBM

ORIGINAL RESEARCH

A scoping study of frameworks for adapting public health evidence-based interventions

Cam Escoffery,[1] Erin Lebow-Skelley,[1] Hallie Udelson,[1] Elaine A. Böing,[1] Richard Wood,[2] Maria E. Fernandez,[2] Patricia D. Mullen[2]

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Abstract

Evidence-based public health translation of research to practice is essential to improve the public's health. Dissemination and implementation researchers have explored what happens once practitioners adopt evidence-based interventions (EBIs) and have developed models and frameworks to describe the adaptation process. This scoping study identified and summarized adaptation frameworks in published reports and grey literature. We followed the recommended steps of a scoping study: (a) identifying the research question; (b) identifying relevant studies; (c) selecting studies; (d) charting the data; (e) collating, summarizing, and reporting the results; and (f) consulting with experts. We searched PubMed, PsycINFO, PsycNET, and CINAHL databases for articles referencing adaptation frameworks for public health interventions in the published and gray literature, and from reference lists of framework articles. Two reviewers independently coded the frameworks and their steps and identified common steps. We found 13 adaptation frameworks

Implications

Practice: These frameworks can offer guidance for steps in the adaptation process for evidence-based interventions (EBIs).

Policy: Funders or agencies that recommend the use of EBIs should encourage organizations implementing them to report on any adaptation and the steps taken for the modifications.

Research: Future research should examine the use of these frameworks in adaptations of EBIs in the field and their impacts on health.

Step name	Step descriptions
1.Assess community	• Identify behavioral determinants and risk behaviors of the new target population using focus groups, interviews, needs assessments, and logic models • Assess organizational capacity to implement the program
2.Understand the intervention	• Identify and review relevant EBPs and their program materials • Understand the theory behind the programs and their core elements
3.Select intervention	• Select the program that best matches the new population and context
4.Consult with experts	• Consult content experts, including original program developers, as needed • Incorporate expert advice into program
5.Consult with stakeholders	• Seek input from advisory boards and community planning groups where program implementation takes place • Identify stakeholder partners who can champion program adoption in new setting and ensure program fidelity
6.Decide what needs adaptation	• Decide whether to adapt or implement original program • Theater test selected EBP using new target population and other stakeholders to generate adaptations • Determine how original and new target population/setting differ in terms of risk and protective factors • Identify areas where EBP needs to be adapted and include possible changes in program structure, content, provider, or delivery methods • Retain fidelity to core elements • Systematically reduce mismatches between the program and the new context
7.Adapt the original program	• Develop adaptation plan • Adapt the original program contents through collaborative efforts • Make cultural adaptations continuously through pilot testing • Core components responsible for change should not be modified
8.Train staff	• Select and train staff to ensure quality implementation
9.Test the adapted materials	• Pretest adapted materials with stakeholder groups • Conduct readability tests • Pilot test adapted EBP in new target population • Modify EBP further if necessary
10.Implement	• Develop implementation plan based on results generated in previous steps • Identify implementers, behaviors, and outcomes • Develop scope, sequence, and instructions • Execute adapted EBP
11.Evaluate	• Document the adaptation process and evaluate the process and outcomes of the adapted intervention as implemented • Write evaluation questions; choose indicators, measures, and the evaluation design; plan data collection, analysis, and reporting • Employ empowerment evaluation approach framework to improve program implementation

The ADAPT-ITT Model

A Novel Method of Adapting Evidence-Based HIV Interventions

Gina M. Wingood, ScD, MPH† and Ralph J. DiClemente, PhD*†‡*

TABLE 4. Applying the ADAPT-ITT Model to Adapt the SiHLE[5] Intervention to Zulu-Speaking Female Adolescents

Phase	Methodology
1. Assessment	• Conducted focus groups with young adult Zulu-speaking women
	• Conducted focus groups with key stakeholders in a rural primary care clinic in KwaZulu-Natal
	• Conducted elicitation interviews with key stakeholders who were HIV/AIDS prevention scientists
	• Analyzed results of formative evaluations
2. Decision	• Decided to adapt the SiHLE HIV intervention defined as an EBI by the CDC[5]
3. Administration	• Administered theater test with Zulu adolescents
	• Analyzed results of the theater test
4. Production	• Produced draft 1 of the adapted EBI and developed process measures
5. Topical Experts	• Identified 3 topical experts knowledgeable about HIV prevention and the population of Zulu-speaking adolescents living in KwaZulu-Natal, the target audience for intervention
6. Integration	• Integrated content from topical experts and created draft 2 of the adapted EBI
	• Integrated scales that measure new intervention content in the study survey
	• Integrated readability testing into draft 2 of the EBI to create draft 3
7. Training	• Trained recruiters, facilitators, assessors and data management staff to implement draft 3 of the adapted EBI
8. Testing	• Pilot study is being planned

Wingood GM, DiClemente RJ. The ADAPT-ITT model: a novel method of adapting evidence-based HIV Interventions. J Acquir Immune Defic Syndr. 2008 Mar 1;47 Suppl 1:S40-6.

Step 1
Document Needs & Build Logic Model

- Describe needs and goals
- Describe personal determinants and individuals in the environment
- Create logic model of change

Step 2
Search for EBIs

- Find EBIs
- Review EBIs for basic fit
- Select EBIs for further review

Step 3
Assess Fit & Plan Adaptations

- Describe EBI materials and activities, content, design and delivery
- Compare EBI with logic model
- Make adaptation decisions

Step 4
Make Adaptations

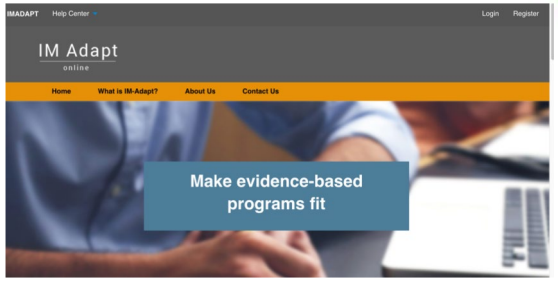
- Link adaptation decisions with specific EBI materials and activities
- Pre-test
- Implementation plan for the adapted EBI
- Scope & Sequence

Step 5
Test Your Progress

- List process evaluation questions
- List outcome evaluation questions

Helps planners:

1) **Document their community needs and expected logic of change**
2) **Search for EBA and determine potential fit**
3) **Characterize the EBA to identify the core elements and keep them intact during adaptation**
4) **Base changes on your community assessment results**
5) **Develop/adapt and implementation and evaluation plan.**



imadapt.org

Escoffery *et al. Implementation Science* (2018) 13:125
https://doi.org/10.1186/s13012-018-0815-9

Implementation Science

SYSTEMATIC REVIEW Open Access

Asystematic review of adaptations of evidence-based public health interventions globally

Cam Escoffery[1*], E. Lebow-Skelley[1], R. Haardoerfer[1], E. Boing[1], H. Udelson[1], R. Wood[2], M. Hartman[2], M. E. Fernandez[2] and P. D. Mullen[2]

Abstract

Background: Adaptations of evidence-based interventions (EBIs)often occur. However, little is known about the
, we conducted a
ypes of
What steps are
dapted EBIs?
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udies for adapted
s, reasons for
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se, and chronic
tion included the
lementing in a
cations (73.8%),
aterials,
rmined needed
an evaluation
ty (52.4%). Fewer
tions of EBIs that
e the adaptation
building efforts to

Reasons for adaptation

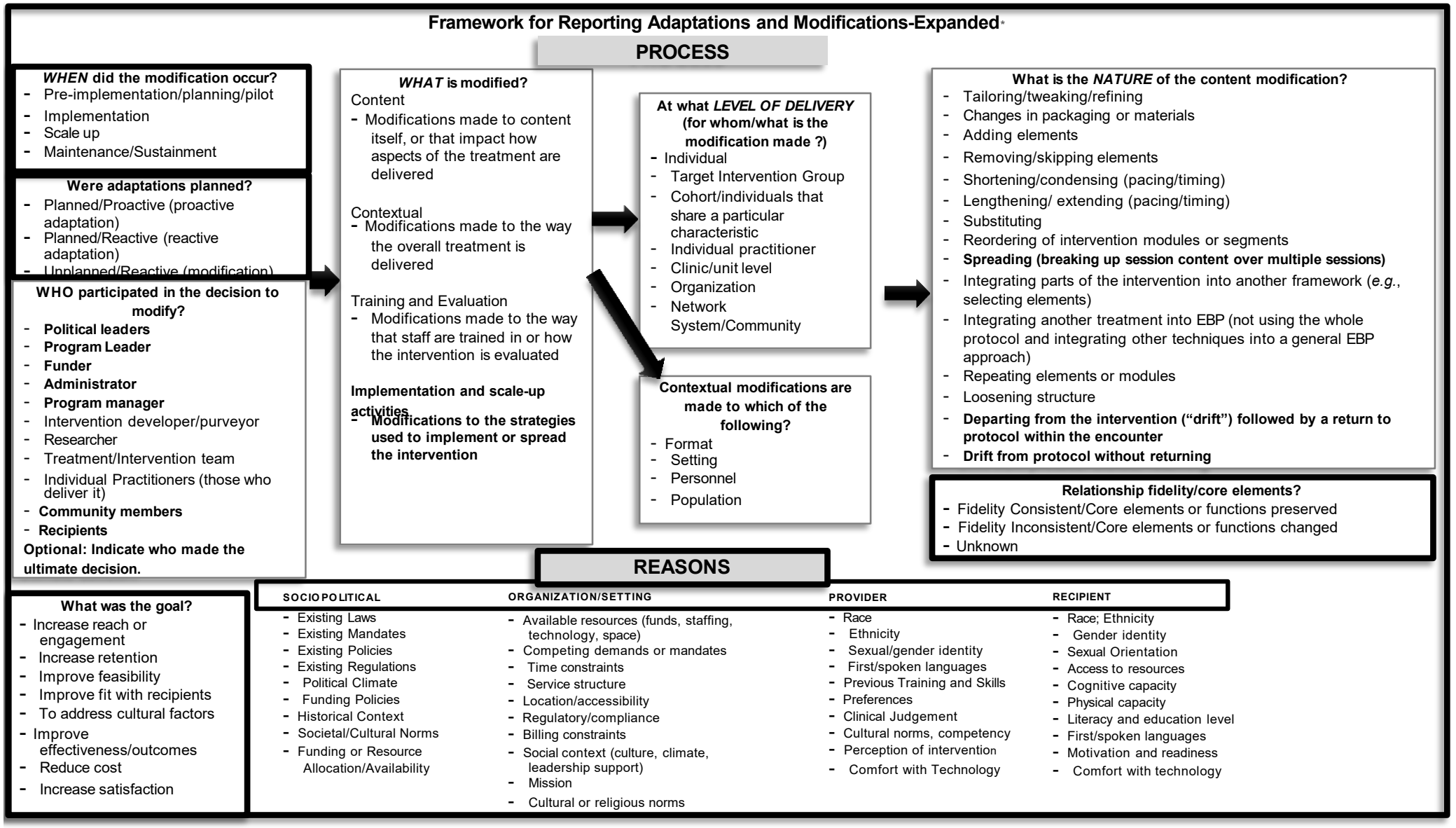
Cultural appropriateness	27 (64.3%)
Focus on new target population	25 (59.5%)
Implement in new community setting	24 (57.1%)
Improve ease and feasibility of implementation	6 (14.3%)
Make program more widely accessible	1 (2.4%)
Condense program	1 (2.4%)

WHY document adaptations?

- Create an **organized list of adaptations** that future implementers can consider for success
- Provide **contextual process data** to interpret outcomes (i.e., how adaptations contribute to outcomes)
- **Consider refinements** to the recommended intervention & implementation strategies based on observed changes
- Propose **refinements** to existing frameworks and measurement approaches and develop a replicable, easy-to-use documentation method for adaptations/modifications
- Anticipate and **describe the impact of adaptations**
- **Challenges: conceptual/historical and methodological**


Don't Let 'Perfect' Be
the Enemy of 'Done'

The FRAME: an expanded framework to report adaptations and modifications



Wiltsey Stirman S, Baumann AA, Miller CJ. The FRAME: an expanded framework for reporting adaptations and modifications to evidence-based interventions. *Implement Sci*. 2019;14(1):58.

When, what, and how document adaptations?

Focus of Adaptation	Timing of Adaptation - Point in the Study: Planning Pre-implementation	During Implementation	Following Sustainment
Intervention			
Implementation Strategy			
Context			

Methods to Assess Adaptation

#1: Observational techniques

#2: Focused interviews

#3: Questionnaires, checklists, and logs

#4: Content analysis of key documents and curricula

#5: Study databases and clinical databases

Rabin BA, McCreight M, Battaglia C, et al. Systematic, Multimethod Assessment of Adaptations Across Four Diverse Health Systems Interventions. *Front Public Health*. 2018;6:102.

frontiers in Public Health

METHODS
published: 09 April 2018
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Check for updates

Systematic, Multimethod Assessment of Adaptations Across Four Diverse Health Systems Interventions

Borsika A. Rabin[1,2,3,4], Marina McCreight[1], Catherine Battaglia[1,5], Roman Ayele[1,5], Robert E. Burke[1,6], Paul L. Hess[1,6], Joseph W. Frank[1,6] and Russell E. Glasgow[1,3,4]*

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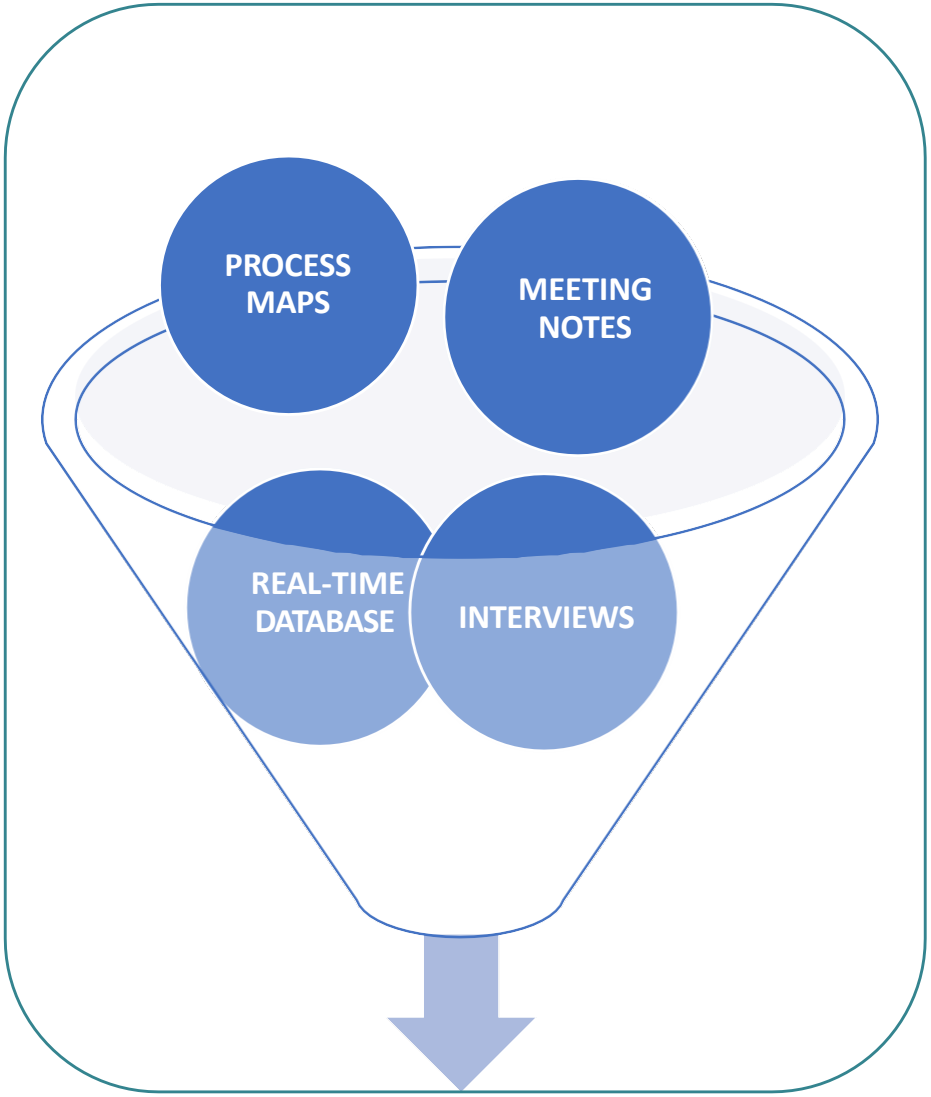
Triangulation of data

SURVEYS

OBSERVATION

INFORMAL CHECK-IN WITH TEAMS

PERIODIC REFLECTIONS



ELECTRONIC RECORDS

CHECKLISTS & LOGS

Full Picture of Adaptations

Sample Interview Questions

WHAT component or part of the intervention was changed in this adaptation; in other words, what was the nature of the change?
(For instance, was it a change to program content, format, delivery mode, staff delivering it, patients eligible, where, when or how it was delivered, or what?)

WHO was responsible for first suggesting or initiating this change?
(Was this the person or persons the ones who implemented the change? (If not, who implemented the adaptation?))

WHEN during the ____ program was this adaptation first made?

WHY was this adaptation made?
(For example, to get more people to participate, to make the program attractive to more settings, to increase its effectiveness, to make it easier to deliver, to make it easier to maintain or reduce costs, etc.?)

Example Tracking form

Date of the modification	4/15/2016	6/2/2016
Description of the modification	ISurvey questions reordered - moved the Rose Dyspnea questionnaire to the end.	Revised patient letter to include information about automated pre-procedural phone calls.
Reason for the modification	To improve fluidity of the survey and enhance data capture	To prepare patients for data collection
BY WHOM are modifications made?	Researcher	Researcher
WHAT is modified?	Order of data collection	Content of the intervention
At what LEVEL OF DELIVERY?	Individual patient level	Individual patient level
CONTEXT modifications are made to…	Intervention format	Intervention format
What is the NATURE of the Content modification?	Tailoring/tweaking/refining	Tailoring/tweaking/refining

	A	B	C	D	E	F	G	H	I
1	**Analyst**	**Site**	**Interview Date**	**Type of exit interview**	**Source**	**Adaptation Description**	**Role**	**1. What was changed - elements?**	**2. What was changed - type of change**
	tials of analyst ducting the analysis	Site code (Enter N/A for all)	Date when interview was conducted or adaptation identified (N/A for pre-implementation adaptations)	Simple Detailed adaptation (Enter N/A for all)	**Types:** Baseline interviews Pre open trial ART Meetings Pre open trial clinician interviews Post open trial Veteran interviews Post open trial clinician interviews Post open trial ART Meetings Post RCT C1 Veteran interviews Post RCT C1 clinician interviews Post RCT C1 ART Meetings Post RCT C2 Veteran interviews Post RCT C2 clinician interviews Post RCT C2 ART Meetings Post RCT C3 Veteran interviews Post RCT C3 clinician interviews Post RCT C3 ART Meetings Final ART interviews Clinician supervision	**Brief description of the adaptation that was made** (Try to keep it to 1-2 sentences but provide enough context that it stands alone. *For example: Recruitment criteria was changed to include all patients with XX code as well.)*	**Role of interviewee on project**, e.g.: Research staff ART Veteran- non CDST participant ART Veteran- CDST participant ART Clinician CDST provider	**Which of the following elements was primarily changed as part of the adaptation?** ☒ The setting ☒ The format ☒ Personnel involved ☒ The target population ☒ How the intervention is presented ☒ Other	**Which of the following was the primary type of change involved?** ☒ Tailoring to individuals ☒ Adding a component ☒ Removing a component ☒ Condensing a component ☒ Extending a component ☒ Substituting for a component ☒ Changing the order of components ☒ Integrating with other programs we are doing ☒ Repeating a component ☒ Loosening the structure or protocol ☒ Otherwise changing the intervention

short term

Finley et al. BMC Medical Research Methodology (2018) 18:153
https://doi.org/10.1186/s12874-018-0610-y

BMC Medical Research Methodology

RESEARCH ARTICLE Open Access

Periodic reflections: a method of guided discussions for documenting implementation phenomena

Erin P. Finley[1,2,3*], Alexis K. Huynh[3,4], Melissa M. Farmer[3,4], Bevanne Bean-Mayberry[3,4,5], Tannaz Moin[3,4,5], Sabine M. Oishi[3,4], Jessica L. Moreau[3,4], Karen E. Dyer[3,4], Holly Jordan Lanham[1,2], Luci Leykum[1,2] and Alison B. Hamilton[3,4,5]

TBM

ORIGINAL RESEARCH

A case study of a theory-based method for identifying and reporting core functions and forms of evidence-based interventions

M. Alexis Kirk,[1] Emily R. Haines,[2] Franziska S. Rokoske,[3] Byron J. Powell,[4] Morris Weinberger,[2] Laura C. Hanson,[5] Sarah A. Birken[2]

Kirk et al. Implementation Science (2020) 15:56
https://doi.org/10.1186/s13012-020-01021-y

Implementation Science

DEBATE Open Access

Towards a comprehensive model for understanding adaptations' impact: the model for adaptation design and impact (MADI)

M. Alexis Kirk[1*], Julia E. Moore[2], Shannon Wiltsey Stirman[3] and Sarah A. Birken[4]

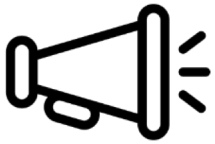
Coronado et al. Implementation Science (2020) 15:77
https://doi.org/10.1186/s13012-020-01037-4

Implementation Science

RESEARCH Open Access

Health plan adaptations to a mailed outreach program for colorectal cancer screening among Medicaid and Medicare enrollees: the BeneFIT study

Gloria D. Coronado[1*], Jennifer L. Schneider[1], Beverly B. Green[2], Jennifer K. Coury[3], Malaika R. Schwartz[4], Yogini Kulkarni-Sharma[5] and Laura Mae Baldwin[4]

Poll the Audience 

How familiar are you with the RE-AIM framework?

- o I have **read about it** in publications
- oI have **used it** in my own research for planning, implementation, or evaluation
- o I am **not familiar** with the RE-AIM framework

frontiers in Public Health

ORIGINAL RESEARCH
published: 27 May 2020
doi: 10.3389/fpubh.2020.00194

Check for updates

Making Implementation Science More Rapid: Use of the RE-AIM Framework for Mid-Course Adaptations Across Five Health Services Research Projects in the Veterans Health Administration

Russell E. Glasgow[1,2]*, *Catherine Battaglia*[3,4,5], *Marina McCreight*[6], *Roman Aydiko Ayele*[7] and *Borsika Adrienn Rabin*[8,9,10]

Pragmatic Use of RE-AIM

RE-AIM Dimension	Key Pragmatic Priorities to Consider and Answer
Reach	WHO is (was) intended to benefit and who actually participates or is exposed to the intervention?
Effectiveness	WHAT is (was) the most important benefits you are trying to achieve and what is (was) the likelihood of negative outcomes?
Adoption	WHERE is (was) the program or policy applied and WHO applied it?
Implementation	HOW consistently is (was) the program or policy delivered, HOW will (was) it be adapted, HOW much will (did) it cost, and WHY will (did) the results come about?
Maintenance	WHEN will (was) the initiative become operational; how long will (was) it be sustained (Setting level); and how long are the results sustained (Individual level)?

Glasgow RE and Estabrooks P. Pragmatic application of RE-AIM. *Preventing Chronic Disease*, 2018; 15:E02
Glasgow RE et al. RE-AIM planning and evaluation.... (2019). *Frontiers Public Health* 7: 64.

Rationale for Iterative RE-AIM: More Rapid

- D&I Frameworks are often cited, but frequently not used throughout a proposal or project
- If frameworks are used, it is almost always for either planning or evaluation (RE-AIM has been used most for evaluation, but also successfully for planning)
- Neither RE-AIM nor most other D&I models have been used **iteratively to guide adaptations** at key points
- A major limitation to D&I models and methods is that they are much **slower than needed by stakeholders**

Glasgow, RE .... & Rabin B. Making implementation science more rapid. (2020) *Frontiers Public Health*. 8: 194

Study Purpose

- To develop a pragmatic, replicable iterative RE-AIM implementation strategy bundle to inform mid-course corrections
- To use this audit and feedback **implementation strategy bundle** based on RE-AIM to help stakeholder implementation teams guide adaptations
- To provide a **conceptual and data-based process** to help stakeholders reflect upon progress, set priorities, and develop action plans
- To test this process across 5 different VA health services research projects (on pain, care transitions, cardiac care, rural health)

Glasgow, RE .... & Rabin B. Making implementation science more rapid. (2020) *Frontiers Public Health*. 8: 194

Steps in Iterative RE-AIM Process

- Step 1: **Project team** reviewed the specification of RE-AIM dimensions developed at the **beginning of the project**, and discussed the Iterative RE-AIM process.
- Step 2: Team members completed independent **ratings on each RE-AIM dimension** in terms of a) its **importance** at the present stage of the project and b) **progress to date** on that dimension.
- Step 3: A second team meeting reviewed summarized ratings from the individual rating sheets. A **group engagement, reflection and discussion process** was used to identify **one to two** key RE-AIM dimensions on which to focus and develop SMART goals and **action plans**.
- Step 4: A **follow-up** interview with the PI and project manager for each project regarding their progress on the implementation of the action plans, as well as collect data on the feasibility and usefulness of the iterative RE-AIM process.

Glasgow, RE .... & Rabin B. Making implementation science more rapid. (2020) *Frontiers Public Health*. 8: 194

RE-AIM Assessment Rating Form

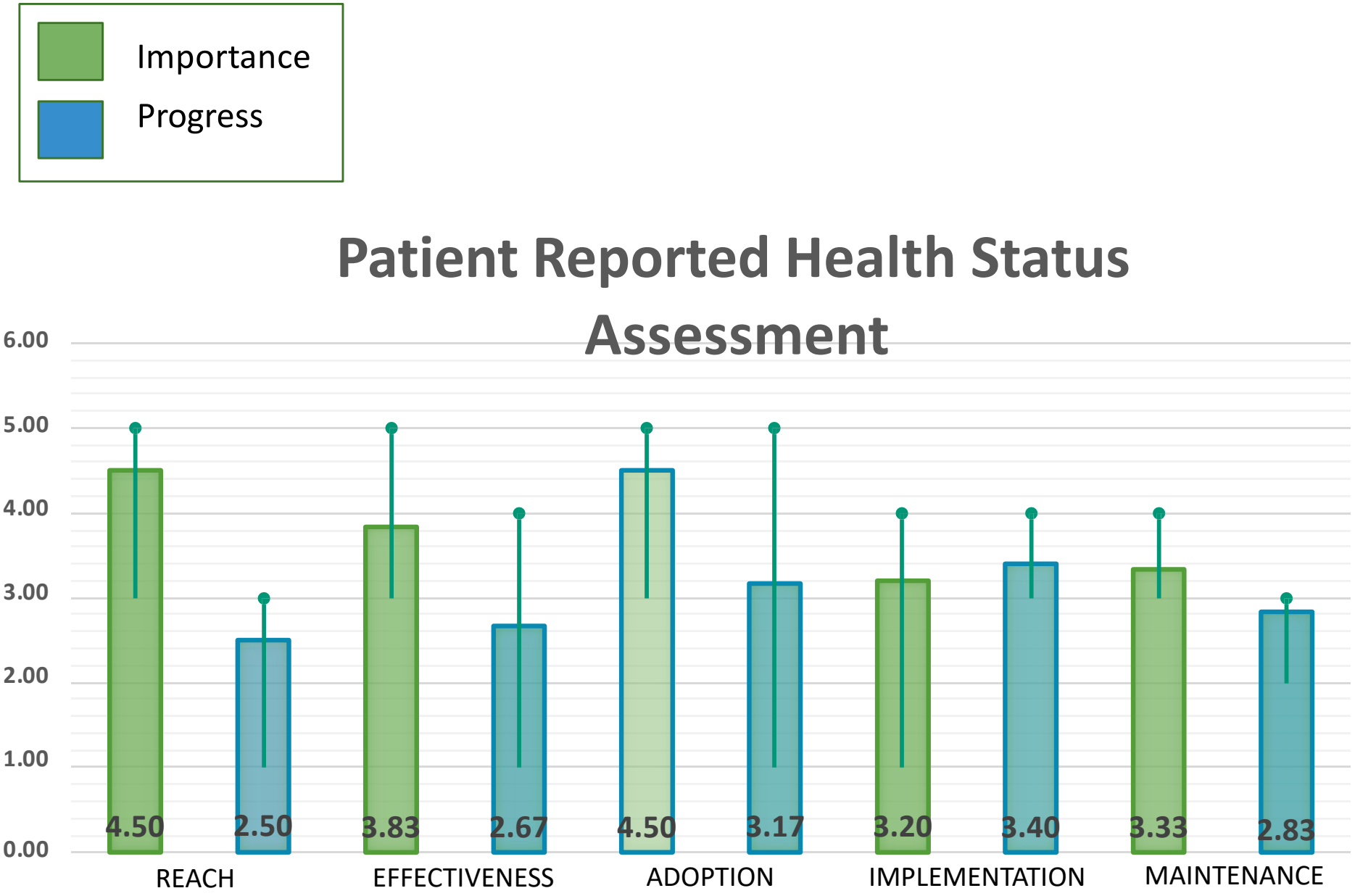
Please rate each question below regarding the importance of and the need to enhance each RE-AIM dimension in your project. Use your best estimate to provide a 1-5 rating for each item even if you are not sure or do not feel you have quite enough information. Please refer to the documents provided to you through the preliminary meeting (RE-AIM measure table and RE-AIM handouts). Use the comment section to explain your ratings and make initial suggestions on how to enhance the given RE-AIM dimension.

- **REACH** (to eligible Veterans)

How important is Reach to this project, at this time?	How satisfied are you with progress to date on Reach?
1 = not important	1 = not satisfied
2=somewhat important	2=somewhat satisfied
3= important	3= satisfied
4=moderately important	4=moderately satisfied
5 = extremely important	5 = extremely satisfied

Comments:

Sample “Gap” Report



Results

- A median of seven team members participated in the two meetings. Qualitative and descriptive data revealed that the process was feasible, and understandable to teams in adjusting their interventions and implementation strategies.
- The RE-AIM dimensions identified as most important were ***adoption and effectiveness,*** and the dimension that had the largest **gap** between **importance and rated progress** to that point was ***reach.***
- The dimensions most frequently selected for improvement were ***reach and adoption.***
- Follow-up meetings indicated that teams found the process very helpful and were able to implement the action plans they set.

RE-AIM Dimensions and key phrase from action plans

Project Name	RE-AIM Dimension Focus	SMART Goals and Action Plans
Patient-Reported Health Status Assessment	REACH ADOPTION	1. Conduct workflow assessments to learn where it would fit and how 2. Perform chart review to learn about actions taken after decline status note in the EMR
Multimodal Pain	EFFECTIVENESS ADOPTION	1. Effectiveness: summarize feedback from semi-structured interviews with providers and review for opportunities to improve program sessions; share the feedback with operational partners 2. Adoption: inform providers of the upcoming sessions; 3. Engage/re-engage with program stakeholders for assistance and guidance
Community Transitions	REACH	1. Conduct in-services with community hospital to educate about the program enrollment criteria 2. Interview other investigators about how they approach REACH in their projects 3. Consider giving out Veterans program cards pro-actively 4. Review and revise program exclusion criteria
Advanced Care Coordination	REACH	1. Schedule and conduct educational in-services in participating community hospitals. 2. Program social worker to identify best practices of approach at each participating community hospital
Rural Transitions	REACH MAINTENANCE	1. Review existing literature and plan to collect and analyze real-time return on investment-type data 2. Access operational data and performance measures to compare with program outcomes 3. Discuss with site champions about what leadership and stakeholders need to sustain the program

Packel *et al. Trials* (2020) 21:963
https://doi.org/10.1186/s13063-020-04899-7

Trials

STUDY PROTOCOL Open Access

Optimizing the efficiency and implementation of cash transfers to improve adherence to antiretroviral therapy: study protocol for a cluster randomized controlled trial

Laura Packel[1*], Prosper Njau[2], Carolyn Fahey[1], Angela Ramadhani[3], William H. Dow[4], Nicholas P. Jewell[5,6] and Sandra McCoy[1]

Published in final edited form as:
J Acquir Immune Defic Syndr. 2019 December ; 82(Suppl 3): S332–S338. doi:10.1097/QAI.0000000000002196.

Implementation Science using Proctor's Framework and an adaptation of the Multiphase Optimization Strategy (MOST): Optimizing a Financial Incentive Intervention for HIV Treatment Adherence in Tanzania

Laura Packel[1], **Carolyn Fahey**[1], **Prosper Njau**[2,3], **Sandra I. McCoy**[1]

[1]University of California, Berkeley, School of Public Health

[2]Health for a Prosperous Nation, Dar es Salaam, Tanzania

[3]MOHCGEC

Application of Iterative RE-AIM to ART Adherence Program (a hypothetical example)

Steps involved:

1. **Team identifies RE-AIM goals (e.g., reach: 60%; adherence level (effectiveness): 75%; staff implementation: 80% fidelity)**
2. **Assess these 3 outcomes approximately every 4 months**
3. **Based on decision by full team of stakeholders, select 1-2 RE-AIM target areas on which to adapt the implementation approach**
4. **Repeat as needed for at least for 3 cycles**

Application of Iterative RE-AIM to ART Adherence Program (a hypothetical example)

- Assume the ***first iterative assessment*** finds reach of 35% (goal of 60%) and inequitable participation); 80% adherence among participants; and 65% (goal = 80%) of staff delivering incentives as in protocol
- Potential decision- work on reach by changing who approaches potential participants, how this is framed and the locations in which recruitment takes place
- Assume ***second iterative assessment*** finds increased reach (now 55% and more equitable) but now adherence has dropped to 60%
- Potential decision: increase cash incentive amount from $10 to $25

Limitations

- Small number of teams and sample size; and that all were VA projects.
- At least some members of each team had used RE-AIM before.
- Although explicitly involved all implementation team members, it did not include Veteran patients or organizational decision makers.
- Did not experimentally compare this process to other approaches or use of other implementation science frameworks.

Future directions

- Replication in non-VA settings and projects that did not use RE-AIM in their initial proposal.
- More formal evaluation of the long-term impact.
- Assess different timing and intensities and cost-effectiveness of iterative assessments

Conclusions

- Iterative RE-AIM, while still in need of refinement and replication, was helpful across **five diverse health services projects,** implementation teams, different project phases and content areas.
- This novel application of an implementation science framework driven improvement process appears **feasible**
- The **rapid, mid-course evaluation** process enhanced the practitioner relevance of implementation science approaches and facilitated teams reflecting on their project
- Adaptations will happen; the Iterative RE-AIM process provides a conceptual and data-driven approach to **guide such adaptations**.

Summary

- Complex interventions usually **can be, will be,** and **should be** adapted

- Adaptation should be:
  - embraced, studied, and guided *rather than*
  - ignored, and/or
  - Suppressed

- Adaptations are best made based on data/evidence (broadly speaking)

Presentation by Brian Mittman
PCORI Methodology Standards:
https://www.pcori.org/research-results/about-our-research/research-methodology/pcori-methodology-standards

Adapt study – DECIPHer

https://decipher.uk.net/portfolio/the-adapt-study

The development of guidance was underpinned by three key work packages:

- A systematic review of existing guidance and a scoping review of practice in adaptation of interventions for new contexts;

-Qualitative interviews with researchers, funder, journal editors and policy and practice stakeholders about current practice and future directions;

-An expert consensus process, including a 3 round e-DELPHI and a series of online meetings of international experts to discuss a draft of the guidance.

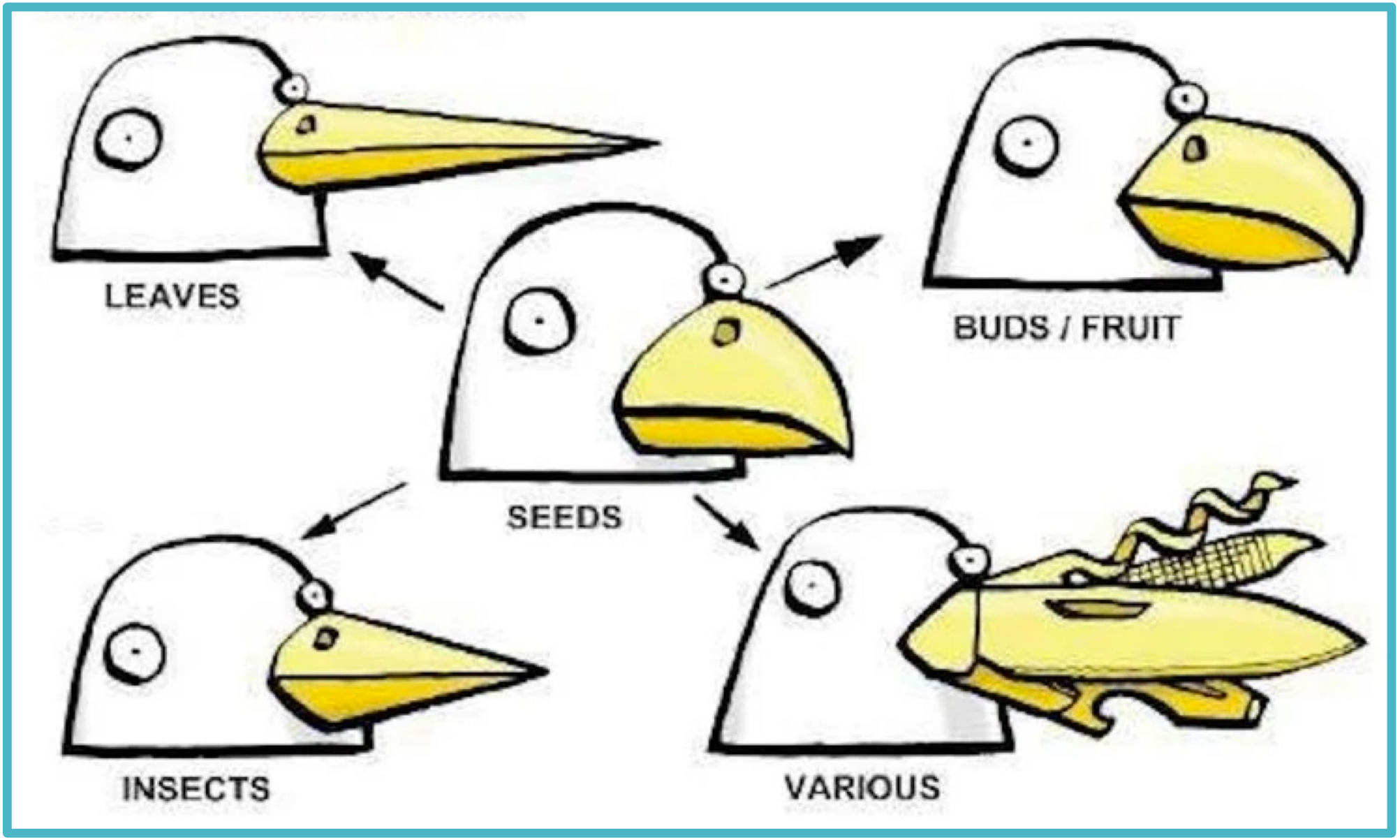
Adaptation, Fidelity, and Tailoring group

- The group **began in January 2016** as part of the IRG
- We currently have **over a 100 members**
- Representation from **many QUERIs**, including: TRIPLE AIM, CIVIC, PROVE, CARRIAGE, EMPOWER, IMPROVE, Bridge, PRISM, and Optimizing Function and Independence
- Members from and outside of the VA nationally and internationally
- Co-chaired by **Borsika Rabin** and **Russell Glasgow** and facilitated by **Christine P. Kowalski**
- We meet **monthly to discuss topics related to adaptation, tailoring and fidelity** with attention to clinical application
- Discussions include how to **define interventions** and **implementation strategies** as well as how to **describe and document adaptations**

Context and Adaptation in Dissemination & Implementation Research (CLSC 7663)

Overview	**This course covers concepts, frameworks, and methods for understanding and assessing the context and guiding adaptations as relevant to dissemination and implementation (D&I) health research and practice.**
Instructor	**Christina Studts, PhD, MSPH, LCSW, and Borsika Rabin, PhD, MPH, PharmD**
Meeting Time	**Fridays, 11:00am-12:30pm Mountain Time**
Semester	**Spring 2021 (February 4 – April 22)**
Format	**Fully online, using a combination of real-time video conferences and self-guided study**
Capacity	**15 students**
Semester Hours	**2**
Key Topics	**Topics include the importance of context and key multilevel contextual factors such as policy, history, and organizational climate; types of adaptations (cultural, local); how to conceptualize and assess both context and adaptations; selected tools for D&I research and practice; and emerging and future issues related to context and adaptation.**

DO YOU HAVE ANY QUESTIONS?



"**Implementing a program is like constructing a building. An architect draws upon general engineering principles (theory) to design a building that will serve the purposes for which it is designed.** However, the specific building that results is strongly influenced by parameters of the building site, such as the lot size, the nature of the site's geological features, the composition of the soil, the incline of the surface, the stability and extremes of climate, zoning regulations, and cost of labor and materials.

The architect must combine architectural principles with site parameters to design a specific building for a specific purpose on a specific site....This dynamic is mirrored in the rough-and-tumble world of the human services. Despite excellent plans and experience, ongoing redesign and adjustment may be necessary."

-- Bauman at al. 1991

Select resources

Hawe P, Shiell A, Riley T. Complex interventions: how "out of control" can a randomised controlled trial be?. *BMJ*. 2004;328(7455):1561-1563.

Jolles, M. P., Lengnick-Hall, R., & Mittman, B. S. (2019). Core functions and forms of complex health interventions: a patient-centered medical home illustration. *Journal of general internal medicine*, *34*(6), 1032-1038.

Harrison, M.S. Functions and Forms Framework: a Methodology for Mechanistic Deconstruction and Adaptation?. *J GEN INTERN MED* (2021).

Kirk AM, Haines ER, Rokoske FS, Powell BJ, Weinberger M, Hanson LS, Birken SA. A case study of a theory-based method for identifying and reporting core functions and forms of evidence-based interventions, *Translational Behavioral Medicine*, https://doi.org/10.1093/tbm/ibz178

Kirk, M. A., Moore, J. E., Stirman, S. W., & Birken, S. A. (2020). Towards a comprehensive model for understanding adaptations' impact: the model for adaptation design and impact (MADI). *Implementation Science*, *15*(1), 1-15.

Miller, C. J., Wiltsey-Stirman, S., & Baumann, A. A. (2020). Iterative Decision-making for Evaluation of Adaptations (IDEA): A decision tree for balancing adaptation, fidelity, and intervention impact. *Journal of Community Psychology*, *48*(4), 1163-1177.

Escoffery, C., Lebow-Skelley, E., Haardoerfer, R., Boing, E., Udelson, H., Wood, R., ... & Mullen, P. D. (2018). A systematic review of adaptations of evidence-based public health interventions globally. *Implementation Science*, *13*(1), 125.

Stirman, S. W., Baumann, A. A., & Miller, C. J. (2019). The FRAME: an expanded framework for reporting adaptations and modifications to evidence-based interventions. *Implementation Science*, *14*(1), 1-10.

Stirman lab on FRAME and related resources: http://med.stanford.edu/fastlab/research/adaptation.html

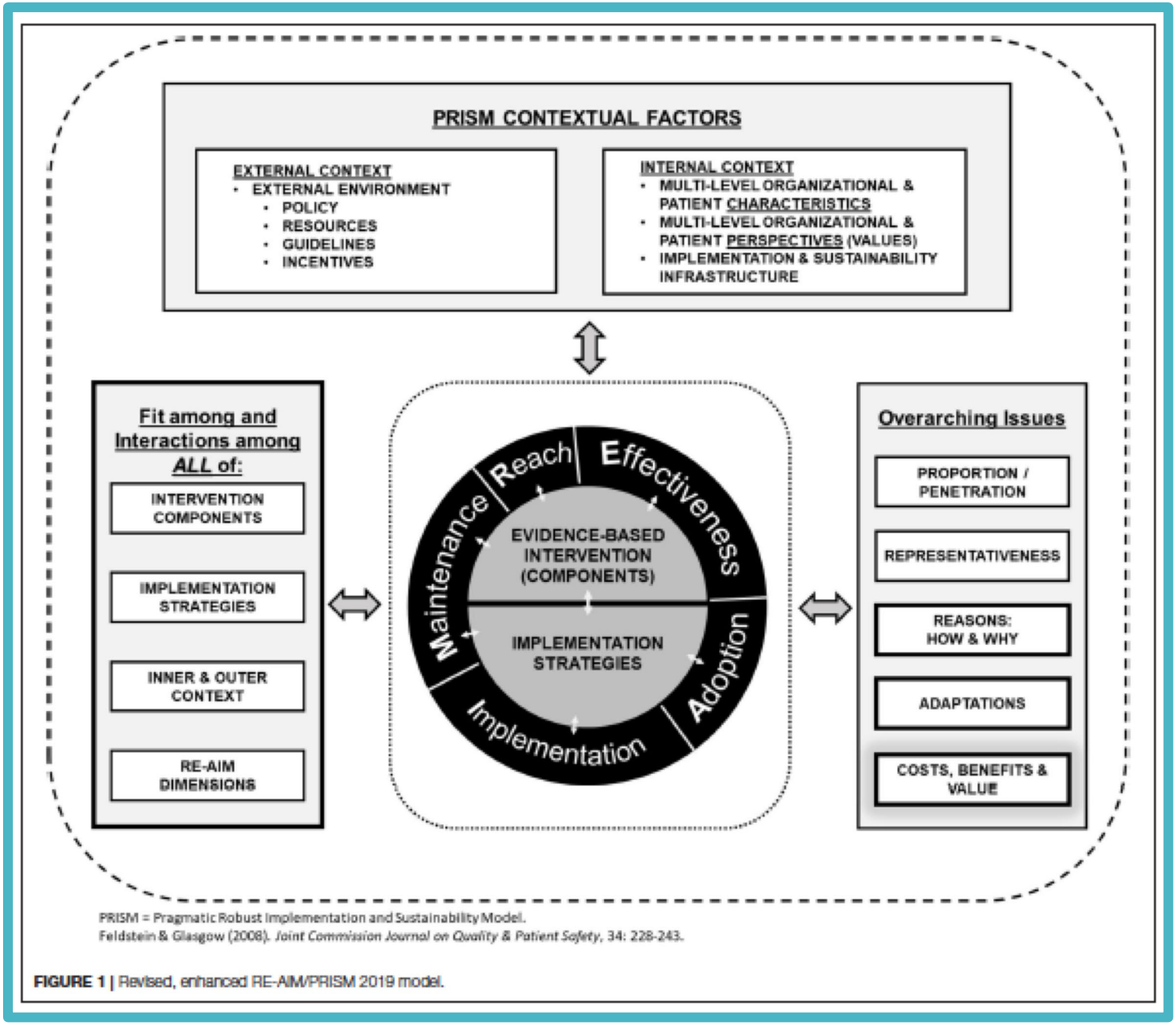
Coronado, G. D., Schneider, J. L., Green, B. B., Coury, J. K., Schwartz, M. R., Kulkarni-Sharma, Y., & Baldwin, L. M. (2020). Health plan adaptations to a mailed outreach program for colorectal cancer screening among Medicaid and Medicare enrollees: the BeneFIT study. *Implementation Science*, *15*(1), 1-13.

Glasgow, R. E., Battaglia, C., McCreight, M., Ayele, R. A., & Rabin, B. A. (2020). Making implementation science more rapid: Use of the RE-AIM framework for mid-course adaptations across five health services research projects in the Veterans Health Administration. *Frontiers in Public Health*, *8*, 194.

Rabin, B. A., McCreight, M., Battaglia, C., Ayele, R., Burke, R. E., Hess, P. L., ... & Glasgow, R. E. (2018). Systematic, multimethod assessment of adaptations across four diverse health systems interventions. *Frontiers in public health*, *6*, 102.

Evidence-Based...on what?
Key Equity Related Criteria on which to evaluate program progress- seldom used

- Participant **Representativeness and Equity**
- **Setting** Representativeness and Diversity
- **Context,** Setting and **Generalizability**
- **Feasibility and Fidelity**
- Community/Setting Engagement
- **Sustainability- and equity of settings and individuals** sustaining programs and improvements
- **Costs/Feasibility**



PRISM = Pragmatic Robust Implementation and Sustainability Model.
Feldstein & Glasgow (2008). *Joint Commission Journal on Quality & Patient Safety*, 34: 228-243.

FIGURE 1 | Revised, enhanced RE-AIM/PRISM 2019 model.

doi:10.3389/fpubh.2019.00064

Conventional thinking about preventive interventions focuses over simplistically on the ‘‘package’’ of activities and/or their educational messages. An alternative is to focus on the dynamic properties of the context into which the intervention is introduced. Schools, communities and worksites can be thought of as complex ecological systems. They can be theorized on three dimensions: (1) their constituent activity settings (e.g., clubs, festivals, assemblies, classrooms); (2) the social networks that connect the people and the settings; and (3) time. ***An intervention may then be seen as a critical event in the history of a system, leading to the evolution of new structures of interaction and new shared meanings. Interventions impact on evolving networks of person-time-place interaction, changing relationships, displacing existing activities and redistributing and transforming resources.*** *This alternative view has significant implications for how interventions should be evaluated and how they could be made more effective.*

Am J Community Psychol (2009) 43:267–276
DOI 10.1007/s10464-009-9229-9

ORIGINAL PAPER

Theorising Interventions as Events in Systems

Penelope Hawe · Alan Shiell · Therese Riley

Published online: 24 April 2009
! Springer Science+Business Media, LLC 2009

Abstract Conventional thinking about preventive interventions focuses over simplistically on the ‘‘package’’ of activities and/or their educational messages. An alternative is to focus on the dynamic properties of the context into which the intervention is introduced. Schools, communities and worksites can be thought of as complex ecological systems. They can be theorised on three dimensions: (1) their constituent activity settings (e.g., clubs, festivals, assemblies, classrooms); (2) the social networks that connect the people and the settings; and (3) time. An intervention may then be seen as a critical event in the history a system, leading to the evolution of new structures of interaction and new shared meanings. Interventions impact evolving networks of person-time-place interaction, relationships, displacing existing activities and transforming resources. This alternative view has significant implications for how interventions should be evaluated and how they could be made more effective. We explore this idea, drawing on social network analysis and complex systems theory.

Keywords Intervention ! Complexity ! Social networks ! Ecological ! Community ! Context

An early version of this work was presented at the Society for Community Research and Action Meeting, Champaign, Illinois, 2004.

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Introduction

An interchange in the 1980s captures a history that has repeated itself several times since in the field of prevention. When the Stanford Heart Disease prevention project was first being described and discussed, the lead investigators were criticised for using the word ‘‘community’’ to describe their intervention while actually relying on theories of behaviour change from individual psychology to power their thinking. The critics were asking for a cognisance of community and community-change processes of (Leventhal et al. 1980). Missing the point completely, the Stanford team replied that given that individuals were the ones having heart attacks, they were happy with the changing they had adopted (Meyer et al. 1980). redistributing and

As it happened, and is well known now, the Stanford Heart Disease prevention project and others modelled on it are counted as some of the failures in the history of the promotion of heart health (Susser 1995). In reflecting on this, the Stanford investigators concluded that ‘‘communities are dynamic entities’’ and as a consequence their approach should have been different at the outset (Fortmann et al. 1995). Sadly, they did not concede that this is what their critics had pointed out all along.

Population-level prevention, based on individual-level theorising, has thrived nonetheless. It could be argued that a lot has been gained. For example, improvements in physical activity and diet have been achieved by simple messaging by telephone (Eakin et al. 2007). Reductions in sexually risky behaviour among adolescents have been achieved with computer based interventions (Kiene and Barta 2006).

But overall, for several reasons, there is unease and dissatisfaction with the idea that conventionally conceived behaviour change interventions should function as our

“Complexity is defined as “a scientific theory which asserts that some systems display behavioral phenomena that are completely inexplicable by any conventional analysis of the systems' constituent parts.” **Reducing a complex system to its component parts amounts to “irretrievable loss of what makes it a system.”**

Hawe et al. BMJ 2004;328:1561–3

The Golden Hour
by Andrea Mowry

Published in	Drea Renee Knits
Craft	Knitting
Category	Neck / Torso → Shawl / Wrap
Published	July 2018
Suggested yarn	Stone Wool Cormo Brooklyn Tweed Ranch 01
Yarn weight	Worsted (9 wpi) ?
Gauge	16.5 stitches and 24 rows = 4 inches in Stockinette Stitch, after wet blocking
Needle size	US 8 - 5.0 mm
Yardage	660 - 700 yards (604 - 640 m)
Sizes available	one size
Languages	English Spanish

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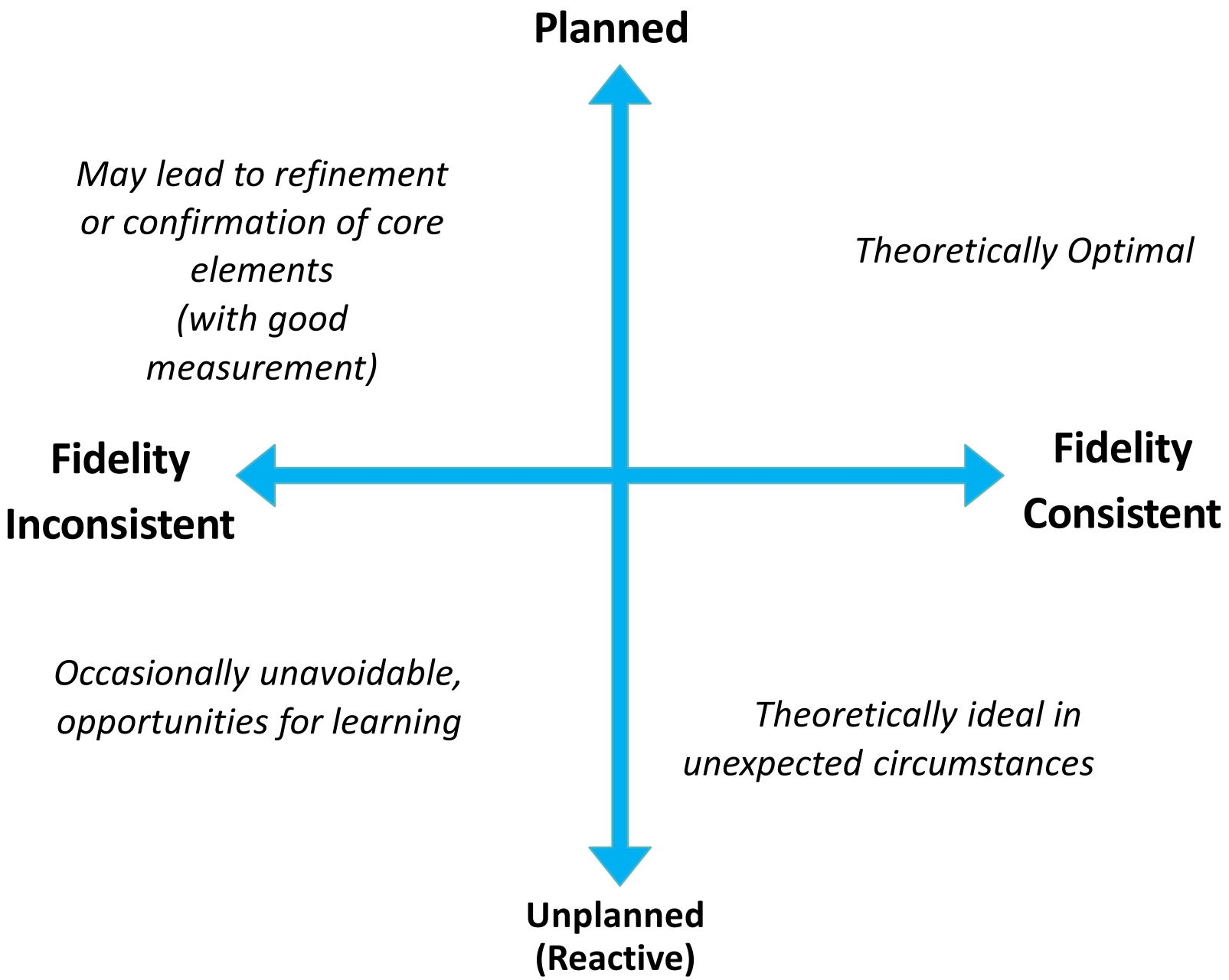
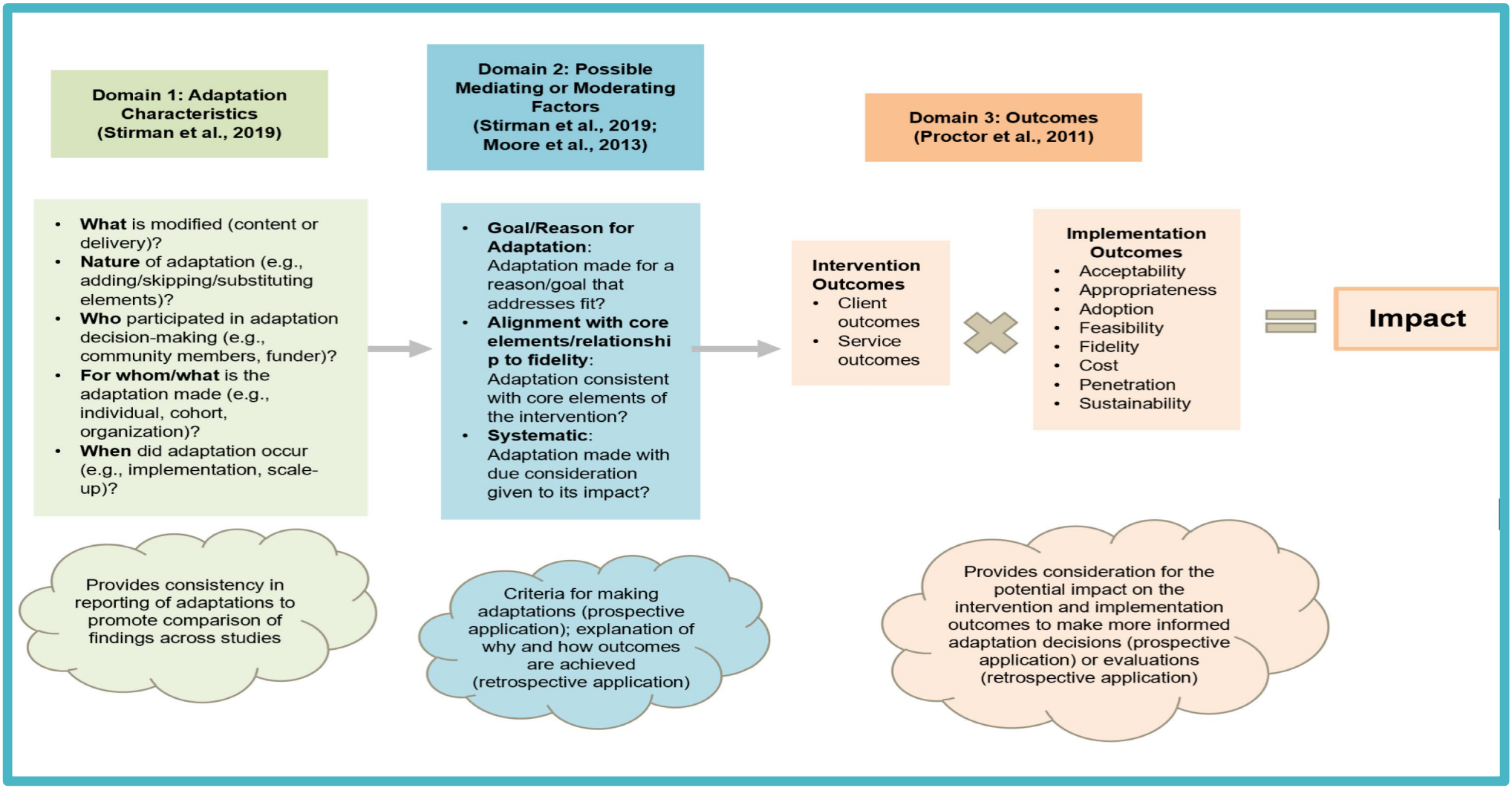


Miller, C. J., Wiltsey-Stirman, S., & Baumann, A. A. (2020). Iterative Decision-making for Evaluation of Adaptations (IDEA): A decision tree for balancing adaptation, fidelity, and intervention impact. *Journal of Community Psychology*, *48*(4), 1163-1177.

MADI



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