Iterative pragmatic approaches to guiding and evaluating adaptations in real-world settings with examples from the VA

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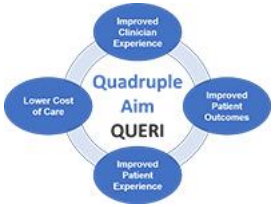

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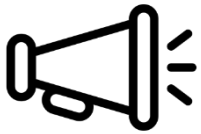
Topics for today

- Overview of key concepts of adaptations as they relate to complex, real-world interventions
- 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



How are you documenting adaptations in your current project(s)?

- **Not** documenting adaptations
- **Systematically and comprehensively** documenting adaptations
- **Pragmatically** documenting adaptations

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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.*

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.

DECIPHer

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

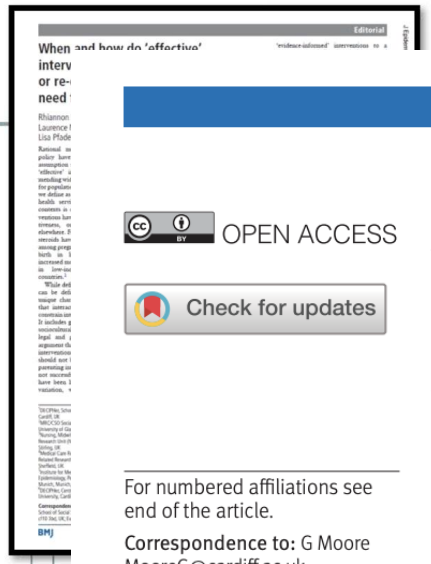
The development of guidance was underpinned by three key work packages:

- 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.

DECIPHer



RESEARCH METHODS AND REPORTING

OPEN ACCESS

Check for updates

Adapting interventions to new contexts—the ADAPT guidance

Graham Moore,[1] Mhairi Campbell,[2] Lauren Copeland,[1] Peter Craig,[2] Ani Movsisyan,[3,4] Pat Hoddinott,[5] Hannah Littlecott,[1] Alicia O'Cathain,[6] Lisa Pfadenhauer,[3,4] Eva Rehfuess,[3,4] Jeremy Segrott,[7] Penelope Hawe,[8,9] Frank Kee,[10] Danielle Couturiaux,[1] Britt Hallingberg,[1,11] Rhiannon Evans[1]

For numbered affiliations see end of the article.

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http://dx.doi.org/10.1136/bmj.n1679

Accepted: 28 June 2021

Implementing interventions with a previous evidence base in new contexts might be more efficient than developing new interventions for each context. Although some interventions transfer well, effectiveness and implementation often depend on the context. Achieving a good fit between intervention and context then requires careful and systematic adaptation. This paper presents new evidence and consensus informed guidance for adapting and transferring interventions to new contexts.

from interventions, by ensuring that interventions delivered at the population level are sensitive to the needs of disadvantaged groups.[10] When effects are not reproduced in new contexts, however, it can be difficult to determine whether this result is due to inappropriate adaptation, weaknesses in original evidence, mechanisms that do not function in the new context, or another explanation.

Efforts to examine what kinds of adaptation enhance the likelihood of interventions working in new contexts have proven inconclusive owing to limited transparency in conduct and reporting of adaptation.[7 11] In the ADAPT study,[12] funded by the UK Medical Research Council and National Institute for Health Research, we developed guidance to improve the conduct and reporting of intervention adaptations. Our guidance focuses on involving stakeholders in adaptation, selecting a suitable evidence informed intervention, planning and undertaking adaptations,

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guidance.

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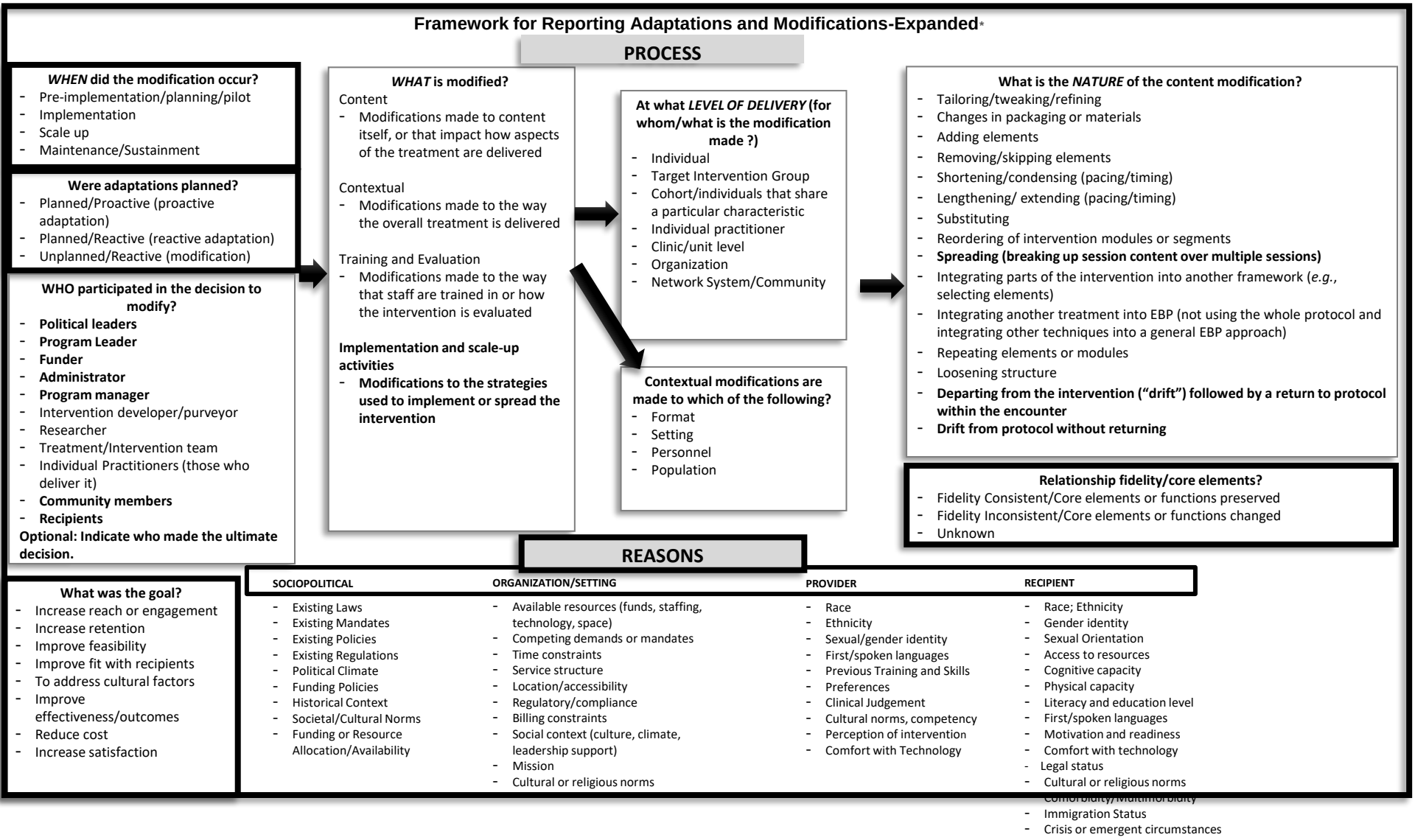
WHY document adaptations?

- 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**

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.

FRAME-IS

Module 1: BRIEFLY DESCRIBE the EBP, implementation strategy, and modification(s)

The EBP being implemented is: _____

The implementation strategy being modified is: _____

The modification(s) being made is/are: _____

The reason(s) for the modification(s) is/are: _____

Module 2: WHAT is modified?

❑ ***Content***
Modifications made to content of the implementation strategy itself, or that impact how aspects of the implementation strategy are delivered

❑ ***Evaluation***
Modifications made to the way that the implementation strategy is evaluated

❑ ***Training***
Modifications to the ways that implementers are trained

❑ ***Context***
Modifications made to the way the overall implementation strategy is delivered. For Context modifications, specify which of the following was modified:

- ❑ ***Format*** (e.g. group vs. individual format for delivering the implementation strategy)
- ❑ ***Setting*** (e.g. delivering the implementation strategy in a new clinical or training setting than was originally planned)
- ❑ ***Personnel*** (e.g. having the implementation strategy be delivered by a systems engineer rather than a clinician facilitator)
- ❑ ***Population*** (e.g. delivering the implementation strategy to middle managers instead of frontline clinicians)
- ❑ ***Other*** context modification: write in here:
  _____

Module 3: What is the NATURE of the content, evaluation, or training modification?

- ❑ Tailoring/tweaking/refining
- ❑ Changes in packaging or materials
- ❑ Adding elements
- ❑ Removing/skipping elements
- ❑ Shortening/condensing (pacing/timing)
- ❑ Lengthening/ extending (pacing/timing)
- ❑ Substituting
- ❑ Reordering of implementation modules or segments
- ❑ Spreading (breaking up implementation content over multiple sessions)
- ❑ Integrating parts of the implementation strategy into another strategy (e.g., selecting elements)
- ❑ Integrating another strategy into the implementation strategy in primary use (e.g. adding an audit/feedback component to an implementation facilitation strategy that did not originally include audit/feedback)
- ❑ Repeating elements or modules of the implementation strategy
- ❑ Loosening structure
- ❑ Departing from the implementation strategy ("drift") followed by a return to strategy within the implementation encounter
- ❑ Drift from the implementation strategy without returning (e.g., stopped providing consultation, stopped sending feedback reports)
- ❑ Other (write in here):
  _____

Module 3, OPTIONAL Component: Relationship to fidelity/core elements?

- ❑ Fidelity Consistent/Core elements or functions preserved
- ❑ Fidelity Inconsistent/Core elements or functions changed
- ❑ Unknown

Module 4, Part 1: What is the GOAL?

- ❑ Increase reach of the EBP (i.e. the number of patients receiving the EBP)
- ❑ Increase the clinical effectiveness of the EBP (i.e. the clinical outcomes of the patients or others receiving the EBP)
- ❑ Increase adoption of the EBP (i.e. the number of clinicians or teachers using the EBP)
- ❑ Increase the acceptability, appropriateness, or feasibility of the implementation effort (i.e. improve the fit between the implementation effort and the needs of those delivering the EBP)
- ❑ Decrease costs of the implementation effort
- ❑ Improve fidelity to the EBP (i.e. improve the extent to which the EBP is delivered as intended)
- ❑ Improve sustainability of the EBP (i.e. increase the chances that the EBP remains in practice after the implementation effort ends)
- ❑ Increase health equity or decrease disparities in EBP delivery
- ❑ Other (write in here):
  _____

Module 4, Part 2: What is the LEVEL of the rationale for modification?

- ❑ Sociopolitical level (i.e. existing national mandates)
- ❑ Organizational level (i.e. available staffing or materials)
- ❑ Implementer level (i.e. those charged with leading the implementation effort)
- ❑ Clinician or Teacher level (i.e. those implementing the EBP)
- ❑ Patient or Other Recipient level (i.e. those who will ideally benefit from the EBP)
- ❑ Other (write in here):
  _____

Miller, C., Barnett, M.L., Baumann, A.A. *et al.* The FRAME-IS: a framework for documenting modifications to implementation strategies in healthcare. *Implementation Sci* **16,** 36 (2021).

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.

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frontiers in Public Health

METHODS
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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]*

[1] Denver-Seattle Center of Innovation for Veteran-Centered and Value-Driven Care (COIN), Denver VHA Medical Center, Denver, CO, United States, [2] Department of Family Medicine and Public Health, School of Medicine, University of California San Diego, La Jolla, CA, United States, [3] Adult and Child Consortium for Health Outcomes Research and Delivery Science, School of Medicine, University of Colorado, Aurora, CO, United States, [4] Department of Family Medicine, School of Medicine, University of Colorado, Aurora, CO, United States, [5] Department of Health System Management and Policy, Colorado School of Public Health, University of Colorado, Aurora, CO, United States, [6] Department of Medicine, School of Medicine, University of Colorado, Aurora, CO, United States*

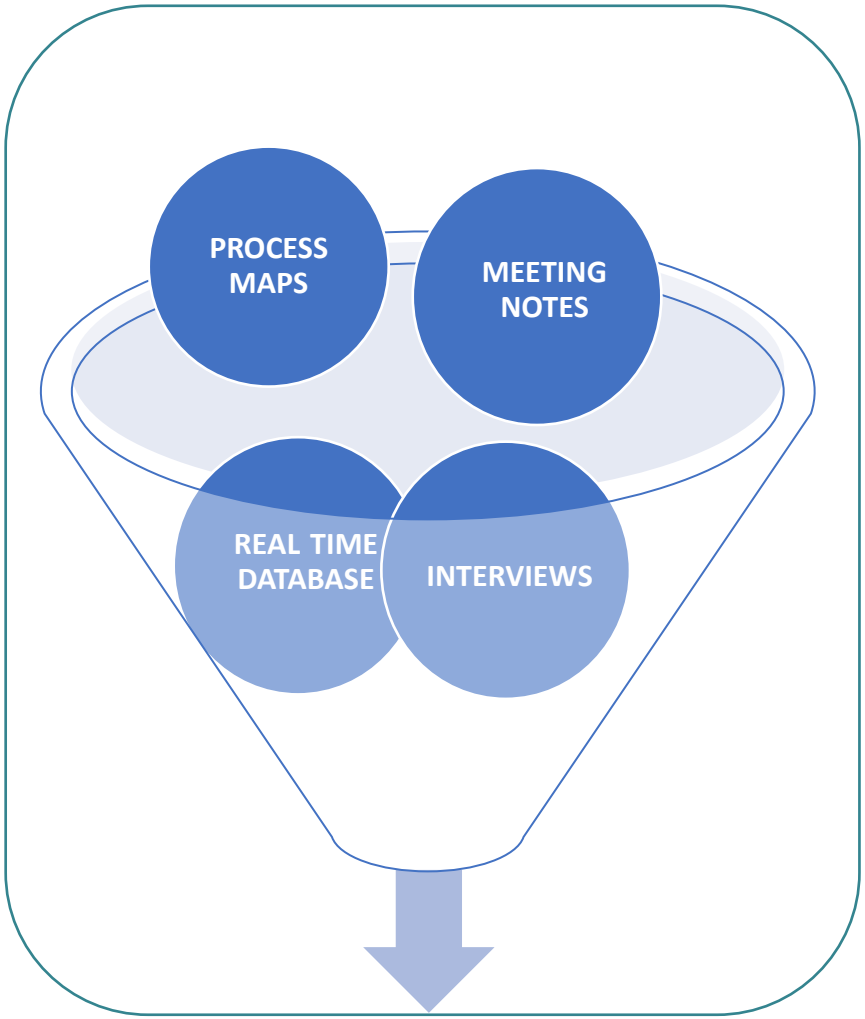
Triangulation of data

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
WHEN: When during the project the adaptation was made	During planning stages before began intervention	During planning stages before began intervention
WHY: What is the purpose of the adaptation?	Increase effectiveness	Increase implementation/ ability of staff to deliver intervention successfully
IMPACT - What are (subjective) short term results of adaptation?	Positive: Impact effectiveness	Positive: Impact implementation/ ability of staff to deliver intervention successfully

A	B	C	D	E	F	G	H	I
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

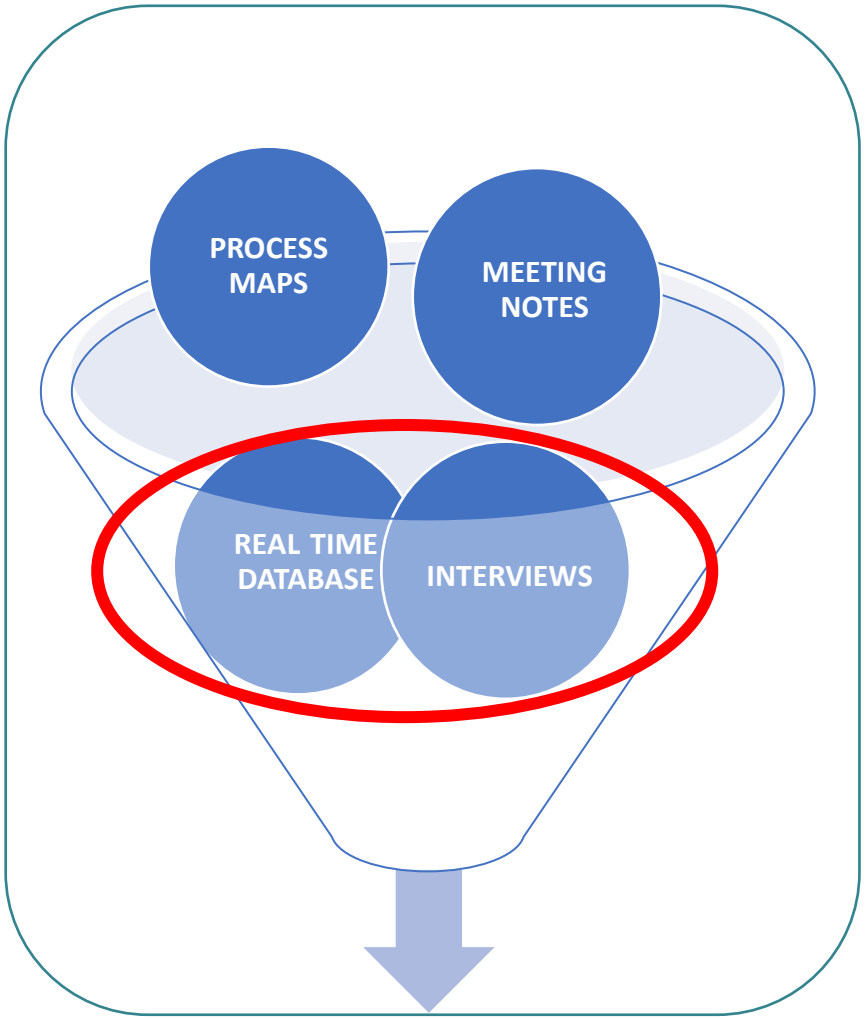
Study 1: TNP - Triangulation of data

SURVEYS

OBSERVATION

INFORMAL CHECK IN WITH TEAMS

PERIODIC REFLECTIONS

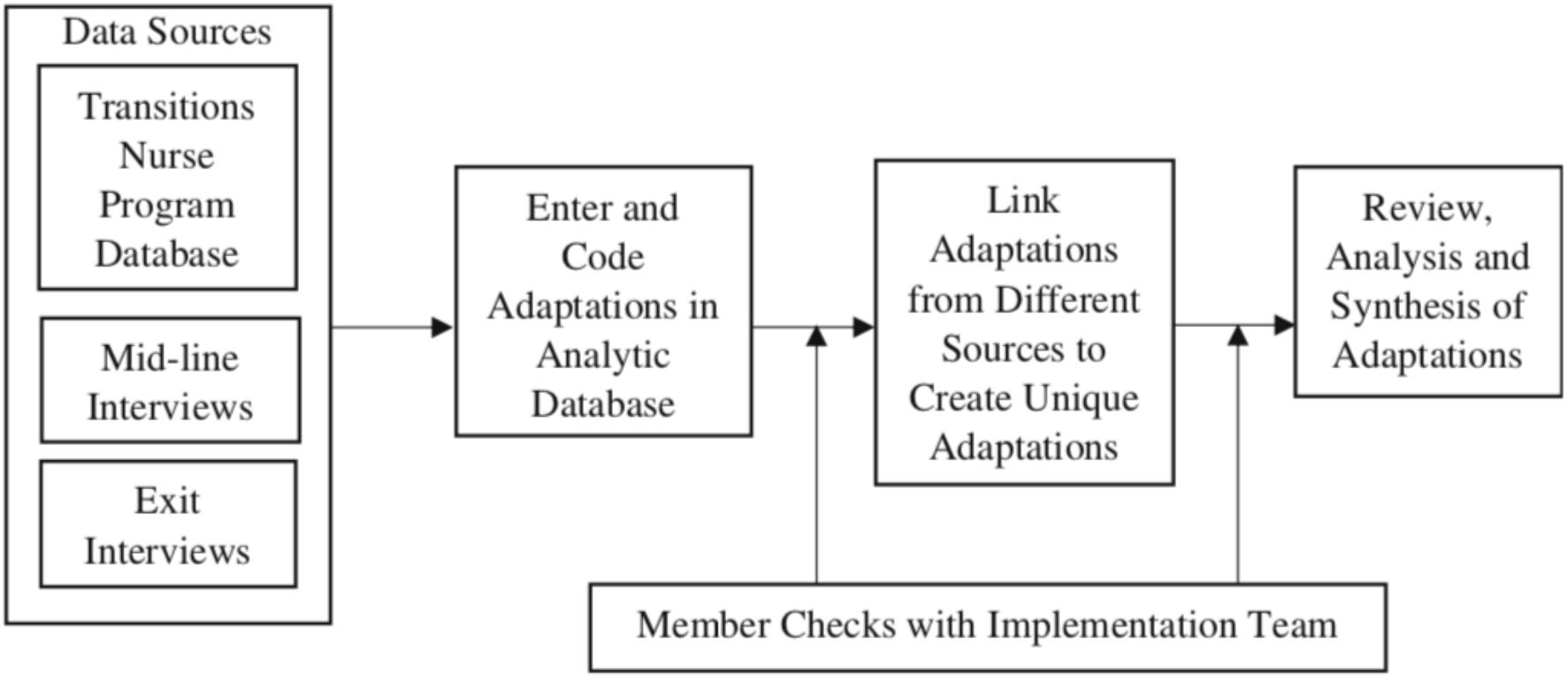


ELECTRONIC RECORDS

CHECKLISTS & LOGS

Full Picture of Adaptations

McCarthy M, Ujano de Motta L, Nunnery M, Gilmartin H, Leonard C, …, Rabin B. Adaptations during the implementation of the Transition Nurse Program. *Implementation Science*



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Key findings from analysis Study 1: TNP

Table 1: Distribution of unique adaptations across sites and time points

Timing of Adaptations Across Sites and Timepoints					
Phase	Pre-I	Early-I	Imp	Late-I	Sustainment
Site 1	0	0	5	3	0
Site 2	0	2	4	0	0
Site 3	0	0	7	1	0
Site 4	0	1	8	0	0
Site 5	1	3	6	0	0
Total	**1**	**6**	**30**	**4**	**0**

Pre-I = pre-implementation, Early-I = early implementation,

Imp = implementation, Late-I = late implementation

McCarthy M, Ujano de Motta L, Nunnery M, Gilmartin H, Leonard C, …, Rabin B. Adaptations during the implementation of the Transition Nurse Program. *Implementation Science*

Adaptation constructs	Pre-Implementation	Early-Implementation	Mid-Implementation	Late-Implementation	Sustainment		Total
Elements							
Format	0	0	2	1	0		3
Personnel Involved	1	0	7	1	0		9
Target Population	0	4	16	2	0		22
Intervention Presentation	0	2	4	0	0		6
Other	0	0	1	0	0		1
What was changed							
Tailoring to individuals	0	0	3	2	0		5
Adding a component	0	0	0	0	0		0
Removing a component	0	0	0	0	0		0
Condensing a component	0	0	0	0	0		0
Extending a component	0	0	1	0	0		1
Substituting for a component	0	0	1	0	0		1
Changing the order of components	0	0	0	0	0		0
Integrating with other programs	0	3	1	0	0		4
Repeating a component	0	0	0	0	0		0
Loosening the structure or protocol	0	0	0	0	0		0
Otherwise changing the intervention	1	3	24	2	0		30
Who was responsible for this change							
Entire or Most of Team	0	3	9	0	0		12
Provider (TN/SC)	1	3	16	0	0		20
Administrator	0	0	3	1	0		4
Researcher	0	0	0	3	0		3
Developer	0	0	0	0	0		0
Stakeholder	0	0	1	0	0		1

McCarthy M, Ujano de Motta L, Nunnery M, Gilmartin H, Leonard C, …, Rabin B. Adaptations during the implementation of the Transition Nurse Program. *Revise and resubmit in Implementation Science*

Key findings from analysis of the TNP study

- **Longitudinal and multi-stakeholder database entries and interviews** were used to assess adaptations across five sites over three years.
- Collecting data **at different time points** from different stakeholders allowed us to **triangulate the data** for a richer understanding.
- **Member checking** with the main implementation team provided rich contextual details that were not reflected in the database and interviews.
- We observed a change in the **type and the intention of adaptations** depending on when these adaptations happened.
- Adaptations are heavily influenced by **personnel and context**, often in interplay with each other. Few adaptations that were identified occurred in isolation.
- 73% of adaptations were coded **as planned (proactive)** and 27% as **unplanned (reactive).**
- Systematically documenting the **impact (positive or negative) of adaptations** on process and effectiveness outcomes as well as sustainment proved challenging.

McCarthy M, Ujano de Motta L, Nunnery M, Gilmartin H, Leonard C, …, Rabin B. Adaptations during the implementation of the Transition Nurse Program. *Revise and resubmit in Implementation Science*

Improving Collaborative Decision-Making Among Veterans with Psychosis

Intervention: Collaborative Decision Skills Training (CDST)

- Intended to increase patient knowledge, skills, comfort & confidence to engage in treatment decision-making
- Developed with civilians with serious mental illness & clinicians, piloted with civilians with serious mental illness

Current study aims

- Adapt CDST for Veterans with psychosis
- Assess effectiveness and implementation feasibility for use among Veterans with psychosis participating in VA psychiatric rehabilitation

3. What was changed- component of CDST	Was the change made?	4. What was the size of the change?	5. What was the scope of the change?
Which of the following components of CDST was altered? Role-plays and other in-session practice Worksheets Examples Advocacy Treatment teams At-home practice Goal identification and planning skills (including NOW) Assertiveness skills (including ASAP) Problem solving skills (including SCALIE) Coping skills Psychoeducation Managing conflict and disagreements Empowerment	Yes (change was incorporated into manual, practice, method, etc). No, not incorporated. If no, why? Pick option: -Change would compromise the integrity of the intervention -Change was not practical or not feasible -There were administrative challenges to implementing the change -Change was too drastic -Change not desirable at this time -Other reason (describe)	**Considering the total CDST intervention, what percentage of the intervention was impacted by this change?** For example, if 1 role-play was removed from the manual and the role-play is estimated to take 10 minutes of session time, this would equal 2.1% of the intervention (i.e., 10/60 minutes of 1 of 8 session = 1/48 = 2.1%).	**What percentage of the sessions were impacted by the change?** - 1 session = 12.5% 2 sessions = 25% 3 sessions = 37.5% 4 sessions = 50% 5 sessions = 62.5% 6 sessions = 75% 7 sessions = 87.5% 8 sessions = 100%
Assertiveness skills (including ASAP)	Yes, manuals	3.13%	12.50%
Psychoeducation	Yes, manuals	0.21%	12.50%
Service delivery manual	Yes, SDM	0.42%	12.50%

- FRAME with new sections including size & scope

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]

McCarthy et al. Implementation Science (2021) 16:71
https://doi.org/10.1186/s13012-021-01126-y

Implementation Science

RESEARCH Open Access

Understanding adaptations in the Veteran Health Administration's Transitions Nurse Program: refining methodology and pragmatic implications for scale-up

Michaela S. McCarthy[1,2*], Lexus L. Ujano-De Motta[1], Mary A. Nunnery[1], Heather Gilmartin[1,3], Lynette Kelley[1], Ashlea Wills[1], Chelsea Leonard[1], Christine D. Jones[1,4] and Borsika A. Rabin[1,5,6]

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]

Coury et al. Implementation Science Communications (2021) 2:5
https://doi.org/10.1186/s43058-020-00104-7

Implementation Science Communications

RESEARCH Open Access

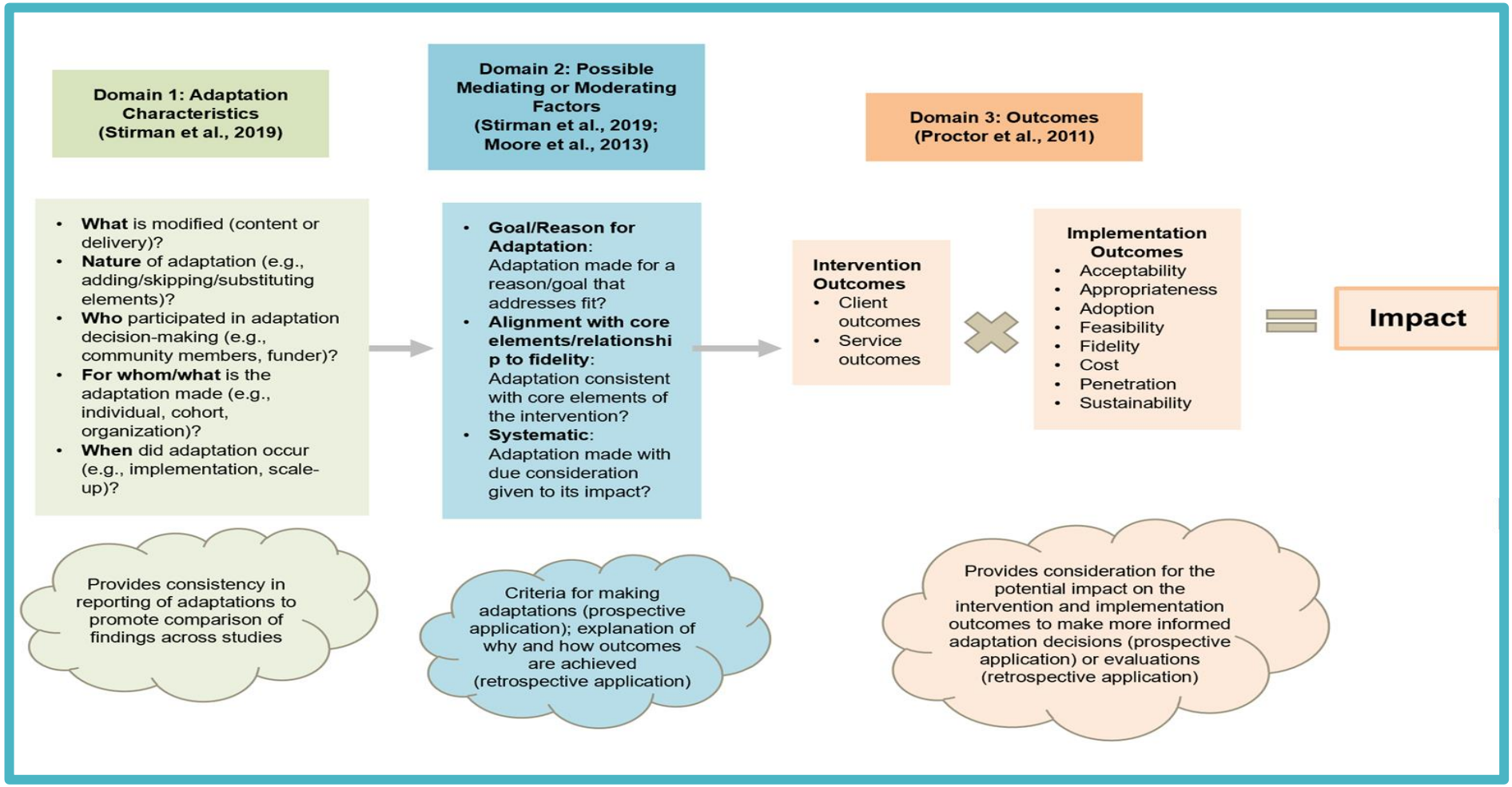
What's the "secret sauce"? How implementation variation affects the success of colorectal cancer screening outreach

Jennifer Coury[1*], Edward J. Miech[2], Patricia Styer[3], Amanda F. Petrik[4], Kelly E. Coates[5], Beverly B. Green[6], Laura-Mae Baldwin[7], Jean A. Shapiro[8] and Gloria D. Coronado[4]

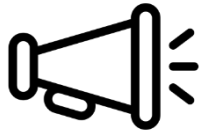
Topics for today

- Overview of key concepts of adaptations as they relate to complex, real-world interventions
- 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

MADI



Kirk, M.A., Moore, J.E., Wiltsey Stirman, S. *et al.* Towards a comprehensive model for understanding adaptations' impact: the model for adaptation design and impact (MADI). *Implementation Sci* **15,** 56 (2020).

Poll the Audience 

How familiar are you with the RE-AIM framework?

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

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)

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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.

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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
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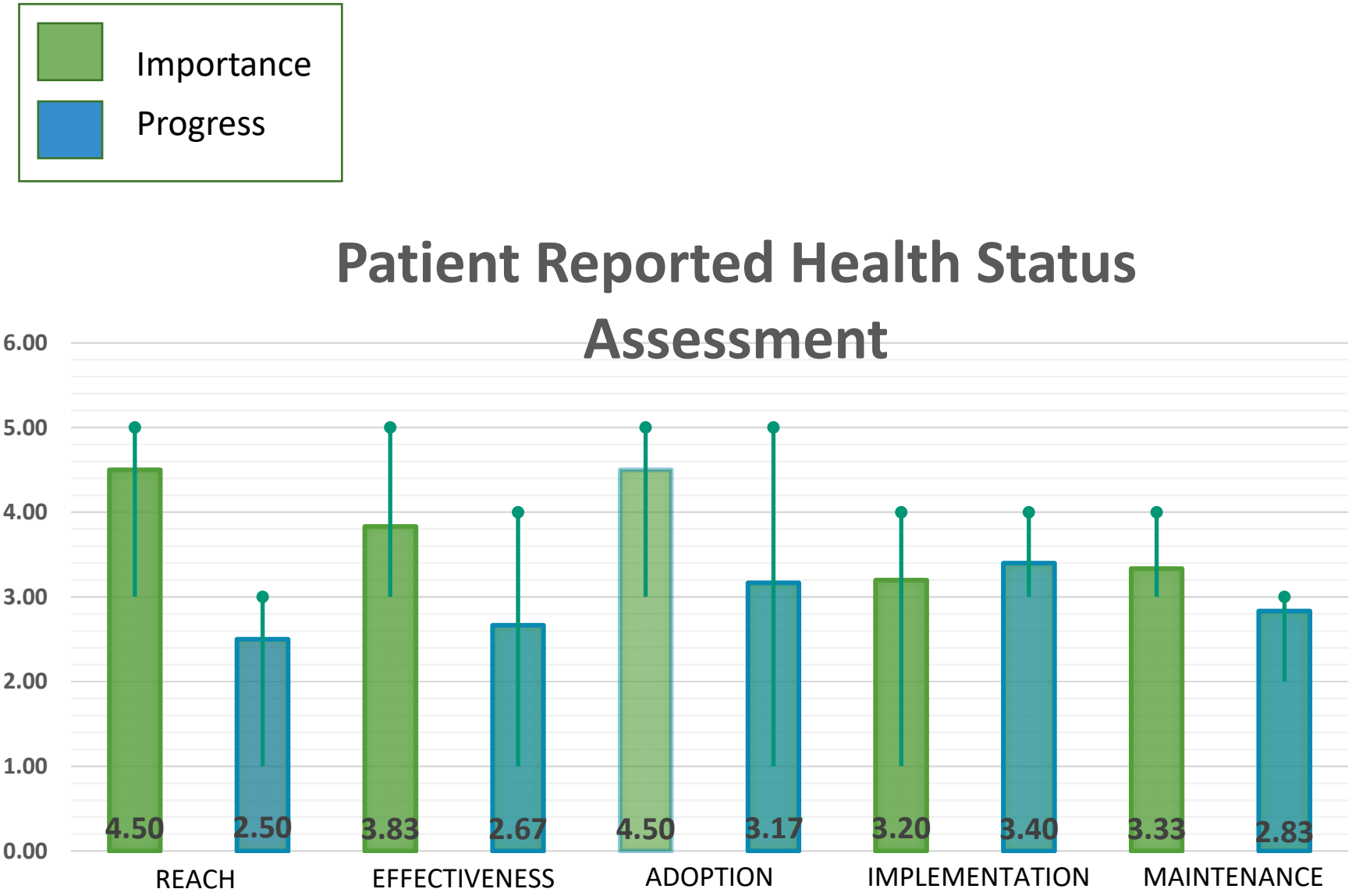
Comments:

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

Limitations of initial iterative RE-AIM Study

- 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 for iterative RE-AIM

- Use as an implementation ***strategy bundle*** for the Quadruple Aim QUERI

- 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 on iterative RE-AIM

- 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**.

Topics for today

- Overview of key concepts of adaptations as they relate to complex, real-world interventions
- 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**

Potential **future directions for documenting and guiding adaptations -** ***for discussion***

- Use of innovative and multi-method approaches to document adaptations is needed – these need to be pragmatic
- Need to better understand the impact of adaptations on implementation and effectiveness outcomes – how do we track this
- Explore process mapping as stakeholder focused approach to ASSESS and to GUIDE adaptations
- Need systems approaches to make sense out of rapid, dynamic, complex interactions over time
- Investigate realist evaluation framework- what adaptions for what purpose under what conditions for what issues….etc.

Final thoughts…

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

- Explore parallel concept of 'complex adaptations

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

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

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

Adaptation, Fidelity, and Tailoring group

- The group **began in January 2016** as part of the IRG
- We currently have **over a 100 members**
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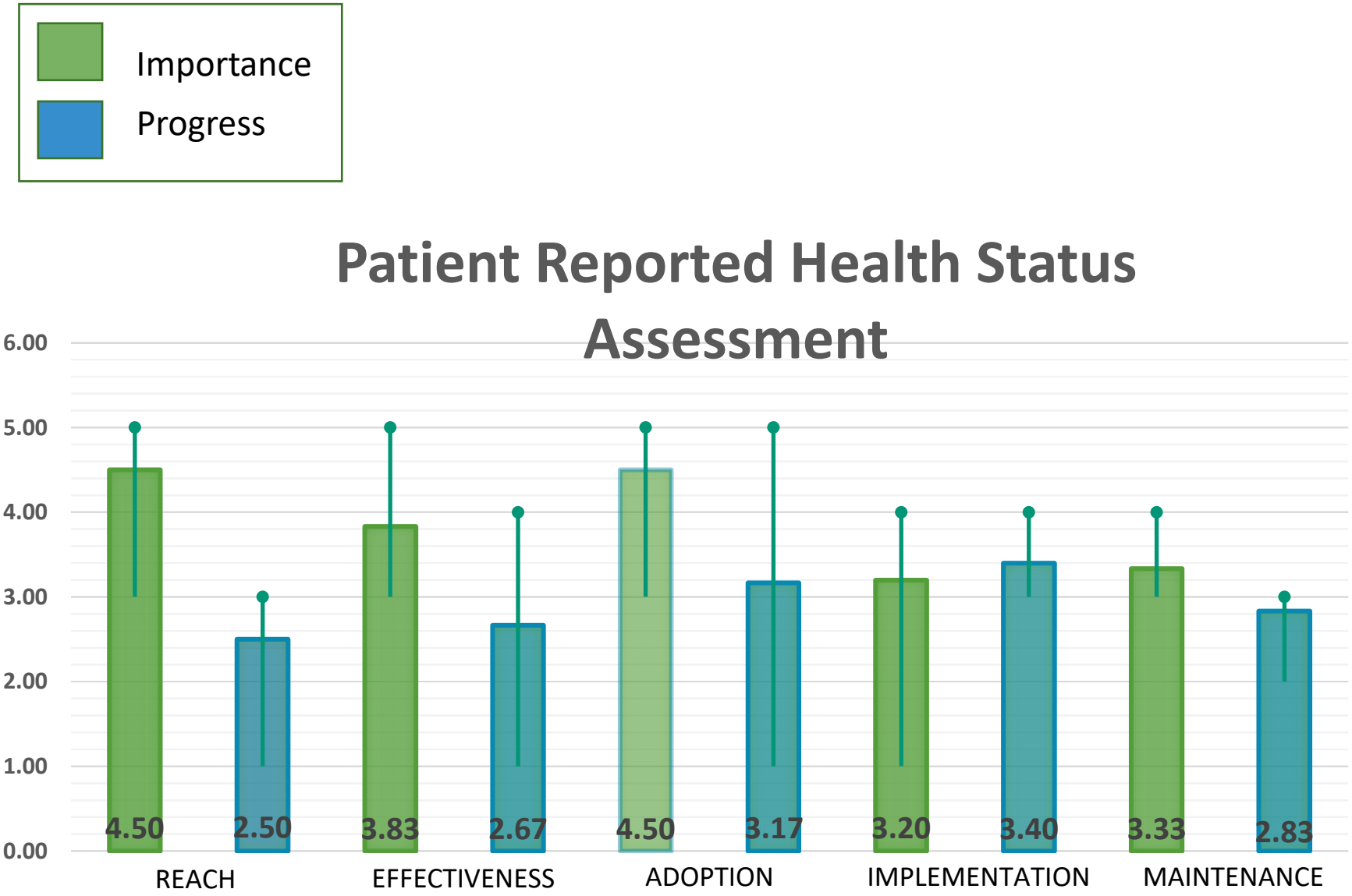

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Questions for you…

- What do you see as most important need for research on documenting and understanding adaptations?
- What do you see as most important need for research on guiding adaptations?
- How can we make adaptations research more rapid and relevant to stakeholders?

LET GO, LEARN FAST, AND THRIVE IN THE
FUTURE OF WORK

the adaptation advantage

HEATHER E. McGOWAN
CHRIS SHIPLEY
FOREWORD BY THOMAS L. FRIEDMAN