

# ASSESSMENT AND CLASSIFICATION OF MODIFICATIONS TO EVIDENCE-BASED INTERVENTIONS

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# Poll Question #1

- What is your primary role in VA?
  - student, trainee, or fellow
  - clinician
  - researcher
  - Administrator, manager or policy-maker
  - Other

## Poll question #2

With respect to adaptations/modifications:

- I have needed to adapt interventions for my clinical work
- I have needed to adapt interventions for research
- I haven't had to adapt interventions in the work I do

# Not all Adaptations are equal?

- Little research is available to determine impact
- Relatively few distinctions between types of modifications

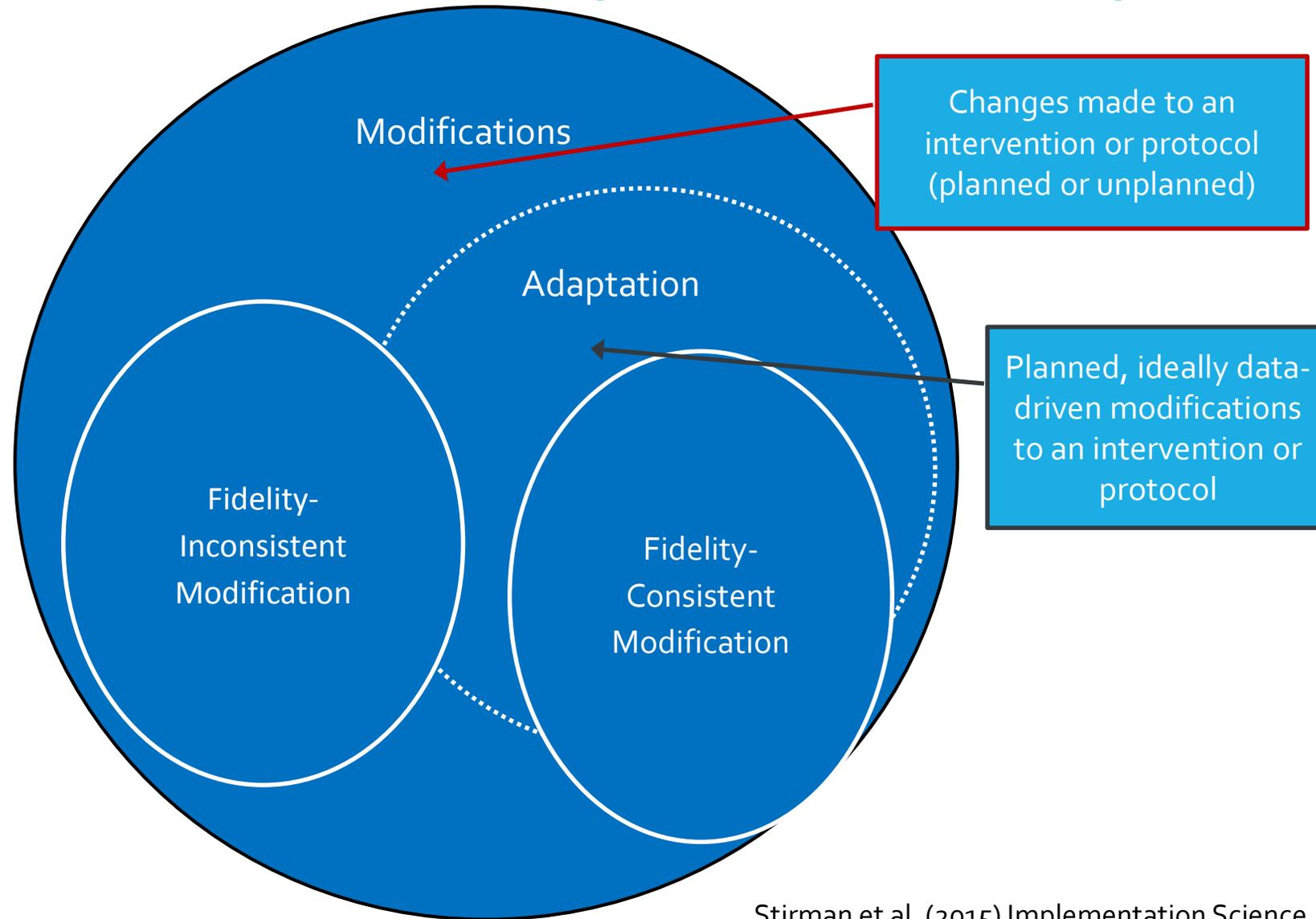
# Definitions and distinctions

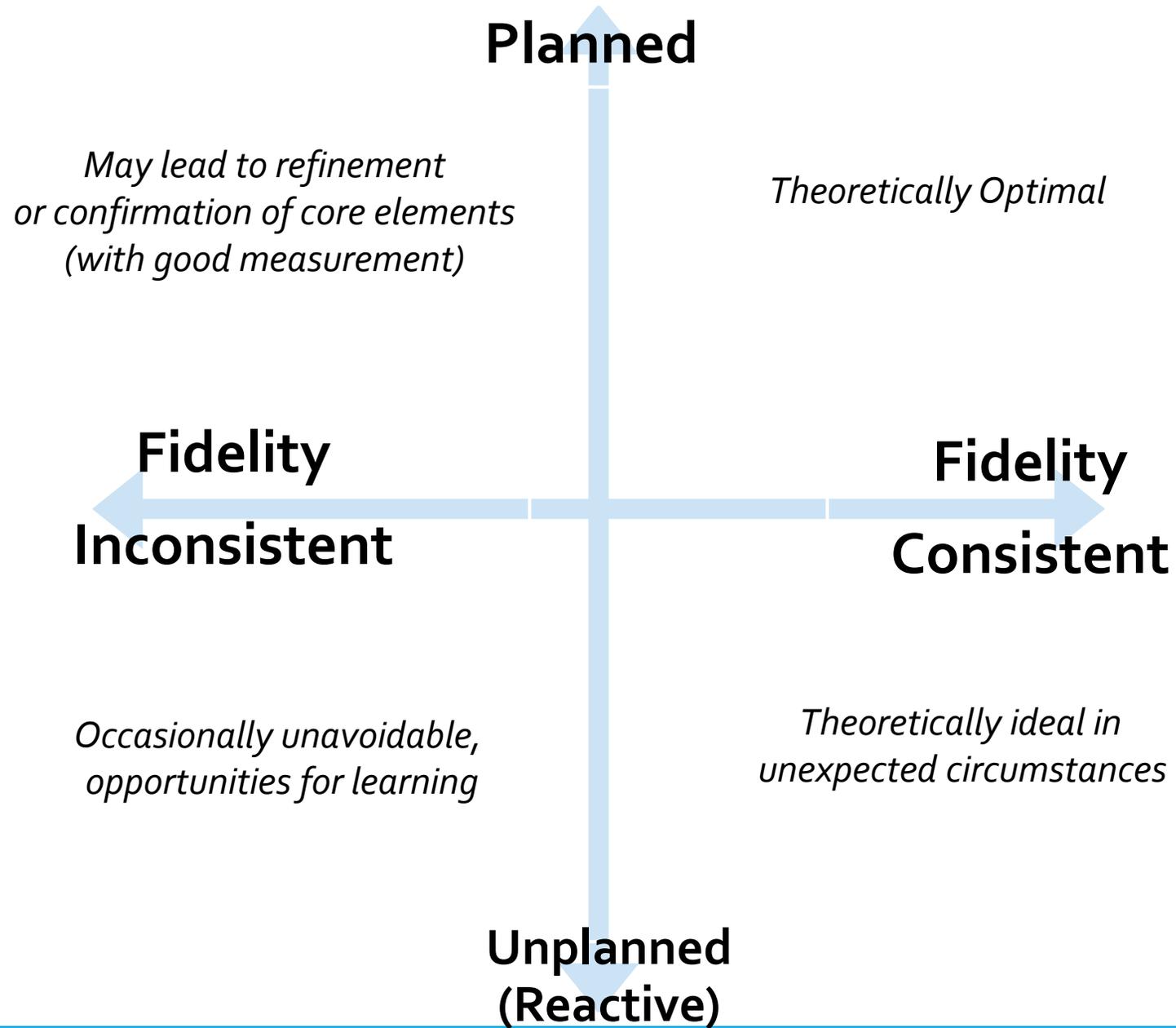
- Fidelity: the skilled/appropriate delivery of core intervention components
- Modification: changes (proactive or reactive) made to the intervention/program
- Adaptation: proactive, planned modifications

# What do we mean by core elements?

- Parts of the intervention that are empirically or theoretically associated with desired outcomes/impact
- Parts of the intervention that are effective and necessary
- Might mean attending to *function*, rather than *form* in complex settings and interventions (c.f., Mittman, 2018)
- *These may not be the same in all contexts*

# Modification, Adaptation, Fidelity





# Core elements vs. Core functions



# DOCUMENTING ADAPTATIONS

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# 2013 FRAMEWORK

Stirman et al. *Implementation Science* 2013, **8**:65  
<http://www.implementationscience.com/content/8/1/65>



RESEARCH

Open Access

## Development of a framework and coding system for modifications and adaptations of evidence-based interventions

Shannon Wiltsey Stirman<sup>1,2,3\*</sup>, Christopher J Miller<sup>2,5</sup>, Katherine Toder<sup>4</sup> and Amber Calloway<sup>6</sup>

### Abstract

**Background:** Evidence-based interventions are frequently modified or adapted during the implementation process. Changes may be made to protocols to meet the needs of the target population or address differences between the context in which the intervention was originally designed and the one into which it is implemented [*Addict Behav* 2011, **36**(6):630–635]. However, whether modification compromises or enhances the desired benefits of the intervention is not well understood. A challenge to understanding the impact of specific types of modifications is a lack of attention to characterizing the different types of changes that may occur. A system for classifying the types of modifications that are made when interventions and programs are implemented can facilitate efforts to understand the nature of modifications that are made in particular contexts as well as the impact of these modifications on outcomes of interest.

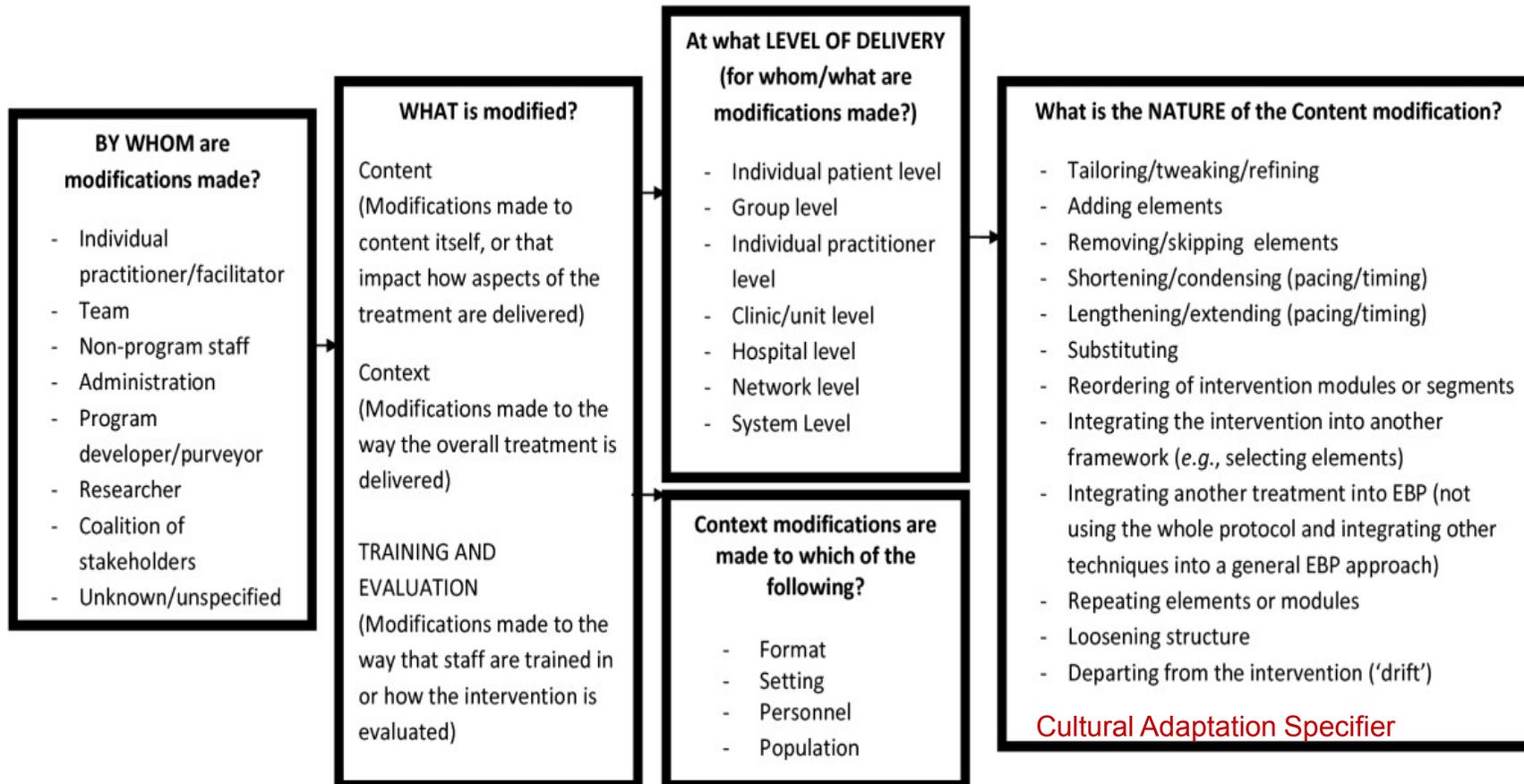
**Methods:** We developed a system for classifying modifications made to interventions and programs across a variety of fields and settings. We then coded 258 modifications identified in 32 published articles that described interventions implemented in routine care or community settings.

**Results:** We identified modifications made to the content of interventions, as well as to the context in which interventions are delivered. We identified 12 different types of content modifications, and our coding scheme also included ratings for the level at which these modifications were made (ranging from the individual patient level up to a hospital network or community). We identified five types of contextual modifications (changes to the format, setting, or patient population that do not in and of themselves alter the actual content of the intervention). We also developed codes to indicate who made the modifications and identified a smaller subset of modifications made to the ways that training or evaluations occur when evidence-based interventions are implemented. Rater agreement analyses indicated that the coding scheme can be used to reliably classify modifications described in research articles without overly burdensome training.

**Conclusions:** This coding system can complement research on fidelity and may advance research with the goal of understanding the impact of modifications made when evidence-based interventions are implemented. Such findings can further inform efforts to implement such interventions while preserving desired levels of program or intervention effectiveness.

**Keywords:** Implementation, Modification, Adaptation, Sustainability

# Framework of Modifications And Adaptations



# Hall, Rabin, Glasgow et al

- 2017: PCMH Adaptations model
- 2018: Blended assessment model: Expanded framework to Who, What, When, Why
- Most adaptations undertaken to increase effectiveness
- Adaptations undertaken by teams at early- to- mid- implementation most effective

# How do taxonomies fit the data?

- Roscoe & Colleagues applied 4 taxonomies to a dataset (school-based intervention)
  - Castro
  - Bernal
  - Moore
  - Stirman
- Coverage & Clarity relatively high

The Journal of Primary Prevention  
<https://doi.org/10.1007/s10935-018-00531-2>

ORIGINAL PAPER



## Classifying Changes to Preventive Interventions: Applying Adaptation Taxonomies

Joseph N. Roscoe<sup>1</sup> · Valerie B. Shapiro<sup>1</sup> · Kelly Whitaker<sup>2</sup> · B. K. Elizabeth Kim<sup>3</sup>

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### Abstract

High-quality implementation is important for preventive intervention effectiveness. Although this implies fidelity to a practice model, some adaptation may be inevitable or even advantageous in routine practice settings. In order to organize the study of adaptation and its effect on intervention outcomes, scholars have proposed various adaptation taxonomies. This paper examines how four published taxonomies retrospectively classify adaptations: the Ecological Validity Framework

# UPDATED FRAMEWORK FOR REPORTING

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STIRMAN, BAUMANN, MILLER (IN PRESS; *IMPLEMENTATION SCIENCE*);  
AVAILABLE AT:

[HTTP://MED.STANFORD.EDU/FASTLAB/RESEARCH/A  
DAPTATION.HTML](http://med.stanford.edu/fastlab/research/adaptation.html)

# Framework for Reporting Adaptations and Modifications-Expanded

## PROCESS

### WHEN did the modification occur?

- Pre-implementation/planning/pilot
- Implementation
- Scale up
- Maintenance/Sustainment

### Were adaptations planned?

- Planned/Proactive (proactive adaptation)
- Planned/Reactive (reactive adaptation)
- Unplanned/Reactive (modification)

### WHO participated in the decision to modify?

- Political leaders
- Program Leader
- Funder
- Administrator
- Program manager
- Intervention developer/purveyor
- Researcher
- Treatment/Intervention team
- Individual Practitioners (those who deliver it)
- Community members
- Recipients

Optional: Indicate who made the ultimate decision.

### WHAT is modified?

#### Content

- Modifications made to content itself, or that impact how aspects of the treatment are delivered

#### Contextual

- Modifications made to the way the overall treatment is delivered

#### Training and Evaluation

- Modifications made to the way that staff are trained in or how the intervention is evaluated

#### Implementation and scale-up activities

- Modifications to the strategies used to implement or spread the intervention

### At what LEVEL OF DELIVERY (for whom/what is the modification made ?)

- Individual
- Target Intervention Group
- Cohort/individuals that share a particular characteristic
- Individual practitioner
- Clinic/unit level
- Organization
- Network System/Community

### Contextual modifications are made to which of the following?

- Format
- Setting
- Personnel
- Population

### What is the NATURE of the content 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 intervention modules or segments
- **Spreading (breaking up session content over multiple sessions)**
- Integrating parts of the intervention into another framework (e.g., selecting elements)
- Integrating another treatment into EBP (not using the whole protocol and integrating other techniques into a general EBP approach)
- Repeating elements or modules
- Loosening structure
- **Departing from the intervention ("drift") followed by a return to protocol within the encounter**
- **Drift from protocol without returning**

### Relationship fidelity/core elements?

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

## REASONS

### What was the goal?

- Increase reach or engagement
- Increase retention
- Improve feasibility
- Improve fit with recipients
- To address cultural factors
- Improve effectiveness/outcomes
- Reduce cost
- Increase satisfaction

#### SOCIOPOLITICAL

- Existing Laws
- Existing Mandates
- Existing Policies
- Existing Regulations
- Political Climate
- Funding Policies
- Historical Context
- Societal/Cultural Norms
- Funding or Resource Allocation/Availability

#### ORGANIZATION/SETTING

- Available resources (funds, staffing, technology, space)
- Competing demands or mandates
- Time constraints
- Service structure
- Location/accessibility
- Regulatory/compliance
- Billing constraints
- Social context (culture, climate, leadership support)
- Mission
- Cultural or religious norms

#### PROVIDER

- Race
- Ethnicity
- Sexual/gender identity
- First/spoken languages
- Previous Training and Skills
- Preferences
- Clinical Judgement
- Cultural norms, competency
- Perception of intervention

#### RECIPIENT

- Race; Ethnicity
- Gender identity
- Sexual Orientation
- Access to resources
- Cognitive capacity
- Physical capacity
- Literacy and education level
- First/spoken languages
- Legal status
- Cultural or religious norms
- Comorbidity/Multimorbidity
- Immigration Status
- Crisis or emergent circumstances
- Motivation and readiness

WHEN, WHO?

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# Framework for Reporting Adaptations and Modifications-Expanded\*

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## **WHO** made the decision to modify?

- Team
- Individual practitioner/ facilitator
- Non-program staff
- Administration
- Program developer/ purveyor
- Researcher
- Treatment/Intervention team
- Community members
- Recipients
- Coalition of stakeholders
- Unknown/unspecified

Optional: Indicate who made the ultimate decision

WHAT?

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### **WHAT is modified?**

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- Modifications made to the way the overall treatment is delivered

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WHY?

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## **WHY was the adaptation made?**

### **What was the goal?**

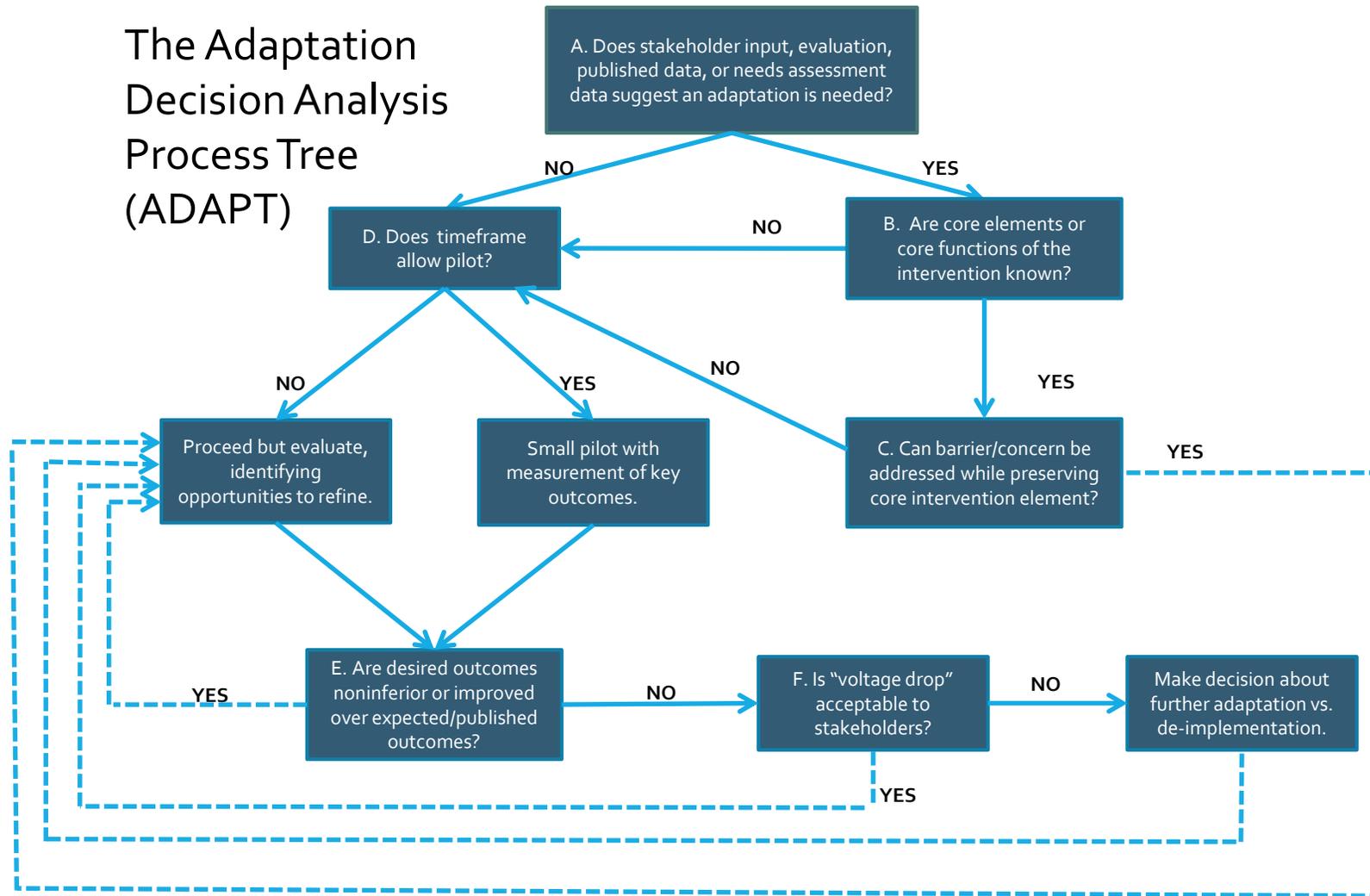
- Increase reach or engagement
- Increase retention
- Improve feasibility
- Improve fit with recipients
- To address cultural factors
- Improve effectiveness/outcomes
- Reduce cost
- Increase satisfaction

## What factors influenced the decision?

Sociopolitical	Organization/Setting	Provider	Recipient
<ul style="list-style-type: none"> <li>- Existing Laws, Mandates, Policies, and Regulations</li> <li>- Political climate</li> <li>- Funding Policies</li> <li>- Socio-historical context</li> <li>- Societal/Cultural Norms</li> <li>- Funding and Resource Allocation/Availability</li> </ul>	<ul style="list-style-type: none"> <li>- Available resources (funds, staffing, technology, space)</li> <li>- Competing demands or mandates</li> <li>- Time constraints</li> <li>- Service structure</li> <li>- Location/accessibility</li> <li>- Regulatory/compliance</li> <li>- Billing constraints</li> <li>- Social context (culture, climate, leadership support)</li> <li>- Mission</li> <li>- Cultural or religious norms</li> </ul>	<ul style="list-style-type: none"> <li>- Race</li> <li>- Ethnicity</li> <li>- Sexual/gender identity</li> <li>- First/spoken languages</li> <li>- Previous Training and Skills</li> <li>- Preferences</li> <li>- Clinical Judgement</li> <li>- Cultural competency</li> <li>- Perception of intervention</li> </ul>	<ul style="list-style-type: none"> <li>- Race; Ethnicity</li> <li>- Sexual/gender identity</li> <li>- Sexual Orientation</li> <li>- Access to resources</li> <li>- Cognitive capacity; Physical capacity</li> <li>- Access to resources</li> <li>- Literacy and education level</li> <li>- First/spoken languages</li> <li>- Legal status</li> <li>- Cultural or religious norms</li> <li>- Comorbidity/Multimorbidity</li> <li>- Immigration Status</li> <li>- Crisis or emergent circumstances</li> <li>- Motivation and Readiness</li> </ul>

# ADAPTATION PROCESS

# The Adaptation Decision Analysis Process Tree (ADAPT)



# ASSESSMENT STRATEGIES

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# Strategies for documentation

- Self Report
  - Embedded in a medical record
  - Periodic checklist
- Interview
- Observation

# Interview

- In the past [time period] /Since implementing [intervention], have you made any changes?
- How have you changed it?
  - Probe with the codebook handy, ask enough questions to be able to determine which form of adaptation(s) they've made?
- Do you make that change for everyone, or just some people?
  - Probe/who, how often
- What led you to make that change?
  - Assess for therapist preference, recipient need/constraint, setting constraint/need, other factors
  - Who was involved in the decision?
- Does it seem to be working? How do you determine if it's working?

# Self Report Survey

## Monthly/Weekly or session-by-session versions

In the past month, with how many of your CPT clients have you made the following adaptations or changes to CPT? (check all that apply)

	None	Some (fewer than half)	Most (more than half, but not all)	All (4)
Tailoring/tweaking/refining (e.g., changing terminology or language, modifying worksheets in minor ways) Describe: (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrating components of the intervention into another framework  (e.g., selecting elements to use but not using the whole protocol) Describe: (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrating another treatment into the EBP  (e.g., integrating other techniques into the intervention) Describe: (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Removing/skipping CPT interventions, modules, or components of the treatment  (e.g., didn't assign module, didn't use a worksheet, didn't assign homework) Describe: (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lengthening/extending session time (5)	<input type="radio"/>	<input type="radio"/>		
Lengthening/extending number of weeks	<input type="radio"/>	<input type="radio"/>		

If applicable, what influenced your decisions to make these changes?

- My client's needs or preferences (1)
- My own preferences (2)
- Constraints within the setting in which I work (3)
- Other (4) \_\_\_\_\_
- N/A, I didn't make changes (5)

# Self-report

**Did you make any of the following Adaptations to CPT in TODAY's session?**

<input type="checkbox"/> Tailoring/tweaking/refining (e.g., changing terminology or language, modifying worksheets in minor ways)
<input type="checkbox"/> Integrating components of the intervention into another framework (e.g., selecting elements to use but not using the whole protocol)
<input type="checkbox"/> Integrating another treatment into the EBP (e.g., integrating other techniques into the intervention)
<input type="checkbox"/> Removing/skipping CPT interventions, modules or components of the treatment (e.g., didn't assign module, didn't use a worksheet, didn't assign homework)
<input type="checkbox"/> Lengthening/extending session time
<input type="checkbox"/> Lengthening/extending number of weeks
<input type="checkbox"/> Shortening/condensing session time (e.g., ended CPT today and have completed fewer than 12 sessions)
<input type="checkbox"/> Shortening/condensing number of weeks (e.g., condensing so all CPT elements are delivered in less than 12 sessions)
<input type="checkbox"/> Adjusting other order of intervention modules, topics, or segments
<input type="checkbox"/> Adding modules or topics to the intervention
<input type="checkbox"/> Departing from the protocol starting to use another treatment strategy
<input type="checkbox"/> Loosening the session structure
<input type="checkbox"/> Repeating elements or modules (e.g., repeating a concept or activity covered in a previous session that was not intended for another session)
<input type="checkbox"/> Substituting elements or modules (e.g., substituting an ABC sheet for the challenging beliefs worksheet)
<input type="checkbox"/> Stopped using the CPT and used another strategy for part of the session (e.g., 10 minutes or more)
<input type="checkbox"/> Did CPT in a different setting (e.g., delivering it on an inpatient unit).

# Challenges-self reports

- Recall
- Accuracy
- Record keeping
- Provider burden

# Observation

- Live (site visits) or recording of interactions
- Coding scheme and decision rules
- Dichotomous Ratings

## TACV\_1: 1. Approach (select one)

This therapist was clearly working from a primarily CPT approach

This therapist seemed to be mostly using a CPT approach, but seemed to purposefully integrate other treatment modalities or interventions into this session (e.g., DBT skills, empty chair technique)  
(Describe)

This therapist started using CPT but stopped using CPT or drifted into another approach (e.g., supportive therapy) for large portions of the session. (describe when/why you think this happened)

This therapist seemed to be using another approach for the most part, but integrated elements of CPT  
(Describe)

This therapist did not use any CPT.

## TACV\_2: 2. Other Modifications (check all that apply)-**READ ALL OF THESE AND SEE IF ANY APPLY! If none, check "no modifications"**

The therapist tailored the terminology or CPT worksheets to make them easier for the client to understand or use.

The therapist skipped or removed elements of this session **\*\*this item can be endorsed when a significant element (e.g., one that appears on the unique and essential section above) is not done. The exception is if they don't ask about how homework went (item 1)—this alone should not be counted as skipping an element. If they also don't review or do ANY CPT worksheets in the session, or if they don't do the account and it's CPT, etc., then it would count. If they gave any homework, it would not count as removing/skipped element.**

The therapist re-ordered elements of the protocol (e.g., employed a strategy that typically occurs in a later session or introduces a concept, form, or intervention that should have been introduced in an earlier session). Re-ordering modules is acceptable in the CPT Protocol and shouldn't be counted. You could endorse this item if the clinician introduces the CBW worksheet earlier than called for in the protocol, or if they assigned the "do nice things for yourself" assignment earlier.

The therapist shortened the session (less than 45 minutes)

The therapist lengthened the session (more than 60 minutes)

The therapist did CPT, but loosened the structure of the session—I'm not sure that we'll see a lot of examples.

# Challenges: Observation

- Time and resources
- Some adaptations (e.g., sequencing, spreading, adding sessions) might not be evident from a single observation
- Practically and conceptually, it can make sense to assess fidelity and adaptation simultaneously
- Observing the full protocol can have implications for fidelity assessments

# Correspondence between self-reports and observation

- Assessment may require obtaining multiple different forms of ratings for single interactions
  - Triangulation
  - Some forms can't be discerned through some strategies
  - Improve accuracy?
- If adaptations are low frequency, need a sufficient number of sessions to capture enough to assess agreement

# HOW DOES ADAPTATION IMPACT OUTCOMES?

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# What outcomes matter to stakeholders?

- Engagement
- Feasibility
- Acceptability
- Perception of fit
- Satisfaction
- Clinical Change

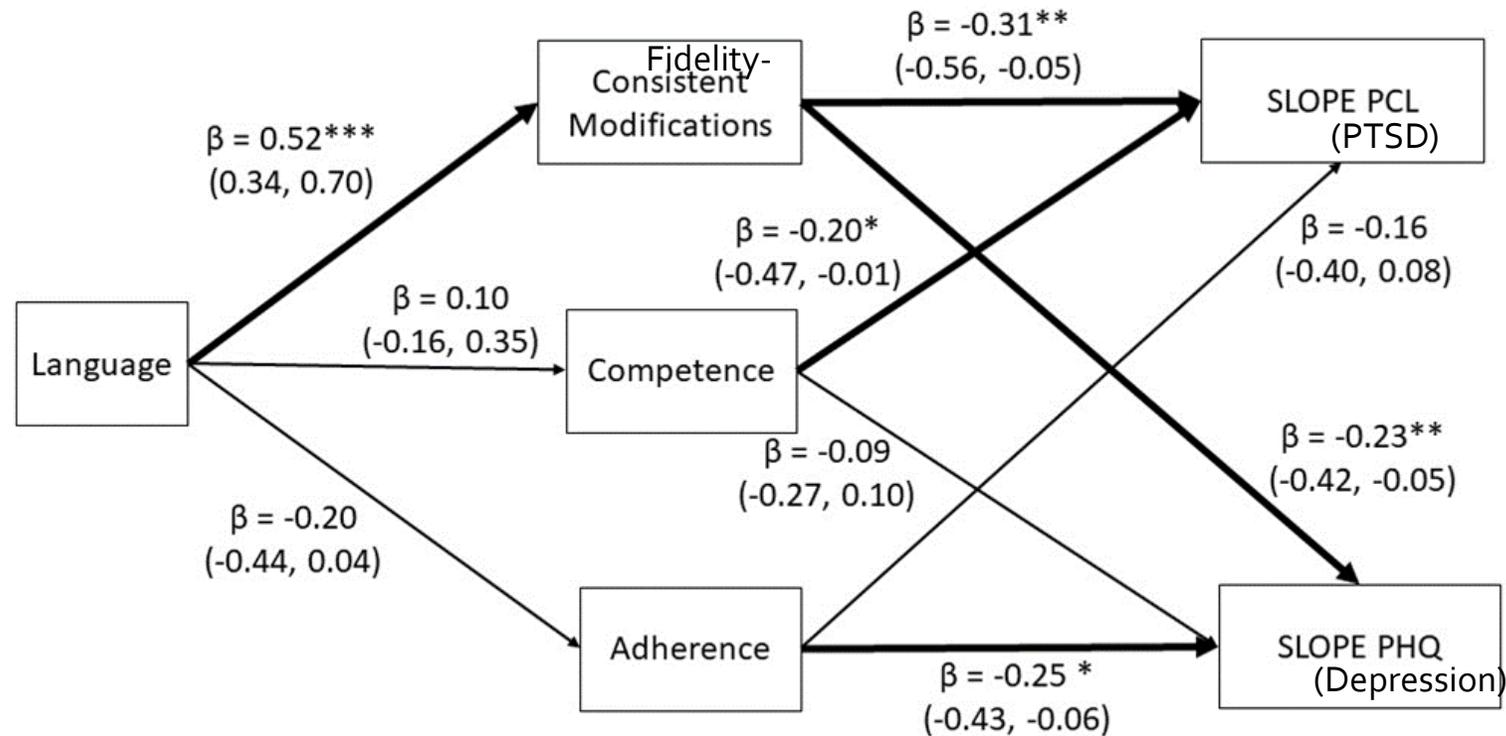
# Implications of modifications

- Adaptations to PTSD treatments do not appear to negatively impact results (Levitt, 2007; Galovski, 2012) BUT-highly specified parameters
- Similar or improved outcomes when programs were adapted to fit the needs of the community (Kalichman, 1993; Kennedy, 2000)
- BUT others found worse recipient-level outcomes (Stanton, 2005) despite increased retention (Kumpfer, 2002)
- Mixed findings on cultural adaptations; but rarely compared to standard interventions

# Fidelity, Adaptation, & Outcomes

- Community Mental Health Agency implementing CPT for PTSD
- 19 therapists, 58 clients (68% Female, 48% Hispanic/Latino, ~60% HS education or below)
- CPT protocol piloted, then adapted; outcomes didn't differ between adapted & original versions
- All CPT sessions coded by observers for fidelity and adaptation
- Mean # sessions attended=8
- 68% experienced clinically meaningful change at or before 12 sessions

# Fidelity, Modifications, and Outcomes in CPT for PTSD



# The Adaptome

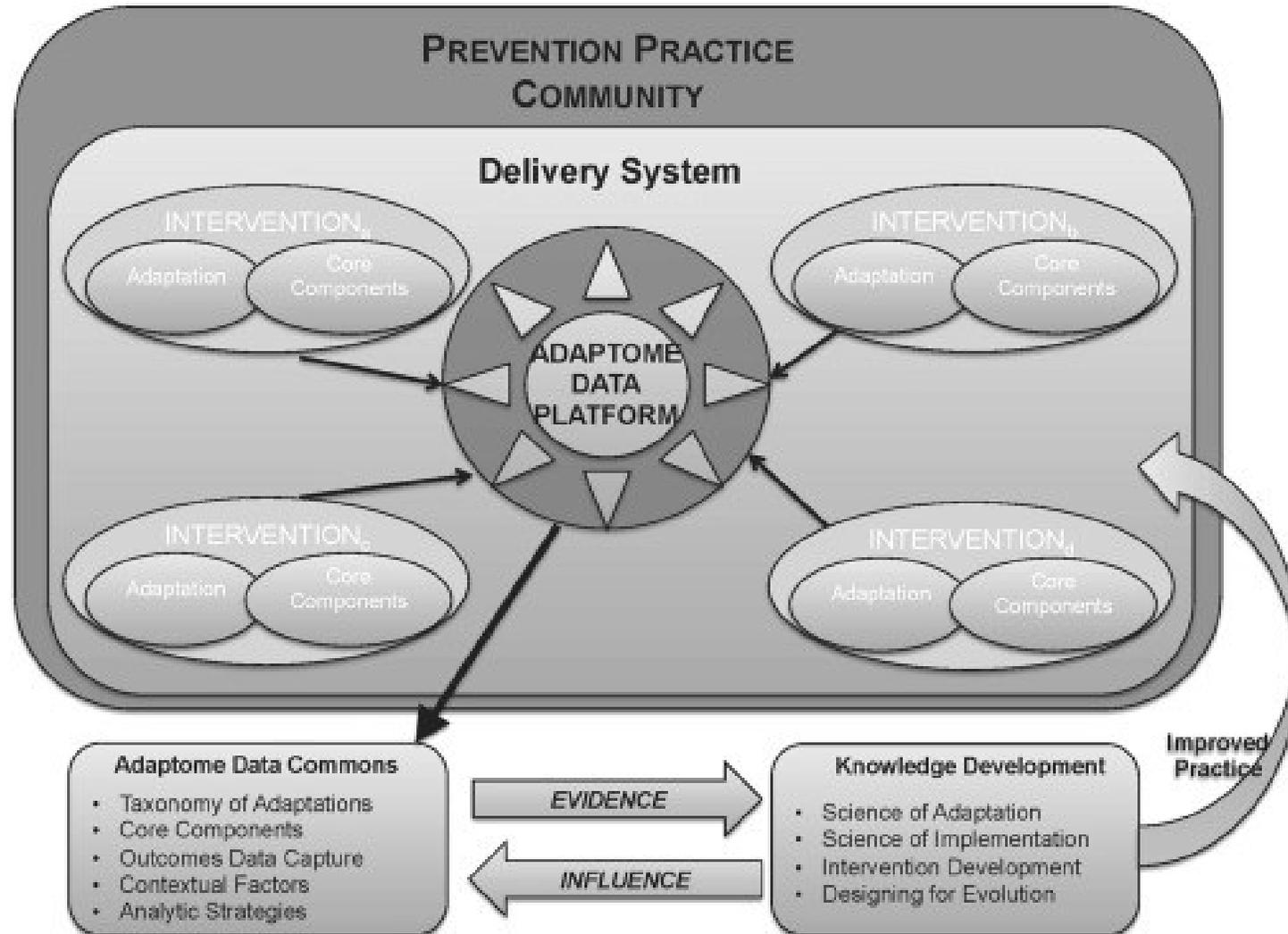
## Advancing the Science of Intervention Adaptation

David A. Chambers, DPhil, Wynne E. Norton, PhD

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In the past few decades, prevention scientists have developed and tested a range of interventions with demonstrated benefits on child and adolescent cognitive, affective, and behavioral health. These evidence-based interventions offer promise of population-level benefit if accompanied by findings of implementation science to facilitate adoption, widespread implementation, and sustainment. Though there have been notable examples of successful efforts to scale up interventions, more work is needed to optimize benefit. Although the traditional pathway from intervention development and testing to implementation has served the research community well—allowing for a systematic advance of evidence-based interventions that appear ready for implementation—progress has been limited by maintaining the hypothesis that evidence generation must be complete prior to implementation. This sets up the challenging dichotomy between fidelity and adaptation and limits the science of adaptation to findings from randomized trials of adapted interventions. The field can do better. This paper argues for the development of strategies to advance the science of adaptation in

# Chambers & Norton-Adaptome



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