NIA IMPACT COLLABORATORY
TRANSFORMING DEMENTIA CARE

# Adaptation of behavioral interventions and use of the FRAME to document adaptations and modifications

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National Center for PTSD & Stanford University

# Housekeeping

- All participants will be muted
- Enter **all questions** in the Zoom **Q&A/chat box** and send to Everyone
- Moderator will review questions from chat box and ask them at the end
- Want to continue the discussion? Associated podcast released about 2 weeks after Grand Rounds
- Visit impactcollaboratory.org
- Follow us on Twitter & LinkedIN:

@IMPACTcollab1 https://www.linkedin.com/company/65346172

# Learning Objectives

Upon completion of this presentation, you should be able to:

- Discuss factors that should be considered when adapting behavioral interventions
- Describe how the FRAME can be used to document adaptations
- Provide examples of study designs to investigate the impact of adaptations

# 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



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.

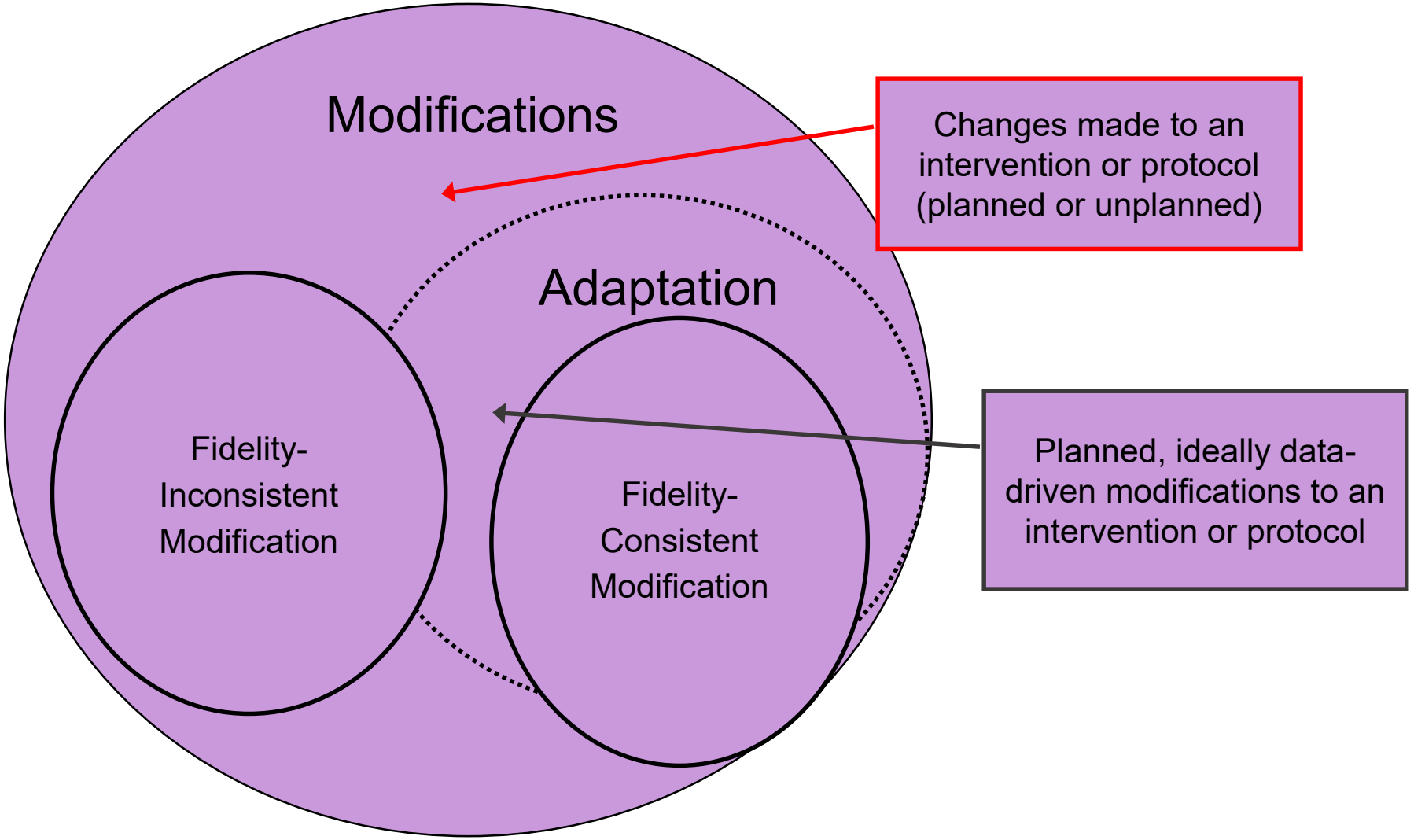
# What is adaptation in implementation science? It depends!

- ***Process*** **or** ***mechanism*** associated with successful implementation (Stirman et al., 2012; Iwelunmor et al., 2016)
- An implementation ***strategy*** (Aarons et al., 2012; Powell et al., 2015)
- ***Adaptability*** as a quality or characteristic of an intervention (e.g. with modular interventions being inherently adaptable) (Damschroder et al., 2009)
- Adaptation as an implementation ***outcome*** (similar to fidelity) (Proctor et al., 2011)



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.

# Modification, Adaptation, Fidelity

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Stirman, S. W., Gutner, C. A., Crits-Christoph, P., Edmunds, J., Evans, A. C., & Beidas, R. S. (2015). Relationships between clinician-level attributes and fidelity-consistent and fidelity-inconsistent modifications to an evidence-based psychotherapy. *Implementation Science*, *10*(1), 1-10.

# Adaptation is inherent in implementation

- Adaptation is inherent – perhaps crucial – to the implementation process
- If we view local adaptations, cultural adaptation, and other efforts to improve fit as flaws in implementation fidelity:
  - we are at best missing opportunities to learn
  - at worst, setting ourselves up for implementation failure

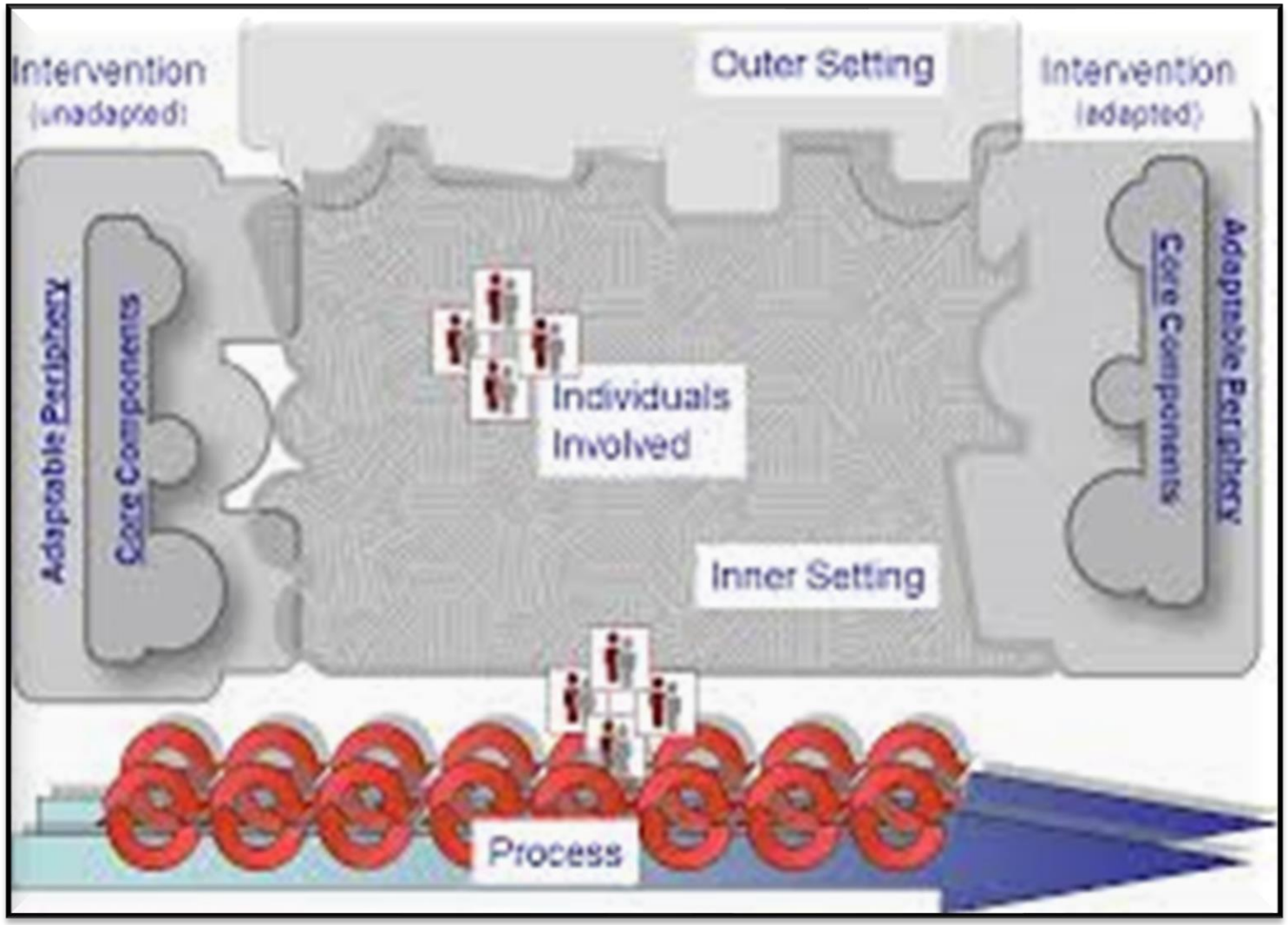


Baumann, A. A., Cabassa, L. J., & Stirman, S. W. (2017). Adaptation in dissemination and implementation science. *Dissemination and implementation research in health: translating science to practice*, *2*, 286-300.
Baumann, A., Mejia, A., Lachman, J., Parra-Cardona, R., Lopez-Zeron, G., Amador Buenabad, 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.

# Context

Even if you have the most successful intervention, context can affect how it is implemented

# Consolidated Framework of Implementation Research (CFIR)

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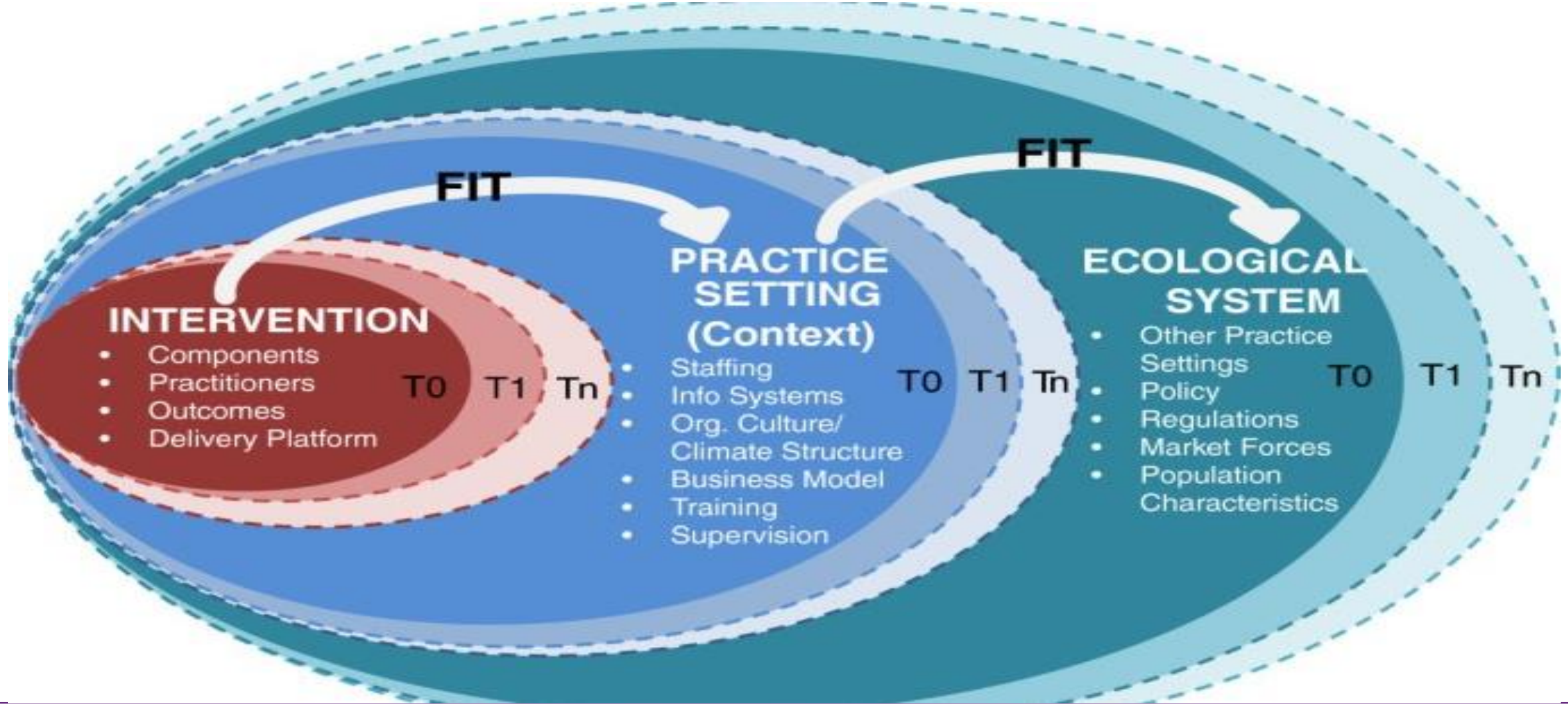
Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation science*, *4*(1), 1-15.

# The Dynamic Sustainability Framework




NIA IMPACT COLLABORATORY
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Chambers, D. A., Glasgow, R. E., & Stange, K. C. (2013). The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. Implementation Science, 8(1), 117.

# Fidelity-Adaptation Tension

# 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., Perez Jolles, 2019)

*These may not be the same in all contexts*

# Core elements vs. Core functions



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.

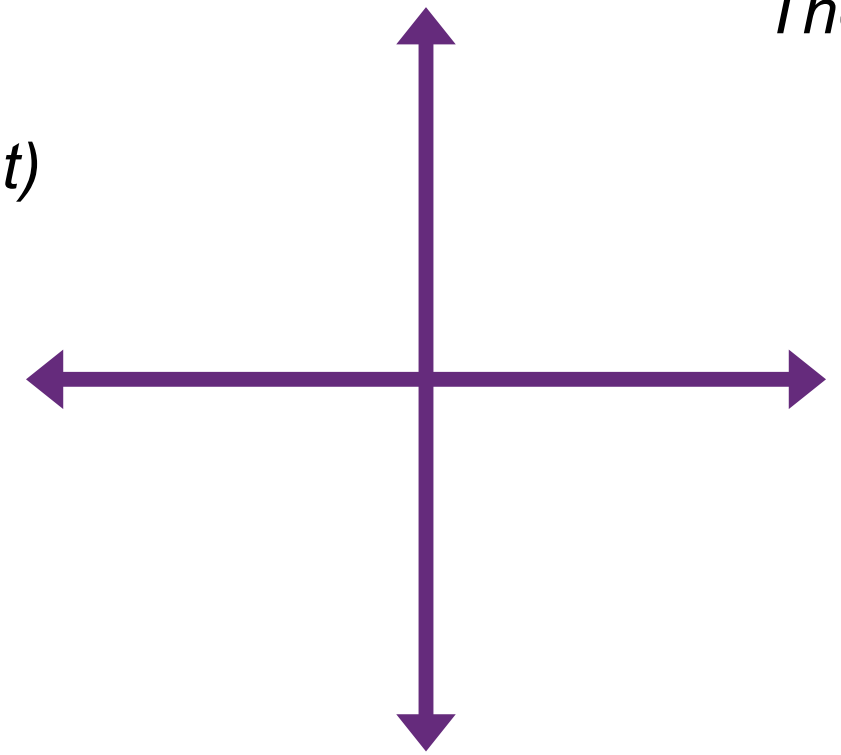
*May lead to refinement or confirmation of core elements (with good measurement)*

**Planned**

*Theoretically Optimal*

**Fidelity Inconsistent**

**Fidelity Consistent**



**Unplanned (Reactive)**

*Occasionally unavoidable, opportunities for learning*

*Theoretically ideal in unexpected circumstances*



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.

# Adaptation Process: Decision Frameworks

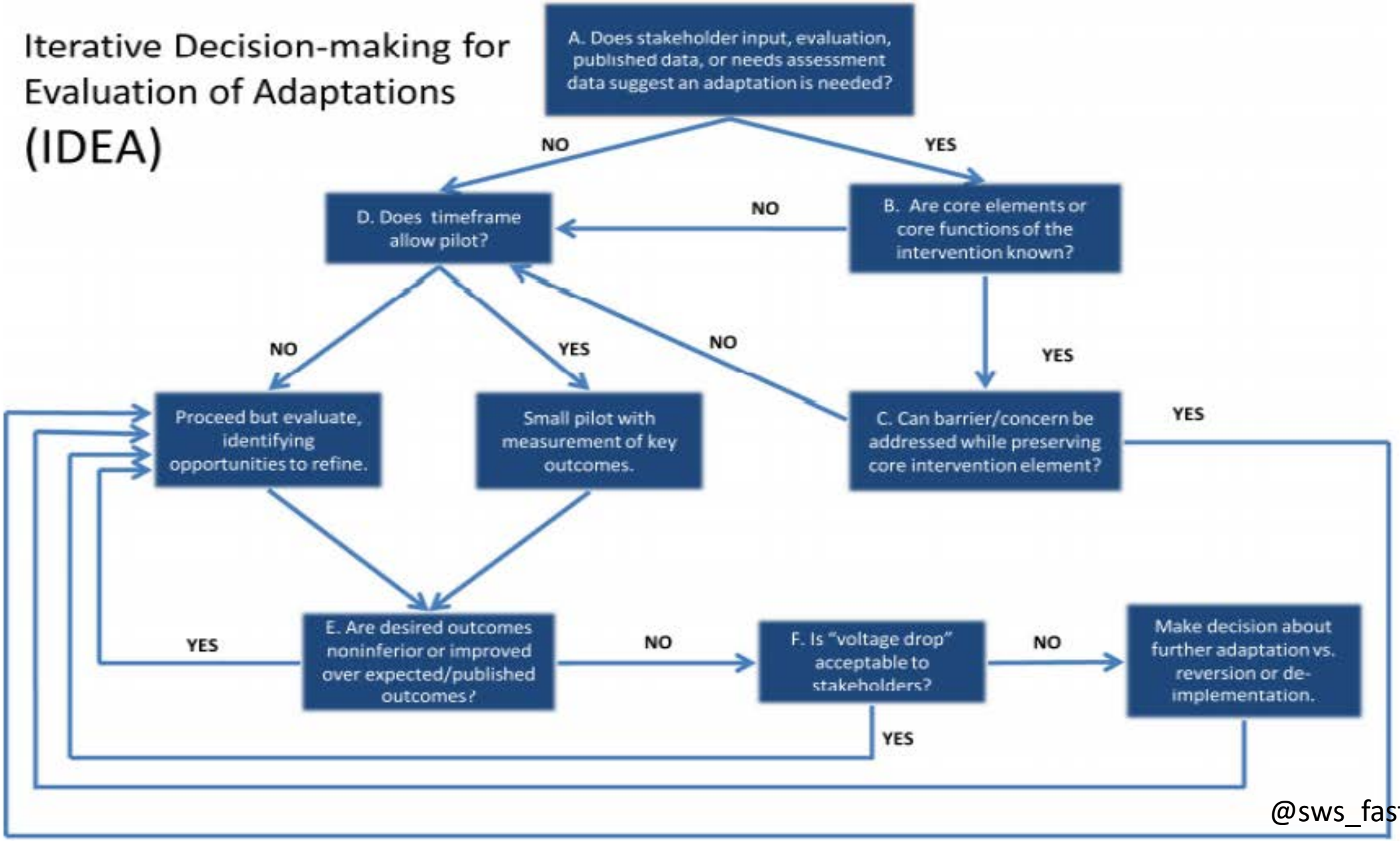
## Iterative Decision Tree for Evaluation of Adaptations (IDEA)

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.

## Model for Adaptation Design & Impact (MADI)

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.

# Iterative Decision-making for Evaluation of Adaptations (IDEA)




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.

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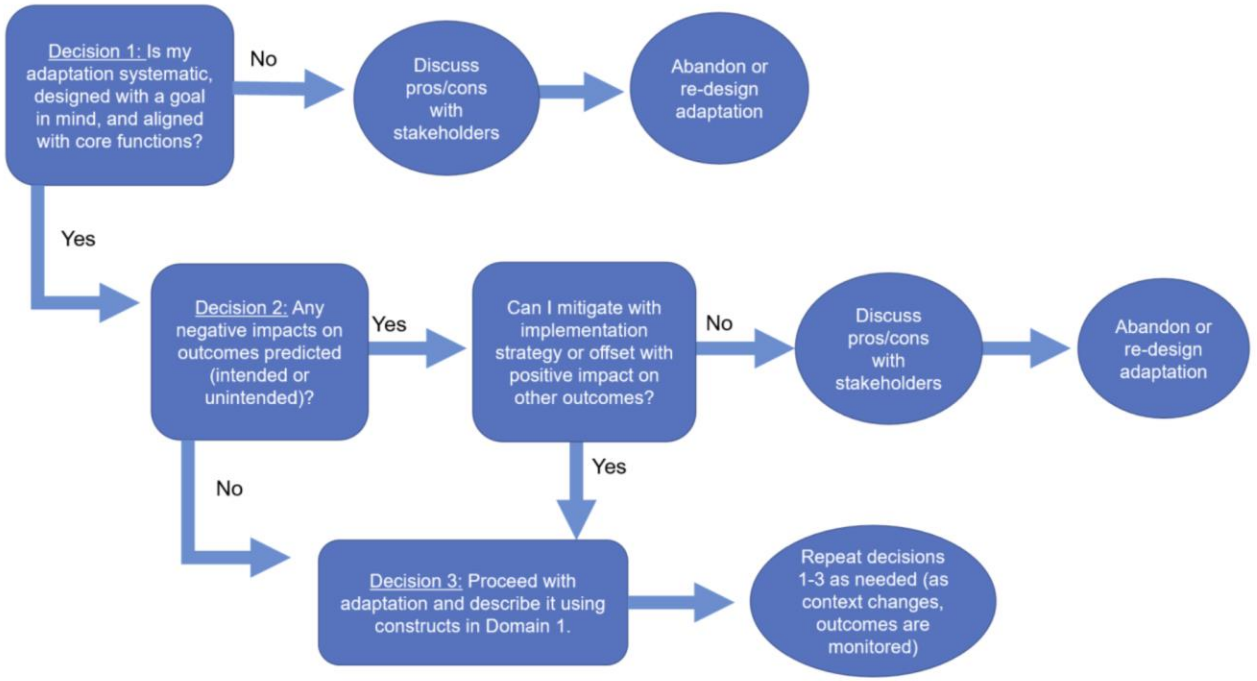
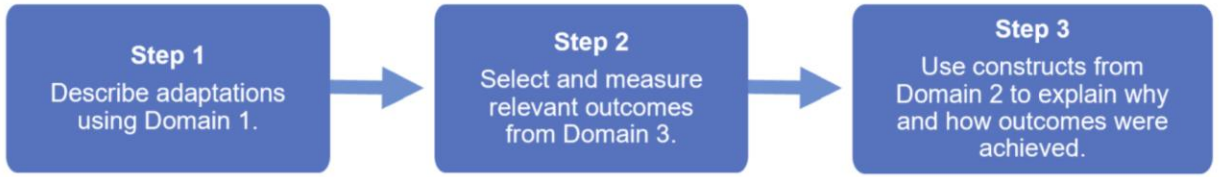
# MADI as a Decision Aid

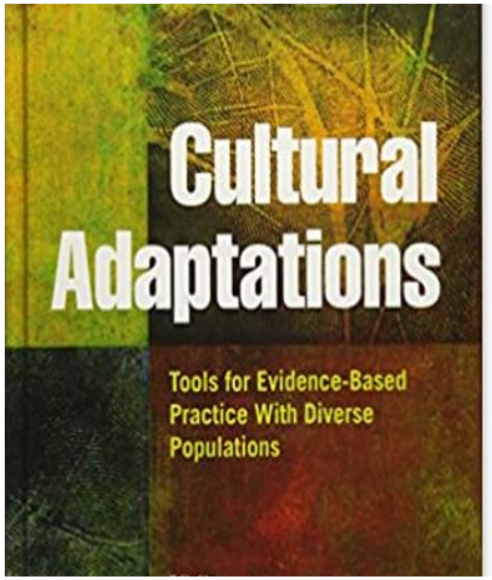
**Decision Aid 1: Prospective Use of MADI**




**Decision Aid 2: Retrospective Use of MADI**



# Adaptation Process




Bernal, G., & Domenech Rodríguez, M. M. (Eds.). (2012). *Cultural adaptations: Tools for evidence-based practice with diverse populations.* American Psychological Association. https://doi.org/10.1037/13752-000

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]

CLINICAL PSYCHOLOGY
SCIENCE AND PRACTICE

Parent Management Training-Oregon Model (PMTO™) in Mexico City: Integrating Cultural Adaptation Activities in an Implementation Model

Ana A. Baumann, Brown School of Social Work, Washington University in St. Louis
Melanie M. Domenech Rodríguez, Utah State University
Nancy G. Amador, Instituto Mexicano de Psiquiatría Ramón de la Fuente Muñiz
Marion S. Forgatch, Oregon Social Learning Center
J. Rubén Parra-Cardona, Michigan State University

Cabassa *et al. Implementation Science* 2014, **9**:178
http://www.implementationscience.com/content/9/1/178

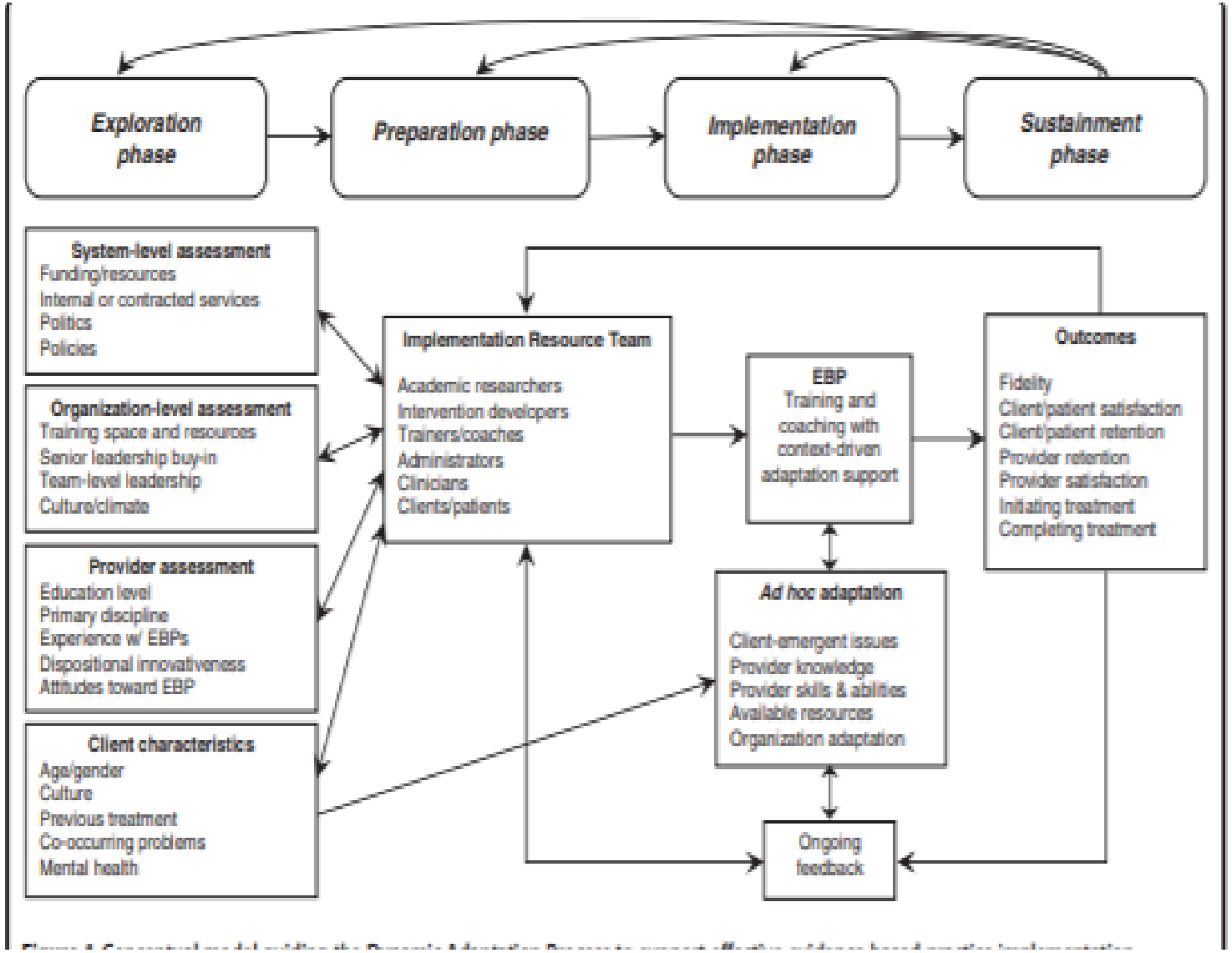
IMPLEMENTATION SCIENCE

RESEARCH Open Access

Using the collaborative intervention planning framework to adapt a health-care manager intervention to a new population and provider group to improve the health of people with serious mental illness

Leopoldo J Cabassa[1,2*], Arminda P Gomes[1], Quisqueya Meyreles[2], Lucia Capitelli[2], Richard Younge[3], Dianna Dragatsi[2], Juana Alvarez[2], Yamira Manrique[1] and Roberto Lewis-Fernández[2,3]

# Adaptation as a Strategy




Aarons, G. A., Green, A. E., Palinkas, L. A., Self-Brown, S., Whitaker, D. J., Lutzker, J. R., ... & Chaffin, M. J. (2012). Dynamic adaptation process to implement an evidence-based child maltreatment intervention. *Implementation Science*, *7*(1), 1-9.

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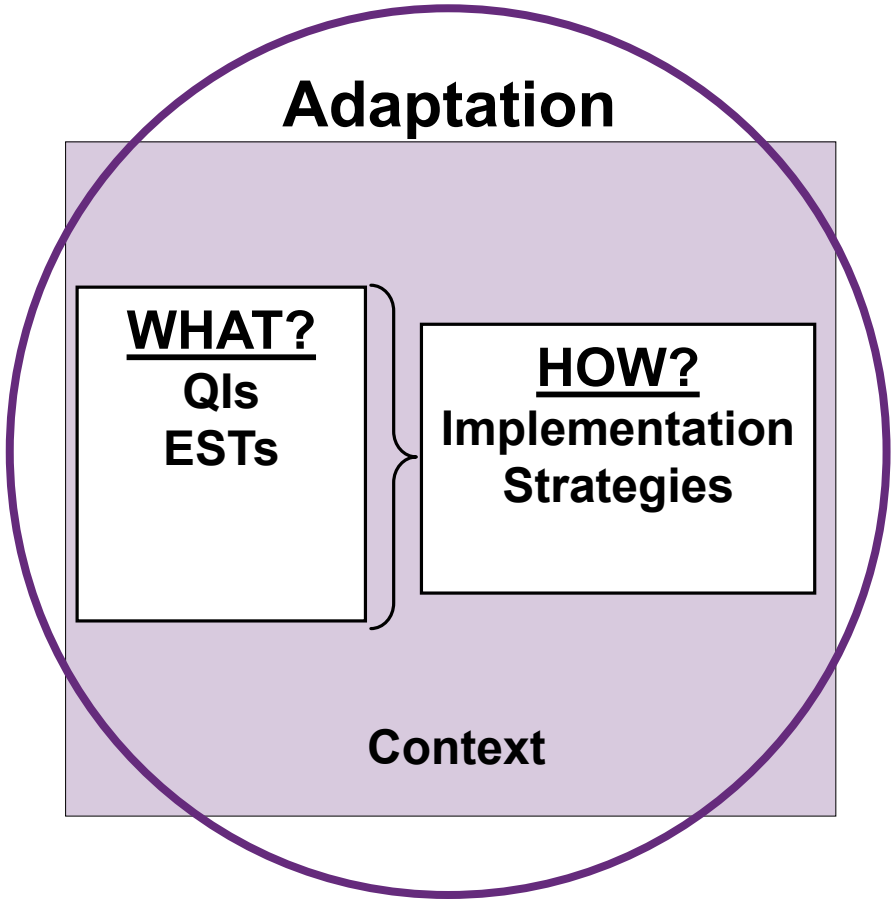
# Adaptation as a Strategy




Impact

- Implementation, services and/or client outcomes


Baumann, A. A., & Cabassa, L. J. (2020). Reframing implementation science to address inequities in healthcare delivery. *BMC Health Services Research*, *20*(1), 1-9.

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.

Cabassa, L. J., & Baumann, A. A. (2013). A two-way street: bridging implementation science and cultural adaptations of mental health treatments. *Implementation*

Wiltsey Stirman, S., Gamarra, J. M., Bartlett, B. A., Calloway, A., & Gutner, C. A. (2017). Empirical examinations of modifications and adaptations to evidence-based psychotherapies: Methodologies, impact, and future directions. *Clinical Psychology: Science and Practice*, *24*(4), 396-420. *Science*, *8*(1), 90.

# Documenting adaptations

# Goals of documenting adaptations during implementation

- 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)
- **Link adaptations to outcomes** (what kind of outcomes can be expected when specific adaptations are made?)
- **Consider refinements** to the recommended intervention & implementation strategies based on observed changes
- Propose **refinements** to the existing methodologies and frameworks and develop a replicable, easy-to-use documentation method for adaptations/ modifications

# Self Report

**COMPLETE ONE OF THESE CHECKLISTS FOR EACH THERAPY VISIT / WEEK**

Please check the box next to any modifications or adaptations that you observed during your review of the session (see next page for code definitions).

| Type of Modification | Check Here |
|---|---|
| 1. Tailoring/tweaking/refining (e.g., changing terminology or language, modifying worksheets in minor ways)<br>Describe: | |
| 2. Integrating components of the intervention into another framework (e.g., selecting elements to use but not using the whole protocol)<br>Describe: | |
| 3. Integrating another treatment into the EBP (e.g., integrating other techniques into the intervention) Describe: | |
| 4. Removing/skipping core modules or components of the treatment<br>Describe: | |
| 5a Pacing/Timing-Decelerating--Lengthening/extending time spent during therapy visit covering a CPT session | |
| 5b. Pacing/Timing-Decelerating--Lengthening/extending number of weeks | |
| 6a. Pacing/Timing-Accelerating--Shortening/condensing time spent during therapy visit covering a CPT session | |
| 6b. Pacing/Timing-Accelerating--Shortening/condensing number of weeks | |
| 7. Adjusting other order of intervention modules, topics, or segments<br>Describe: | |
| 8. Adding modules or topics to the intervention<br>Describe: | |
| 9. Departing from the protocol starting to use another treatment strategy<br>Describe: | |
| 10. Loosening the session structure<br>Describe: | |
| 11. Repeating elements or modules (e.g., repeating a concept or activity covered in a previous session that was not intended for another session)<br>Describe: | |
| 12. Substituting elements or modules<br>Describe: | |

# 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<br>Who was involved in the decision? |
| Does it seem to be working? How do you determine if it's working? | |

# Observation

Requires time and resources, including trained observers who know the FRAME and intervention well

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

# Assessment strategies

**Self-report**

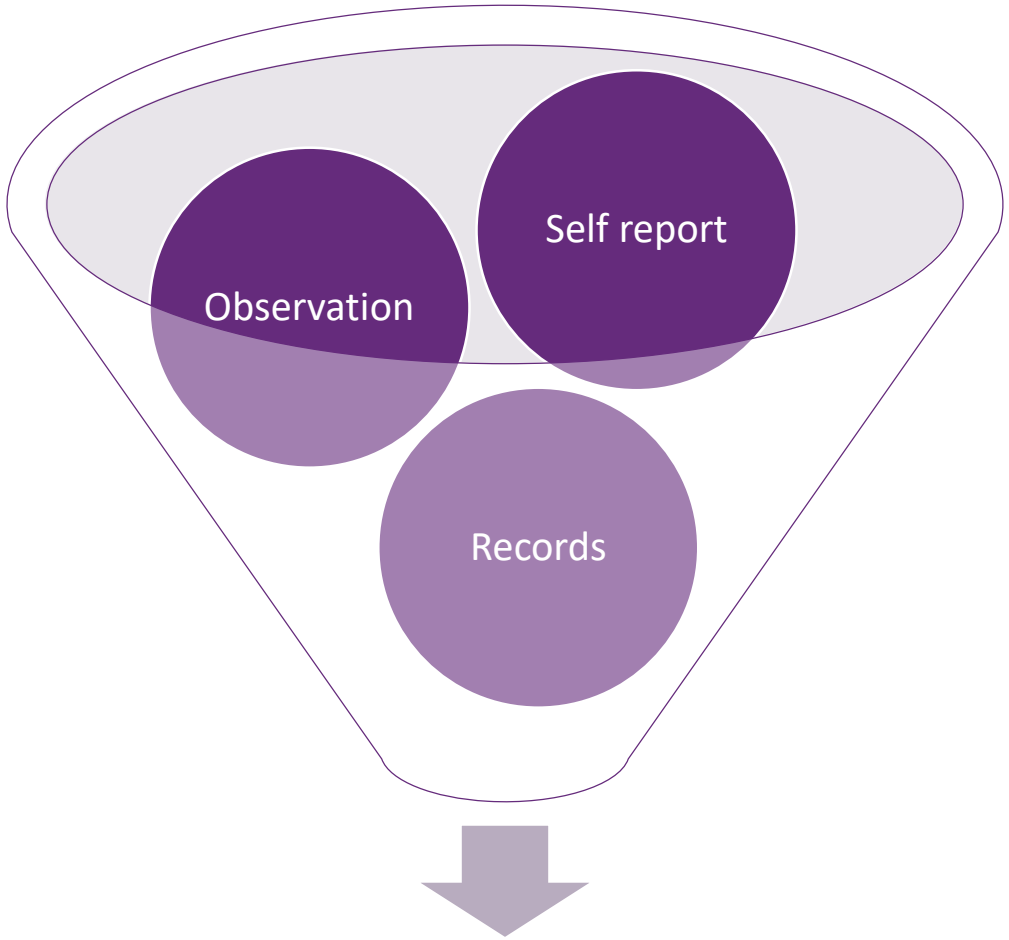
- Recall
- Accuracy
- Record keeping
- Provider burden

**Observation**

- Time and resources
- Some modifications (e.g. changing session sequence) may require longitudinal observation
- Hawthorne Effect

*May require multimethod assessment and triangulation*

# Triangulation




Full Picture of Adaptations

# Adaptation: Documenting

Wiltsey Stirman *et al. Implementation Science* (2019) 14:58
https://doi.org/10.1186/s13012-019-0898-y

Implementation Science

DEBATE Open Access

## The FRAME: an expanded framework for reporting adaptations and modifications to evidence-based interventions

Shannon Wiltsey Stirman[1*], Ana A. Baumann[2] and Christopher J. Miller[3,4]

# 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
- To reduce disparities or promote equity

**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
- Comfort with Technology

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

# How?

# Framework for Reporting Adaptations and Modifications-Expanded*

## *WHEN* did the modification occur?

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

## WHO made the decision to modify?

Individual practitioner/ facilitator

- Team
- Non-program staff
- Administration
- Program developer/ purveyor
- Researcher
- Coalition of stakeholders
- Unknown/unspecified

## 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

## Were adaptations planned?

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

Adapted from Stirman, Miller, Toder & Calloway 2013. and Baumann, Cabassa, & Stirman, 2017 *Suggested individual, sociopolitical, and structural factors were not refined using the coding process used for the 2013 framework.

# What?

## *WHAT* is modified?

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

**Context**
-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

## What is the relationship to fidelity*?

-Fidelity Consistent
-Fidelity Inconsistent
-Unknown
**preservation of essential elements*

## Context 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
- 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

# Why?

# 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
- To reduce disparities or promote equity

# What factors influenced the decision?

**SOCIOPOLITICAL**
- Existing Laws, Mandates, and Policies
- Political climate
- Funding Policies
- Socio-historical context

**ORGANIZATION/SETTING**
- Available resources (funds, staffing, technology, space)
- Competing demands or mandates
- Service structure
- Location
- Regulatory/compliance
- Billing constraints
- Social context (culture, leadership support,)
- Mission or values

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

**RECIPIENT**
- Race; Ethnicity
- Sexual/gender identity
- Access to resources
- Cognitive capacity; Physical capacity
- Access to resources
- Literacy and education level
- First/spoken languages
- Legal status
- Cultural or religious norms
- Comorbidity/Multimorbidity
- Comfort with Technology

# Using the FRAME and Medical Records to Document Adaptations

frontiers | Frontiers in Public Health

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SPECIALTY SECTION
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Public Health Education and
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a section of the journal
Frontiers in Public Health

## Assessment of modifications to evidence-based psychotherapies using administrative and chart note data from the US department of veterans affairs health care system

Shannon Wiltsey Stirman[1,2*], Heidi La Bash[1], David Nelson[3,4], Robert Orazem[3], Abigail Klein and Nina A. Sayer[3,5]

[1]National Center for PTSD, VA Palo Alto Healthcare System, Menlo Park, CA, United States,
[2]Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine

TABLE 4 Estimated variance components for random effects for CPT and PE. *7,297 EBP sessions for 1,257 patients seen by 182 thera

| Modification type | Estimate | SE | LRT p-value | Proportion of var |
|---|---|---|---|---|
| **Tailoring/Tweaking** | | | | |
| Therapist effects | 0.123 | 0.186 | 0.241 | 0.025 |
| Patient effects | 1.506 | 0.288 | <0.0001 | 0.306 |
| **Switching CPT type** | | | | |
| Therapist effects | 0.247 | 0.400 | 0.259 | 0.052 |
| Patient effects | 1.194 | 0.470 | 0.002 | 0.252 |
| **Integrating another treatment** | | | | |
| Therapist effects | 0.429 | 0.393 | 0.116 | 0.090 |
| Patient effects | 1.028 | 0.543 | 0.017 | 0.217 |
| **Session lengthening/extending** | | | | |
| Therapist effects | 1.612 | 0.314 | <0.0001 | 0.261 |
| Patient effects | 1.276 | 0.187 | <0.0001 | 0.207 |
| **Protocol lengthening/extending** | | | | |
| Therapist effects | 1.287 | 0.445 | <0.0001 | 0.281 |
| Patient effects | NA (Scored at patient level across all sessions) | | | |
| **Session shortening/condensing** | | | | |
| Therapist effects | 0.498 | 0.102 | <0.0001 | 0.084 |
| Patient effects | 2.116 | 0.133 | <0.0001 | 0.358 |

| | | | | |
|---|---|---|---|---|
| **Session shortening/condensing** | | | | |
| Therapist effects | 0.498 | 0.102 | <0.0001 | 0.084 |
| Patient effects | 2.116 | 0.133 | <0.0001 | 0.358 |
| **Repeating** | | | | |
| Therapist effects | 0.671 | 0.122 | <0.0001 | 0.169 |
| Patient effects | 0.017 | 0.058 | 0.380 | 0.004 |
| **Reordering** | | | | |
| NA (very rare event) | | | | |
| **Spreading** | | | | |
| Therapist effects | 0.479 | 0.115 | <0.0001 | 0.116 |
| Patient effects | 0.367 | 0.097 | <0.0001 | 0.089 |
| **Drift** | | | | |
| Therapist effects | 0.433 | 0.159 | 0.0002 | 0.098 |
| Patient effects | 0.698 | 0.218 | <0.0001 | 0.159 |
| **Removing** | | | | |
| Therapist effects | 0.580 | 0.088 | <0.0001 | 0.148 |
| Patient effects | 0.040 | 0.039 | 0.133 | 0.010 |

[a]All modifications except protocol extending were based on EBP sessions 1 through 7.
CPT, Cognitive Processing Therapy; PE, Prolonged Exposure.

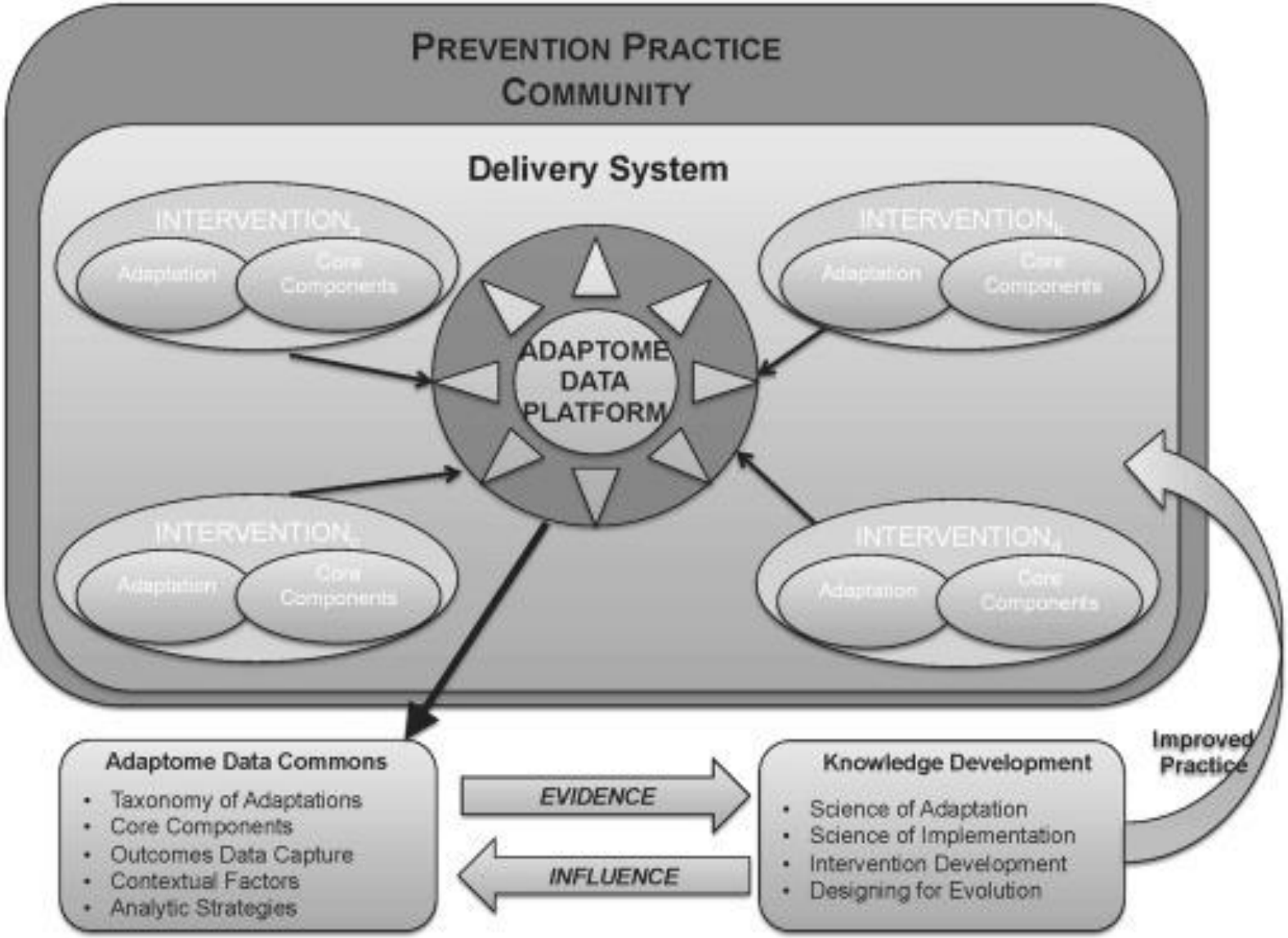
*7,297 EBP sessions for 1,257 patients seen by 182 therapists.

# How does adaptation impact outcomes?

# What outcomes matter to  stakeholders?

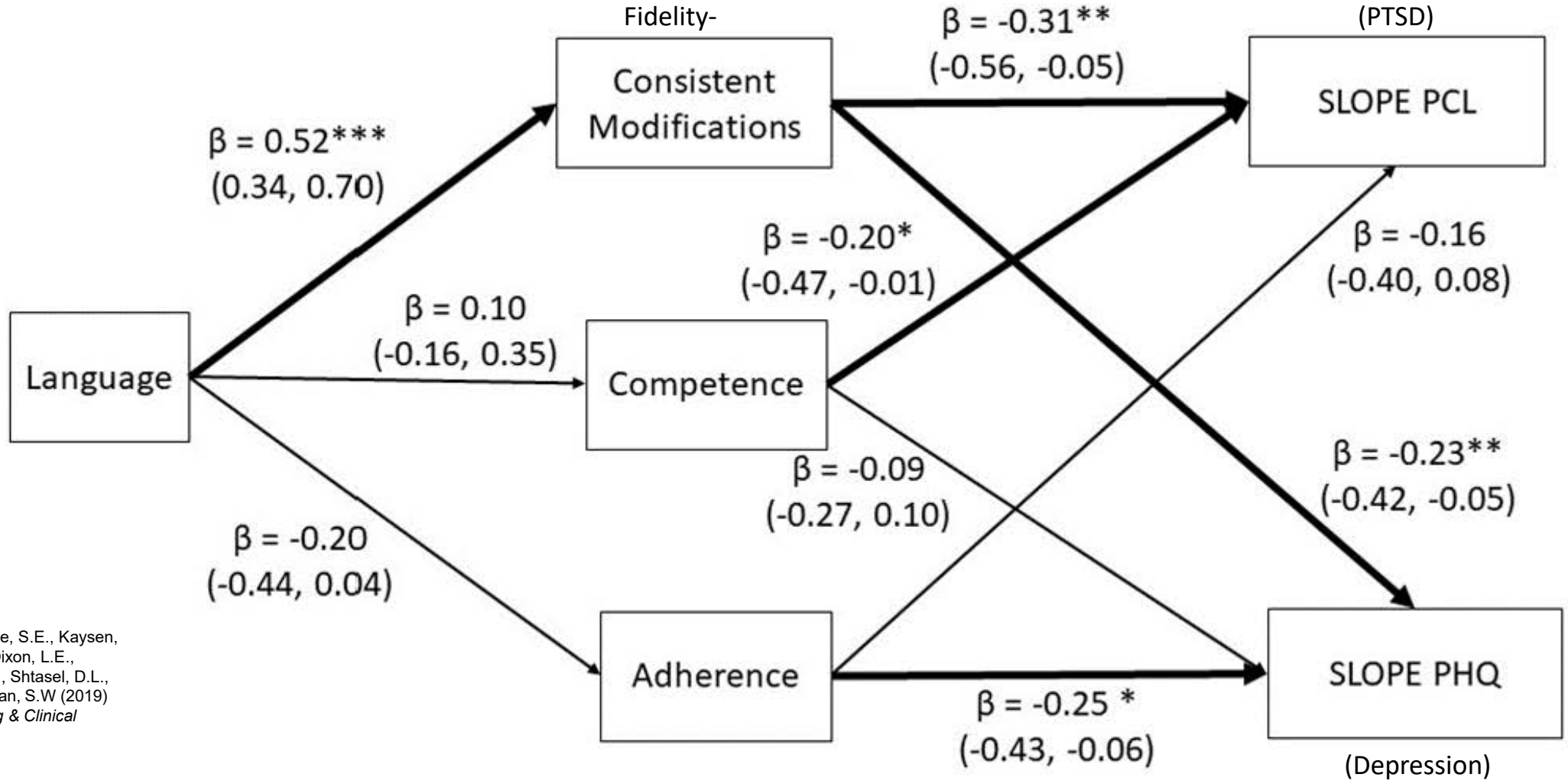
- Engagement
- Feasibility
- Acceptability
- Perception of fit
- Satisfaction
- Clinical Change

# Chambers & Norton- The Adaptome




Chambers, D. A., & Norton, W. E. (2016). The adaptome: advancing the science of intervention adaptation. *American journal of preventive medicine*, *51*(4), S124-S131.

# Fidelity, Modifications, and Outcomes in CPT for PTSD in a Community Setting




Marques, L., Valentine, S.E., Kaysen, D., Mackintosh, M., Dixon, L.E., Ahles, E.M., Youn, S., Shtasel, D.L., Simon, N.M., & Stirman, S.W (2019) *Journal of Consulting & Clinical Psychology*).

# In summary

Adaptation happens. So:

- Plan
- Track
- Work to understand relationships with outcomes
  - Especially those that matter most to your partners!

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# Questions?

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http://med.stanford.edu/fastlab/research/adaptation.html