

# Implementation Science Institute

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# Building Fidelity Measures

**Caryn Ward, PhD**

NIRN @ UNC-FPG Child Development Institute

**Paul Lanier, PhD**

UNC School of Social Work

# Objectives



The (Child-Welfare) field recognizes the importance of fidelity but fidelity is integrated inconsistently in studies and usual care.



Seay, et al. 2015

- Develop shared understanding of the definition fidelity
- Create rationales for use of fidelity assessments
- Design a fidelity assessment when one does not exist



# Activity



## Impromptu Networking

- What big challenge do you bring to this session?
- What do you hope to get from and give this group?





# Fidelity: Definition & Purpose



“the degree to which teachers and other program providers implement programs as intended by the program developer (emphasis in original)”



(Dusenbury, Brannigan, Falco & Hansen, 2003 , p. 240)

Fidelity Data Help Us Understand  
Our Outcomes

Fidelity Data Help Us Improve and  
Sustain Outcomes

Improve  
Individual  
Performance

Improve  
Organizational  
Supports



# Fidelity: Multiple Dimensions

Organizational (Context)

Caseloads

Training/  
Certifications

Education

Other?

Individual

Adherence

Quality/  
Competency

Exposure  
(Dosage)

Component  
Differentiation

Participant  
Responsiveness

(Cross & West, 2011; Proctor et al, 2011)

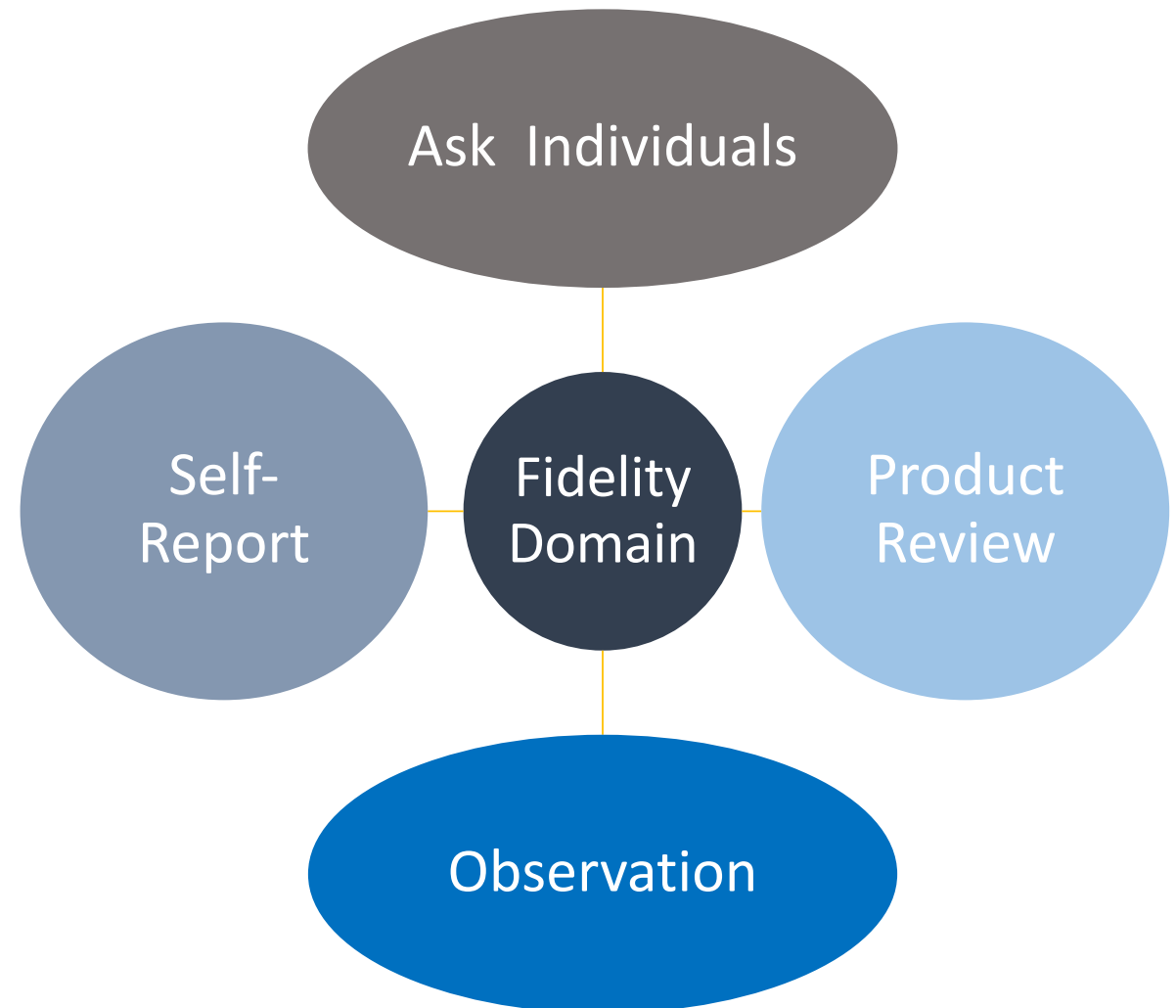


# Fidelity: Methods & Criteria

## Criteria

- Important to Stakeholders
- Low Burden
- Actionable
- Sensitive to Change
- Valid & Reliable

Lewis, Weiner, Stanick & Fischer 2015

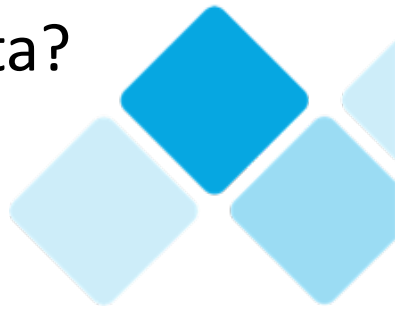


# Activity: Fidelity - Best Practices



## Think-Pair-Share & Case Scenario

- Underline references to best practices for using fidelity data
- How do these practices align with your learning and experiences with fidelity and implementation science practices?
- How does this case scenario align with your current way of using fidelity data?







# Fidelity: Designing a Measure

Facilitators to Ease Design Process

Review of Current  
Measures

(determine availability)

Known Essential  
Components

Team with Diverse  
Perspectives

Stakeholder  
Involvement



# Fidelity: Involving Stakeholders

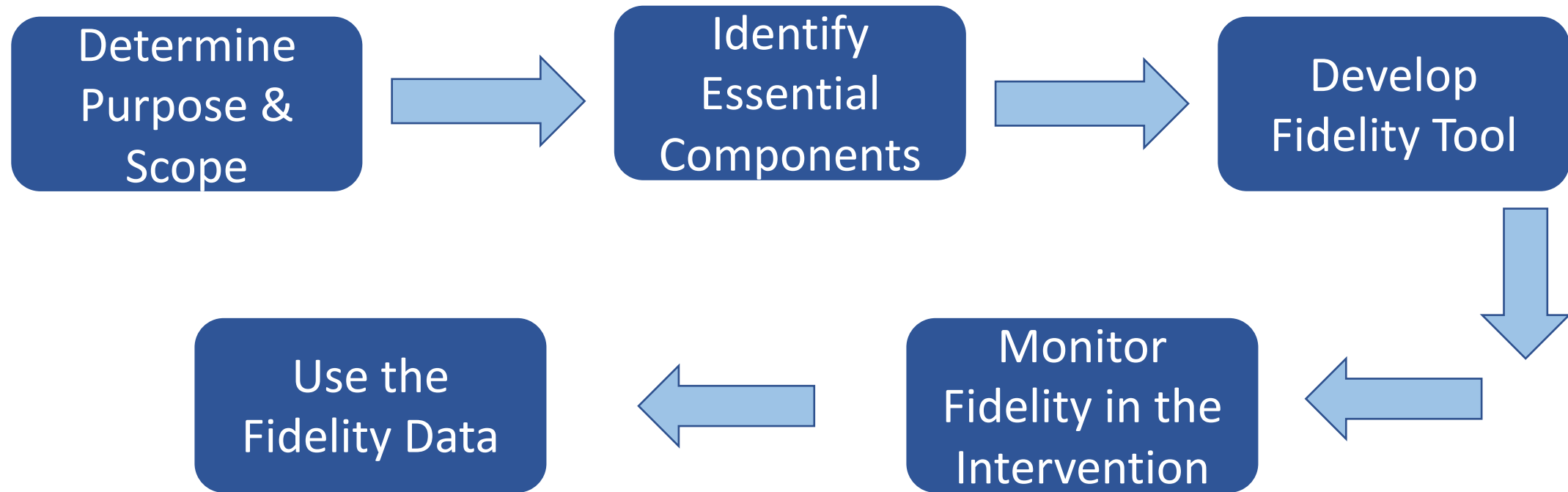
**VALUE:** Implementation is a *collaborative* act

## **Collaboration leads to:**

- Knowledge and evidence that is more implementable
- Infrastructure that brings research evidence and implementation closer together
- Attention to local needs and increased relevance and impact of implementation activity
- Enhanced capacity and capability of implementation



# Fidelity: Designing a Measure



Feely, Seay, Lanier, Auslander & Kohl's (2017) Field Guide to Developing Comprehensive Fidelity Measurement System



# Fidelity: Designing a Measure

Determine  
Purpose &  
Scope

## Case Scenario:

Which dimensions of fidelity needed to be measured?

- Organizational
- Individual
- Both types

## Consider:

- What will the information be used for?
- Will individual or organizational factors be included?
- How much information can and should be collected?
- How does the scope of the fidelity measure(s) match the the needs of the work?



# Fidelity: Designing a Measure

Identify  
Essential  
Components

## Case Scenario:

Are the essential  
components of the  
identified program known?

If no, where do we go?

## Consider:

- Are the “active ingredients” of the program/practice known?
  - Content (What) & Process (How)
  - Innovation Configurations or Practice Profiles
- Which of these essential components should be assessed?
  - Not too many, not too few
- Who do we need to consult or what resources are needed?

Feely, Seay, Lanier, Auslander & Kohl's (2017) Field Guide to  
Developing Comprehensive Fidelity Measurement System



# Fidelity: Designing a Measure

Develop  
Fidelity Tool

## Case Scenario:

Were there identified  
fidelity measures?

What other sources of  
fidelity identified?

## Consider:

- For each of the identified essential components:
  - What is evidence that the component has occurred as intended? With quality?
  - What are potential data sources or measure (ask others, review of product, observation) for that indicator of fidelity?
- How does the structure (e.g., set of skills to obtain mastery or set number of sessions) or delivery (e.g., group or individual) of the practice/program inform the design of the tool?



# Fidelity: Designing a Measure

## Develop Fidelity Tool

### Single Item Example:

- Practitioner covered the topic of time-out.

### Double Barreled Item:

- Practitioner covered the topics of time-out and positive reinforcement.

## Consider:

- When developing items for any method:
  - Measure one construct or process in an item
  - Intensity and accuracy assessed separately
- Scale:
  - Yes or No (Good for Content Items)
  - Three point Likert Scale or Continuous Scale (Good for Quality or Process assessment)
  - Phrase Completion (Good for Frequency ratings)
    - 0 (none of the time) to 10 (all of the time)
- Pilot-Testing:
  - Consistency
  - Clarity
  - Two raters familiar with practice/program for agreement (90%)



# Fidelity: Designing a Measure

**Table 1** Decisions on the PTP Study: content and process checklists

Decision points	PTP team decisions
Design of the fidelity tool	Each session had a customized and detailed list of content items and the process items were consistent across all sessions. This mirrored the design of the PTP intervention
Phrasing of items—single concept	Items that asked about two tasks (e.g., ask about homework and review agenda) were split into two items so that it was clear when the practitioner had completed the task
Phrasing of items—clarity	The checklists were designed to be used by trained raters without constant reference to the manuals so jargon was rephrased in common language and all items that referred to the manual (such as “Complete Activity 2”) were expanded to include the key information from the manual
Selecting the response options	For the content, a binary yes/no option for ‘completed’ and ‘did not complete’ was used. A 0–10 phrase completion scale with the statements at the ends being, “None of the appropriate times” and “All of the appropriate times”
Pilot testing the measure	The measure, particularly the process section, went through several rounds of testing until the raters reached about 90% agreement and were consistently within 1 point on the phrase completion scale. Examples were added for any content items that continued to be confusing and for all process items





# Fidelity: Designing a Measure

Monitor  
Fidelity in the  
Intervention

***Consider time, cost,  
resources, staff  
capacity, turnover***

- Determine Data Source:
  - Direct Observation
  - Product Review (recordings or products generated)
  - Asking Others
  - Self-Report
- Determine Data Collection Process:
  - Selection criteria for rater/collector
    - Reliability – Consistency
    - Training necessary
  - Process (how)
    - Randomization of sessions selected
  - Frequency



# Fidelity: Designing a Measure

**Table 2** Decisions on the PTP Study: rating the sessions

Decision points	PTP decision
Method for rating	Sessions will be rated using the digital audio recording of the session
Recorded sessions	All sessions were recorded
Randomization process	Eight episodes of each session were randomly selected at the end of the study from the list of completed sessions. The randomization was stratified by practitioner
Raters	There were two teams of raters, each with a Masters student and a PhD or PhD student. One team rated all even numbered sessions, the other odd numbered (e.g., all Session 2s were rated by the pair assigned to even numbered sessions)
Training for raters	The raters were trained in a two-day training that included listening and practice rating sessions. Each team had to achieve above 85% agreement on training sessions before beginning rating

# Activity: Fidelity - Best Practices

## Design a Fidelity Measure

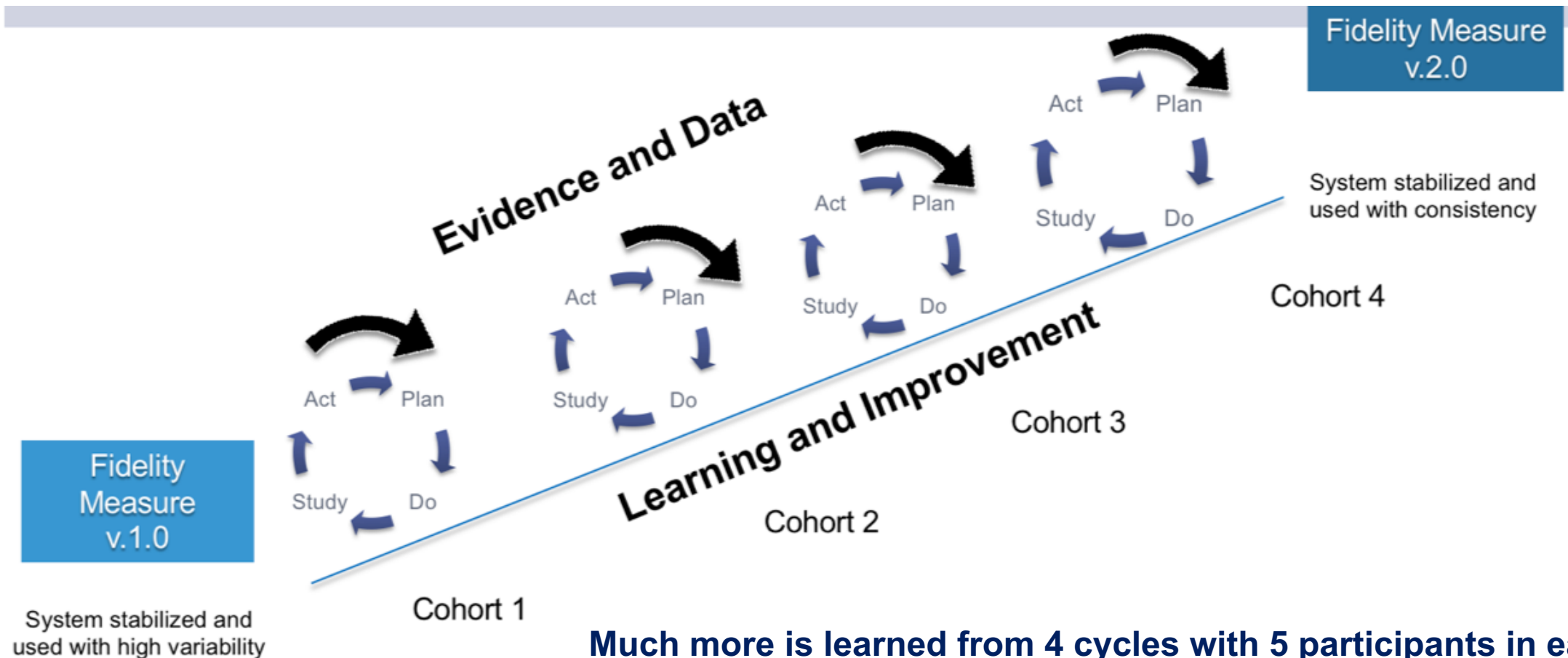
- In small groups:
  - Review essential components and structure of the *Parenting Program*
  - Identify essential components to measure
  - Draft items for selected components and determine scale
  - Identify data sources
  - Review and Reflect





# Fidelity: Designing a Measure

## Usability Testing (Iterative Development Process):



**Much more is learned from 4 cycles with 5 participants in each cycle than from one pilot test with 20 participants (Nielsen, 2000)**






# Fidelity: Designing a Measure

Use the  
Fidelity Data

## Fidelity

Outcomes

	Low	High
Low		
High		

“Let’s see if getting better at what we do helps us improve our outcomes.”

“Do the fidelity measures align with our theory of change?”

“Are we measuring the right core component?”

“Did we choose the wrong approach? Practices?”

“Are the fidelity measures aligned with the core components?”

“Did we choose an EBP that matched our need?”

# Summary & Evaluation of Objectives



The (Child-Welfare) field recognizes the importance of fidelity but fidelity is integrated **inconsistently** in studies and usual care.



- Develop shared understanding of the definition fidelity
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Seay, et al. 2015



# For More Information

**Caryn Ward**

[Caryn.ward@unc.edu](mailto:Caryn.ward@unc.edu)

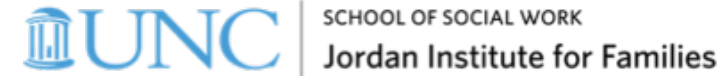


<http://nirn.fpg.unc.edu/>



**Paul Lanier**

[planier@email.unc.edu](mailto:planier@email.unc.edu)



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email: [nirn@unc.edu](mailto:nirn@unc.edu)

web: <http://nirn.fpg.unc.edu>

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