Rapid Analysis Using the Consolidated Framework for Implementation Research (CFIR):
A Methods Cyberseminar

Caitlin Reardon, MPH
Andrea Nevedal, PhD

Presenters

Caitlin Reardon, MPH *(She/Her)*
SENIOR QUALITATIVE ANALYST
VA Ann Arbor Healthcare System
Center for Clinical Management Research

Andrea Nevedal, PhD *(She/Her)*
INVESTIGATOR
SENIOR QUALITATIVE METHODOLOGIST
VA Palo Alto Healthcare System
Center for Innovation to Implementation

First Poll Question

What is your level of familiarity with rapid qualitative analysis?

- ▷ High
- ▷ Moderate
- ▷ Low
- ▷ None

Second Poll Question

What is your level of familiarity with the CFIR?

- ▷ High
- ▷ Moderate
- ▷ Low
- ▷ None

Qualitative Methods & Implementation Science
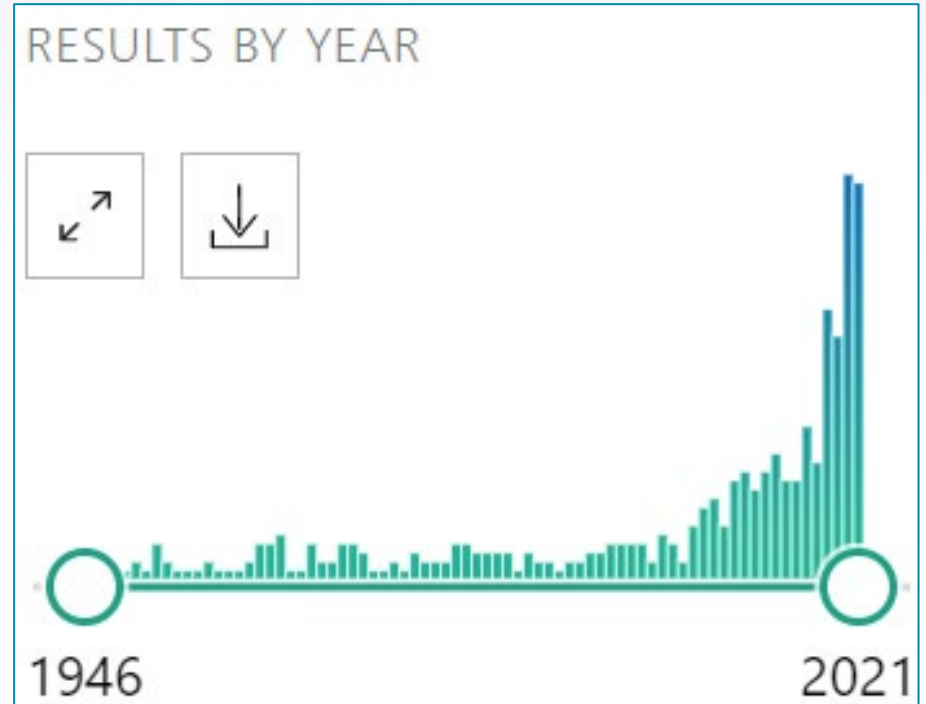
Qualitative approaches:

- Prominent within implementation science[1-2]

- Explain implementation failures or successes

- Common but resource intensive

Rapid Analysis Approaches

Rapid analysis approaches:

- Becoming more common
- Often use inductive methods and transcripts

RESULTS BY YEAR

1946   2021

Objectives

One

Develop a rigorous CFIR-informed *deductive* rapid analysis process using *notes and audio* from semi-structured interviews[3]

▸ Focus of Cyberseminar

Two

Compare our rapid method to our traditional CFIR approach

▸ Decreased time

▸ No transcription costs

▸ Rigorous and effective

METHODOLOGY   **Open Access**

Rapid versus traditional qualitative analysis using the Consolidated Framework for Implementation Research (CFIR)

Andrea L. Nevedal[1*†] , Caitlin M. Reardon[2†], Marilla A. Opra Widerquist[2], George L. Jackson[3,4,5,6], Sarah L. Cutrona[7,8,9], Brandolyn S. White[3] and Laura J. Damschroder[2]

Abstract

Background: Qualitative approaches, alone or in mixed methods, are prominent within implementation science. However, traditional qualitative approaches are resource intensive, which has led to the development of rapid qualitative approaches. Published rapid approaches are often inductive in nature and rely on transcripts of interviews. We describe a deductive rapid analysis approach using the Consolidated Framework for Implementation Research (CFIR) that uses notes and audio recordings. This paper compares our rapid versus traditional deductive CFIR approach.

Methods: Semi-structured interviews were conducted for two cohorts of the Veterans Health Administration (VHA) Diffusion of Excellence (DoE). The CFIR guided data collection and analysis. In cohort A, we used our traditional CFIR-based deductive analysis approach (directed content analysis), where two analysts completed independent in-depth manual coding of interview transcripts using qualitative software. In cohort B, we used our new rapid CFIR-based deductive analysis approach (directed content analysis), where the primary analyst wrote detailed notes during interviews and immediately "coded" notes into a MS Excel CFIR construct by facility matrix; a secondary analyst then listened to audio recordings and edited the matrix. We tracked time for our traditional and rapid deductive CFIR approaches using a spreadsheet and captured transcription costs from invoices. We retrospectively compared our approaches in terms of effectiveness and rigor.

Results: Cohorts A and B were similar in terms of the amount of data collected. However, our rapid deductive CFIR approach required 409.5 analyst hours compared to 683 h during the traditional deductive CFIR approach. The rapid deductive approach eliminated $7250 in transcription costs. The facility-level analysis phase provided the greatest savings: 14 h/facility for the traditional analysis versus 3.92 h/facility for the rapid analysis. Data interpretation required the same number of hours for both approaches.

Conclusion: Our rapid deductive CFIR approach was less time intensive and eliminated transcription costs, yet effective in meeting evaluation objectives and establishing rigor. Researchers should consider the following when employing our approach: (1) team expertise in the CFIR and qualitative methods, (2) level of detail needed to meet project aims, (3) mode of data to analyze, and (4) advantages and disadvantages of using the CFIR.

Keywords: Consolidated Framework for Implementation Research (CFIR), Qualitative methods, Rapid analysis, Implementation science, Veterans

Consolidated Framework for Implementation Research (CFIR)

The CFIR[4–5] is a determinant framework; it defines constructs across five domains of potential influences on implementation
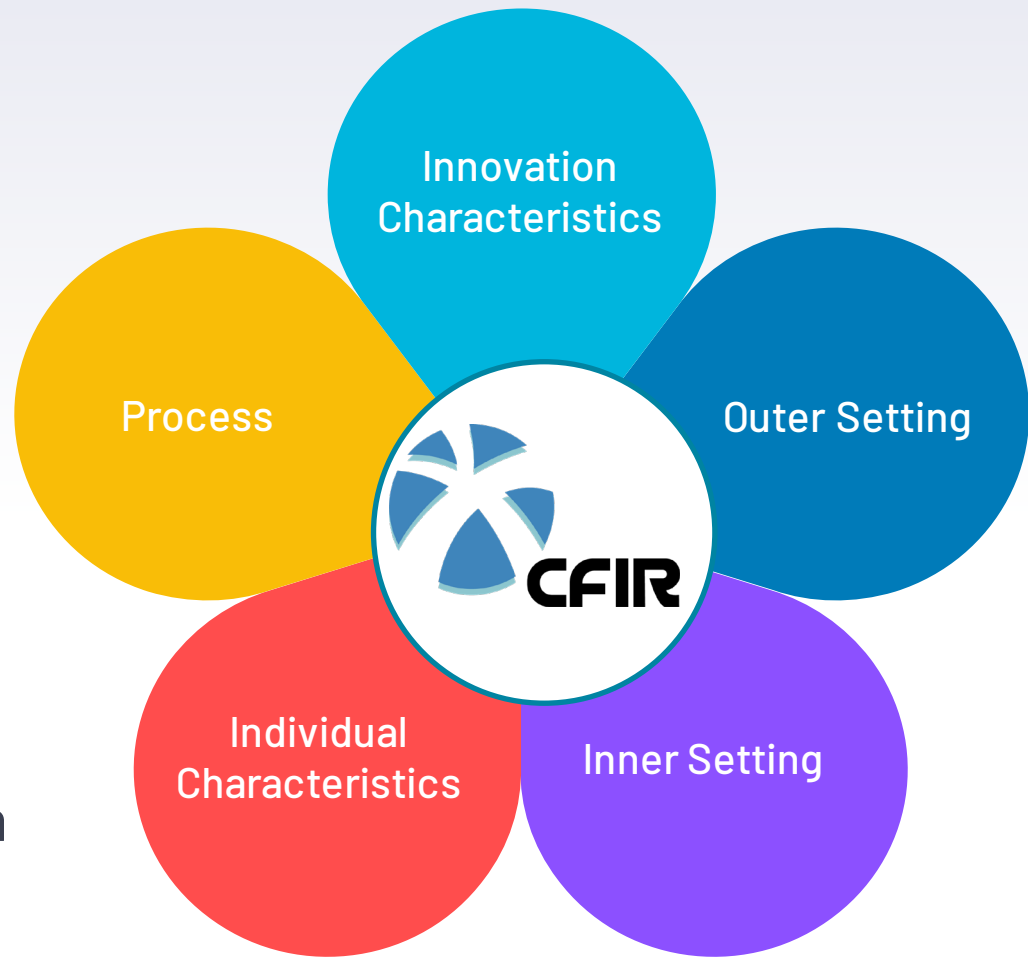
CFIR technical assistance website: www.cfirguide.org

Rapid Analysis Considerations

Is a deductive CFIR approach best for your project? If yes, what is the level of team expertise using the CFIR?

What level of detail (and ease of access to raw data) is needed to meet project aims?

Is this a new project or an extension of related work (i.e., have coding and rating guidelines been developed?)
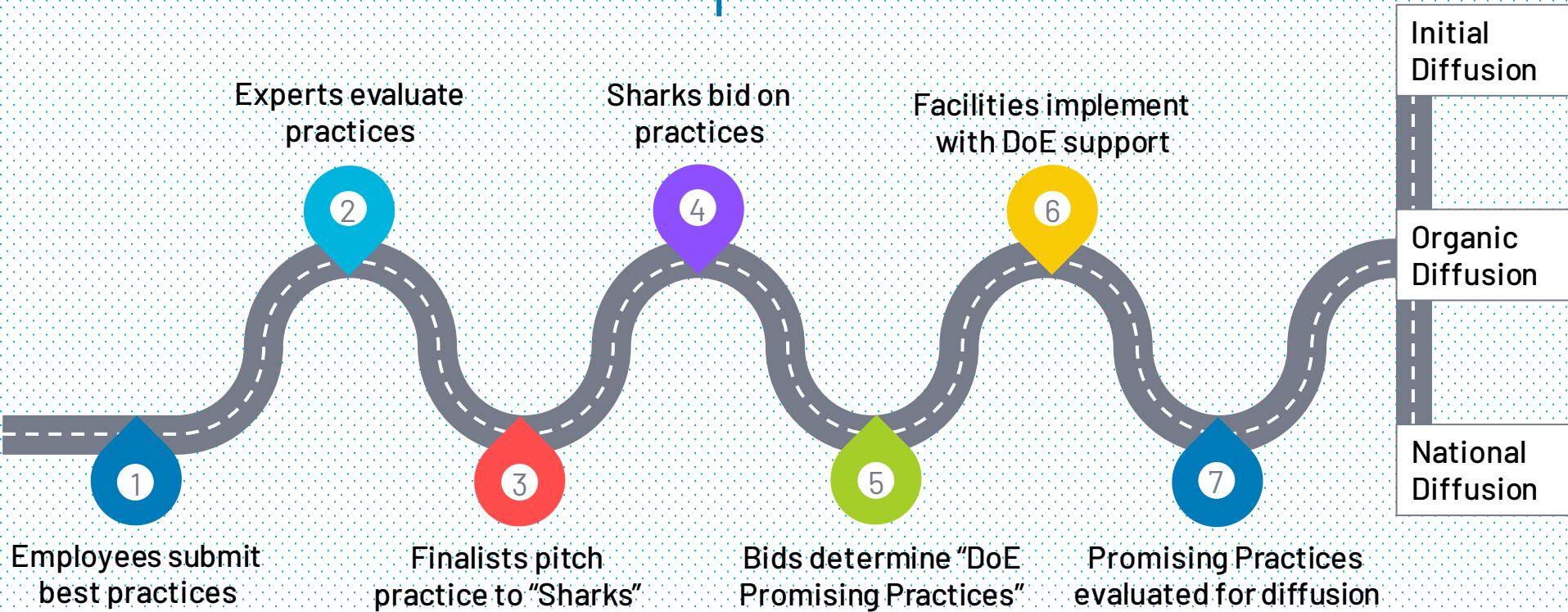
Diffusion of EXCELLENCE
Diffusing Best Practices Across VHA

- Identifies effective clinical & administrative practices *developed by VA employees*

- Disseminates these practices across the VHA system to enhance delivery of Veteran-centered services

DoE Roadmap

Experts evaluate practices

2

Sharks bid on practices

4

Facilities implement with DoE support

6

1

Employees submit best practices

3

Finalists pitch practice to "Sharks"

5

Bids determine "DoE Promising Practices"

7

Promising Practices evaluated for diffusion

Initial Diffusion

Organic Diffusion

National Diffusion

DoE Evaluation

George Jackson, PI

Heather King, Co-I

Brandolyn White, PM

VA Durham Healthcare System

VA Ann Arbor Healthcare System

Laura Damschroder, Site-PI

Maria Arasim, PM

Marilla Widerquist, RA

Caitlin Reardon, QA

Gemmae Fix, Site-PI

Allen Gifford, Co-I

Sarah Cutrona, Co-I

Kathryn DeLaughter, PM

VA Boston Bedford Healthcare System

VA Palo Alto Healthcare System

Andrea Nevedal, Site-PI

QUERI
SHAARK
Spreading Healthcare Access, Activities, Research, and Knowledge (SHAARK) Partnered Evaluation Initiative (PEI)

Traditional CFIR Process Overview

Data Collection
- Develop data collection tools
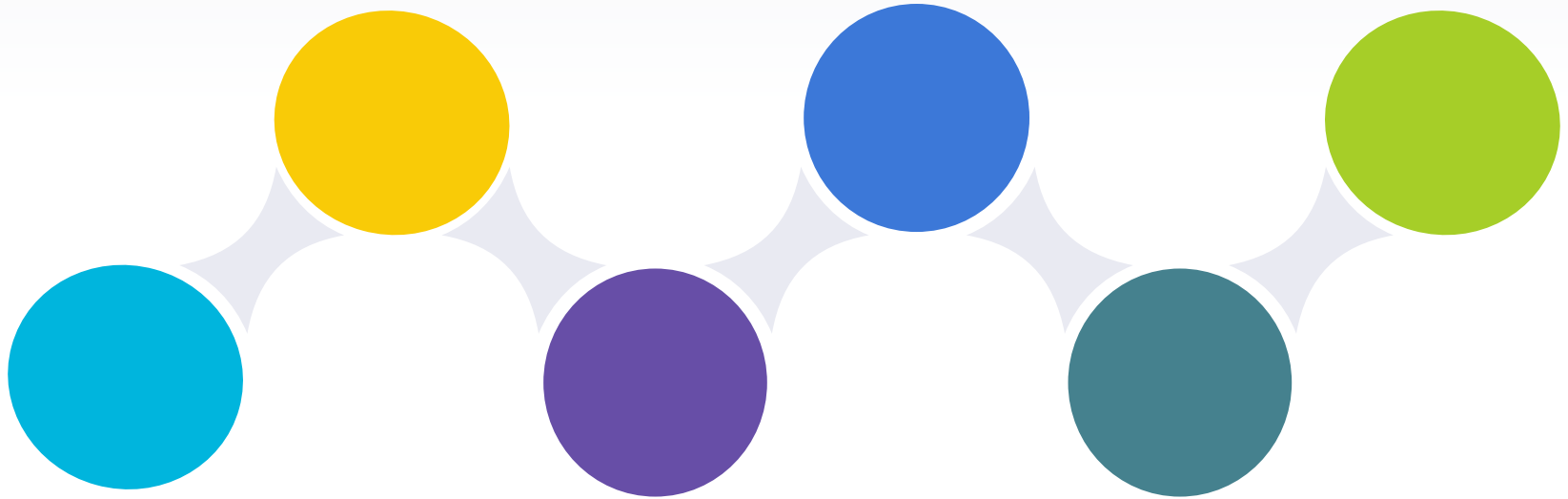- Collect data

Data Analysis
- Develop codebook
- Code data
- Aggregate & summarize data
- Develop rating criteria and rate data

Data Interpretation
- Determine which CFIR constructs:
  - Facilitate/hinder implementation
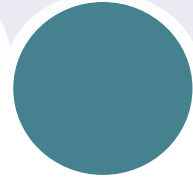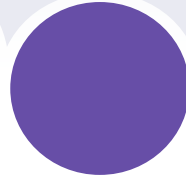 - Distinguish between implementation outcomes

Methods: Coding Data

Step 1: Primary Analyst: Coding

- Handwrite notes during interview
- "Code" notes into matrix
- Write analytic notes and request additional details from secondary analyst
- Develop summary

Step 1: CFIR Matrix

Construct	Facility A
Inner Setting	
Leadership Engagement (LE)	Overall Rating: **Summary**: Participant 1: Facility-level leadership was very engaged, including [Participant 2]. [P2] was responsible for "dislodging" [Time-Stamp] barriers up the chain as necessary, e.g., reaching out to facility leadership to support training. P1 states that ultimately facility leadership "mandated" or "deeply inspired" them to set time aside to be trained and CR Note: I missed something here around a competition? **Rationale**:
Available Resources (AR)	Overall Rating: **Summary**: P1: It was hard for the implementation leaders to have time "carved out"; if there was one "pearl" from her, it's that bids should include time. [Time-Stamp] This delayed implementation and caused undue frustration, but the implementation leads did ultimately receive protected time. **Rationale**:

Step 2: Secondary Analyst: Coding

- Review notes in matrix
- Listen to audio recording
- Verify & revise notes in matrix – use text formatting to highlight changes

Step 2: CFIR Matrix

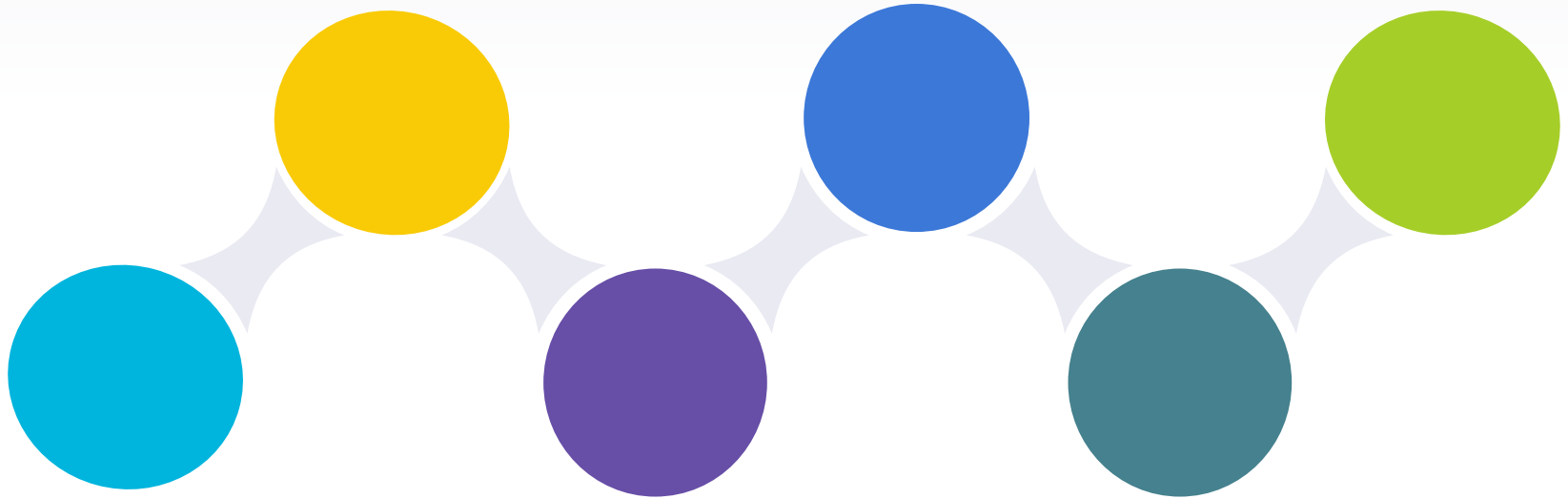| Construct	Facility A
Inner Setting	
Leadership Engagement (LE)	Overall Rating: **Summary:** Participant 1: ~~Facility-level~~ AN Note: Mid-level leadership was very engaged, including [Participant 2]. [P2] was responsible for "dislodging" [~15:10] barriers up the chain as necessary, e.g., reaching out to facility leadership to support training AN Note: and eventually securing protected time for the implementation lead [LE > AR]. P1 states that ultimately facility leadership "mandated" or "deeply inspired" them to set time aside to be trained and AN Note: P2 created a "leaderboard" to show how many referrals had come from each team [34:51]. **Rationale:**
Available Resources (AR)	Overall Rating: **Summary:** P1: It was hard for the implementation leaders to have time "carved out"; if there was one "pearl" from her, it's that bids should include time [~20:07]. This delayed implementation and caused undue frustration, but the implementation leads did ultimately receive protected time. AN Note: from leadership. See LE. **Rationale:**

Step 3: Coding Consensus

- Primary analyst reviews matrix, accepts agreed upon edits
- Analysts meet, discuss discrepancies, reach consensus
- Update codebook when needed

Step 3: CFIR Matrix

Construct	Facility A
Inner Setting	
Leadership Engagement (LE)	Overall Rating: **Summary:** Participant 1: AN Note: Mid-level leadership was very engaged, including [Participant 2]. [P2] was responsible for "dislodging" [~15:10] barriers up the chain as necessary, e.g., reaching out to facility leadership to support training AN Note: and eventually securing protected time for the implementation lead [LE > AR]. P1 states that ultimately facility leadership "mandated" or "deeply inspired" them to set time aside to be trained and AN Note: P2 created a "leaderboard" to show how many referrals had come from each team [34:51]. **Rationale:**
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Methods: Rating Data

Ratings: Strength & Valence

Ratings						
M	–2	–1	0	X	+1	+2
Missing: No Data	Strong Barrier: Strong Negative Influence	Weak Barrier: Weak Negative Influence	Neutral: No Influence	Mixed: Mixed Influence	Weak Facilitator: Weak Positive Influence	Strong Facilitator: Strong Positive Influence

Step 4: Primary Analyst: Rating Data

- Review notes in matrix
- Rate each CFIR construct and provide rating rationale
- Write analytic notes

Step 4: CFIR Matrix

Construct	Facility A
Inner Setting	
Leadership Engagement (LE)	Overall Rating: +1 **Summary:** Participant 1: AN Note: Mid-level leadership was very engaged, including [Participant 2]. [P2] was responsible for "dislodging" [~15:10] barriers up the chain as necessary, e.g., reaching out to facility leadership to support training AN Note: and eventually securing protected time for the implementation lead [LE > AR]. P1 states that ultimately facility leadership "mandated" or "deeply inspired" them to set time aside to be trained and AN Note: P2 created a "leaderboard" to show how many referrals had come from each team [34:51]. Participant 2: P2 is the service chief for [service name]. CR Note: This is mid-level leadership. She was the liaison between the implementation lead and facility level leadership; she states it was "super challenging" [45:06] initially to get the tangible support they needed from facility leadership, but that in the end they "really came through" [52:04] by making it known that training was a priority and giving the implementation lead protected time. AN Note: "This pushed it through." [52:07] **Rationale:** P2 is a strong mid-level leadership facilitator of implementation. Facility-level leadership initially was not supportive, which was hindering implementation, but then they provided the necessary support and protected time, which "pushed it through," warranting a +1 rating.

Step 5: Secondary Analyst: Rating

- Review and revise ratings and rationales in matrix – use text formatting to highlight changes

Step 5: CFIR Matrix

Construct	Facility A
Inner Setting	
Leadership Engagement (LE)	Overall Rating: +1 AN Note: +1* Agree overall it's positive, but adding * to reflect mixed data **Summary:** Participant 1: AN Note: Mid-level leadership was very engaged, including [Participant 2]. [P2] was responsible for "dislodging" [~15:10] barriers up the chain as necessary, e.g., reaching out to facility leadership to support training AN Note: and eventually securing protected time for the implementation lead [LE > AR]. P1 states that ultimately facility leadership "mandated" or "deeply inspired" them to set time aside to be trained and AN Note: P2 created a "leaderboard" to show how many referrals had come from each team [34:51]. Participant 2: P2 is the service chief for [service name]. CR Note: This is mid-level leadership. She was the liaison between the implementation lead and facility level leadership; she states it was "super challenging" [45:06] initially to get the tangible support they needed from facility leadership, but that in the end they "really came though" [52:04] by making it known that training was a priority and giving the implementation lead protected time. AN Note: "This pushed it through." [52:07] **Rationale:** P2 is a strong mid-level leadership facilitator of implementation. Facility-level leadership initially was not supportive. AN Note: It was "super challenging" to get the support they needed, which was hindering implementation, but then they provided the necessary support and protected time, which "pushed it through," warranting a +1* rating.

Step 6: Rating Consensus

- Primary analyst reviews matrix & accepts agreed upon edits
- Analysts meet, discuss discrepancies, reach consensus
- Update rating criteria as needed

Step 6: Final CFIR Matrix

Construct	Facility A
Inner Setting	
Leadership Engagement (LE)	Overall Rating: +1* **Summary:** Participant 1: AN Note: Mid-level leadership was very engaged, including [Participant 2]. [P2] was responsible for "dislodging" [~15:10] barriers up the chain as necessary, e.g., reaching out to facility leadership to support training AN Note: and eventually securing protected time for the implementation lead [LE > AR]. P1 states that ultimately facility leadership "mandated" or "deeply inspired" them to set time aside to be trained and AN Note: P2 created a "leaderboard" to show how many referrals had come from each team [34:51]. Participant 2: P2 is the service chief for [service name]. CR Note: This is mid-level leadership. She was the liaison between the implementation lead and facility level leadership; she states it was "super challenging" [45:06] initially to get the tangible support they needed from facility leadership, but that in the end they "really came through" [52:04] by making it known that training was a priority and giving the implementation lead protected time. AN Note: "This pushed it through." [52:07] **Rationale:** P2 is a strong mid-level leadership facilitator of implementation. Facility-level leadership initially was not supportive. AN Note: It was "super challenging" to get the support they needed, which was hindering implementation, but then they provided the necessary support and protected time, which "pushed it through" warranting a +1* rating.

Adapting CFIR RAP

Reduce Secondary Analysis — Eliminate secondary analysis on all or some interviews (e.g., only conduct secondary analysis on the first 10 interviews or a random sample)

Limit CFIR Constructs — Include only CFIR constructs expected to be most relevant to the research question in the matrix

Use Secondary Data — Use project artifacts (e.g., meeting minutes) to analyze in place of interviews

Omit Ratings — Omit, streamline, or simplify rating process following coding

Pros and Cons: Rapid CFIR Approach

Using audio files instead of transcripts:	
Allows researchers to conduct data collection & analysis simultaneously (no delay waiting for transcripts)	Increases cognitive load for primary analyst & requires large scheduling blocks
Eliminates cost of transcription & specialized coding software	Decreases ease of access to raw data & quotations
Streamlining analysis via earlier aggregation of data:	
Eliminates each analyst independently reviewing the same pieces of data multiple times	Requires expertise in CFIR
Allows researchers to provide feedback more quickly to operational partners & funders	Decreases level of detailed feedback

Pros and Cons: Rapid CFIR Approach

Using a deductive instead of inductive approach:	
Reduces risk of overlooking themes (framework is comprehensive)	Increases risk of overlooking important insights not included in the framework (if it's relied on too heavily)
Allows researchers to compare results more easily across studies	N/A

Acknowledgements

Our rapid CFIR approach builds on the work of many researchers, including Dr. Alison Hamilton and Dr. Jennifer Neal.[6-7]

However, our approach is directly based on work by our VHA colleague and friend, Dr. Randy Gale.[8]

Dr. Randall (Randy) C. Gale
1975 – 2018

THANK YOU!

Questions?

You can find us at:

- ▸ Caitlin.Reardon@va.gov
- ▸ Andrea.Nevedal@va.gov

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