



# Centre for Evidence and Implementation

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# 3rd Biennial Australasian Implementation Conference

Melbourne Convention Exhibition Centre | Melbourne, Australia  
5-6 October 2016

Hosted by



## *Effective Implementation: A Marriage of Context and Strategy*

Laura Damschroder

Investigator, U.S. Department of Veteran Affairs'  
Center for Clinical Management Research

#AICMelb



@2016AIC

# Effective Implementation: A Marriage of Context and Strategy

Laura Damschroder, USA

Sneak Preview Webinar:

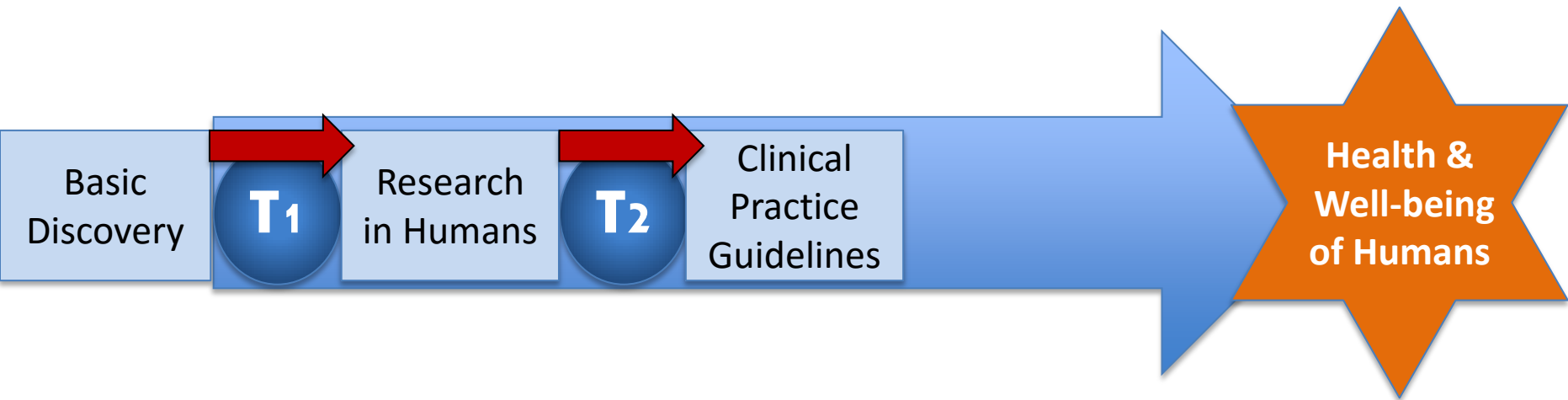
3<sup>rd</sup> Biennial Australasian Implementation Conference

30 March 2016

# My World

- Embedded researcher in US Veterans Affairs integrated national healthcare system
  - Conduct “partnered” research
  - Develop Practical Tools
  - Advance Implementation Science
  - Accelerate translation of evidence-based practices into clinical settings
- QUERI Program: <http://www.queri.research.va.gov/>

**I am speaking from an unofficial capacity and the views expressed in this presentation are my own and do not reflect the position or policy of the Department of Veterans Affairs or the United States Government.**



Basic  
Discovery

**T1**

Research  
in Humans

**T2**

Clinical  
Practice  
Guidelines

**Health &  
Well-being  
of Humans**

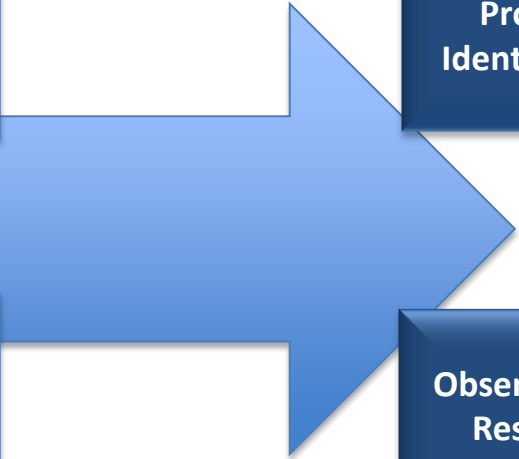
Basic Discovery



Research in Humans



Clinical Practice Guidelines



Problem Identification

Observational Research

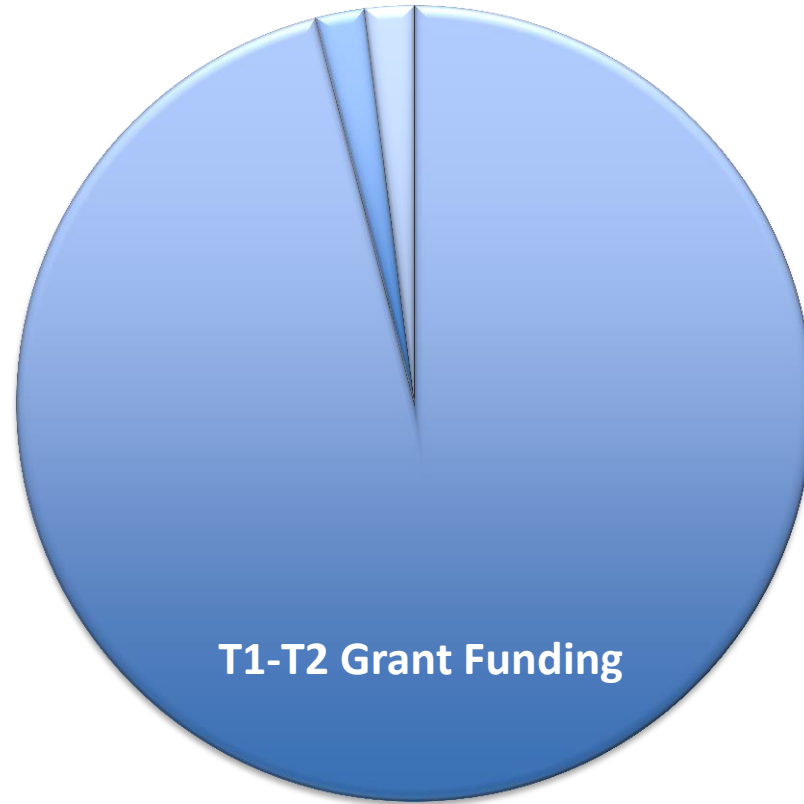
Efficacy / Effectiveness Trials



MISSION ACCOMPLISHED!



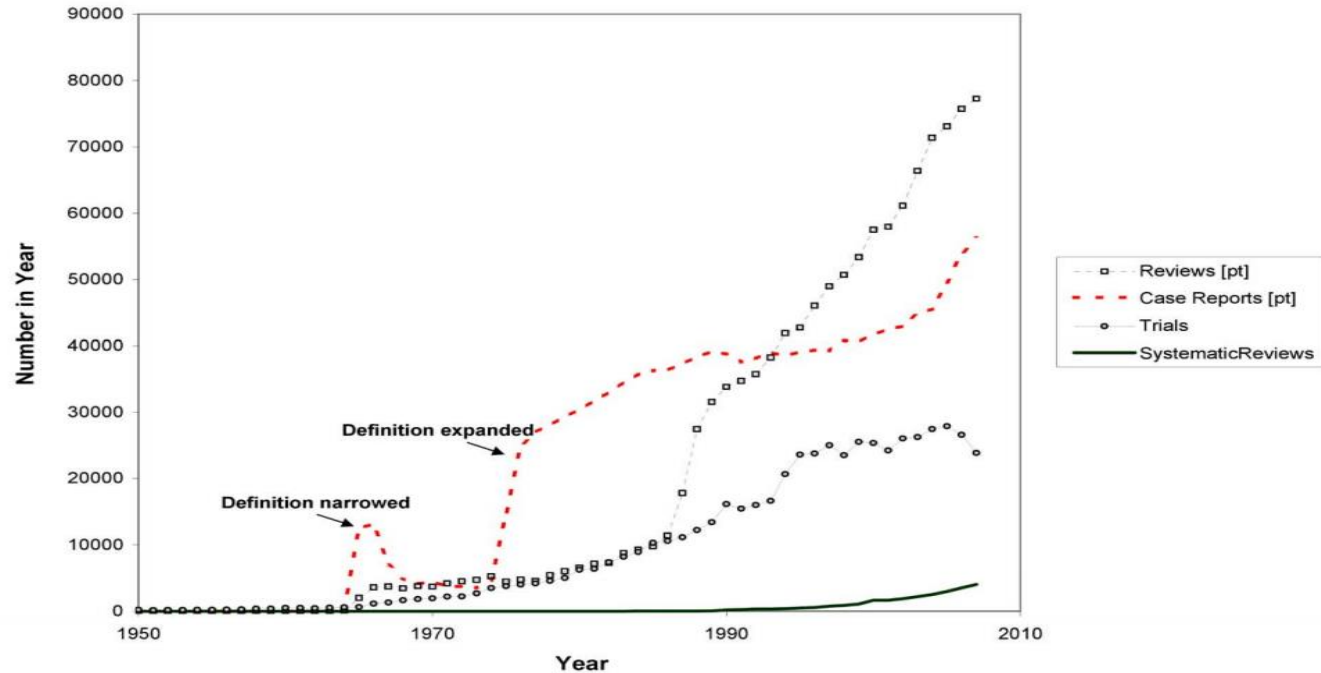
**Grant Funding**



**T1-T2 Grant Funding**



# Proliferation of “WHAT Works” Evidence

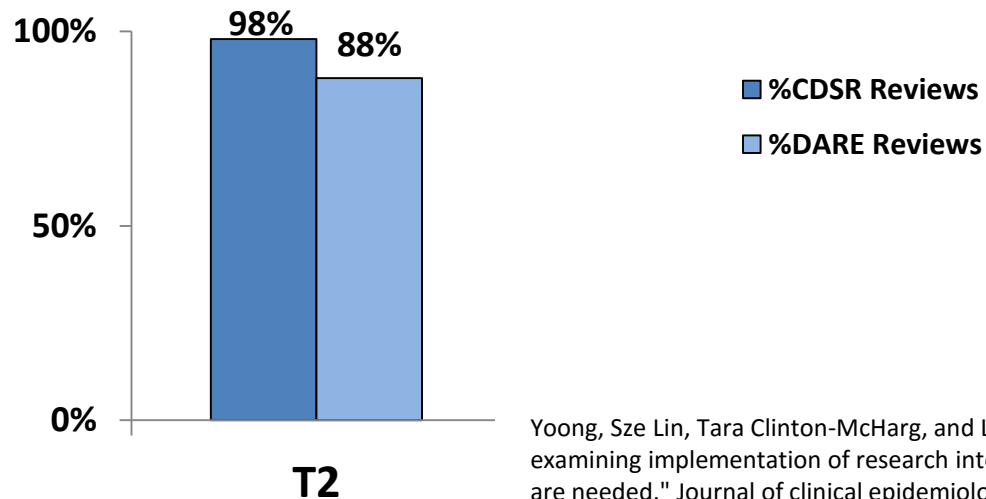


Bastian, H., P. Glasziou, and I. Chalmers, Seventy-five trials and eleven systematic reviews a day: how will we ever keep up? PLoS Med, 2010. 7(9)

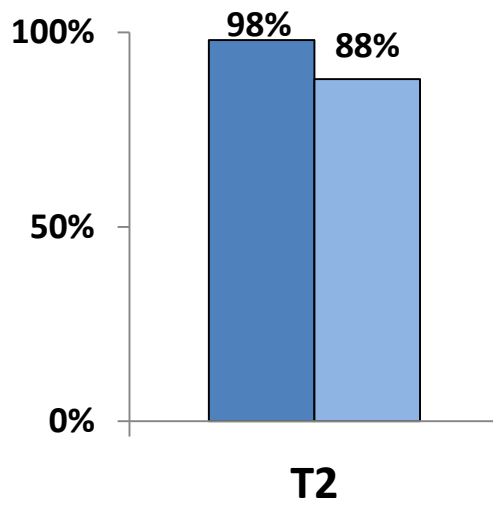
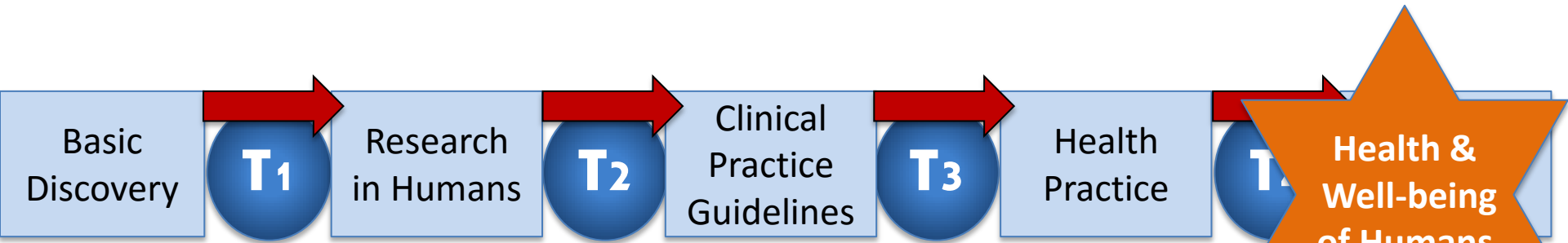


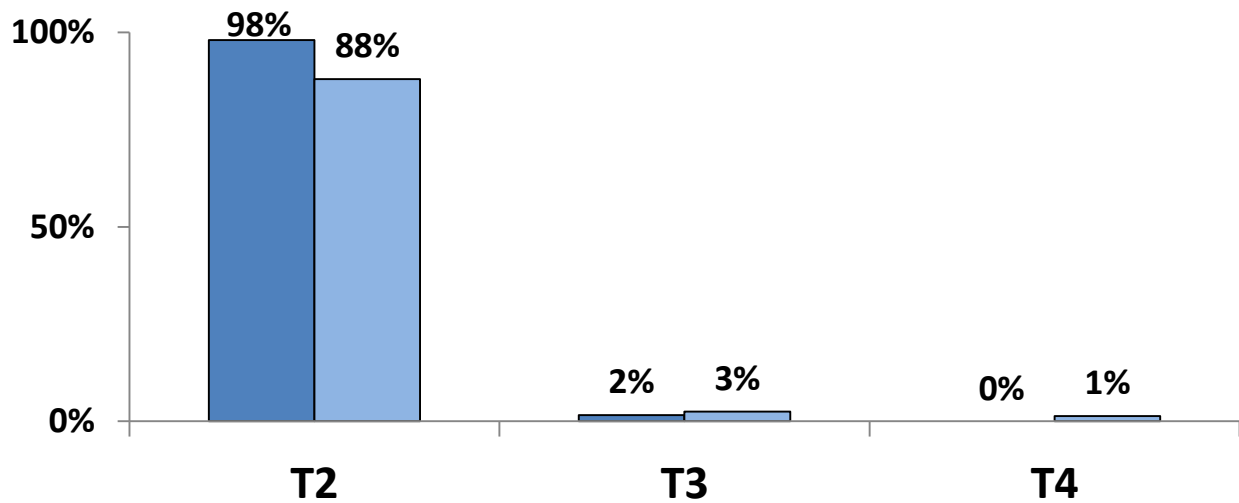
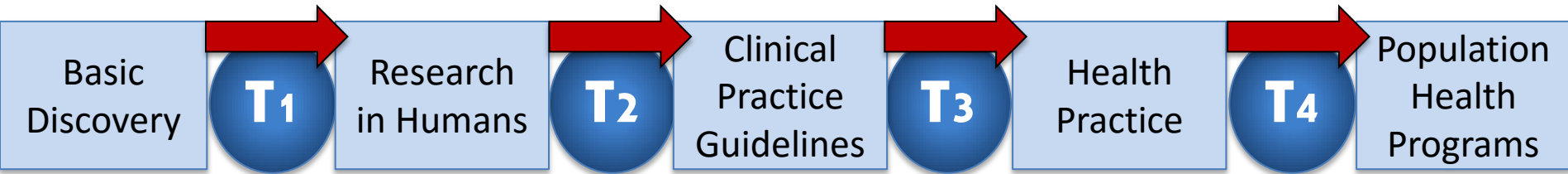
% Systematic Reviews from sample of 2 databases:

- Database of Abstracts of Reviews of Effects (**DARE**)
- Cochrane Database of Systematic Reviews (**CDSR**)



Yoong, Sze Lin, Tara Clinton-McHarg, and Luke Wolfenden. "Systematic reviews examining implementation of research into practice and impact on population health are needed." *Journal of clinical epidemiology* 68.7 (2015): 788-791.





# JAMA<sup>®</sup>

Journal of the  
American Medical Association

## VIEWPOINT

## A Call for an End to the Diet Debates

Sherry L. Pagoto, PhD  
University of  
Massachusetts Medical  
School, Worcester.

Bradley M. Appelhans,  
PhD  
Rush University  
Medical Center,  
Chicago, Illinois.



Author Reading at  
jama.com

**As the obesity epidemic** persists, the time has come to end the pursuit of the “ideal” diet for weight loss and disease prevention. The dietary debate in the scientific

most entirely related to macronutrient composition (eg, Zone, Atkins, South Beach, Dukan, Paleo). A second factor is the assumption that lifestyle interventions are in-

### 2013

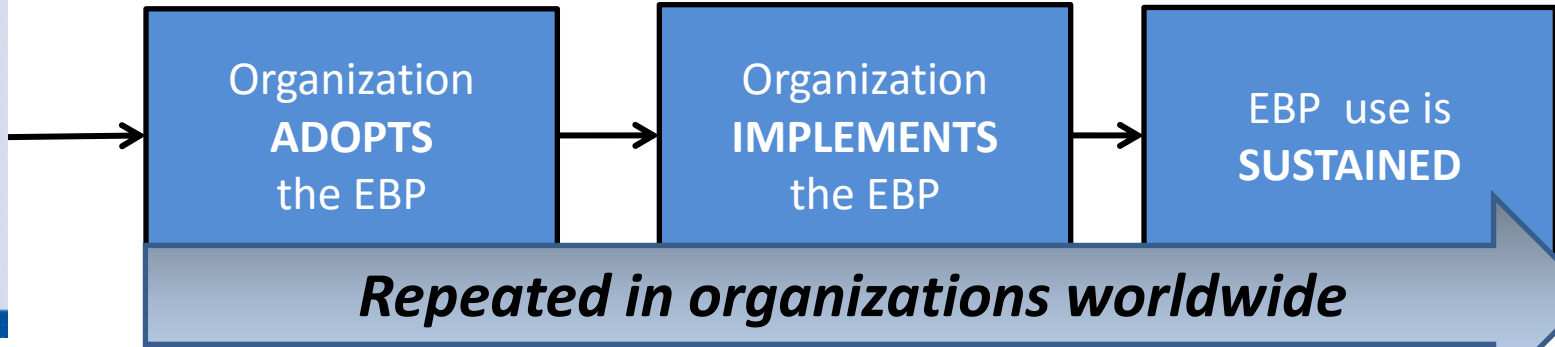
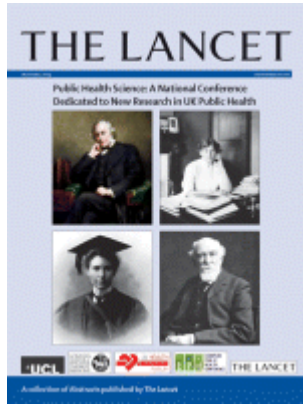
“...the time has come to end the pursuit of the “ideal” diet for weight loss and disease prevention....it is puzzling that the diet debate continues when lifestyle interventions with well-established long-term efficacy are available but have not received the necessary support to be widely implemented.”

have been published, each summarizing 13 to 24 trials.<sup>1-4</sup> The only consistent finding among the trials is that adherence—the degree to which participants continued in the program or met program goals for diet

tients stop taking them, with effects declining within a matter of hours (eg, metformin) to months (eg, statins).

Just like medical therapies, behavioral interventions should only be expected to be effective when treat-

# Assumed Dissemination



# Dissemination & Implementation

## **Dissemination is...**

*the act of spreading something, especially information, widely;  
broadcast or circulate*

## **Implementation is ...**

*Efforts designed to get innovations into use; preparation & execution*

# Dissemination & Implementation

## Dissemination is...

*the act of spreading something, especially information, widely;  
broadcast or circulate*

## Implementation is ...





# T3-T4 Knowledge Gap

- Review of Quality and Safety Teams in acute care
- “Findings revealed limited information about
  - attributes of successful and unsuccessful team initiatives,
  - barriers and facilitators to team initiatives,
  - unique or combined contribution of selected interventions,
  - or how to effectively establish these teams.”

T3-T4 Knowledge

# **GENERATING “WHERE” AND “WHY/HOW” EVIDENCE**

# Validity

- Internal validity
  - WHAT worked?
  - Focus on establishing causal pathway
- External validity
  - WHAT works WHERE, WHY, and HOW?
  - Focus on transferability, generalizability

# RE-AIM Evaluation Framework

Outcome Domain	Description & Examples
<b>Reach</b> (Individual)	Is the intervention reaching the target population? Those most in need?

## Outcome Domain

## Description & Examples

**Reach**  
(Individual)

Is the intervention reaching the target population? Those most in need?

**Effectiveness**  
(Individual)

Does the intervention accomplish its goals?

<b>Outcome Domain</b>	<b>Description &amp; Examples</b>
<b>Reach</b> (Individual)	Is the intervention reaching the target population? Those most in need?
<b>Effectiveness</b> (Individual)	Does the intervention accomplish its goals?
<b>Adoption</b> (Settings & Individuals)	To what extent are those targeted to deliver the intervention participating?

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<b>Effectiveness</b> (Individual)	Does the intervention accomplish its goals?
<b>Adoption</b> (Settings & Individuals)	To what extent are those targeted to deliver the intervention participating?
<b>Implementation</b> (Settings)	To what extent is the intervention consistently implemented by staff members? What is the cost?
<b>Maintenance</b> (Settings & Individuals)	To what extent has the intervention become routine?



## VIEWPOINT

## INNOVATIONS IN HEALTH CARE DELIVERY

# Implementation Science

## A Potential Catalyst for Delivery System Reform

**Elliott S. Fisher, MD,  
MPH**

The Dartmouth  
Institute for Health  
Policy and Clinical  
Practice, Lebanon,  
New Hampshire.

**Stephen M. Shortell,  
PhD, MBA, MPH**

Division of Health  
Policy and  
Management,  
University of California-  
Berkeley School of

**The US health care system** is in a period of unprecedented change. The threats posed by increasing health care costs and the growing consensus that much of current spending is wasted<sup>1</sup> have stimulated a broad array of public and private initiatives aimed at improving care and lowering costs: new technologies, increased investments in patient-centered outcomes research (PCOR), public reporting on the quality and cost of care, pay-for-performance initiatives; and continued efforts to adopt value-based payment models. The health system has responded. For example, the number of accountable care organizations (ACOs) has increased from a handful in

lems. Examples include new medications, new technologies (such as implantable cardioverter defibrillators), and new surgical treatments (new approaches for joint replacement operations). Applications of these innovations are the traditional focus of clinical comparative effectiveness research and evidence-based practice. Physicians are the primary decision makers about whether and to whom these interventions should be offered, whether at the point of care or in the administrative offices of payers faced with a coverage decision. Adoption and implementation decisions are highly influenced by the magnitude of benefit and the quality of the evidence.

# Power of Theory

- Organizing framework for research studies
- Build scientific knowledge base
  - Context, mechanisms of action
  - Generalize through theory
  - Syntheses
- Provides common terms & definitions
- Efficient way to systematically build collective knowledge

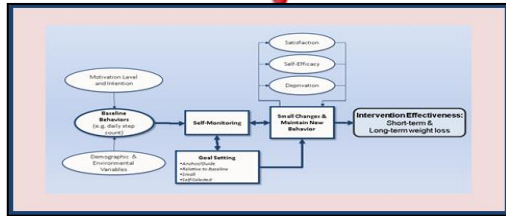
- Colquhoun, H., Leeman, J., Michie, S., Lokker, C., Bragge, P., Hempel, S., ... Grimshaw, J. (2014). Towards a common terminology: a simplified framework of interventions to promote and integrate evidence into health practices, systems, and policies. *Implementation Science*, 9, 51.
- Foy R, Ovretveit J, Shekelle PG, et al. The role of theory in research to develop and evaluate the implementation of patient safety practices. *Quality & safety in health care*. Feb 11 2011.

# Innovations to Improve Patient Care

## T3-T4 Knowledge

- “Active Ingredients”
- Adaptability

Program Benefits



## T2: Innovation (Clinical Effectiveness):

Targeted to improved health & well being of patients

# Comparison of 2 Programs

## Higher Fidelity

- DPP > Usual Care
  - Delivery of content
  - Goal setting
  - Goal progress
  - Group cohesion
  - Supportive, empathetic
- DPP = Usual Care
  - Coach characteristics
  - Staying on track



## Higher Satisfaction

- DPP > Usual Care
  - Group preference
  - Group cohesion
  - Coach
    - Confidence and trust
    - Useful suggestions
    - Meaningful feedback
- DPP = Usual Care
  - Coach
    - Important questions
    - Treated with respect

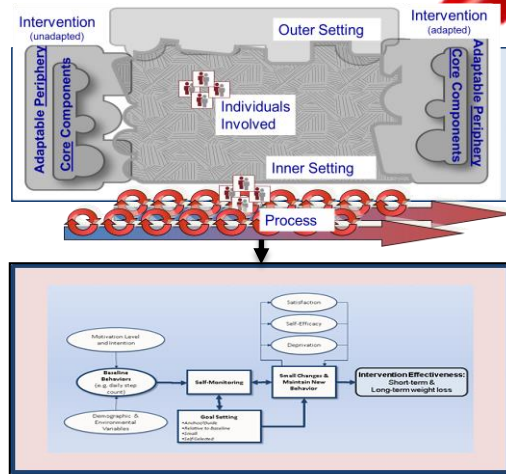


**Higher Participation**



**More Weight Loss**

# Preparing for and Explaining Implementation



## T3-T4 Knowledge:

- Barriers & Facilitators
- Why did/will it work?

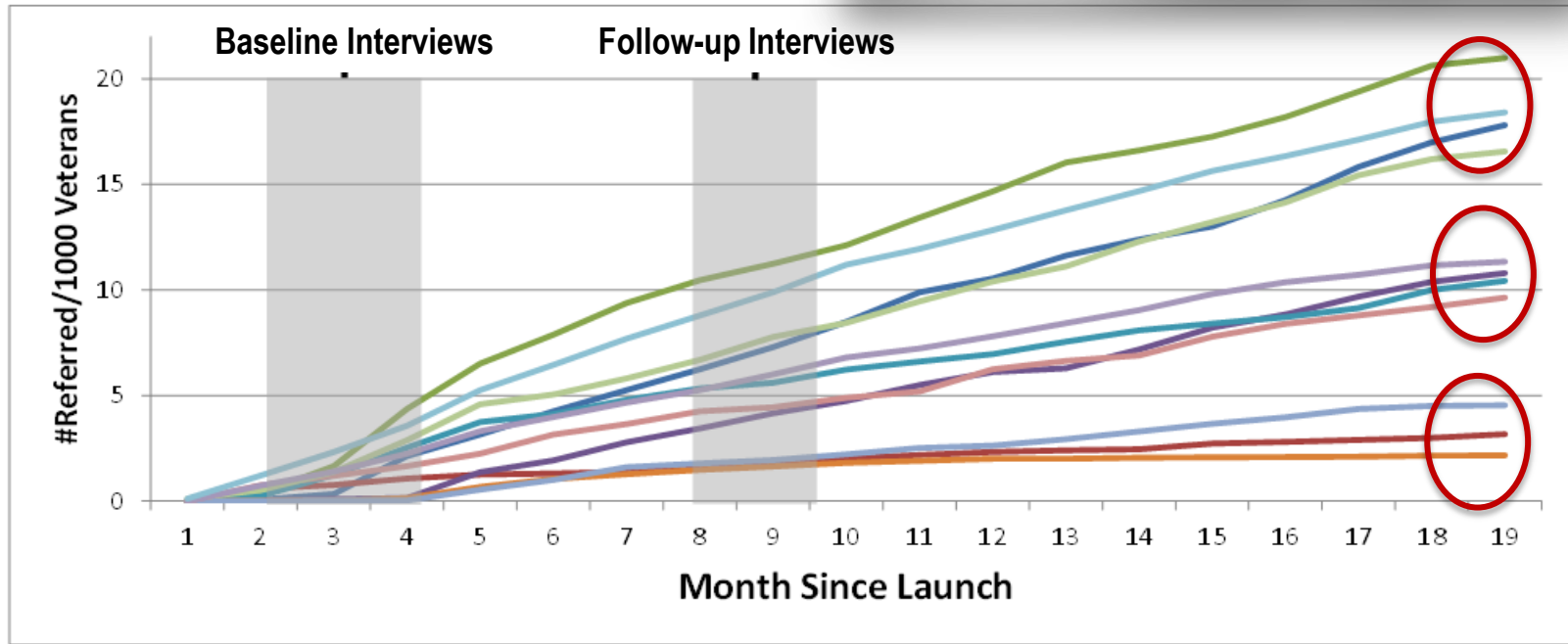
**Program Benefits**

## Explaining Implementation:

“...hypotheses and assumptions about how a specific intervention will facilitate a desired change, as well as the causes, effects, and factors determining success (or the lack of it) in improving health care.” Grohl, et al. (2007). Planning and studying improvement in patient care: The use of theoretical perspectives. *Milbank Quarterly*, 85(1), 93–138.

# Case Study

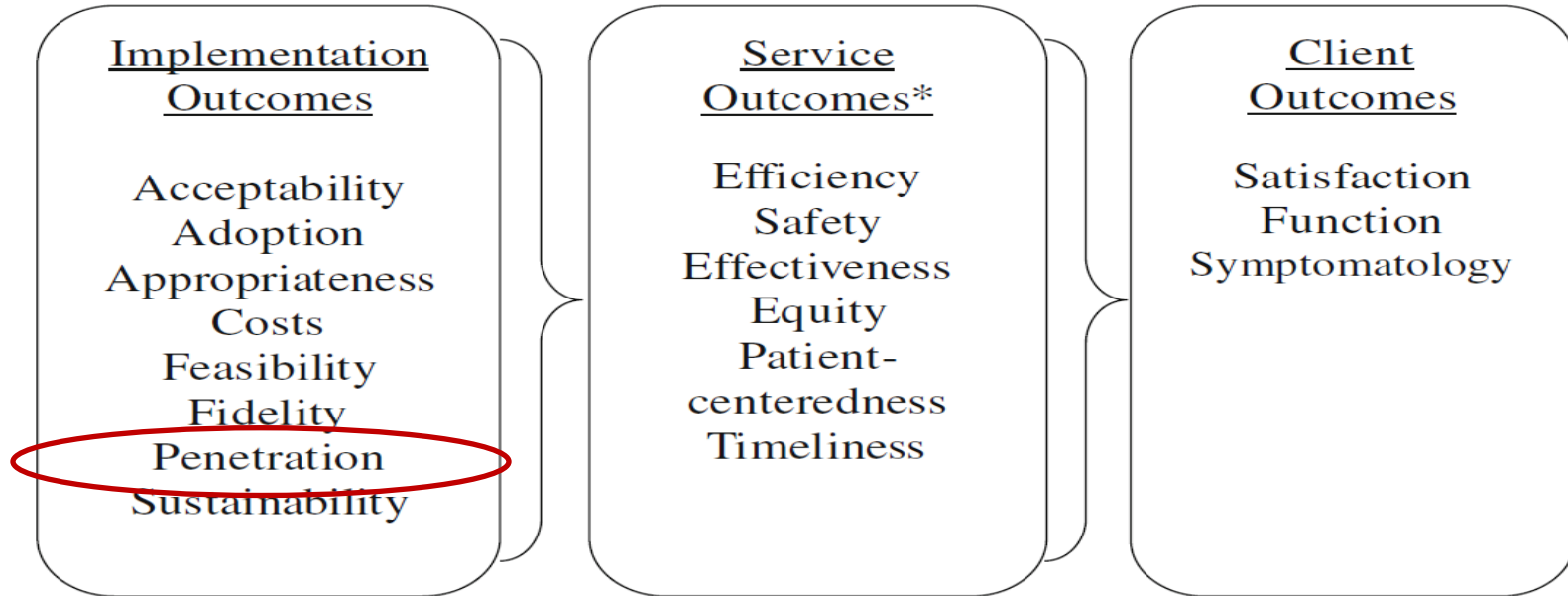
## VA Telephone Lifestyle Coaching (TLC) Program



# Variable referral rates

- Number of Referrals per 1000 Veterans by Site

# Outcomes



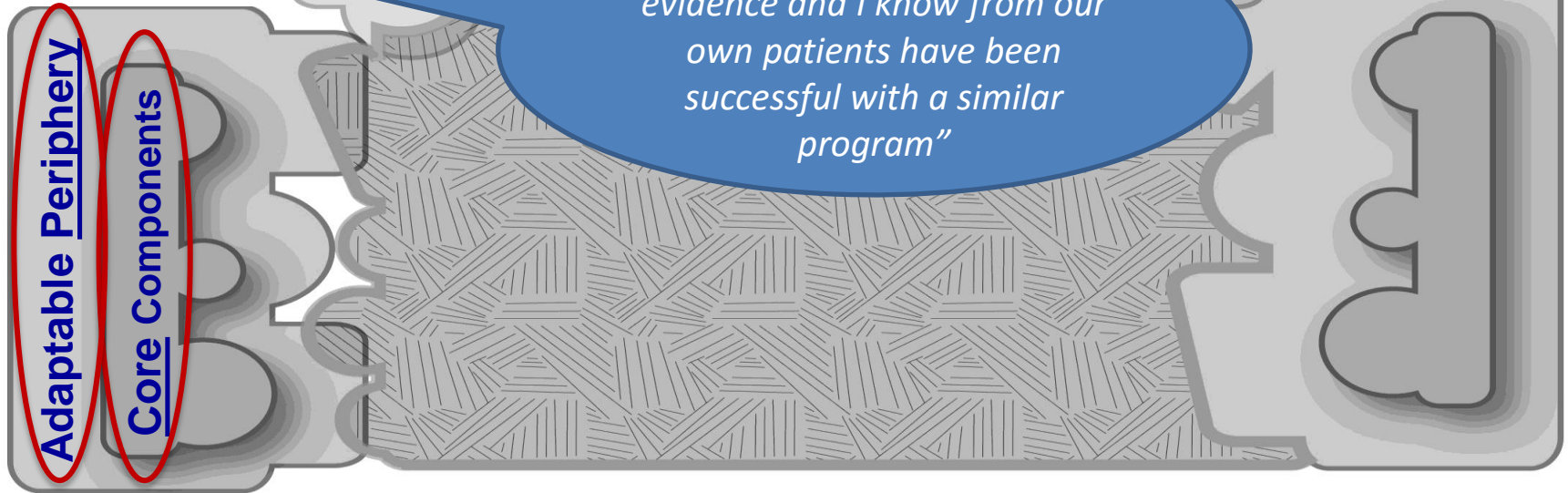


# Consolidated Framework for Implementation Research (CFIR)

- A comprehensive framework to promote consistent use of constructs, terminology, and definitions
  - Consolidate existing models and frameworks
  - Comprehensive in scope
  - Tailor use to the setting

# CFIR: Major Components

Intervention  
(unadapted)



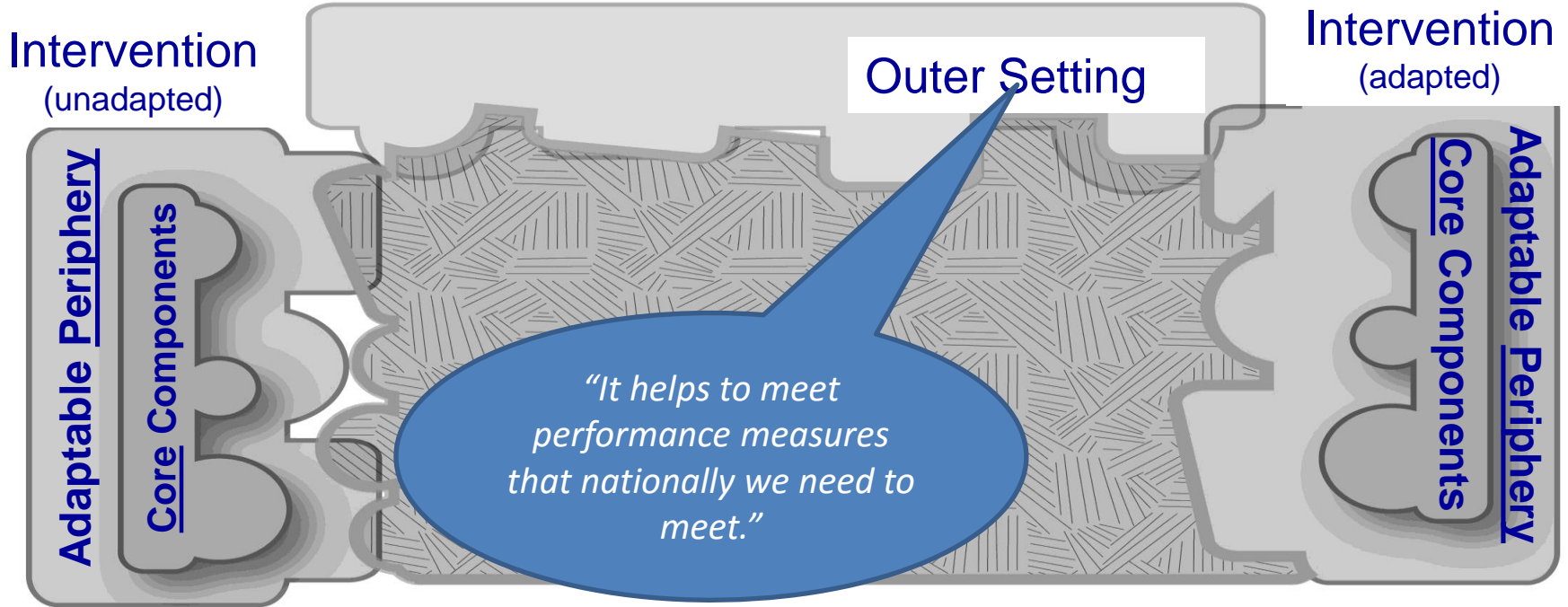
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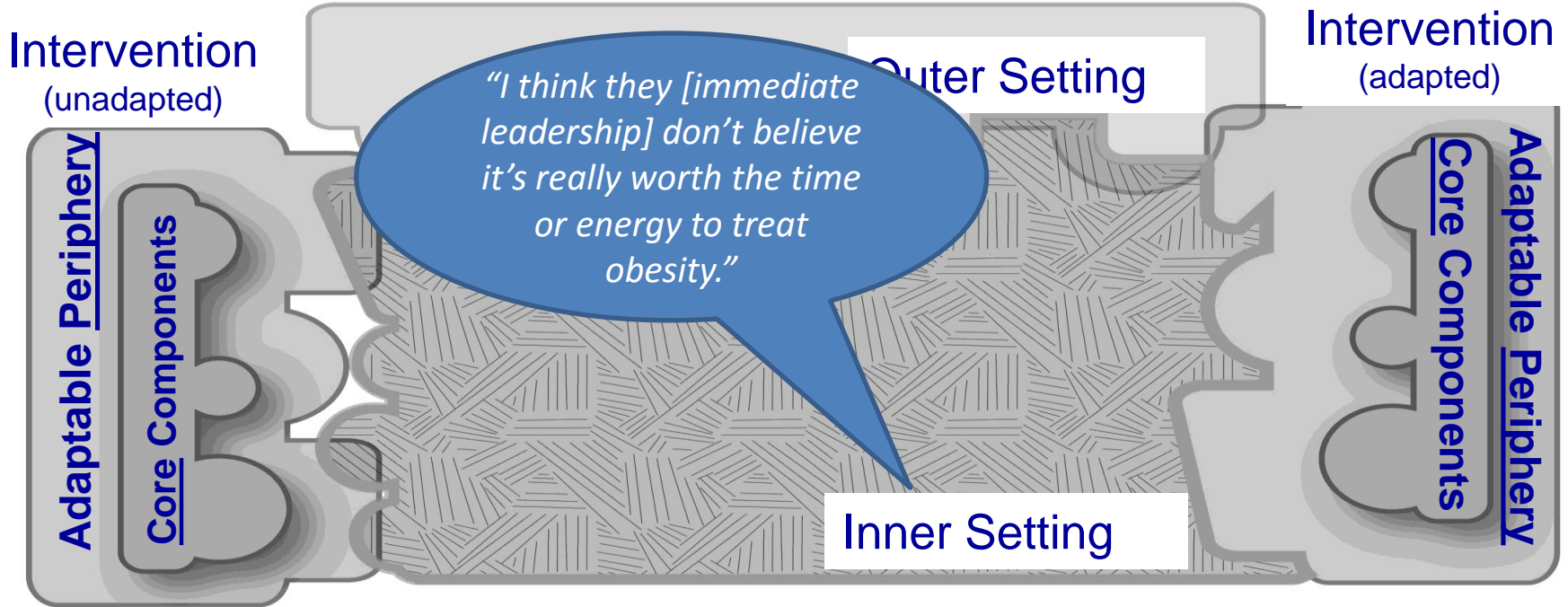
Intervention  
(adapted)



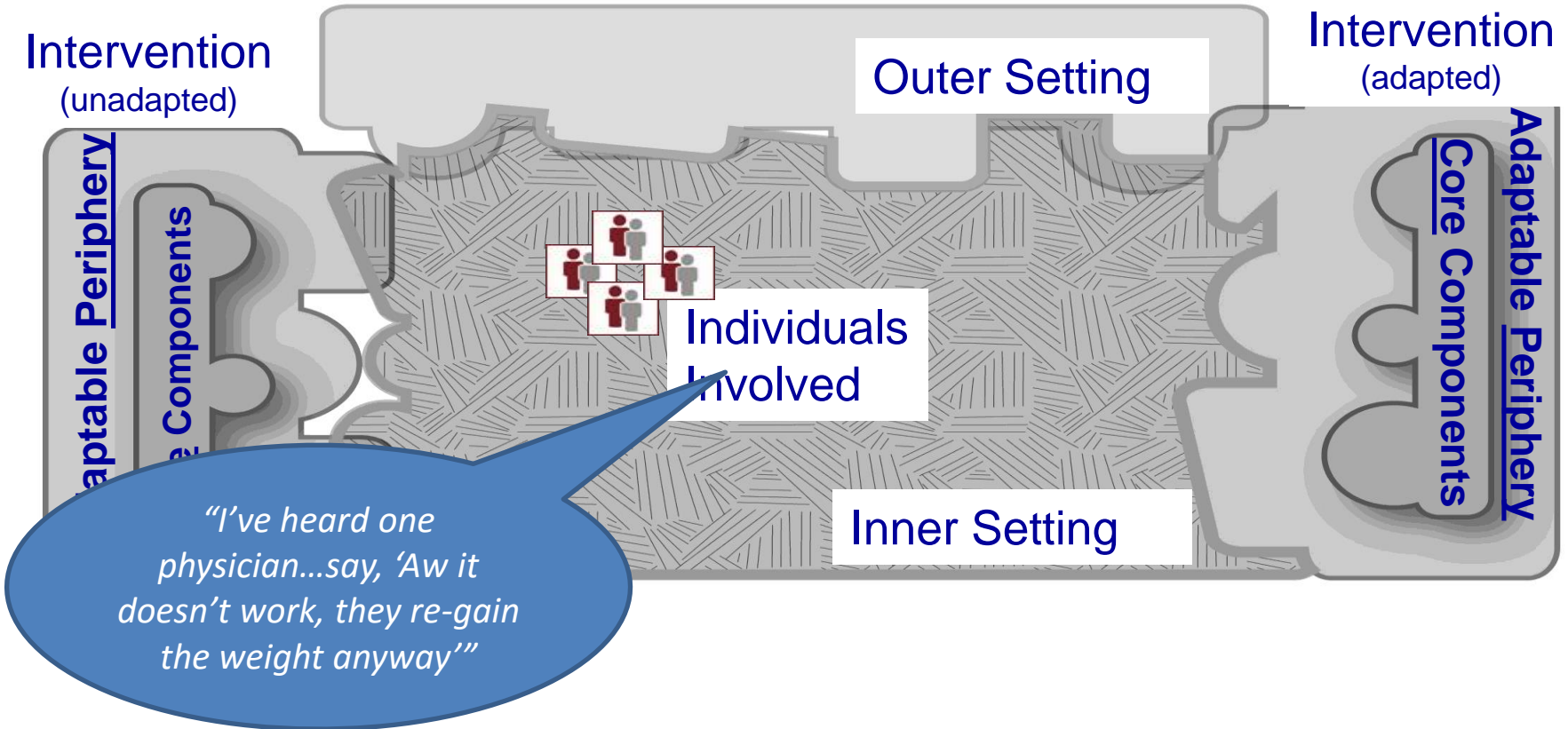
# CFIR: Major Components



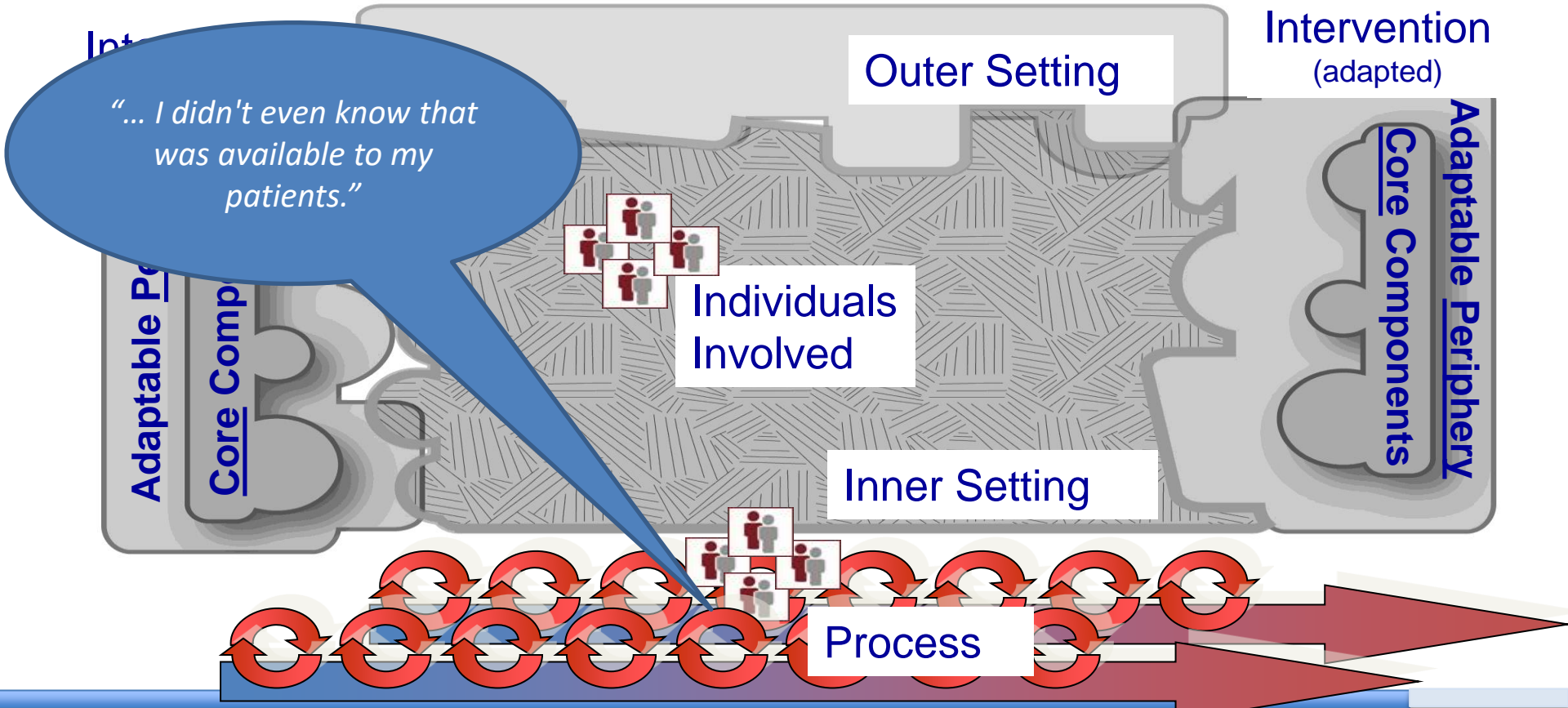
# CFIR: Major Components



# CFIR: Major Components



# CFIR: Major Components



# CFIR Constructs

Ref: <http://www.implementationscience.com/content/4/1/50>

Additional Resources: [www.cfirguide.org](http://www.cfirguide.org)

Topic/Description	Short Description
<b>I. INTERVENTION CHARACTERISTICS</b>	
A Intervention Source	Perception of key stakeholders about whether the intervention is externally or internally developed.
B Evidence Strength & Quality	Stakeholders' perceptions of the quality and validity of evidence supporting the belief that the intervention will have desired outcomes.
C Relative advantage	Stakeholders' perception of the advantage of implementing the intervention versus an alternative solution.
D Adaptability	The degree to which an intervention can be adapted, tailored, refined, or reinvented to meet local needs.
E Trialability	The ability to test the intervention on a small scale in the organization [8], and to be able to reverse course (undo implementation) if warranted.
F Complexity	Perceived difficulty of implementation, reflected by duration, scope, radicalness, disruptiveness, centrality, and intricacy and number of steps required to implement
G Design Quality and Packaging	Perceived excellence in how the intervention is bundled, presented, and assembled
H Cost	Costs of the intervention and costs associated with implementing that intervention including investment, supply, and opportunity costs.
<b>II. OUTER SETTING</b>	
A Patient Needs & Resources	The extent to which patient needs, as well as barriers and facilitators to meet those needs are accurately known and prioritized by the organization.
B Cosmopolitanism	The degree to which an organization is networked with other external organizations.
C Peer Pressure	Mimetic or competitive pressure to implement an intervention; typically because most or other key peer or competing organizations have already implemented or in a bid for a competitive edge.



# Technical Support Website: [www.CFIRguide.org](http://www.CFIRguide.org)



## Consolidated Framework for Implementation Research

Home

CFIR Constructs

Design an Evaluation

- Overview
- Qualitative Data
- Quantitative Data
- Implementation Outcomes

Design an Implementation Strategy

Tools and Templates

- Interview Guide

Published Studies

Additional Resources

Participate

Contact Us

### Welcome to the CFIR Technical Assistance Website

You have come to the right place if you are looking for more information about the Consolidated Framework for Implementation Research (CFIR) that was originally [published in Implementation Science in 2009](#). This site is created for individuals considering using the CFIR to evaluate an implementation or design an implementation study.

[Implementation Science Basics](#)

[What is the CFIR](#)

[Benefits of using the CFIR](#)

[Published Citations of the CFIR](#)

[Future Plans for the CFIR](#)



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CFIR Research Team  
Center for Clinical Management Research  
North Campus Research Complex

# CFIR Guide

## Intervention Characteristics

### Evidence Strength & Quality

1. *In a healthcare setting, influential stakeholders may include influential and well-respected clinicians, where as in an education setting, this may include influential and well-respected teachers or educators.*

What do influential stakeholders think of the intervention?

- What do administrative or other leaders think of the intervention?

2. What kind of supporting evidence or proof is needed about the effectiveness of the intervention to get staff on board?

- Co-workers? Administrative leaders?

### Relative Advantage

1. How does the intervention compare to other alternatives that may have been considered or that you know about?

- What advantages does the intervention have compared to these other programs?
- What disadvantages does the intervention have compared to these other programs?

## Outer Setting

### External Policies & Incentives

1. What kind of local, state, or national performance measures, policies, regulations, or guidelines influenced the decision to implement the intervention?

- How will the intervention affect your organization's ability to meet these measures, policies, regulations, or guidelines?

## Inner Setting

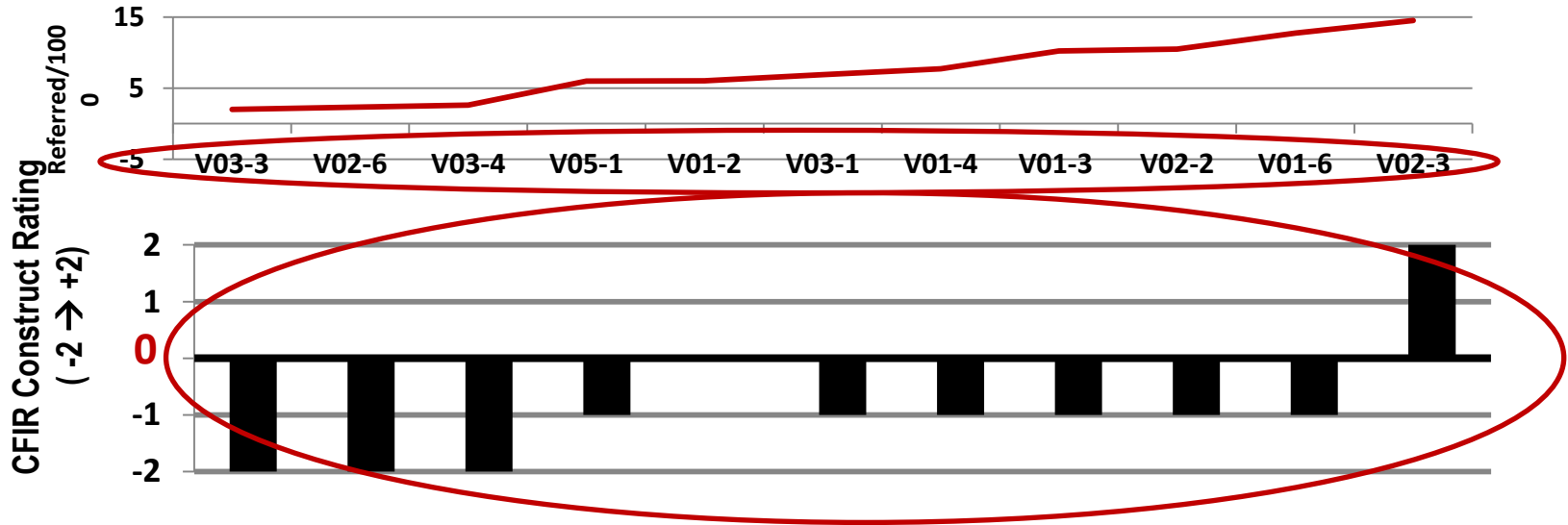
# Analysis

- Coded qualitative data using CFIR as “codebook”
- Rated strength and valence of each construct
  - Scale: -2 to +2

# Referral rate & Construct Ratings by Site

Site ID	V03-3	V02-6	V03-4	V05-1	V01-2	V03-1	V01-4
Referral Rate	2.0094	2.3236	2.5855	5.9953	6.0434	6.8834	7.7227
Structural Characteristics	-2	-2	-2	-1	0	-1	-1
Networks & Communications	-1	1	.	.	.	-1	-1
Compatibility	1	-1	1	1	-1	1	-1

# Structural Characteristics



- Correlation: 0.73 (p=0.01)

# Structural Characteristics

- Barriers
  - Key Coordinator positions unfilled or absent
  - Major cultural transformation in primary care
    - Primary Care Medical Home (PCMH; aka “PACT”)
- Facilitators
  - Example: Organization of prevention services
    - “...we made the case to have prevention programming moved under us...so that we could...inter-refer among ourselves... what’s nice with TLC, is that that fills an important gap in our other programming”

# Distinguishing Constructs: Levers for Change

	High Referral	Low Referral
Structural Characteristics	Preventive services report to same boss	Unfilled positions PCMH Changes
Engaging: Implementation Lead(s)	Enthusiastic, capable leaders	Missing leaders
Engaging: Stakeholders	Multi-faceted communications	Poor communications
Planning		Roll out to smaller rural clinics first
Compatibility	Values Clinical initiatives Existing programs	Only PCPs refer Could not access notes
Networks & Communications	High respect and relationships - teams	Weak/no links in primary care

## Tailored interventions to address determinants of practice (Review)

Baker R, Camosso-Stefinovic J, Gillies C, Shaw EJ, Cheater F, Flottorp S, Robertson N, Wensing M, Fiander M, Eccles MP, Godycki-Cwirko M, van Lieshout J, Jäger C

Tailored implementation can be effective, but the effect is variable and tends to be small to moderate...It is not yet clear how best to tailor interventions and therefore not clear what the effect of an optimally tailored intervention would be.



# Expert Recommendations for Implementing Change (ERIC)

Waltz *et al.* *Implementation Science* 2014, **9**:39  
<http://www.implementationscience.com/content/9/1/39>



IMPLEMENTATION SCIENCE

**STUDY PROTOCOL**

**Open Access**

## Expert recommendations for implementing change (ERIC): protocol for a mixed methods study

Thomas J Waltz<sup>1,2\*</sup>, Byron J Powell<sup>3,4</sup>, Matthew J Chinman<sup>5,6</sup>, Jeffrey L Smith<sup>1</sup>, Monica M Matthieu<sup>7</sup>, Enola K Proctor<sup>3</sup>, Laura J Damschroder<sup>8</sup> and JoAnn E Kirchner<sup>1,9</sup>

# ERIC Compilation of 73 Strategies

Powell *et al.* *Implementation Science* (2015) 10:21  
DOI 10.1186/s13012-015-0209-1



IMPLEMENTATION SCIENCE

**RESEARCH**

**Open Access**

## A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project

Byron J Powell<sup>1\*</sup>, Thomas J Waltz<sup>2</sup>, Matthew J Chinman<sup>3,4</sup>, Laura J Damschroder<sup>5</sup>, Jeffrey L Smith<sup>6</sup>,  
Monica M Matthieu<sup>6,7</sup>, Enola K Proctor<sup>8</sup> and JoAnn E Kirchner<sup>6,9</sup>

# Concept Mapping Results

Waltz *et al.* *Implementation Science* (2015) 10:109  
DOI 10.1186/s13012-015-0295-0



IMPLEMENTATION SCIENCE

**SHORT REPORT**

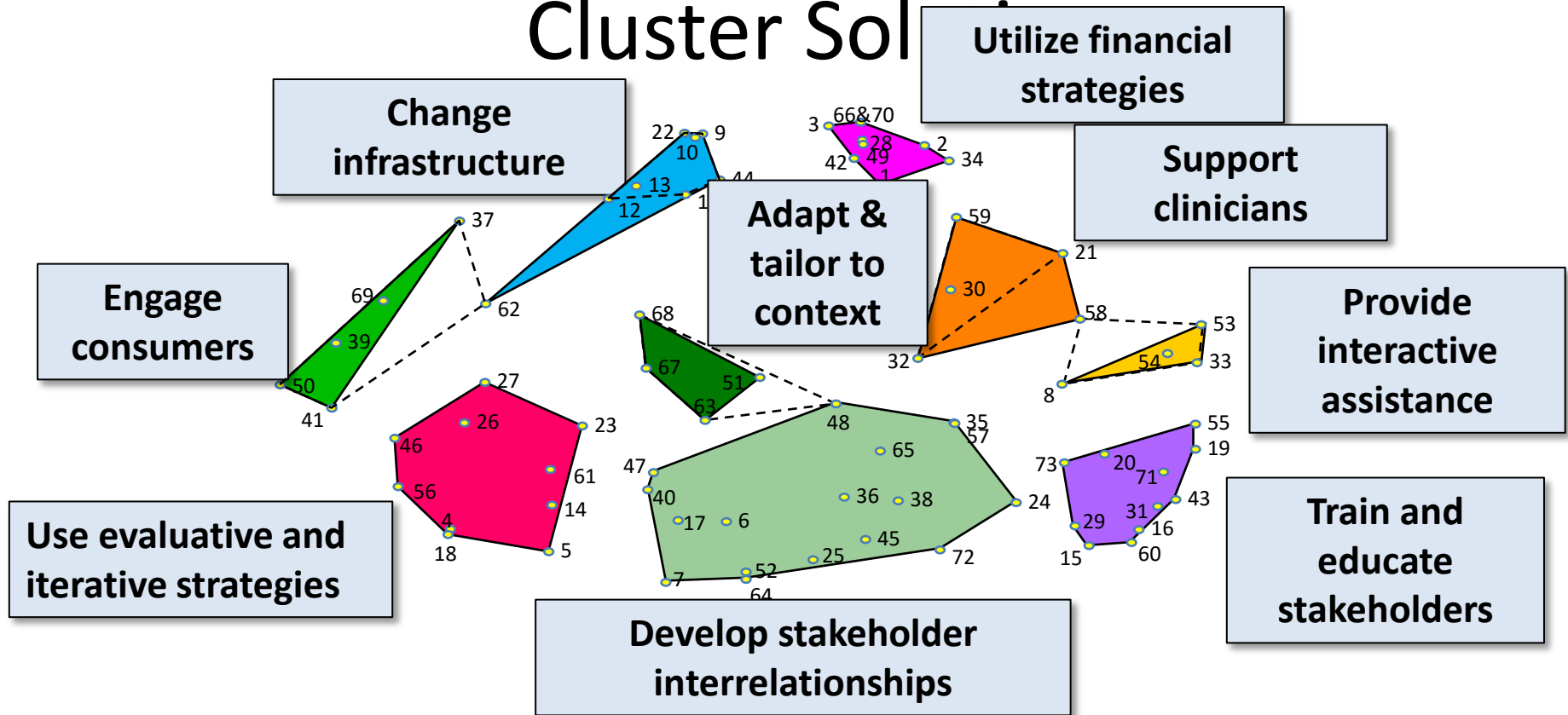
**Open Access**

Use of concept mapping to characterize relationships among implementation strategies and assess their feasibility and importance: results from the Expert Recommendations for Implementing Change (ERIC) study



Thomas J. Waltz<sup>1,2\*</sup>, Byron J. Powell<sup>3</sup>, Monica M. Matthieu<sup>4,5,10</sup>, Laura J. Damschroder<sup>2</sup>, Matthew J. Chinman<sup>6,7</sup>, Jeffrey L. Smith<sup>5,10</sup>, Enola K. Proctor<sup>8</sup> and JoAnn E. Kirchner<sup>5,9,10</sup>

# Compilation Results: Cluster Sol



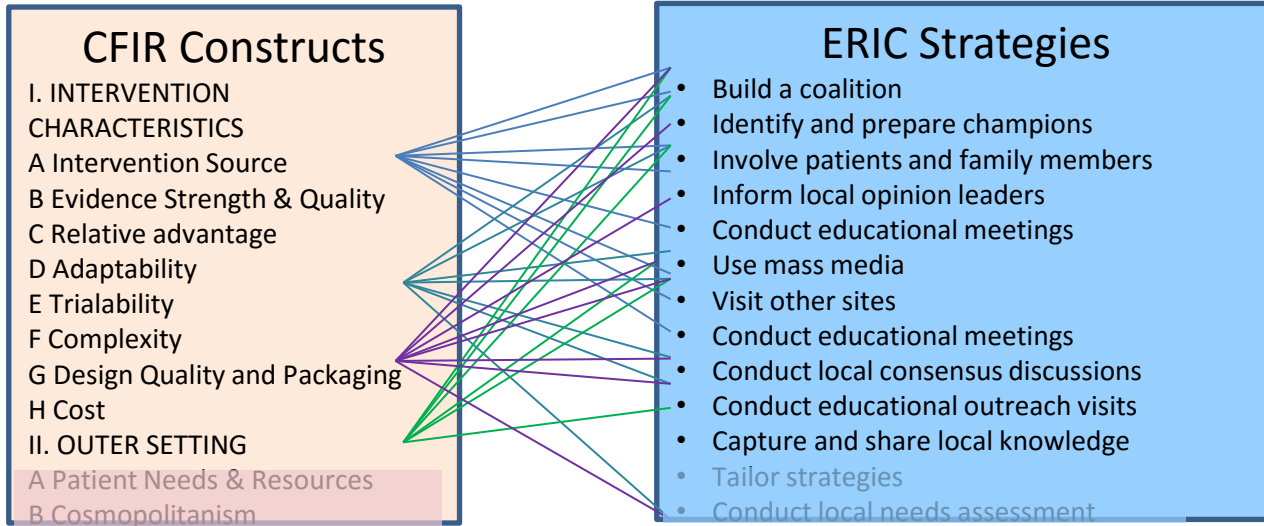
# 2 complex sub-studies

- Expert recommendations for selecting strategies based on:
  - Context
  - Innovation characteristics (e.g., evidence)
  - Phase of implementation
  - CIFR barrier

# Distinguishing Constructs: Levers for Change

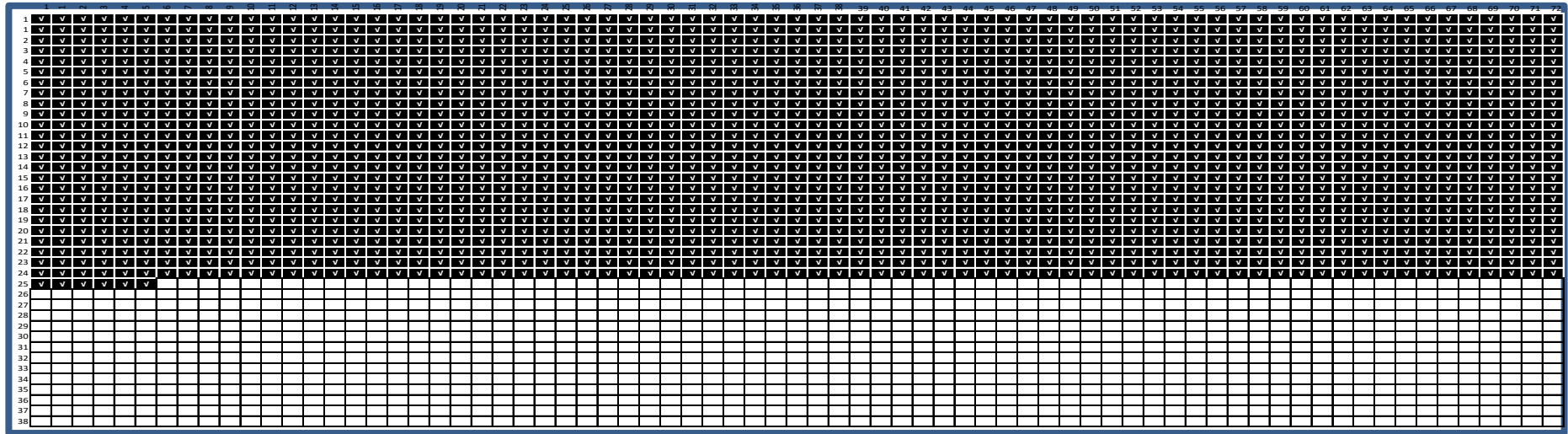
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# Magnitude of the Task



- 39 CFIR constructs
- 73 ERIC Strategies

# Pictograph: Array of possible combinations



73 ERIC Strategies X 39 CFIR Constructs = 2847 possible combinations

Respondents endorsed 1832 (64%) of all possible combinations

Number of combinations reduced by 36%

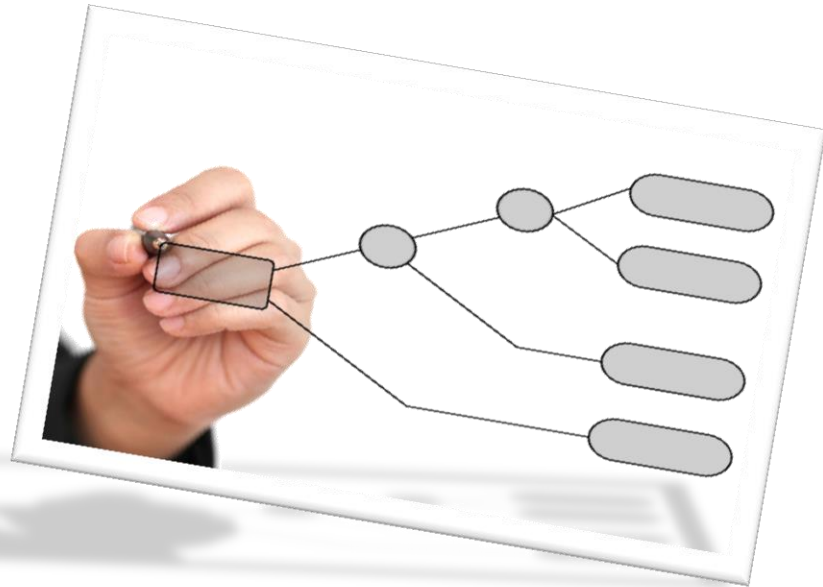


# Findings so far...

- A few strategies are consistently endorsed
- The portfolio of strategies to consider is large
  - Each expert endorses many strategies
- The work continues...

# Packaging for the (real) world

- Guidance for planning successful implementations
  - Context assessment tools
- Implementation Strategies
  - “How to” execute strategies
  - Tailored to context
- “Learning” repositories
  - Collective learning



# Advancing Implementation Science

- **Foundation:** Common Terminology & Constructs
- **Assess Context**
  - Quantitative & Qualitative
- **Targeted innovations**
  - Intervention mapping (<http://www.interventionmapping.com>)
  - Adaptations (<http://www.biomedcentral.com/content/pdf/1748-5908-8-65.pdf>)
- **Implementation Strategies**
  - Strategy Taxonomy (e.g., <http://www.implementationscience.com/content/10/1/21/abstract>)
  - Tailored to context (*forthcoming*)
- **Generate Testable Theories**

# T3-T4 Knowledge Building





# 3rd Biennial Australasian Implementation Conference

Melbourne Convention Exhibition Centre | Melbourne, Australia  
5-6 October 2016

Hosted by



# Questions and comments

#AICMelb  @2016AIC



# 3rd Biennial Australasian Implementation Conference

Melbourne Convention Exhibition Centre | Melbourne, Australia  
5-6 October 2016

Hosted by



*Thank you and we look forward to seeing you at  
the Australasian Implementation Conference  
**5-6 October 2016***

**[www.ausimplementationconference.net.au](http://www.ausimplementationconference.net.au)**

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