




Putting Science into Practice
is Hard: But There is Help!

Objectives

- Introduce Dissemination & Implementation Science (D&I)
- Receive feedback from YOU to refine our presentation


Agenda

- Introduction to Dissemination & Implementation Science (D&I)
- How to design for dissemination, implementation, & sustainability
 - Pre-Implementation (planning): Data to knowledge
 - Implementation (doing): Knowledge to practice
 - Sustainment (routinizing): Practice to data
- Additional resources to learn more

Objectives

1. What is Dissemination & Implementation Science.
2. Why Dissemination & Implementation Science are important tools to support VA's clinical, research, quality improvement, and administrative work.
3. When to apply a systematic, yet pragmatic, approach when implementing health interventions or programs in the real world.
4. How to promote a learning health system through Dissemination & Implementation Science.

Definitions

- ***Dissemination*** is the active approach of spreading evidence-based health interventions to patients who need them.
- ***Implementation*** is the process of integrating the evidence-based health interventions into real-world clinical settings.
- ***Learning Health System*** is a health system that promotes continuous learning, more rapidly uses research as well as data and experience in clinical practice to improve patient care outcomes and reduce costs.
- ***Evidence-Based Practice*** refers to an intervention, program or innovation to be implemented.

Non-Scientific Language to Define D&I Science

The intervention/practice/innovation = *THE THING*

Effectiveness research looks at whether *THE THING* works

Implementation research looks at how best to help people/places *DO THE THING*

Implementation interventions = the stuff we do to try to help people/places *DO THE THING*

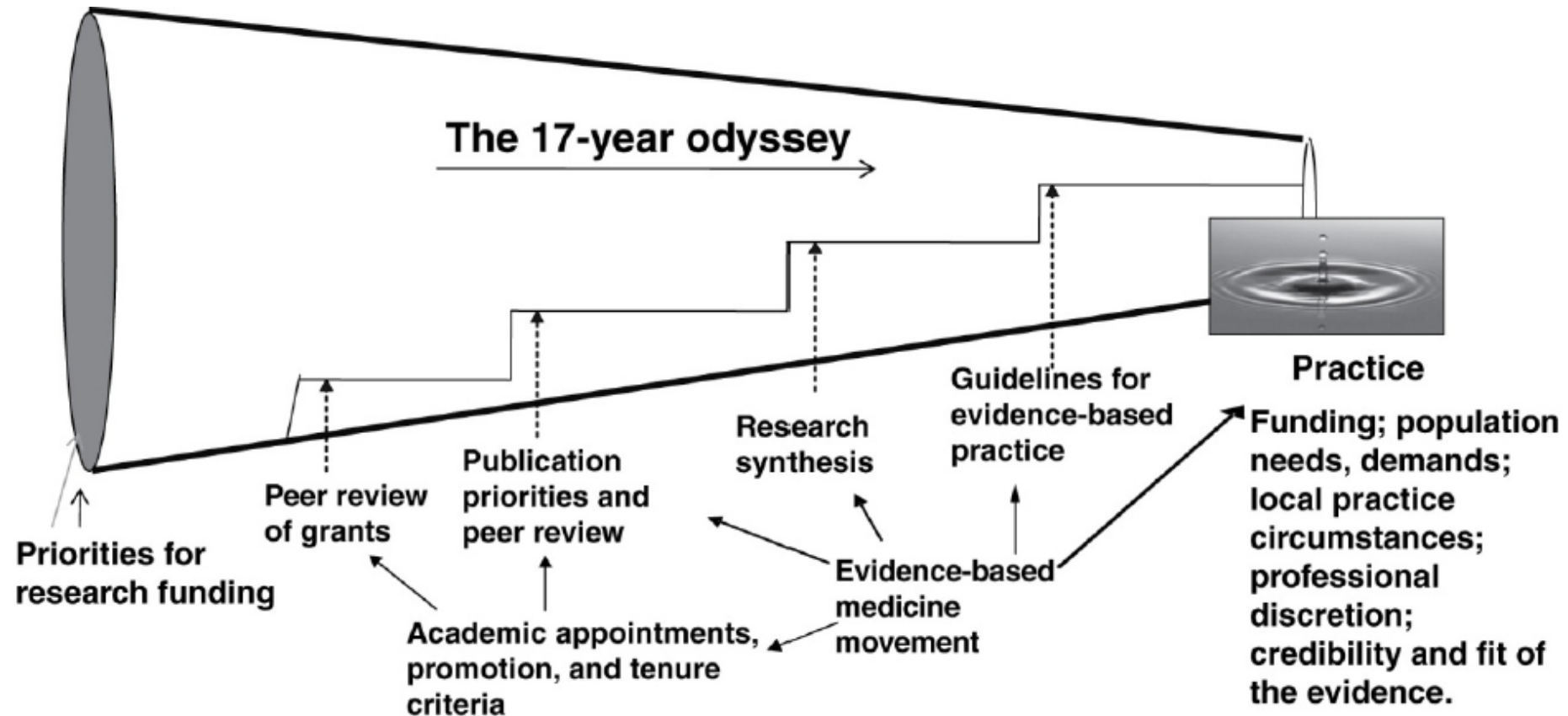
Main implementation outcomes = *HOW MUCH* and *HOW WELL* they *DO THE THING*

Sustainment = *HOW MUCH* will they *CONTINUE* to *DO THE THING*



Introduction: Research to Practice Gap

The Problem: Research to Practice Pipeline



Green, LW et al, (2009); Balas, EA & Boren, SA (2000); Chalmers I & Glasziou P, (2009); Harvey, G & Kitson, A (2015)



But there is hope. . .

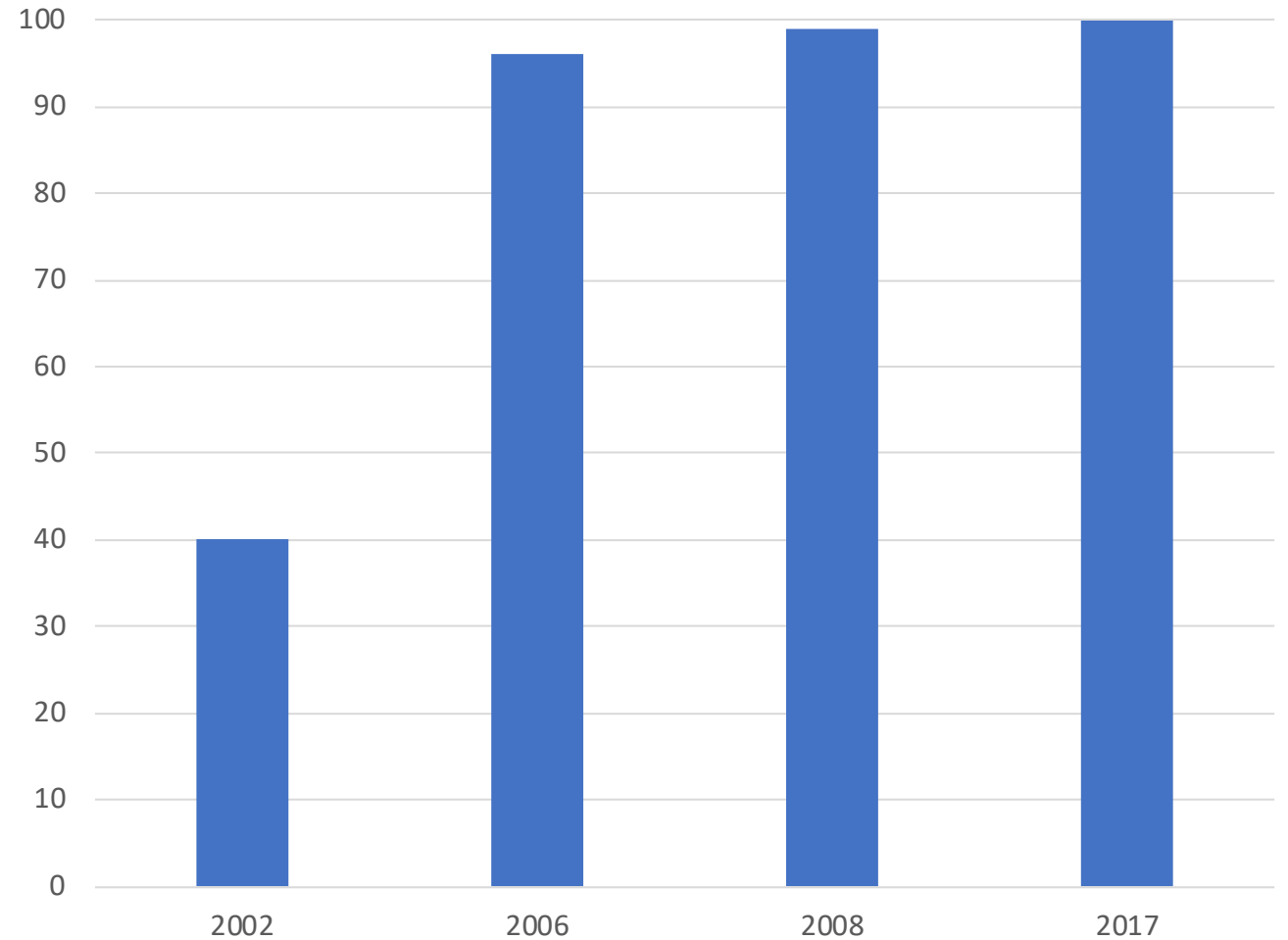
With Active D&I Approach

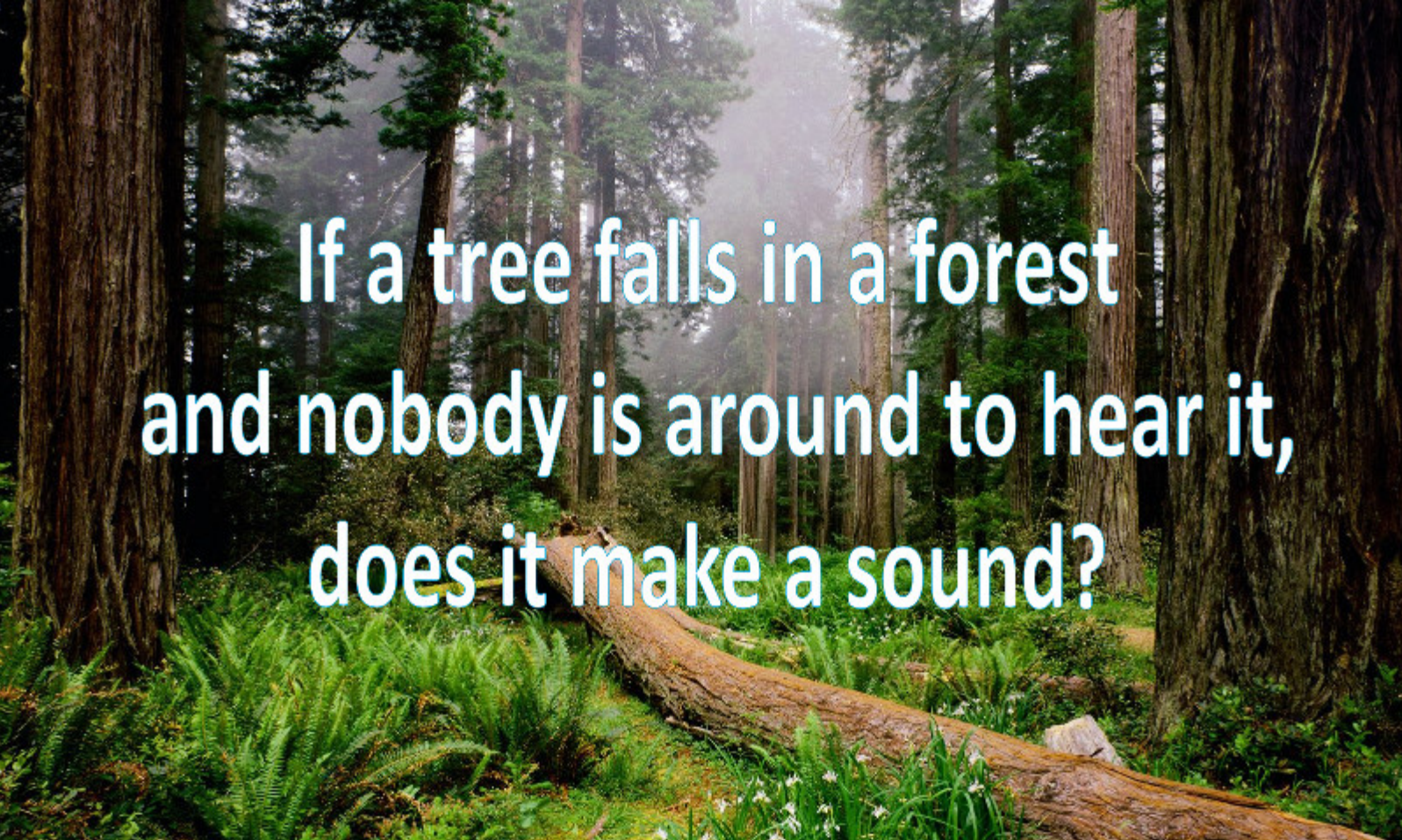
May be able to achieve up to 80%, 3-5 years

Case Example: VA MOVE! Weight Management Program for Veterans



Percentage of VA Medical Centers with Weight Management Programs



A photograph of a forest with a fallen tree trunk in the foreground and tall trees in the background. The text is overlaid on the image.

If a tree falls in a forest
and nobody is around to hear it,
does it make a sound?



D&I Science: Big Picture to Bedside

Why is D&I Important?



Case Example: VA MOVE! and D&I Steps

Engaging Stakeholders

- Primary care providers identified weight management as most pressing preventive medicine need
- Informational Letter and other communications to describe for leaders and clinicians the need for a program and keep stakeholders aware of program development
- Strong support from VA Under Secretary for Health during all phases of development and implementation

Initial Program Design

- Based on NIH guidelines, other available literature, USPSTF recommendation for screening and counseling
- Implementation in primary care clinics (screening, counseling)
- Development of program materials

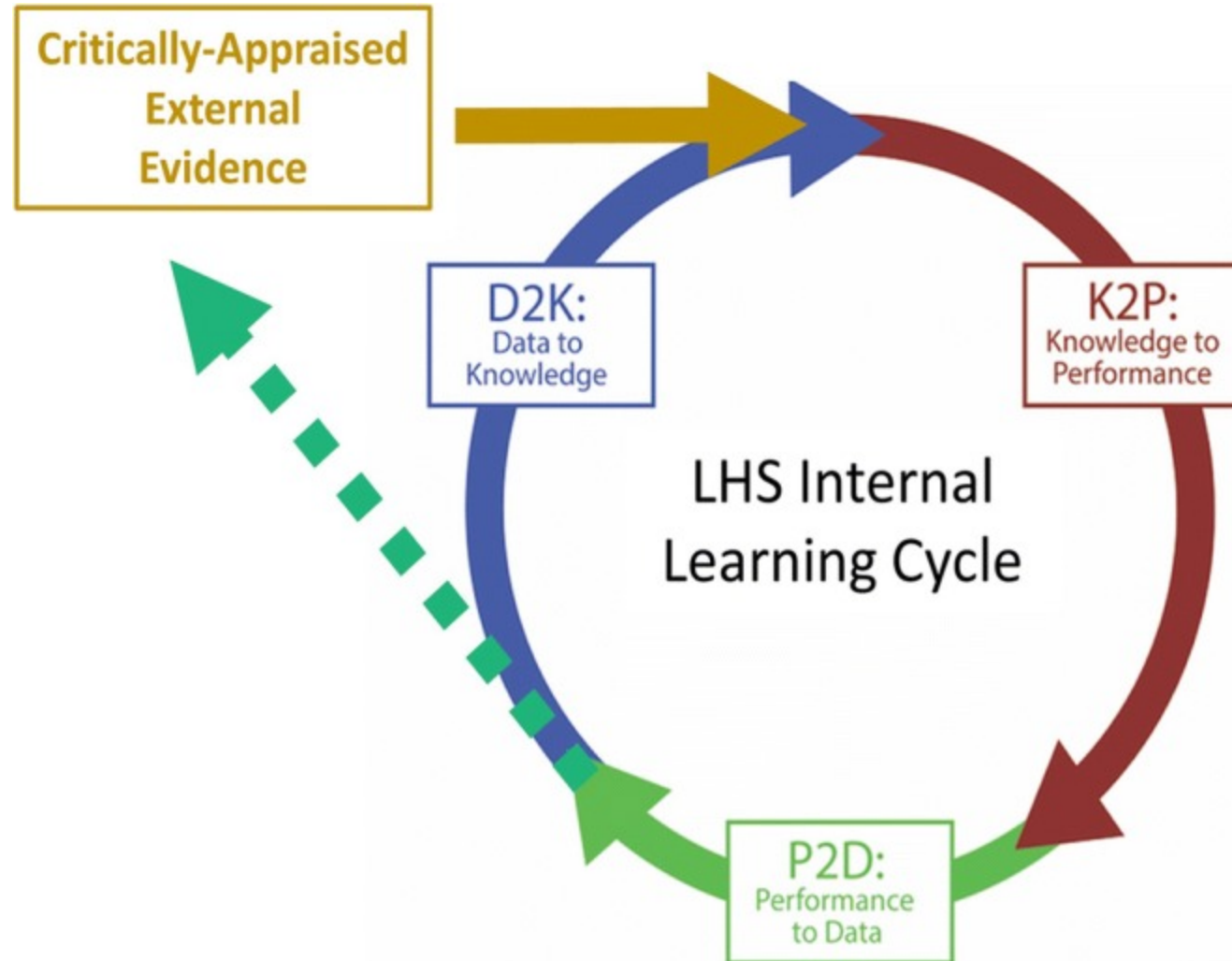
Initial Dissemination

- Pilot feasibility trials with 17 VHA medical facilities
- Program materials provided but modified to suit local need
- Mimic real-world conditions – no additional staff resources or funds

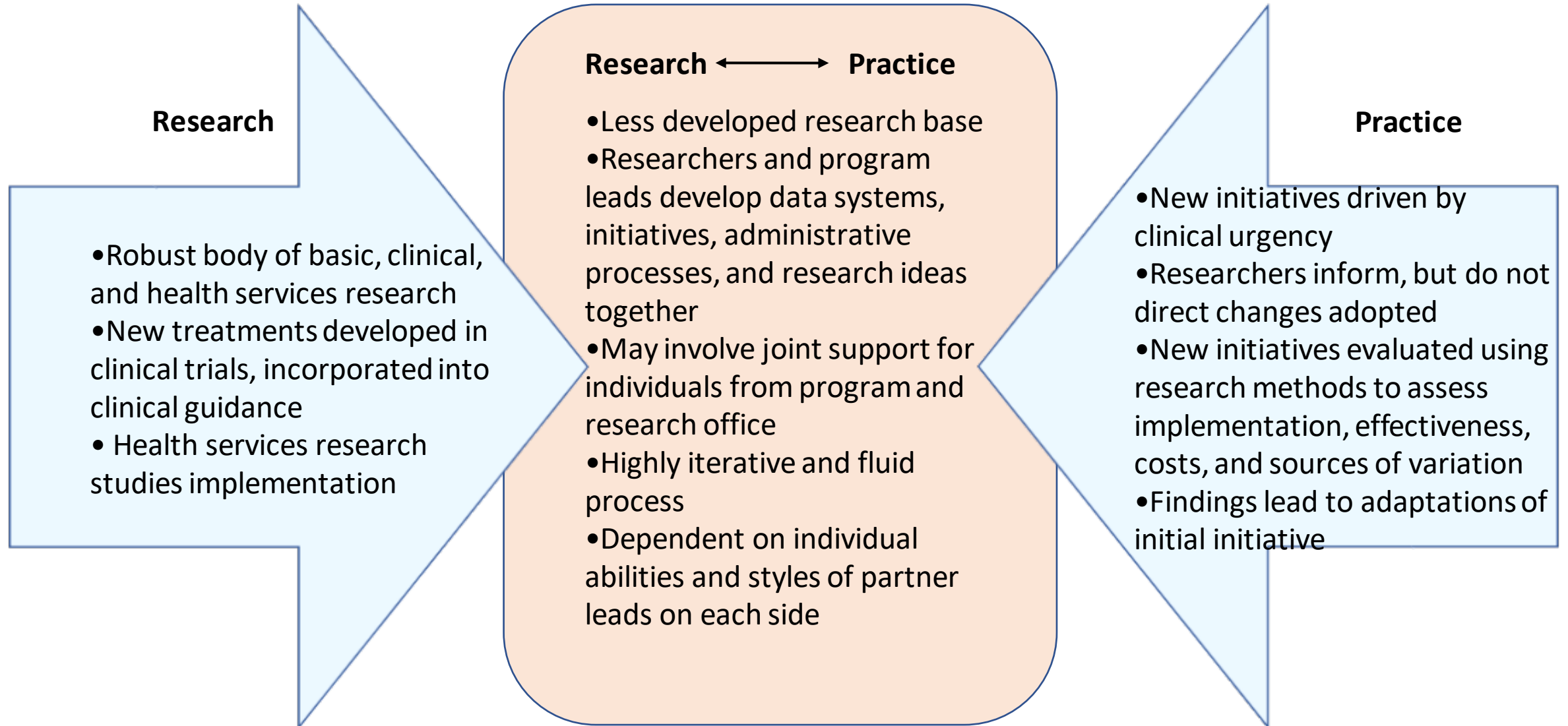
Feasibility Evaluation

- Staff and patients evaluated materials and program for usability, suitability
- Program materials revised in response to feedback
- Based on pilot results, VA Weight Management Executive Council (national recognized experts) endorsed the program as a state-of-the-art, population-based weight management initiative

Learning Health System Characteristics



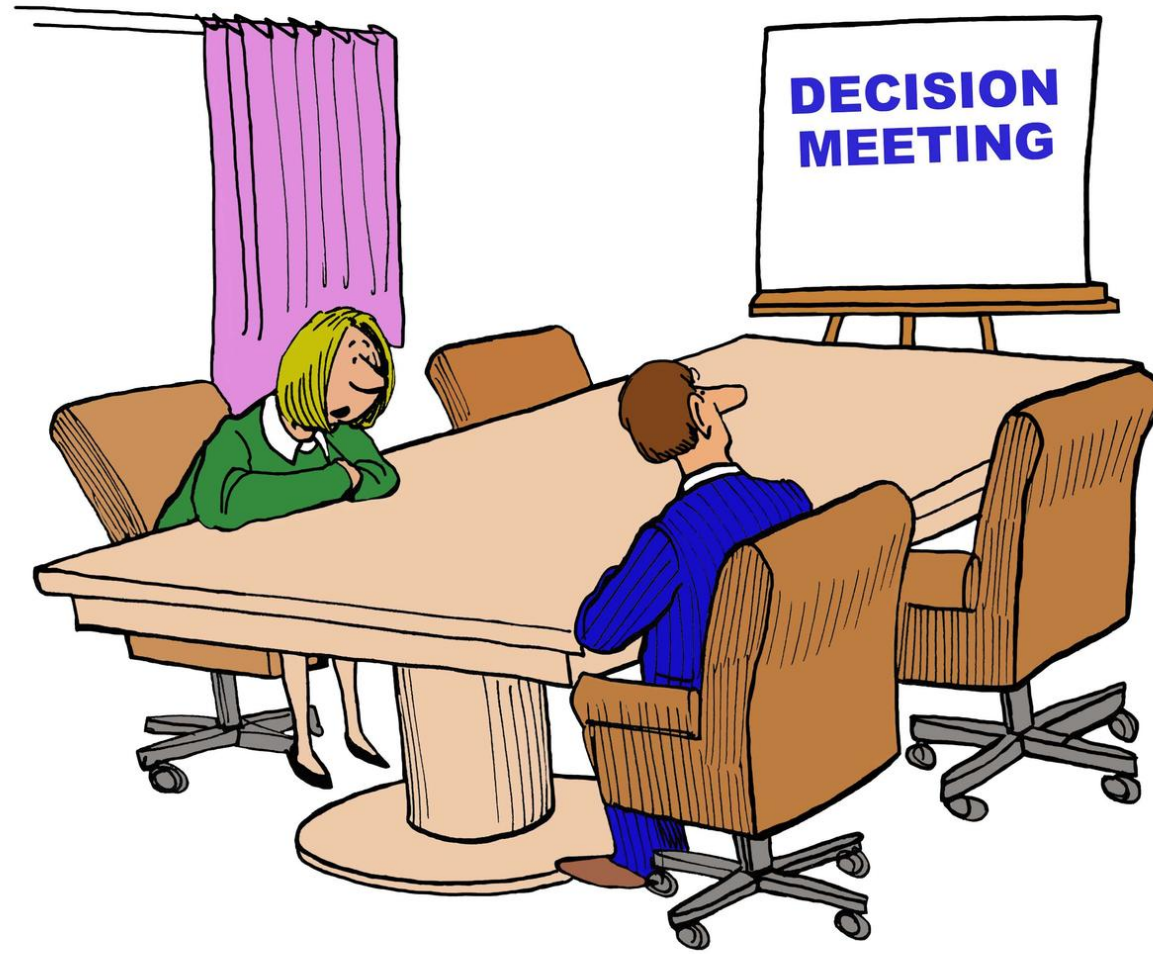
How does D&I fit with a Learning Health System?





Pre-Implementation: Engaging Stakeholders

The Problem: Programs are designed by experts, not the users



**“Quick, let’s make the decision
before everyone else shows up!”**

Case Example: MOVE! Stakeholder Engagement



Obtained stakeholder input



Support from highest level of VA leadership



VA Weight Management Executive Council



Pilot sites



MOVE! Coordinators and Provider Champions



Presentations



VA/DoD Clinical Practice Guideline

Stakeholder Engagement



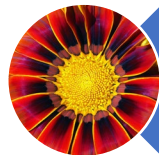
Enhances pragmatic research



Relevance



Trust

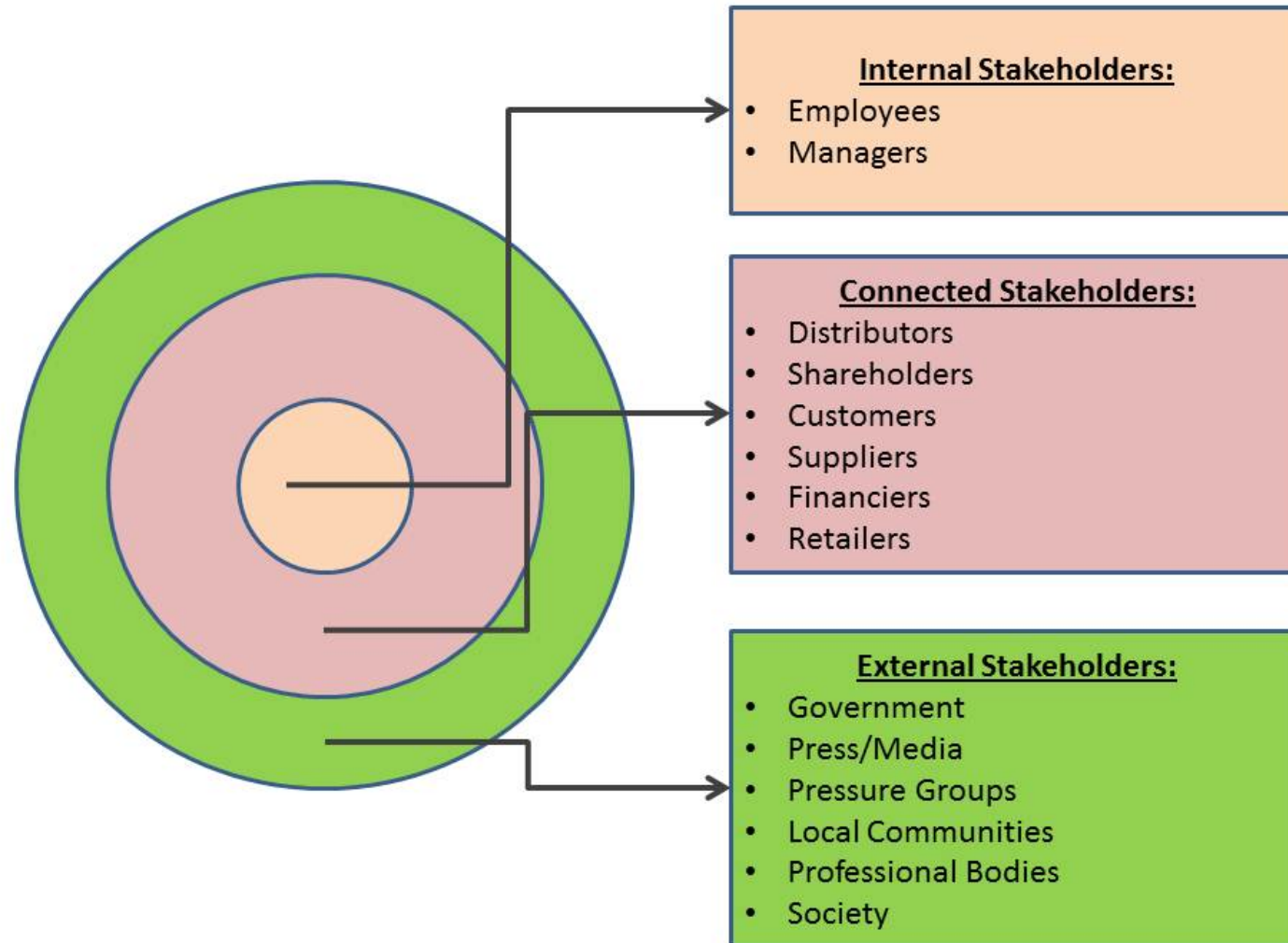


Mutual learning



EBP adoption

How do you Identify Stakeholders?



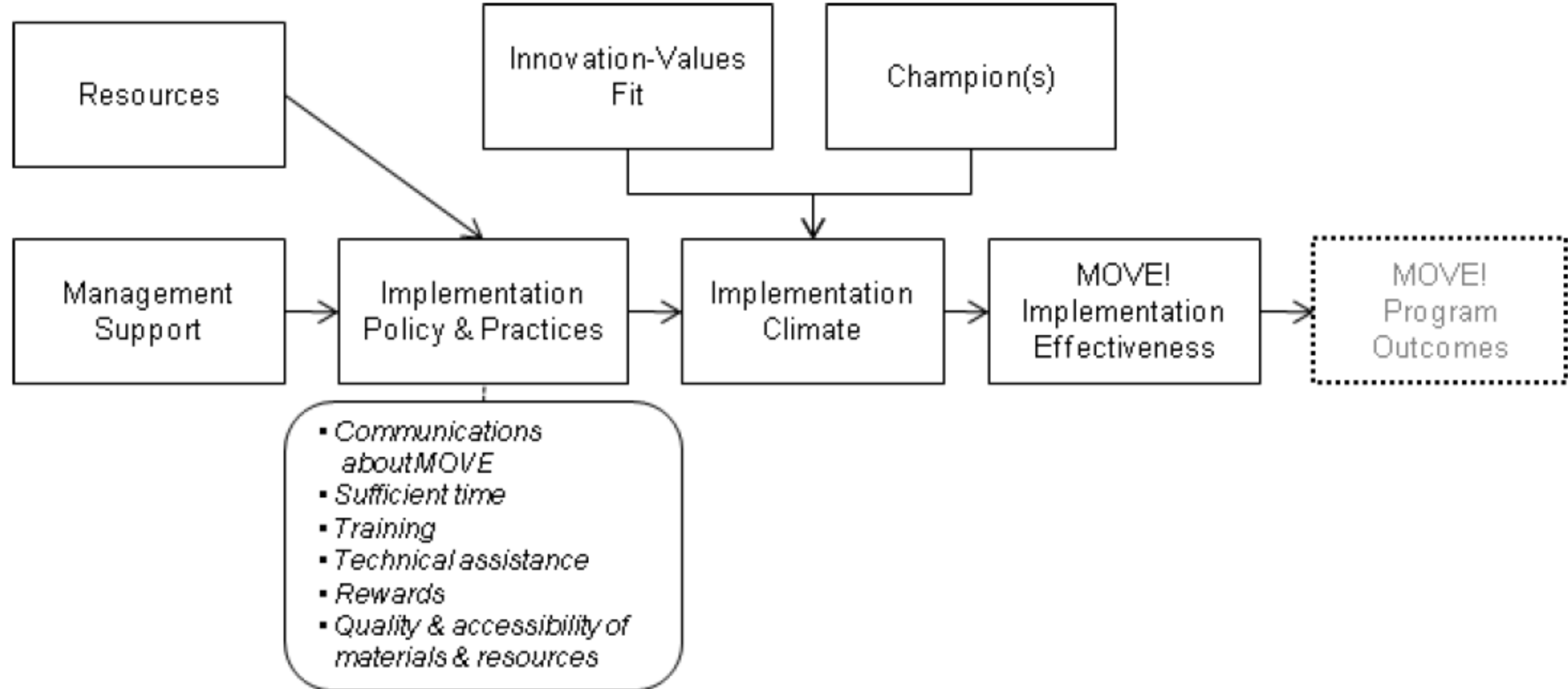


Pre-Implementation: Context and Environment

The Problem: Programs that work at one VA won't work at all VAs



Case Example: MOVE! Understanding Context



Understanding Local Context and Environment

Conduct a pre-implementation assessment!

What does this mean?

Collect information and engage key stakeholders prior to program delivery

How?

Multi-methods approach

Why?

To adapt the program to align with needs, preferences, priorities of the setting

Why Care about Context? What is the Value Added?



IF CONTENT
IS KING,

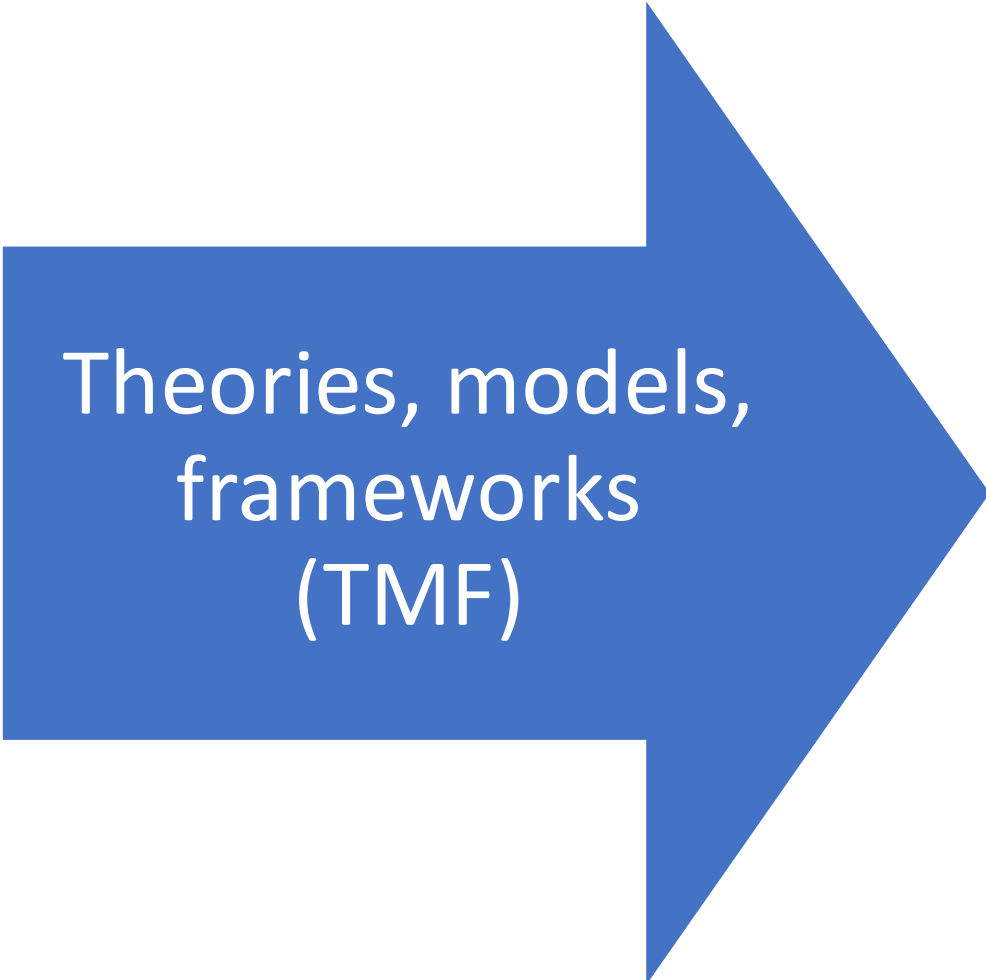
CONTEXT IS
QUEEN

...and she rules the house.



Implementation: Frameworks

Implementation - Guide By:

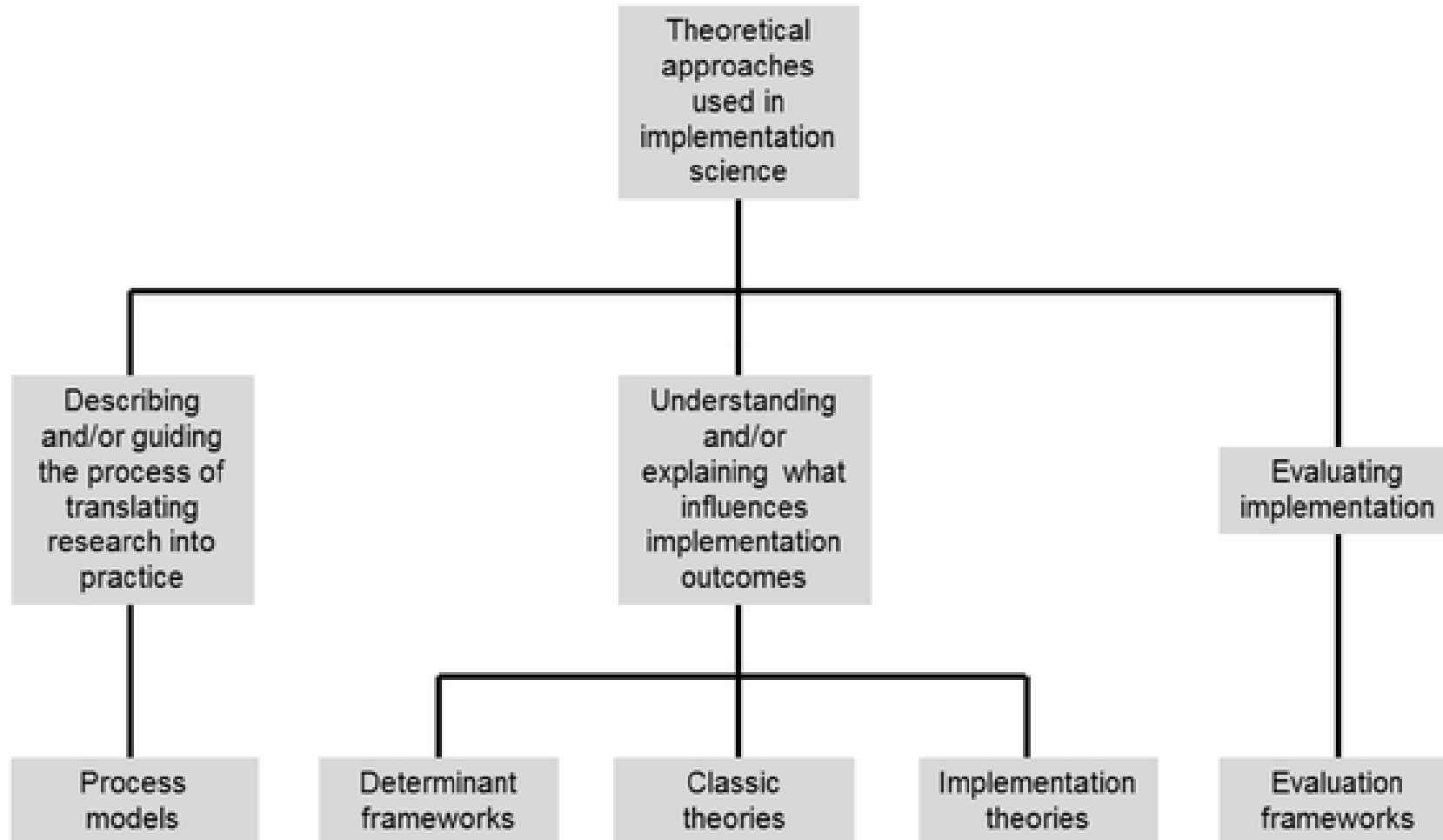


Theories, models,
frameworks
(TMF)



Implementation
interventions

Theories, Models and Frameworks



Dissemination & Implementation Models

in Health Research & Practice

Sections of the D&I Models Webtool

Plan

Select

Combine

Adapt

Use

Measure

<https://dissemination-implementation.org>

Usability

- TMF includes relevant constructs (e.g., self-efficacy; climate)
- Key stakeholders (e.g., researchers; clinicians; funders) are able to understand, apply, and operationalize TMF.
- TMF has a clear and useful figure depicting included constructs and relationships among them.
- TMF provides a step-by-step approach for applying it.
- TMF provides methods for promoting implementation in practice.
- TMF provides an explanation of how included constructs influence implementation and/or each other.

Testability

- TMF proposes testable hypotheses.
- TMF includes meaningful, face-valid explanations of proposed relationships.
- TMF contributes to an evidence base and/or TMF development because it has been used in empirical studies.

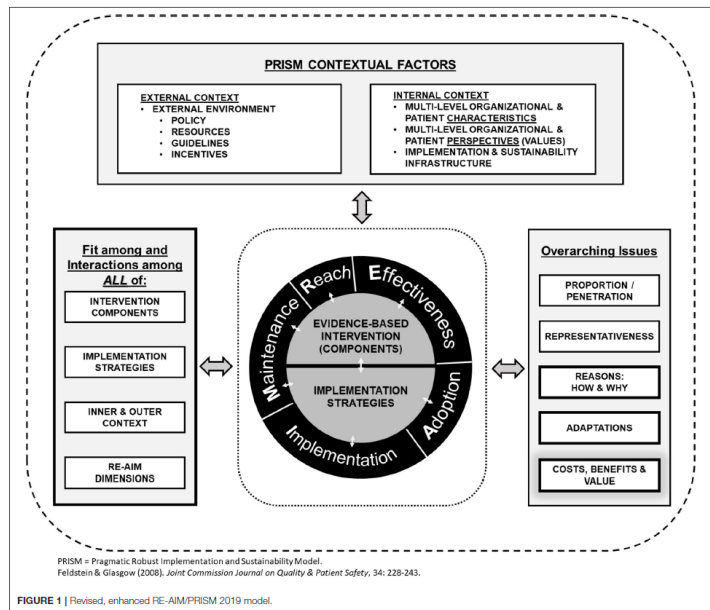
Applicability

- TMF focuses on a relevant implementation outcome (e.g., fidelity; acceptability).
- A particular method (e.g., interviews; surveys; focus groups; chart review) can be used with TMF.
- TMF addresses a relevant analytic level (e.g., individual; organizational; community).
- TMF has been used in a relevant population (e.g., children; adults with serious mental illness) and/or conditions (e.g., attention deficit hyperactivity disorder; cancer).
- TMF is generalizable to other disciplines (e.g., education; health services; social work), settings (e.g., schools; hospitals; community-based organizations), and/or populations (e.g., children; adults with serious mental illness).

Acceptability

- TMF is familiar to key stakeholders (e.g., researchers; scholars; clinicians; funders).
- TMF comes from a particular discipline (e.g., education; health services; social work).

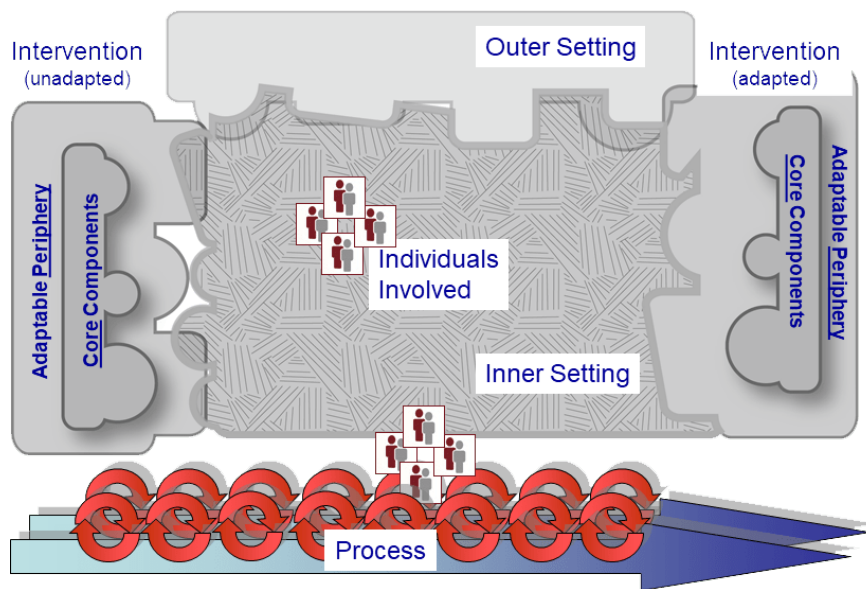
PRISM/RE-AIM



QUERI Roadmap



CFIR



<https://www.re-aim.org/>; <https://cfirguide.org/>;
 Kilbourne AM, et al. (2019)

Case Example: RE-AIM Applied to MOVE!

Dimension	Definition	Results
Reach	Number, proportion, and representativeness of individuals willing to participate in MOVE!	90% of Veterans offered participation.
Effectiveness	The impact of MOVE! on important outcomes, including potential negative effects, quality of life, and economic outcomes.	50% of Veterans experienced clinically significant or modest weight loss.
Adoption	Number, proportion, and representativeness of settings and providers willing to initiate MOVE!	98% of facilitates adopted MOVE!
Implementation	Providers' fidelity to MOVE! protocol and delivery of MOVE! as intended; time and cost of implementing MOVE!	Standardized materials, delivered with fidelity.
Maintenance	The extent MOVE! is institutionalized or part of the routine organizational practices and policies..	MOVE! was integrated into routine VA care.



Implementation:

Strategy and Interventions

Implementation Interventions

Table 3 ERIC discrete implementation strategy compilation (n = 73)

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

Strategy	Definitions
Access new funding	Access new or existing money to facilitate the implementation
Alter incentive/allowance structures	Work to incentivize the adoption and implementation of the clinical innovation
Alter patient/consumer fees	Create fee structures where patients/consumers pay less for preferred treatments (the clinical innovation) and more for less-preferred treatments
Assess for readiness and identify barriers and facilitators	Assess various aspects of an organization to determine its degree of readiness to implement, barriers that may impede implementation, and strengths that can be used in the implementation effort
Audit and provide feedback	Collect and summarize clinical performance data over a specified time period and give it to clinicians and administrators to monitor, evaluate, and modify provider behavior
Build a coalition	Recruit and cultivate relationships with partners in the implementation effort
Capture and share local knowledge	Capture local knowledge from implementation sites on how implementers and clinicians made something work in their setting and then share it with other sites
Centralize technical assistance	Develop and use a centralized system to deliver technical assistance focused on implementation issues
Change accreditation or membership requirements	Strive to alter accreditation standards so that they require or encourage use of the clinical innovation. Work to alter membership organization requirements so that those who want to affiliate with the organization are encouraged or required to use the clinical innovation
Change liability laws	Participate in liability reform efforts that make clinicians more willing to deliver the clinical innovation
Change physical structure and equipment	Evaluate current configurations and adapt, as needed, the physical structure and/or equipment (e.g., changing the layout of a room, adding equipment) to best accommodate the targeted innovation

Implementation Interventions

How to “DO THE THING”

Training

Education

Reminder Prompts

Champion

Adapt and Tailor

And many more!

Selecting and Tailoring Implementation Interventions



Select interventions that fit your context and appeal to your stakeholders: Implementation Mapping: doi: 10.3389/fpubh.2019.00158

Proctor's Specifying and Reporting: doi: 10.1186/1748-5908-8-139



Be prepared to select multiple interventions to address different challenges at different point of time

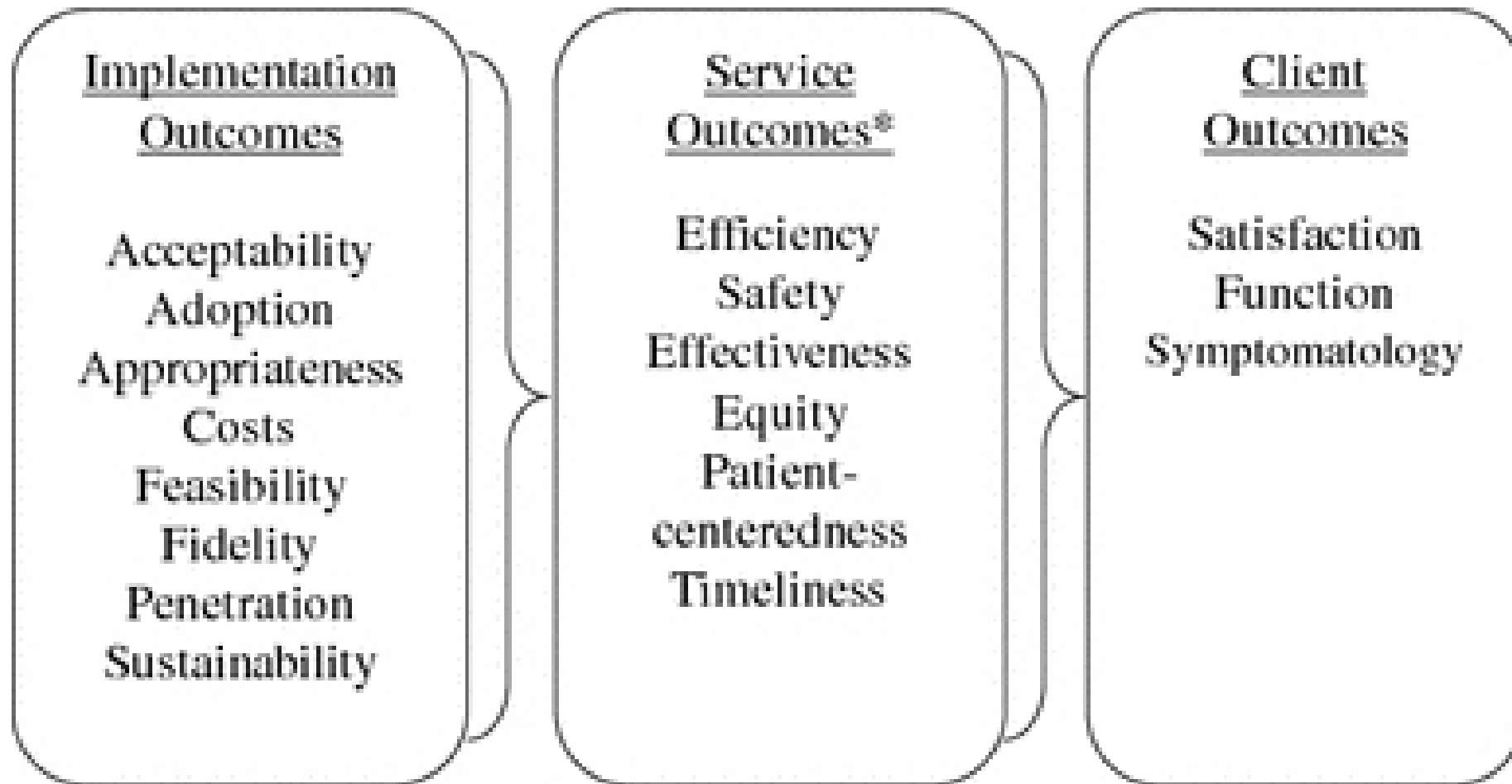


Construct implementation interventions by combining more than one strategy



Implementation: Outcomes

Outcomes



*IOM Standards of Care


Implementation Outcomes

Implementation Outcome	Definition
Acceptability	Level of satisfaction with various parts of an intervention
Adoption	Spectrum of uptake to try an intervention
Appropriateness	Perceived relevance or fit of an intervention
Cost	Quantified measure of cost, cost-effectiveness, or cost/benefit ratio
Feasibility	Extent to which an intervention can be successfully carried out
Fidelity	The degree to which an intervention is implemented as it was designed
Penetration	Extent to which the intervention is used or delivered
Sustainability	Extent to which the broad use of the intervention is maintained



Sustainment:

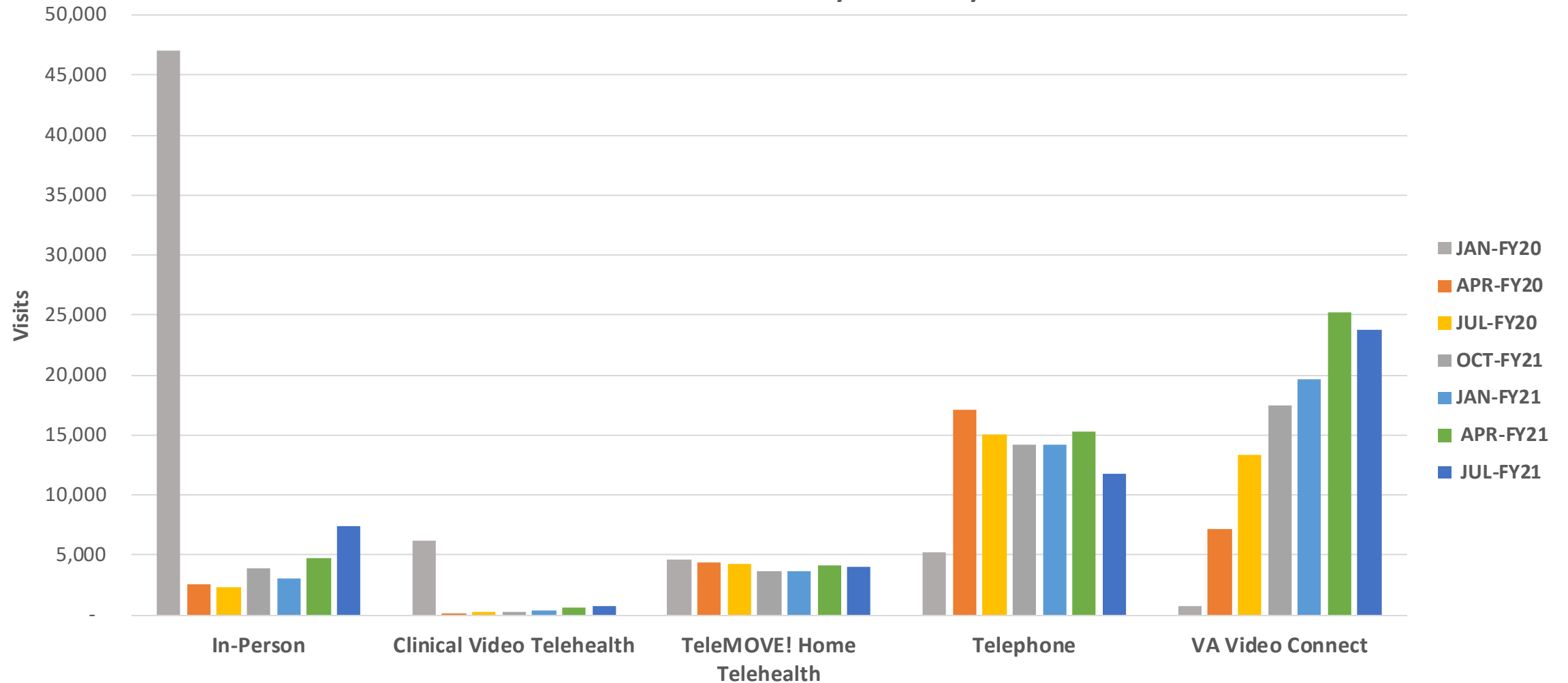
Evaluation and Sustainability



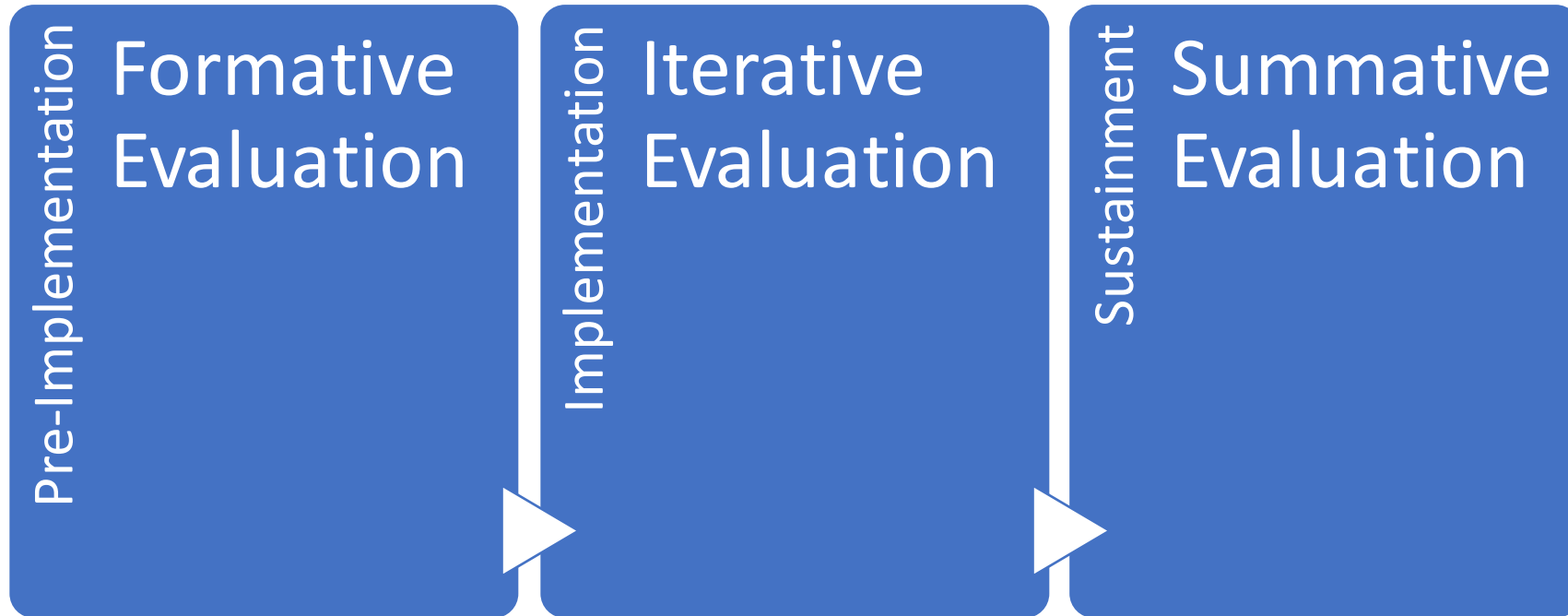
The Problem: Programs that work
often fade away unless attention is
paid to sustainability

Case Example: MOVE! Evolution for Sustainability

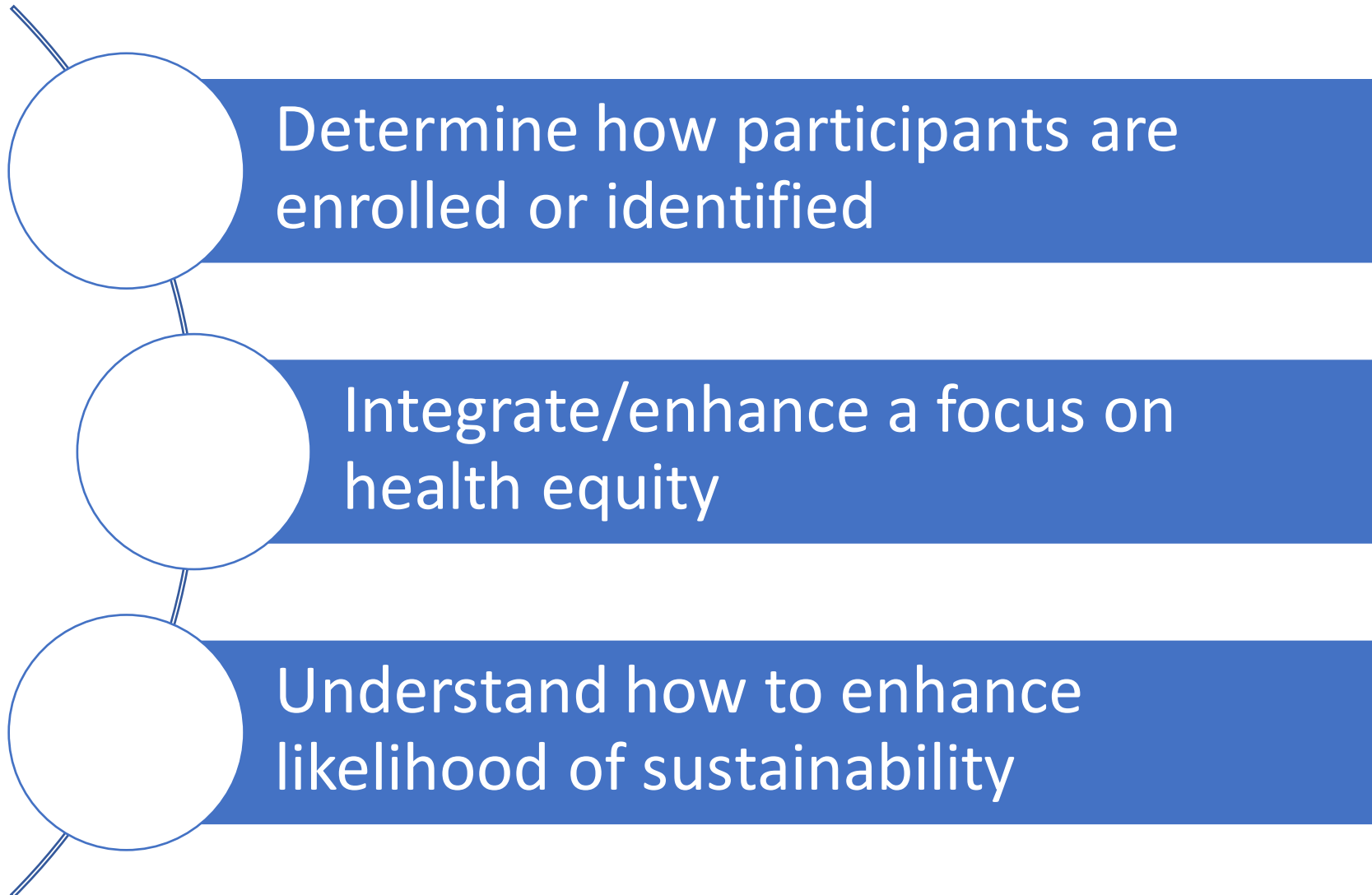
MOVE! Visits Detail January 2020 - July 2021



Evaluating Sustainability



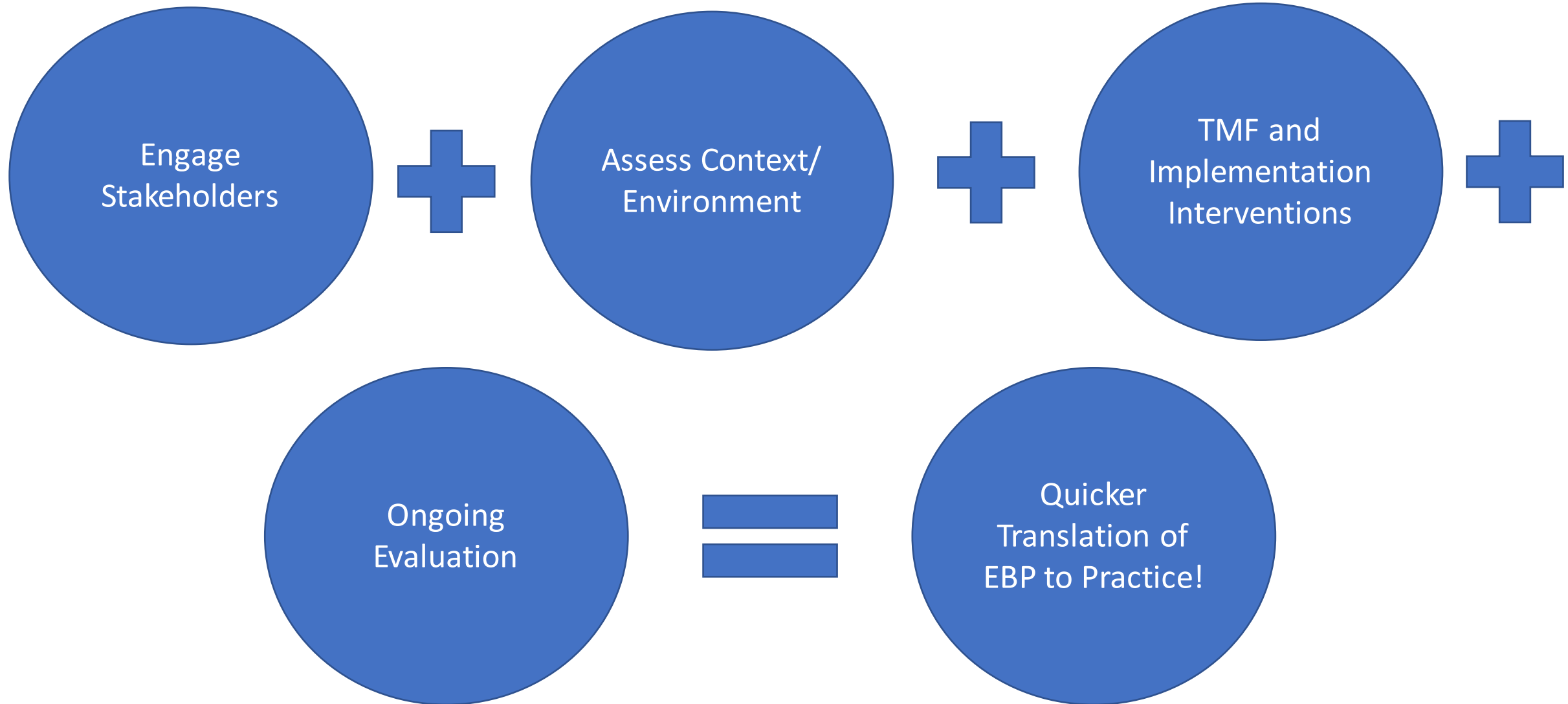
Implications of Evaluation





Conclusion

Summary



Take Home Message

Use a D&I approach to help
your research impact Veterans.

Don't let it be 17 years!!! 😊

Resources for Additional Learning

- [di-greatest-hits-by-category_7-1-19-\(1\).pdf \(ucdenver.edu\)](#)
- [di-competencies-mt-dirc.pdf \(ucdenver.edu\)](#)
- [Research Tools | Division of Cancer Control and Population Sciences \(DCCPS\)](#)
- [Effective Practice and Organisation of Care \(EPOC\) Taxonomy: epoc.cochrane.org/epoc-taxonomy](#)
- [www.dissemination-implementation.org](#)
- <https://medschool.cuanschutz.edu/accords/cores-and-programs/dissemination-implementation-science-program>
- <https://sph.unc.edu/research/explore/implementation-science/>
- <http://www.episcenter.psu.edu/>
- <http://implementation.fpg.unc.edu/>
- <https://societyforimplementationresearchcollaboration.org/>
- <https://ctb.ku.edu/en>
- <http://www.rethinkingclinicaltrials.org/>
- <https://www.queri.research.va.gov/implementation/>
- <https://www.queri.research.va.gov/ceir/>
- <https://www.queri.research.va.gov/tools/roadmap.cfm>
- <https://www.cdc.gov/eval/guide/introduction/index.htm>

Resources for Additional Learning

- Quality Enhancement Research Initiative Training (QUERI) Hubs
https://www.queri.research.va.gov/training_hubs/default.cfm
 1. Adaptation Hub
 2. Designing for Dissemination and Implementation (D4D&I) Hub
 3. Evidence-Based Quality Improvement (EBQI) Hub
 4. Implementation Facilitation (IF) Hub
 5. Learn. Engage. Act. Process. (LEAP) Hub
 6. Leading Healthcare Improvement (LHI) Hub
 7. Teamwork Training Hub

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