

# Implementation Research and Quality Improvement

Applications in US Primary Care Settings

Bijal A. Balasubramanian, MBBS, PhD

Professor & Rockwell Distinguished Chair in Society & Health

Co-Director – UTHealth Houston Institute for Implementation Science

UTHealth Houston School of Public Health

*“Push  
and  
Pull”*

## **Push of research**

- EBI
- Implementation Strategy
- Implementation Plan
- Evaluate implementation and effectiveness
- Determine impact

## **Pull of practice**

- Locally identified need / challenge
- Select strategies to enhance organizational capacity
- Select, adapt, and implement EBIs

# Quality Improvement vs. Implementation Science

## Quality Improvement

- Origin: Industry
- Transforming systems of care to improve health care quality and delivery
- Driven by specific problems in systems
- Goal to improve care quality AND **generate knowledge for local improvement**
- Limited exploration of mechanisms of change

## Implementation Science

- Origin: Behavioral Science and HSR
- Developing approaches to close the gap between research and practice
- Often driven by an under-utilized EBI
- Goal to improve care quality AND **produce generalizable knowledge**
- Focus on implementation outcomes and mechanisms of change

QI regularly involves implementing evidence AND  
IS consistently addresses organizational and setting-level factors

# Pros and Cons

- QI Pros
  - Highly local
  - Implementers highly engaged
  - Small tests of change, PDSA
  - Faster, more nimble
  - Less costly
  - Rapid and iterative
- QI Cons
  - Knowledge gained does not benefit other settings

- IS Pros
  - Strive for generalizable knowledge
  - Attention to contextual determinants guided by TFM
- IS Cons
  - Slow, takes years
  - Complex implementation strategies
  - Implementation many not be aligned with local context



Blend Implementation Science and Quality  
Improvement for Optimal Outcomes

Quality  
Improvement  
as:

Implementation  
Strategy to enhance  
EBI uptake

Approach to building  
practice capacity



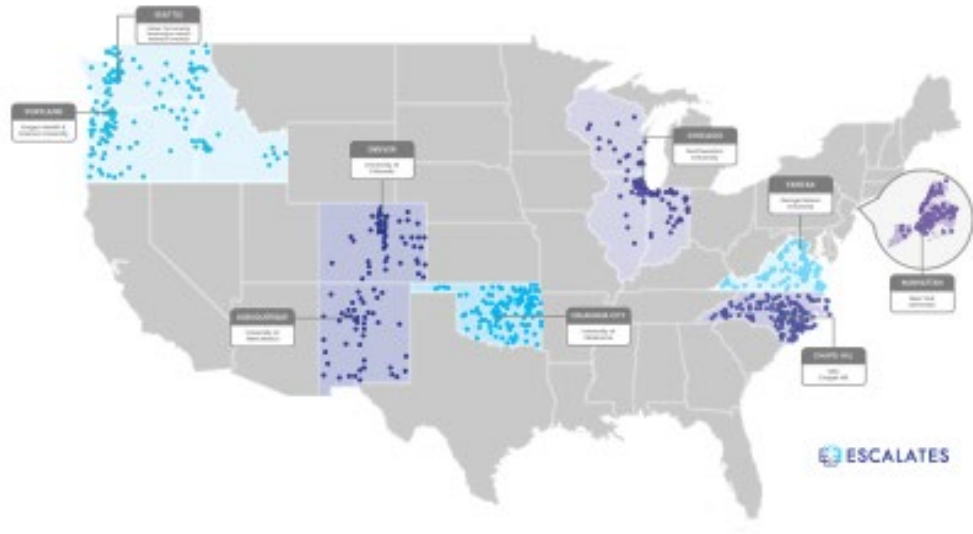
# EvidenceNOW

Improving Blood Pressure Control among Patients  
with Hypertension in US primary care practices

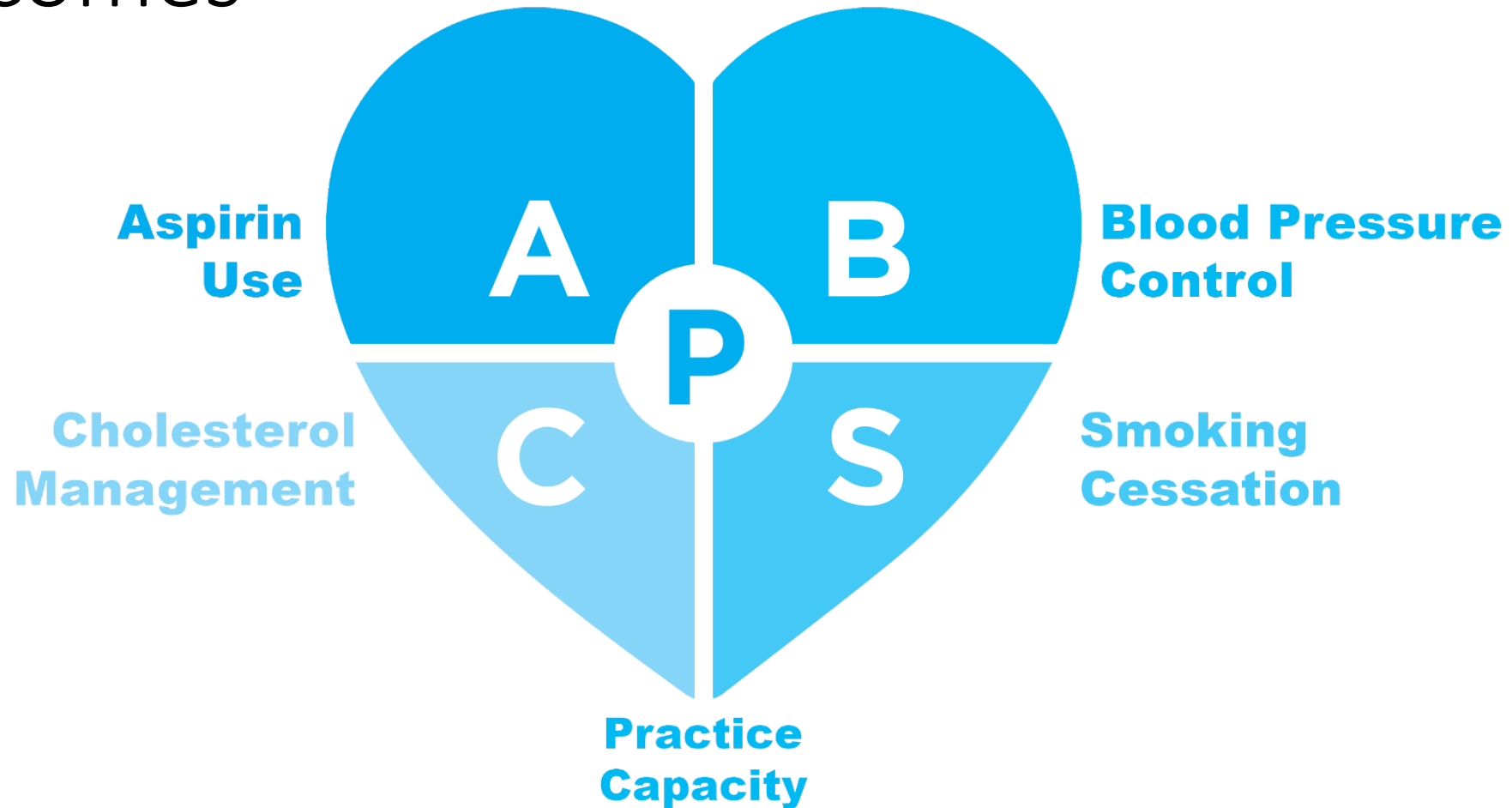


# EvidenceNOW

Designs: Hybrid Type III Cluster-randomized and Stepped-wedge trials  
Unit of analysis: Primary care practice



# Outcomes

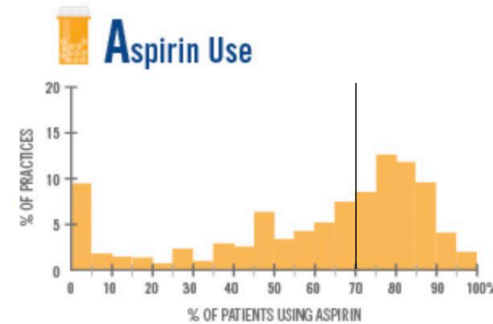




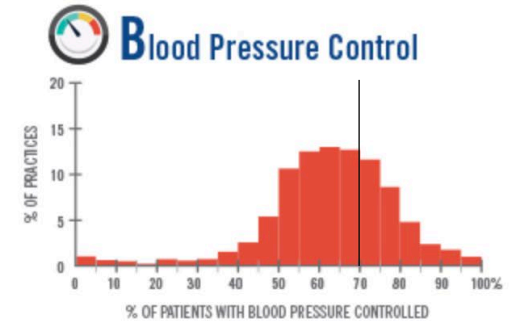
# Background

Smaller practices vary substantially in ABCS quality metrics

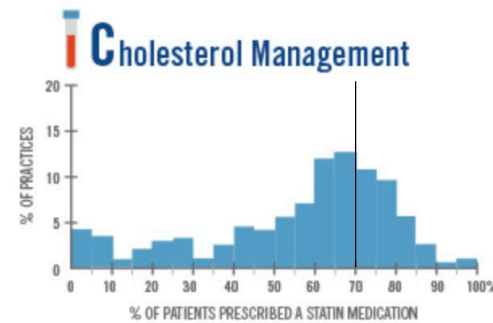
## PRACTICES ACHIEVING VARIOUS LEVELS OF ABCS FOR APPROPRIATE PATIENTS



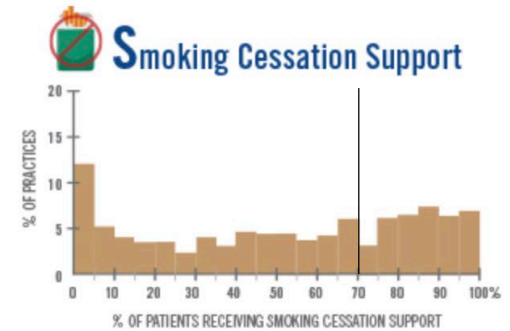
DATA FROM **968** PARTICIPATING PRACTICES



DATA FROM **1,022** PARTICIPATING PRACTICES



DATA FROM **606** PARTICIPATING PRACTICES



DATA FROM **927** PARTICIPATING PRACTICES

As of January 2017

<https://www.ahrq.gov/data/infographics/evidencenow.html>



# Background

- Smaller practices face many challenges in making practice improvements
  - Time constraints
  - Staff shortages
  - Narrow financial margins
  - Lower capacity
- Quality improvement support can help
  - Practice facilitation is an effective strategy to improve delivery of primary care services

Wang A, Pollack T, Kadziel LA, Ross SM, McHugh M, Jordan N, Kho AN. Impact of Practice Facilitation in Primary Care on Chronic Disease Care Processes and Outcomes: a Systematic Review. *J Gen Intern Med.* 2018 Nov;33(11):1968-1977.

Baskerville NB, Liddy C, Hogg W. Systematic review and meta-analysis of practice facilitation within primary care settings. *Ann Fam Med.* 2012 Jan-Feb;10(1):63-74.

# Implementation Strategy and QI Interventions

JNC7 guidelines recommended BP target of 140/90 mmHg for individuals with hypertension

## Implementation Strategy – External agents are the actors

- Practice facilitation
  - Interactive problem solving and support for QI activities
  - EHR/HIT support to measure outcome metrics

## QI interventions – Clinic teams are the actors

- Primary care practices implemented QI changes using iterative PDSA QI cycles
  - Measurement training
  - Taking at least two BP measurements in-office
  - Documenting BPs in discrete fields

# Improving Blood Pressure Clinical Metrics

## ELEMENTS



Assess Practice



Facilitation



Operational Change



Measurement  
Training



Take Repeat



Document

1



Assess features of local setting: practice size and ownership; current blood pressure process.

2



Consider working with a facilitator; most practices, particularly health- and hospital-system owned need at least 10 hours to achieve improvement target.

10 Point Improvement



3



Align the operational change to local needs, using some combination of the following two elements:



Review and institute proper blood pressure measurement

and / or



Take second blood pressure if first is elevated and document it

Facilitation  
to build  
capacity

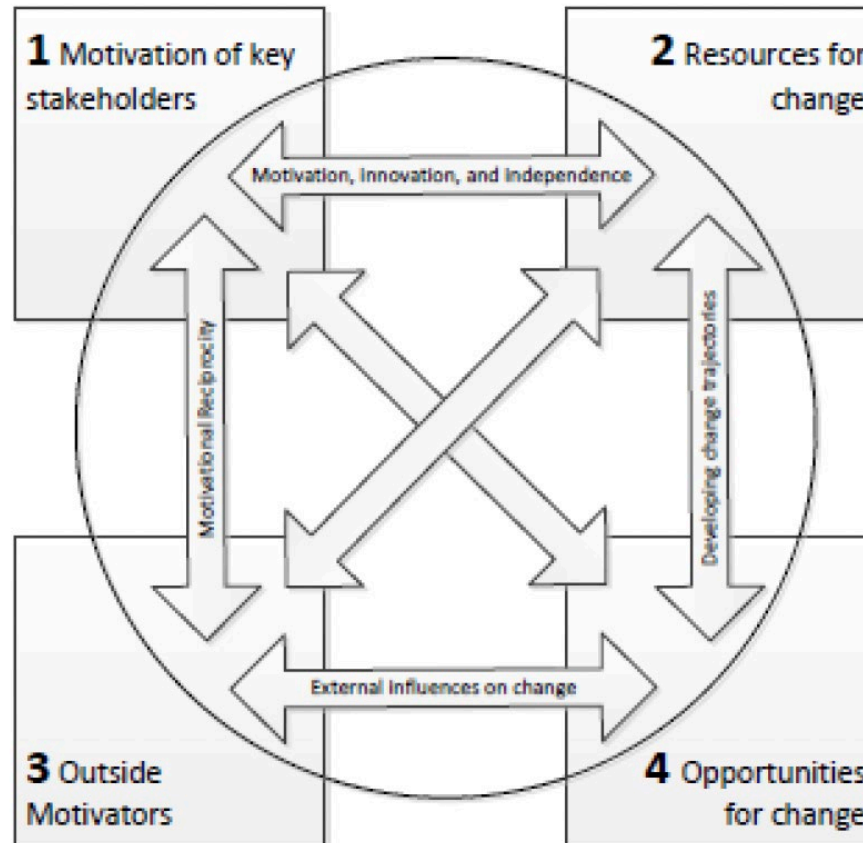
Summary Table of Strategies of More and Less Effective Facilitators

	Cultivating motivation, tailoring, and addressing resistance	Guiding practices through the change process	Articulating strategies to help practices
More effective facilitators	<ul style="list-style-type: none"> <li>• Aligned EvidenceNOW work with other payer initiatives or practice goals.</li> <li>• Used formal assessment tools or causal conversations to assess practice readiness to change and QI capacity.</li> <li>• Addressed resistance directly and worked with practice to overcome barriers (e.g., suggesting smaller tests of change, working with EHR vendors, helping reallocate tasks among team members).</li> </ul>	<ul style="list-style-type: none"> <li>• Identified pain points through conversation with the practice and discussed next steps.</li> <li>• Shared ideas from other practices (“cross-pollination”) and helped tailor to the local context.</li> <li>• Provided project management support (e.g., agenda setting, notetaking, summarizing action items, assigning tasks to team members, providing reminders).</li> </ul>	Yes—were able to speak in detail about the work they did in specific practices, how this work was tailored, and which changes likely led to improvements.
Less effective facilitators	<ul style="list-style-type: none"> <li>• Less evidence of motivating and tailoring.</li> <li>• Practice resistance prevented work from being done. Facilitators described not wanting to push the practice too hard.</li> </ul>	<ul style="list-style-type: none"> <li>• Didactic meetings with education alone.</li> <li>• Did the work <i>for</i> the practice.</li> <li>• Presented options for the change process, but did not push the practice to identify their next steps.</li> <li>• Some facilitators did not have structured meetings; emphasis was on just being present in the practice.</li> </ul>	No—when asked about work done in specific practices answers were limited to the facilitator’s overall approach, and description of presentations and materials used.

Sweeney SM, Baron A, Hall JD, Ezekiel-Herrera D, Springer R, Ward RL, Marino M, Balasubramanian BA, Cohen DJ. Effective Facilitator Strategies for Supporting Primary Care Practice Change: A Mixed Methods Study. *Ann Fam Med*. 2022 Sep-Oct;20(5):414-422.

# Practice Change Model

Value leaders place  
on CVD prevention



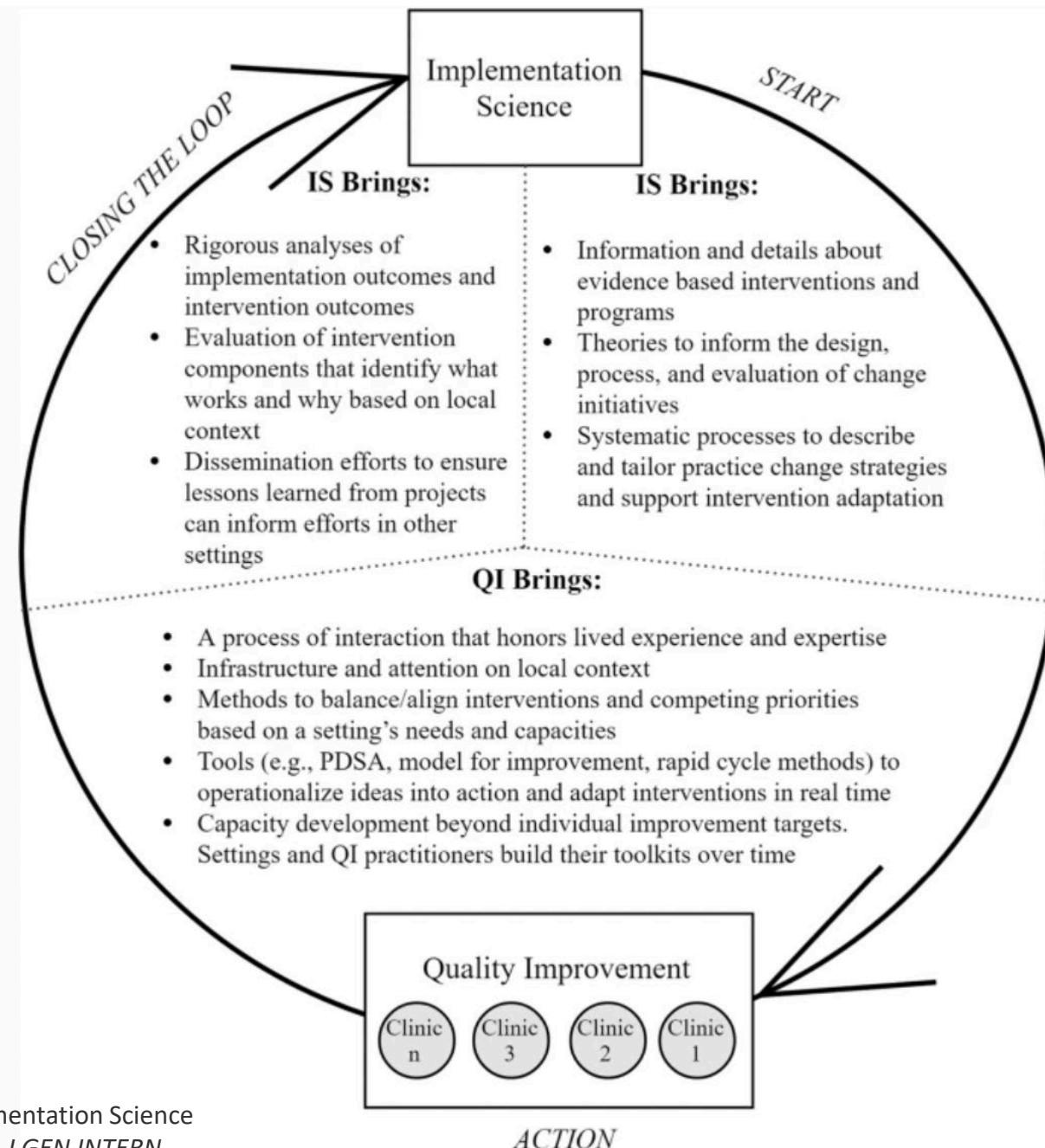
Practice QI infrastructure  
Practice type  
Practice culture  
Adequate staffing  
EHR systems

Payment models  
Facilitators

External QI  
Support

Cohen D, McDaniel RR, Jr., Crabtree BF, et al. A practice change model for quality improvement in primary care practice. *Journal of healthcare management / American College of Healthcare Executives.* May-Jun 2004;49(3):155-168; discussion 169-170.

# Blending IS and QI



Davis, M.M., Gunn, R., Kenzie, E. *et al.* Integration of Improvement and Implementation Science in Practice-Based Research Networks: a Longitudinal, Comparative Case Study. *J GEN INTERN MED* 36, 1503–1513 (2021)

The implementation science (IS)/quality improvement (QI) action cycle.

# Advancing Care Together

Integrating Behavioral Health and Primary Care

# Premise

- Integrating primary and behavioral health care improves:
  - Clinical outcomes
  - Patient experience
  - Reduces cost
- Yet, real world clinics are struggling to integrate care

## Setting

- 11 ambulatory primary care and mental health clinics in Colorado participating in the Advancing Care Together (ACT) Program
- Clinics implemented evidence-based approaches to integrate care for people with primary care and behavioral/mental health care needs

# Purpose

To identify strategies to integrate behavioral health and primary care that:

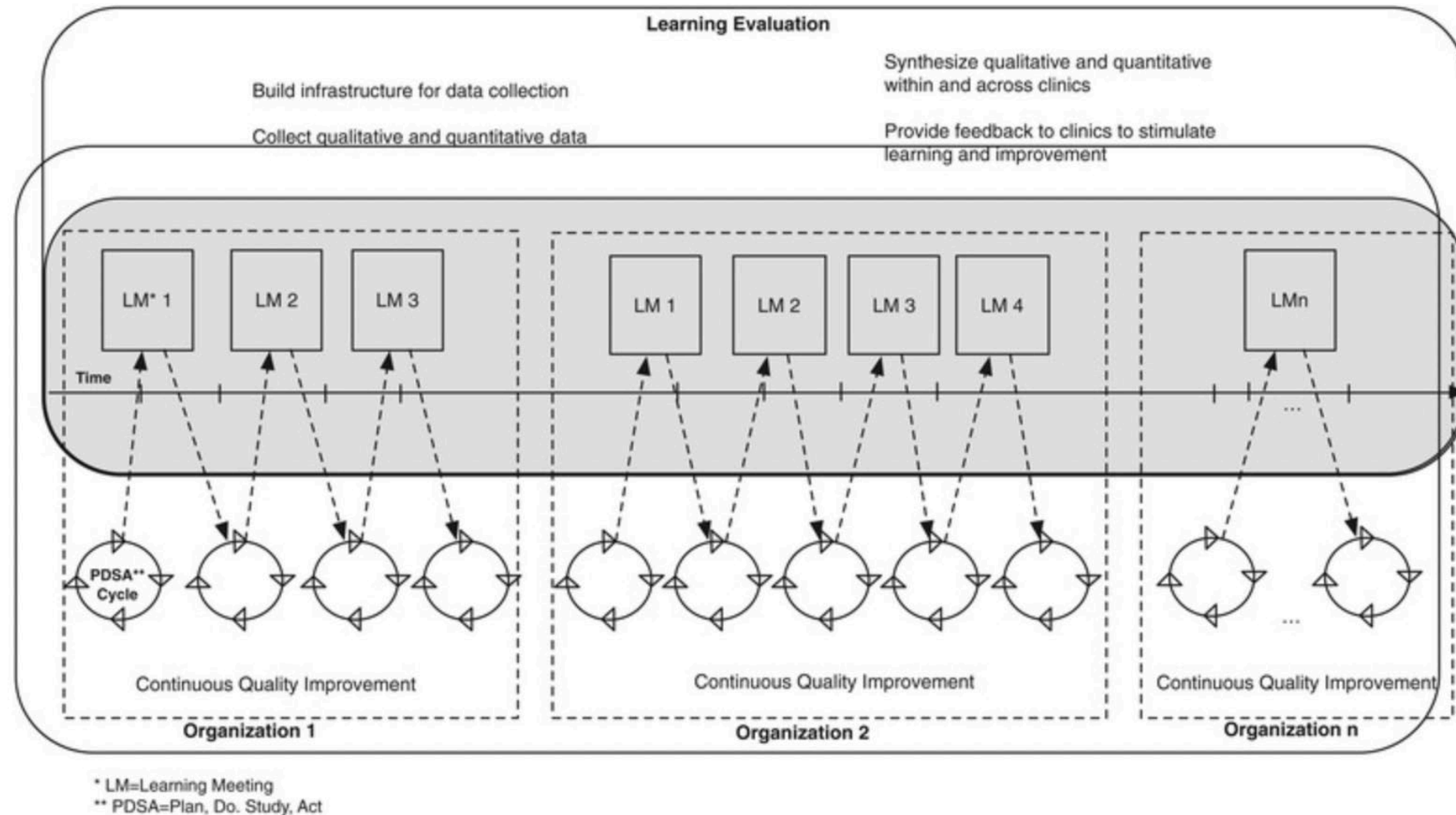
- Real world clinics can implement
- Result in improved care delivery and outcomes
- Can lead to generalizable knowledge
- Can be rapidly disseminated nationally

# Methods

- Design – Longitudinal, mixed methods
  - Practices implemented EB integration strategies
    - Systematic screening
    - Co-locating behavioral health and primary care clinicians
  - Independent evaluation team evaluated implementation and outcomes
- Types of data
  - Qualitative – documents, online diaries, field observation, interviews
  - Quantitative – practice and practice member surveys, process tracking, EHR outcome data
- Analyses
  - Merged qualitative and quantitative data
  - Grounded theory; Immersion-crystallization
  - Growth curve models, mixed effects models

# Learning Evaluation

## Behavioral Health Integration into Primary Care



# Practice-based Evidence

<b>Construct</b>	<b>Conceptual Definition</b>
Integration REACH	Extent to which integrated services are available to the practice population
Location of integration workforce	Proximity of the professionals on the integrated care team
Approach to patient transitions	Strategies that practice employs when introducing and engaging patients with another professional on the care team
Establish care pathways	Determining the level and type of care practice can provide, including care requiring referral to outside resources
Shared mental model	Practice members have shared understanding of practice model for integration

# Limitations?

- Non-randomized study BUT practice-based evidence
- Small practice sample size BUT maximum variation sample
- Not generalizable BUT transportable

# How can researchers blend QI and IS?



Partner with interested parties outside academia



Co-produce interventions



Work in transdisciplinary research teams



“Implement” together



Conduct rigorous mixed-methods evaluations



Pay attention to conventional wisdom or basic good practice



Think before creating new ways to “push” research into practice



*“To him who devotes his life to science, nothing can give more happiness than increasing the number of discoveries, but his cup of joy is full when the results of his studies immediately find practical applications.”*

*Louis Pasteur*

# References

1. Boaden R. Push, pull or co-produce? *Journal of Health Services Research & Policy*. 2020;25(2):67-69.
2. Amy Tyler, Russell E. Glasgow; Implementing Improvements: Opportunities to Integrate Quality Improvement and Implementation Science. *Hosp Pediatr* May 2021; 11 (5): 536–545.
3. Davis, M.M., Gunn, R., Kenzie, E. *et al*. Integration of Improvement and Implementation Science in Practice-Based Research Networks: a Longitudinal, Comparative Case Study. *J GEN INTERN MED* **36**, 1503–1513 (2021)
4. Beidas, R.S., Dorsey, S., Lewis, C.C. *et al*. Promises and pitfalls in implementation science from the perspective of US-based researchers: learning from a pre-mortem. *Implementation Sci* 17, 55 (2022) Leeman, J., Birken, S., Powell, B.J. *et al*. Beyond “implementation strategies”: classifying the full range of strategies used in implementation science and practice. *Implementation Sci* **12**, 125 (2017)
5. Balasubramanian BA, Cohen DJ, Davis MM, Gunn R, Dickinson LM, Miller WL, Crabtree BF, Stange KC. Learning Evaluation: blending quality improvement and implementation research methods to study healthcare innovations. *Implement Sci*. 2015 Mar 10;10:31.
6. Meyers D, Miller T, Genevro J, Zhan C, De La Mare J, Fournier A, Bennett H, McNellis RJ. EvidenceNOW: Balancing Primary Care Implementation and Implementation Research. *Ann Fam Med*. 2018 Apr;16(Suppl 1):S5-S11.