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# Implementing firearm safety promotion programs in pediatric primary care

The Nudge Unit

Center for Health Incentives & Behavioral Economics

Rinad S. Beidas, PhD

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Northwell Health

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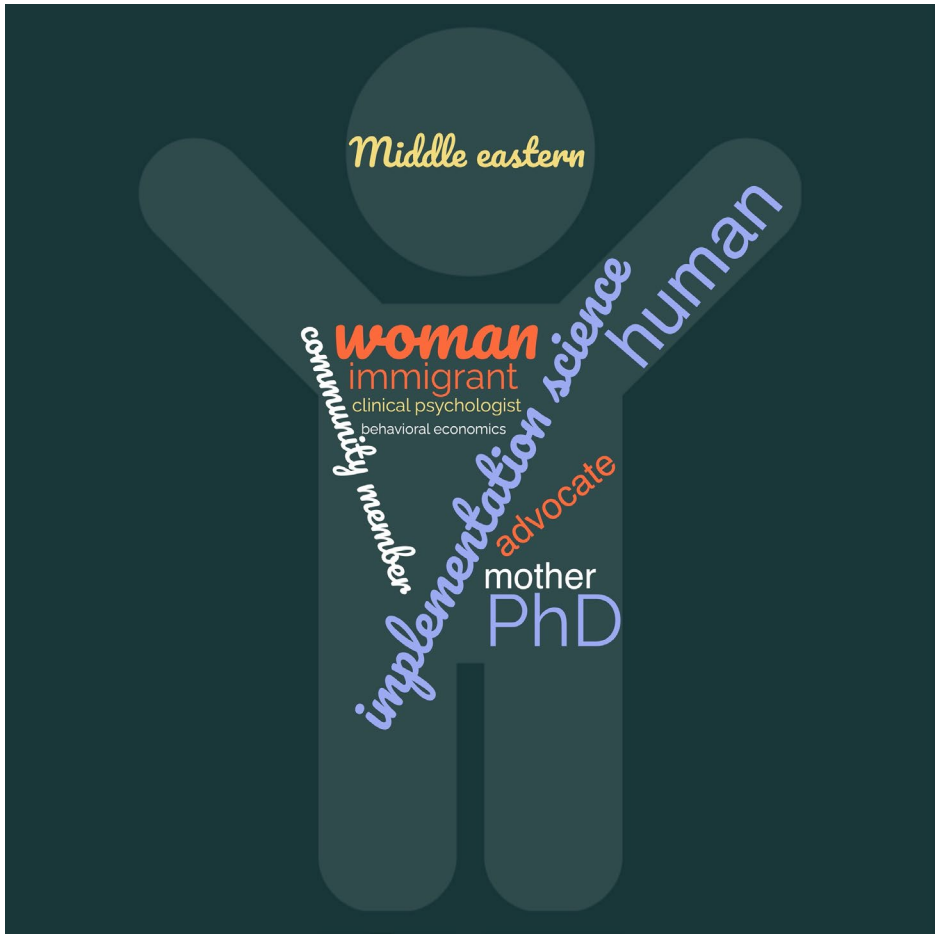
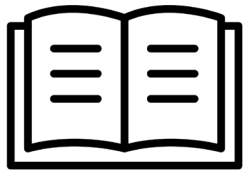
# My positionality as an implementation scientist



# Agenda



Background on implementation science

Current work in firearm safety promotion

# The research-to-practice gap is a major challenge of our time. The time for equitable implementation science has arrived.

COVID-19

By A. David Paltiel, Jason L. Schwartz, Amy Zheng, and Rochelle P. Walensky

## Clinical Outcomes Of A COVID-19 Vaccine: Implementation Over Efficacy

EDITORIAL

## A new lane for science

A recent *Science* editorial on the social and political headwinds that have blunted, obfuscated, and confused public behavior in the United States' COVID-19 response cautioned both politicians who appoint themse tists—including virolo to stay in their lanes. portant question: Should scie

Despite the remarkable de fective vaccines, only about have received their first dose (social distancing and maski evidence are met with wide tance, and rage. Unfortunate rather than the exception. Br Americans receive about 5 clinical interventions know benefit their health.

To address this failing, sc needs to add another lane called implementation res Implementation scientists beyond medication and devi velopment and study how to tate their use by clinics, fron health care providers, pat communities, and policy-m Public health failures that have been avoided, as well a cesses attributable to this sc illustrate the importance of

messages are most effective? Who are the best opinion leaders? How can health systems overcome delays in identifying mildly ill outpatients eligible for monoclonal antibodies? Data are emerging about how to equip urces necessary to optimize organiza- ely as possible. But the current politi- social fabric.

> "COVID-19 has shown the world that 'knowing what to do' does not ensure 'doing what we know.'"

that studies rapid estions pursued in oss-disciplinary col- derstand communi- onomics, and social isciplines that have ly interacted with

would contribute andemic response e years ahead. The nstitutes of Health create an Office of n Research with institutes must nodeled on the Of- esearch. The office merging interven- dress obstacles to ights would guide , making learning- standard. The of-

**Enola K. Proctor** is the Shanti K. Khinduka Distinguished Professor Emerita, Brown School, Washington University in St. Louis, MO, USA. ekp@wustl.edu

**Elvin Geng** is a professor of Medicine in the Department of Medicine, Division of Infectious Diseases, Washington University in St. Louis, MO, USA. elvin.geng@wustl.edu

**Source.** Paltiel et al., 2020, *Health Affairs;* Proctor & Geng, 2021, *Science*

# Implementation science is the study of methods to promote the adoption and integration of evidence-based practices, interventions, and policies into routine health care and public health settings to improve population health


**Source.** https://cancercontrol.cancer.gov/is/about; UW Imp Sci Resource Hub, 2022

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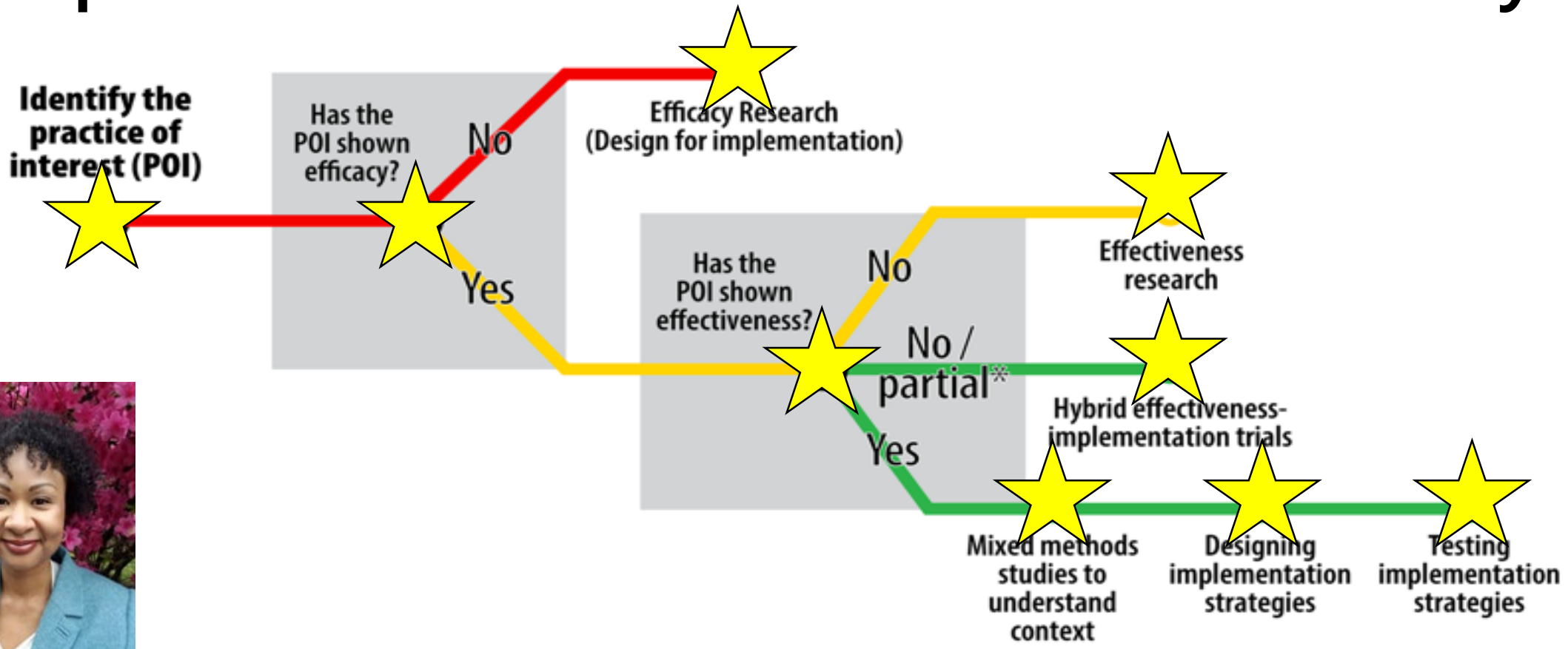
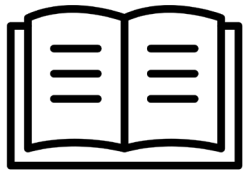
# What kinds of questions does implementation science ask? The IS subway




**Source.** Lane-Fall, Curran, & Beidas (2019). *BMC Medical Research Methodology.*

# Agenda



Background on implementation science

Current work in firearm safety promotion

# Implementing a safe firearm storage program in pediatric primary care as a universal suicide prevention strategy: A 6-year journey


**Source.** R21 MH 108978 (Beidas); R01 MH 123491 (Beidas); U19 MH 121738 (Simon); R24 HD 087149 (Cunningham)

# Team

Brian Ahmedani, PhD
Shari Barkin, MD, MSHS
Arne Beck, PhD
Emily Becker-Haimes, PhD
Jennifer Boggs, PhD
Gregory Brown, PhD
Alison Buttenheim, PhD
Rebecca Cunningham, MD
Matt Daley, MD
Molly Davis, PhD
Marisa Elias, MD
Joel Fein, MD, MPH
Courtney Gregor, BA
David Hemenway, PhD
Ben Hoffman, MD, FAAP
Katie Hoskins, PhD
Shari Jager-Hyman, PhD
Christina Johnson, BS
Cheryl King, PhD

Kristin Linn, PhD
Adina Lieberman, MPH
Steven Marcus, PhD
Lynn Massey, MSW
Melissa Maye, PhD
Bridget McArdle, MD
Dorothy Novick, MD
Amy Pettit, PhD
Amy Reed, BA
Deb Ritzwoller, PhD
Fred Rivara, MD, MPH
Katherine Sanchez, PhD, LCSW
Eric Sigel, MD
Greg Simon, MD
LeeAnn Quintana, MSW
Maureen Walton, PhD
Josyln Westphal, MA
Courtney Wolk, PhD
Leslie Wright, MA
John Zeber, PhD
Nicole Zeld, BA

# Suicides are increasing in the United States. An increase in secure firearm storage could prevent up to **32%** of firearm deaths in youth.

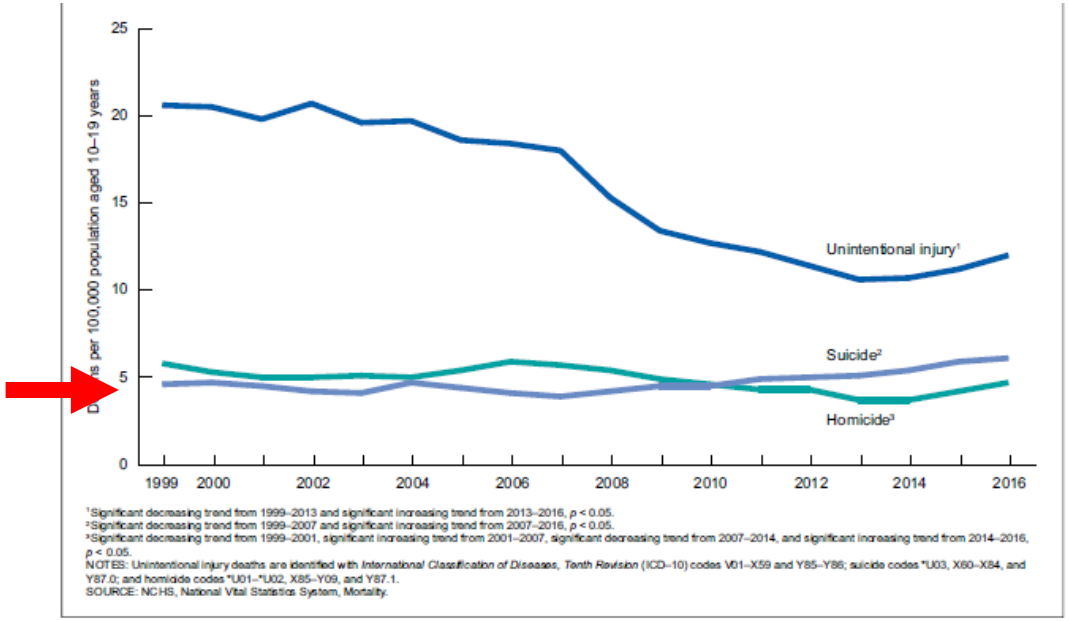
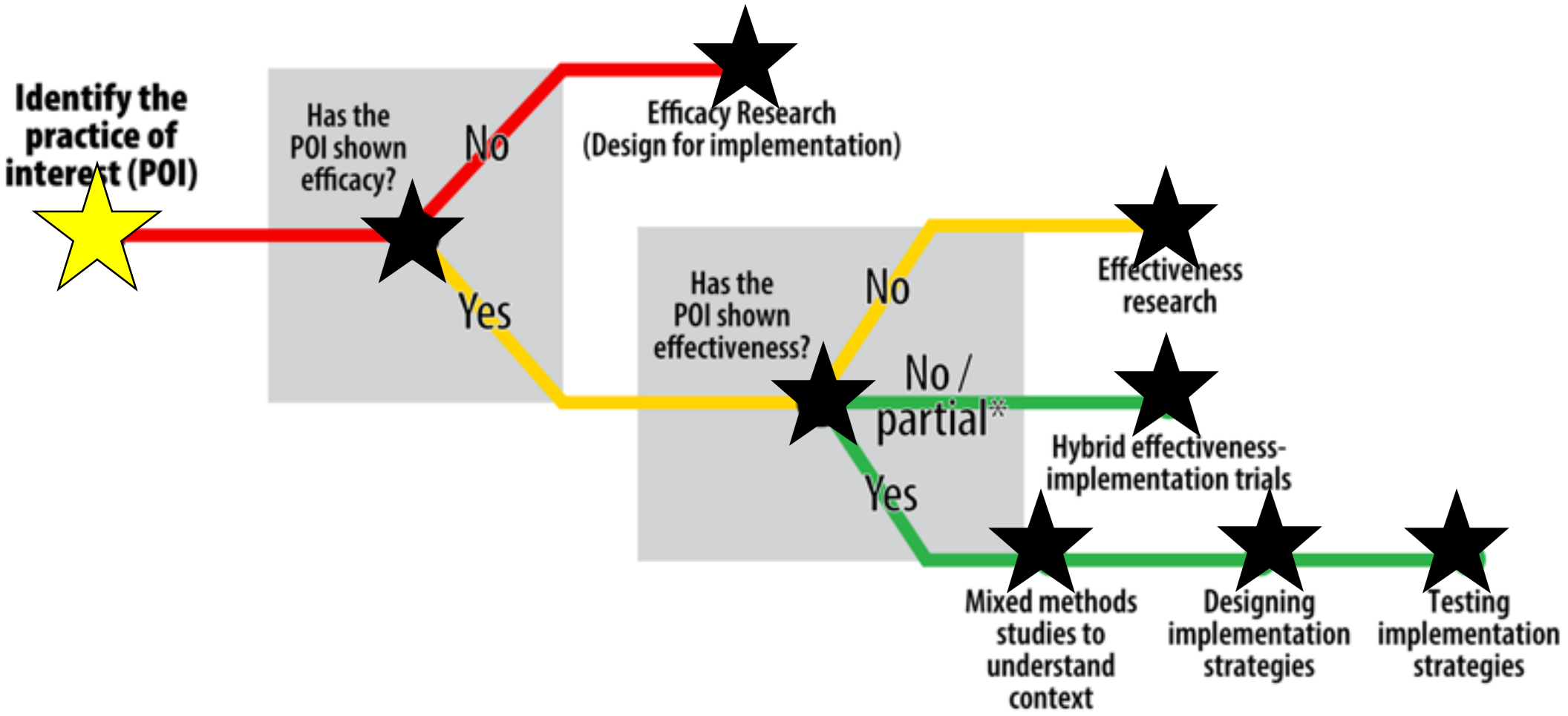



Figure 2. Injury death rates for children and adolescents aged 10–19 years, by intent: United States, 1999–2016

**Source**. https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_04.pdf; Monuteaux et al 2019. *JAMA Pediatrics*.




**Source.** Lane-Fall, Curran, & Beidas (2019). *BMC Medical Research Methodology.*

# There is an evidence-based practice for pediatric primary care: *Safety Check*

ARTICLE

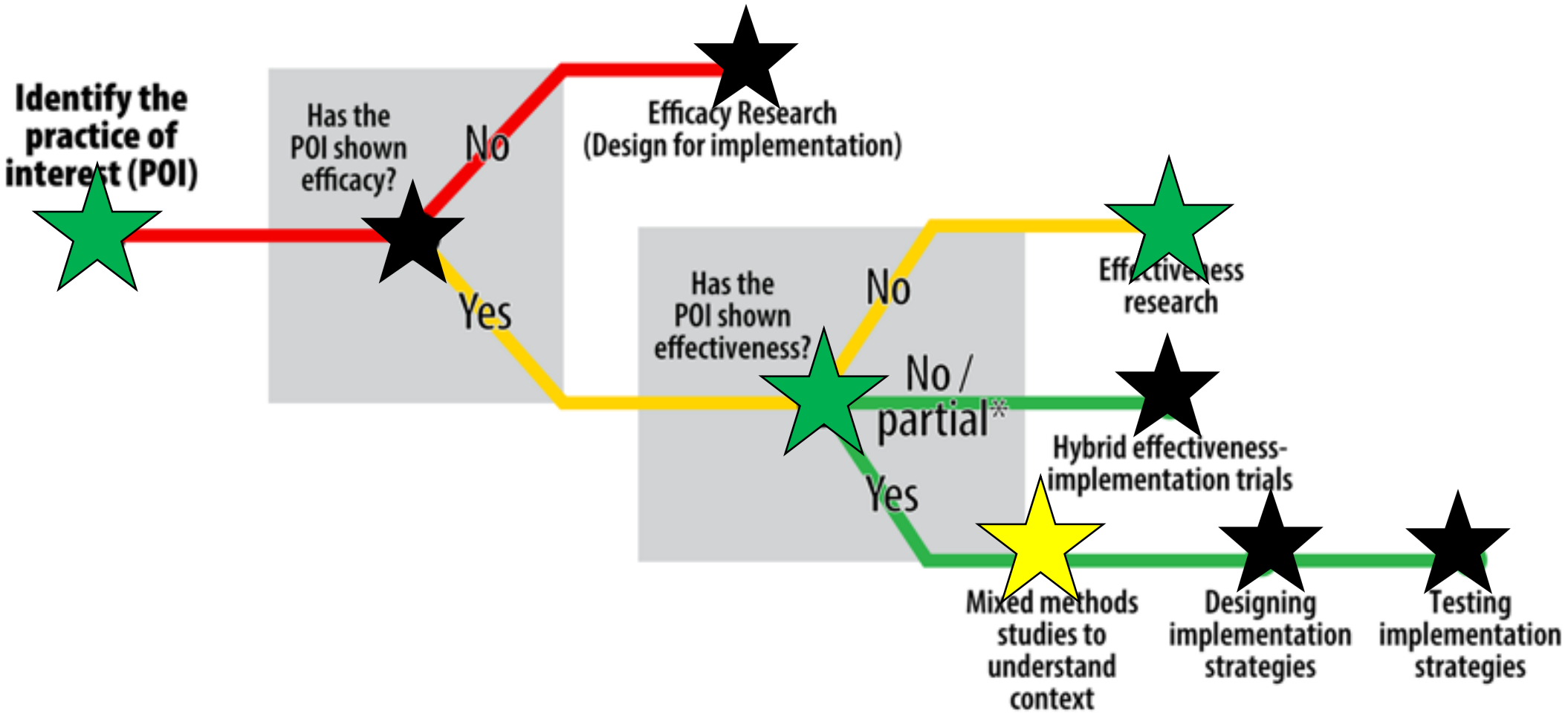
## Is Office-Based Counseling About Media Use, Timeouts, and Firearm Storage Effective? Results From a Cluster-Randomized, Controlled Trial

Shari L. Barkin, MD, MSHS[a], Stacia A. Finch, MA[b], Edward H. Ip, PhD[c], Benjamin Scheindlin, MD[d], Joseph A. Craig, MD[e], Jennifer Steffes, MSW[b], Victoria Weiley, MIS[b], Eric Slora, PhD[b], David Altman, PhD[f], Richard C. Wasserman, MD, MPH[b,g]

[a]Department of Pediatrics, Vanderbilt University Medical Center, Nashville, Tennessee; [b]Pediatric Research in Office Settings, Department of Research, American Academy of Pediatrics, Elk Grove Village, Illinois; [c]Department of Biostatistics, Wake Forest University School of Medicine, Winston-Salem, North Carolina; [d]Burlington Pediatrics, Burlington, Massachusetts; [e]Rocky Mountain Youth Clinics, Denver, Colorado; [f]Center for Creative Leadership, Greensboro, North Carolina, ; [g]Department of Pediatrics, University of Vermont College of Medicine, Burlington, Vermont

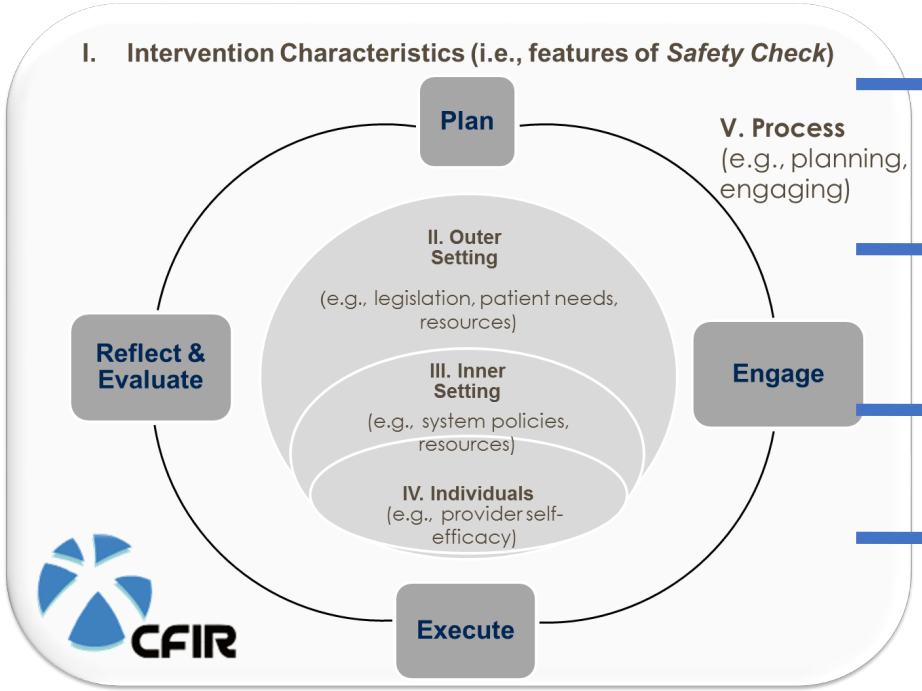
Screening → Conversation → Cable Locks

**Source.** Barkin et al (2008). *Pediatrics*



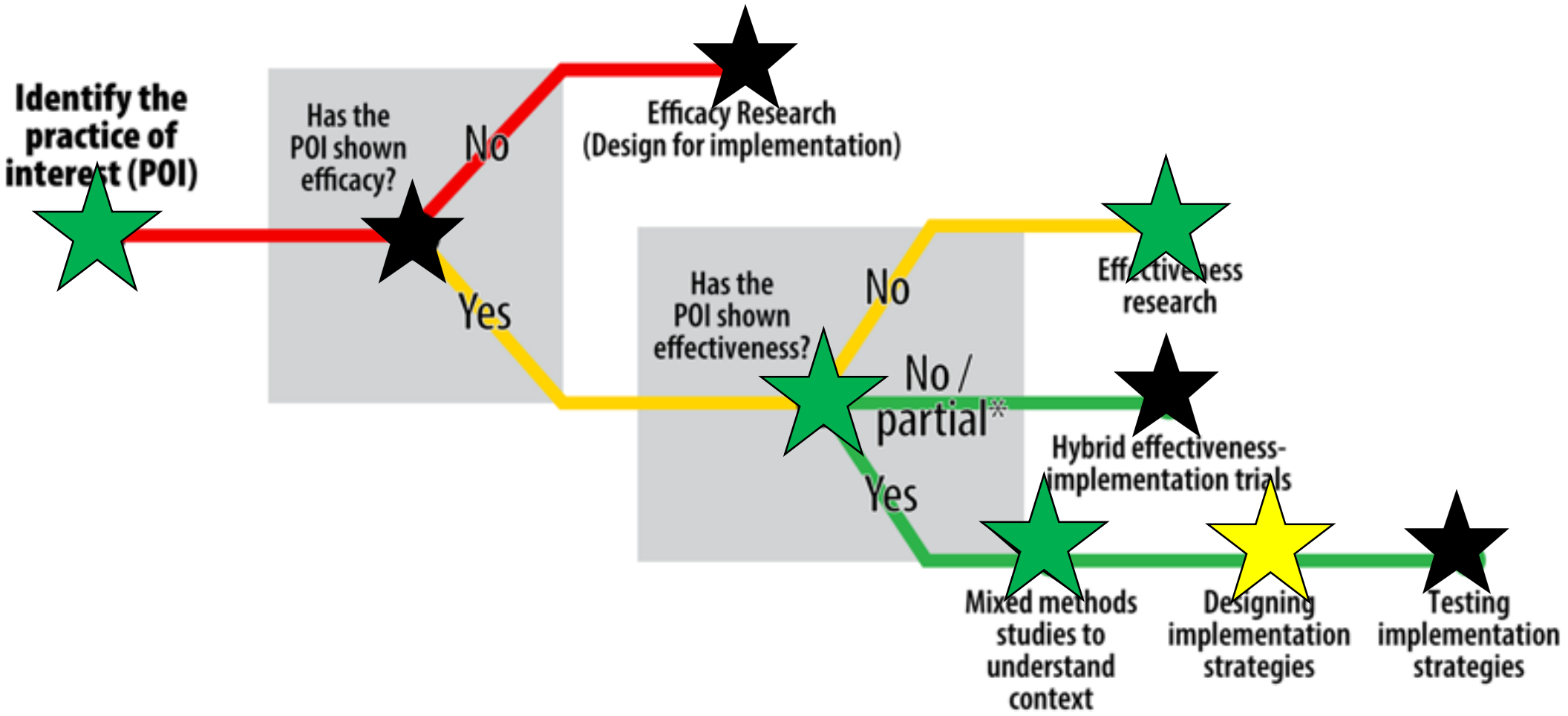

**Source.** Lane-Fall, Curran, & Beidas (2019). *BMC Medical Research Methodology.*

# Multilevel factors may hinder or help implementation.




- Brevity
- Firearm culture
- Workflow integration, leadership
- Self-efficacy

**Source.** Wolk et al (2018). *JAMA Network Open;* Jager-Hyman et al, 2019, *J Beh Med*

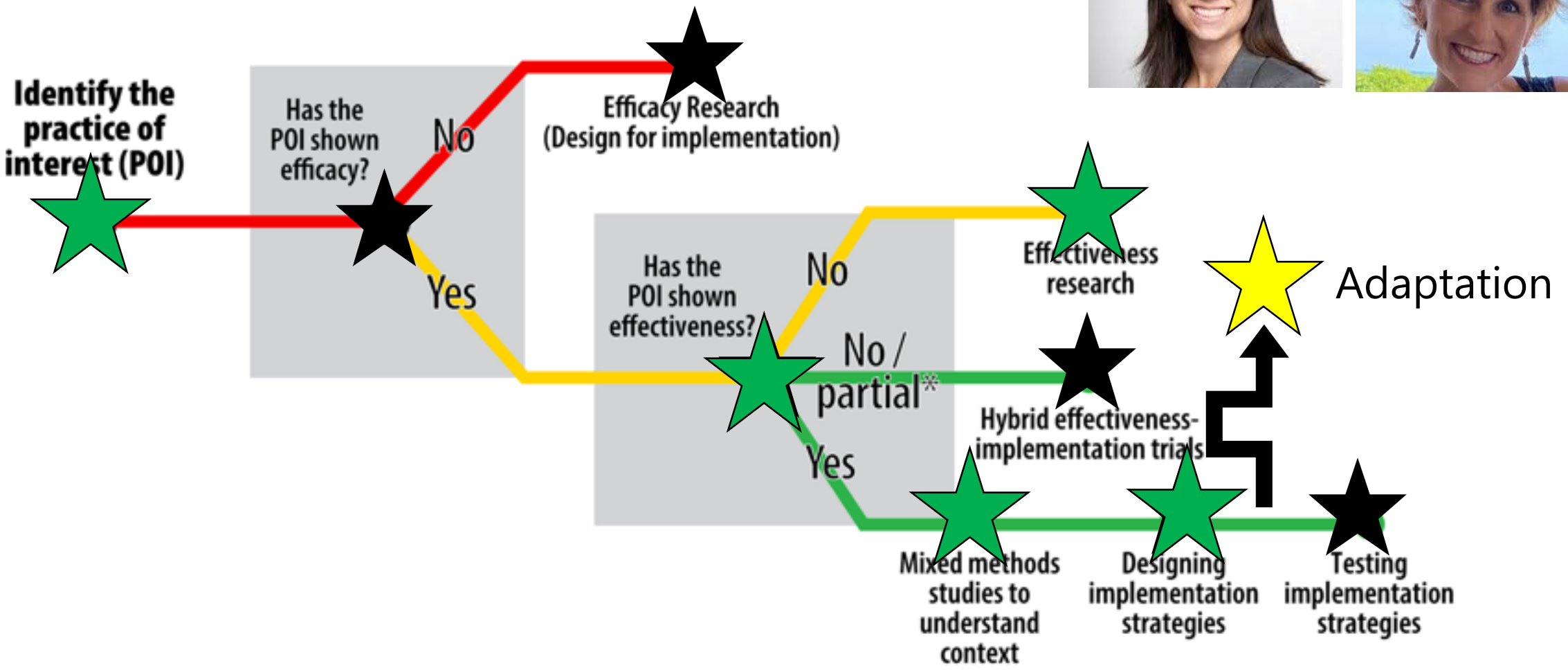



**Source.** Lane-Fall, Curran, & Beidas (2019). *BMC Medical Research Methodology.*

# Implementation mapping allowed us to derive a set of implementation strategies

| |
|---|
| Creating a plan for whom on the medical team will be responsible for implementing each component |
| Changing the clinic or health system policies to encourage the implementation of the program |
| Integrating the program into the electronic health record |
| Training providers how to implement |
| Making changes to the workflow to make it easier to implement the program |
| Sharing information with providers and caregivers about the importance of the program and the problem it addresses |
| Marketing strategies targeting leadership and providers |
| Identifying and preparing provider and leader champions |
| Identifying sources of funding to support implementation |
| **Adapting the program** |

**Source.** Fernandez et al (2019). *Frontiers*




**Source.** Davis et al 2021) *Acad Peds*; Hoskins et al (in review)

# We used a systematic adaptation process to emerge with a new program name & logo and tweaked content

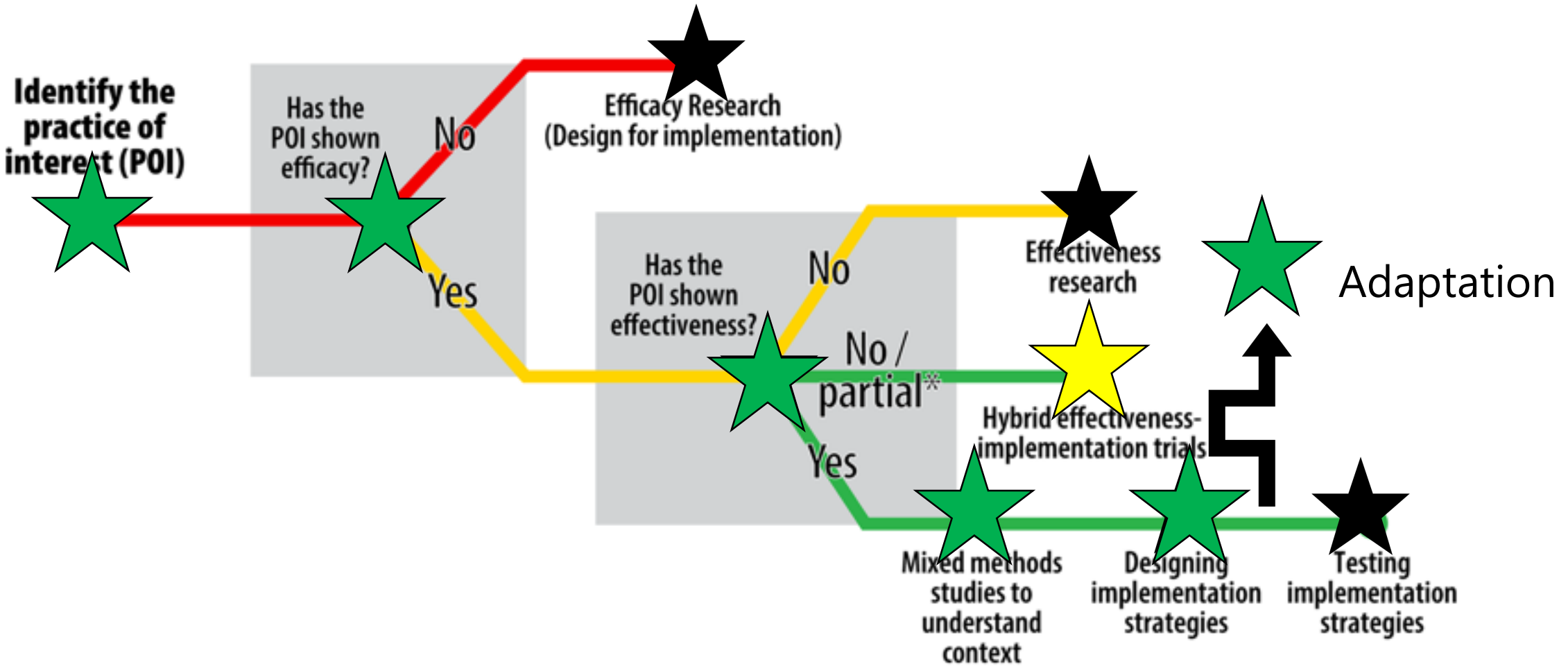

Conversation → Cable Locks

**Parent ratings of acceptability and appropriateness of adapted program (on 1-5 scale)**

| Group | Acceptability Mean (SD) | Appropriateness Mean (SD) |
|---|---|---|
| **Firearm owners (*n*=54)** | 4.23 (0.43) | 3.91 (0.71) |
| **Non-firearm owners (*n*=52)** | 4.45 (0.57) | 4.07 (0.57) |

Acceptability: $t(104) = -2.20, p = 0.030$*
Appropriateness: $t(104) = -1.31, p = 0.193$

**Source.** Davis et al 2021) *Acad Peds*; Hoskins et al (in review)




**Source.** Lane-Fall, Curran, & Beidas (2019). *BMC Medical Research Methodology.*

Is the less costly and scalable EHR-based ‘nudge’ powerful enough or is more intensive and expensive facilitation needed to overcome implementation barriers in the case of this sensitive intervention?

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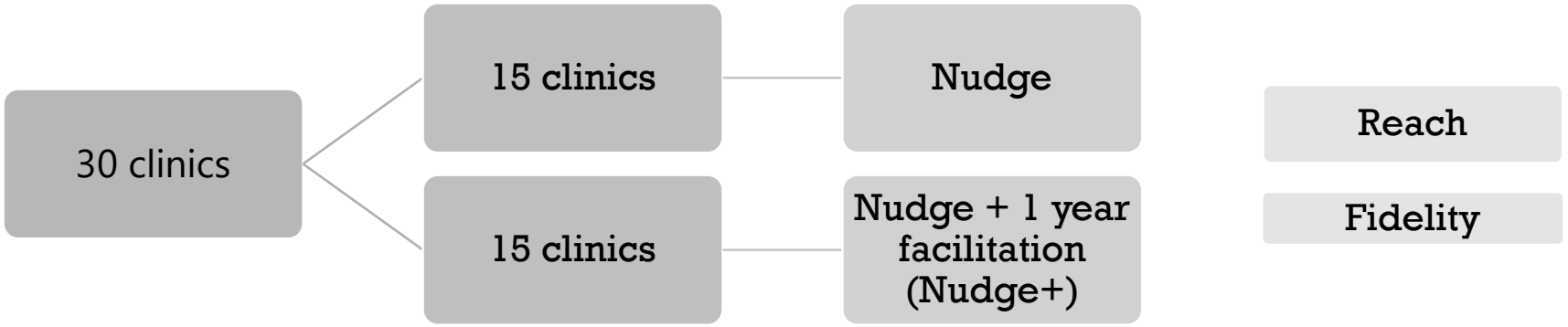
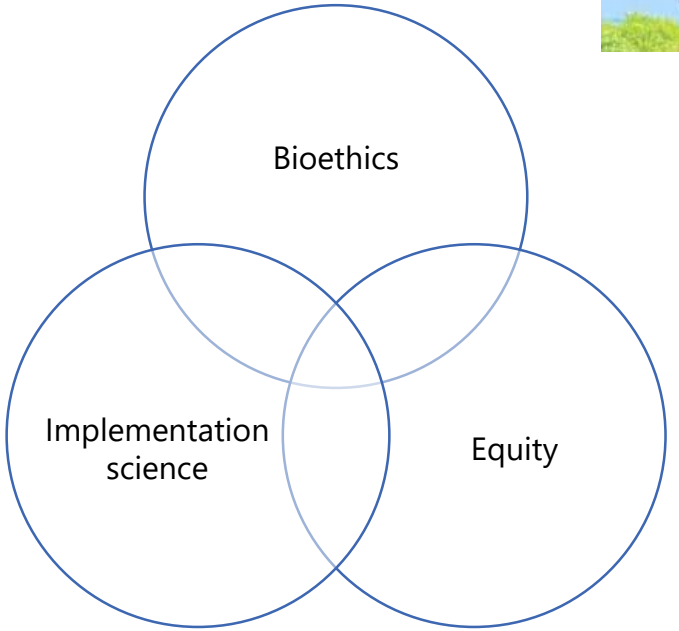
# Hybrid type III effectiveness implementation trial – longitudinal cluster RCT

30 clinics, 151 clinicians, ~40,000 youth




**Source.** Beidas et al., 2021, *Implement Sci*

We are looking at signals for inequities in program delivery as part of a pilot prior to launching the trial to inform our approach to design for equitable implementation.




**Source.** Shelton et al (2019), *Frontiers*; Shelton et al (2021), *IRP;* Baumann and Cabassa (2020), *BMC Health Serv*; Brownson et al (2021), *Imp Sci*

# With gratitude to team and family

# Want more?

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Rinad.beidas@pennmedicine.upenn.edu

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