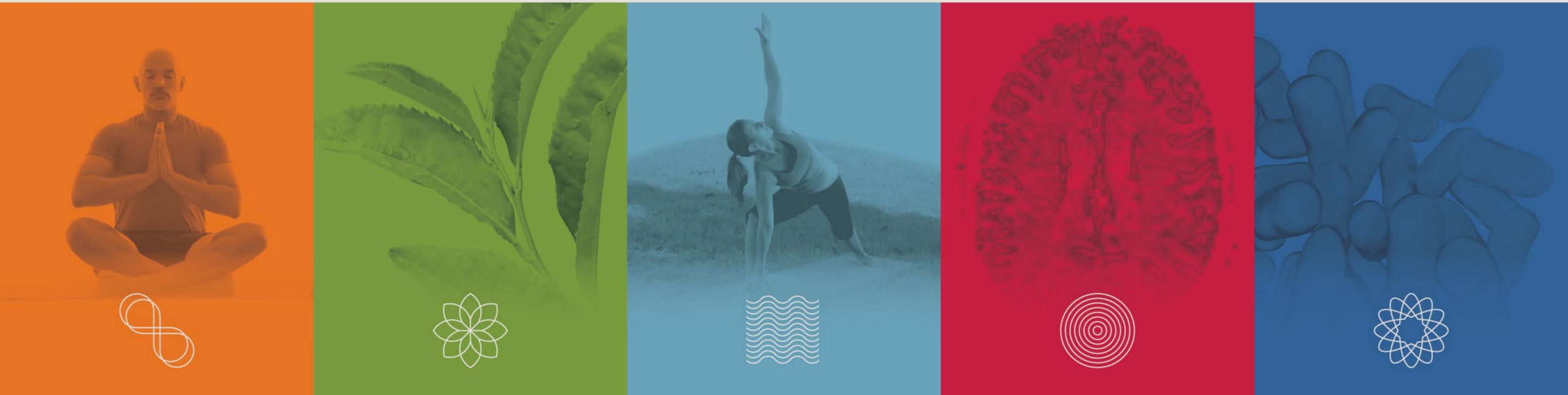




# Orientation to Dissemination and Implementation Science for Complementary and Integrative Health and Whole Person Health

2024 International Congress on Integrative Medicine and Health  
Post-Congress Workshop  
April 13, 2024



WELC OME



# Workshop Goal

- Provide foundational knowledge and stimulate interest in conducting dissemination and implementation (D&I) research in complementary and integrative health



# Presenters



**Jennifer Baumgartner, Ph.D.**

National Center for Complementary and Integrative Health (NCCIH)



**Amanda Midboe, Ph.D.**

VA Palo Alto Health Care System, University of California Davis



**Stephanie Taylor, Ph.D., M.P.H.**

VA Greater Los Angeles, University of California Los Angeles  
School of Medicine and Health Policy and Management



**Isabel Roth, Dr.PH., M.S.**

University of North Carolina School of Medicine



**Eric Roseen, D.C., Ph.D.**

Boston University School of Medicine, Boston Medical Center



# Workshop Objectives

## Objective 1

Understand the value of D&I science for complementary and integrative health and obtain foundational knowledge on conducting D&I research

Learn how D&I models, theories, and frameworks have been applied in complementary and integrative health research



## Objective 2

Understand NCCIH interests in D&I science

Become familiar with NIH/NCCIH funding opportunities and other resources for conducting D&I research



## Objective 3

Learn about opportunities in conducting D&I research in complementary and integrative health in diverse settings



# Workshop Objectives

## Objective 1

Understand the value of D&I science for complementary and integrative health and obtain foundational knowledge on conducting D&I research

Learn how D&I models, theories, and frameworks have been applied in complementary and integrative health research



## Objective 2

Understand NCCIH interests in D&I science

Become familiar with NIH/NCCIH funding opportunities and other resources for conducting D&I research



Networking Break

## Objective 3

Learn about opportunities in conducting D&I research in complementary and integrative health in diverse settings



# Workshop Objectives

## Objective 1

Understand the value of D&I science for complementary and integrative health and obtain foundational knowledge on conducting D&I research

Learn how D&I models, theories, and frameworks have been applied in complementary and integrative health research



## Objective 2

Understand NCCIH interests in D&I science

Become familiar with NIH/NCCIH funding opportunities and other resources for conducting D&I research



## Objective 3

Learn about opportunities in conducting D&I research in complementary and integrative health in diverse settings



Panel Discussion



# Icebreaker Poll

- Two ways to join:
  - Scan the QR code that will appear on the screen
  - Go to Slido.com and enter code #2652033

Joining as a participant?

# 2652033



Objective  
1

Understand the value of  
D&I science for  
complementary and  
integrative health and  
obtain foundational  
knowledge on conducting  
D&I research

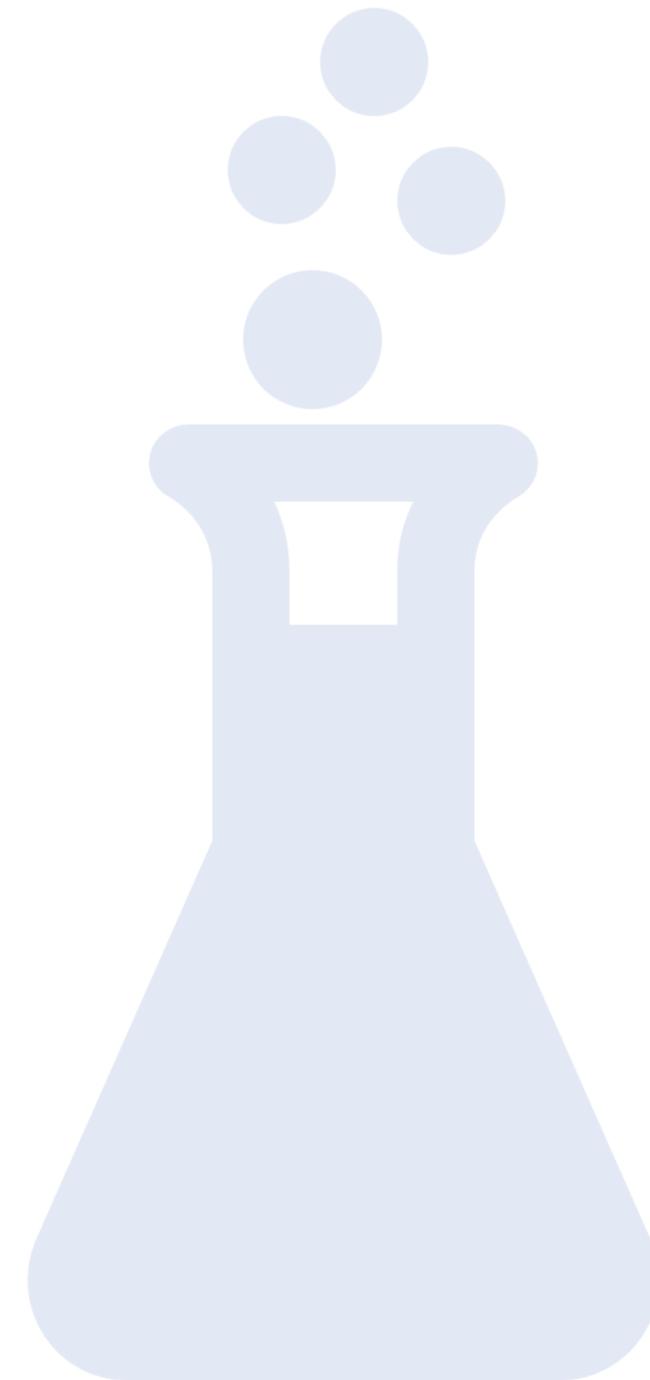


# D&I Science and CIH

*Amanda Midboe, PhD*

VA Palo Alto Health Care System, Ci2i

School of Medicine, University of California, Davis



# Agenda

- Identify aim(s)
- Methods and study design
- Theories, models, and frameworks (TMFs)

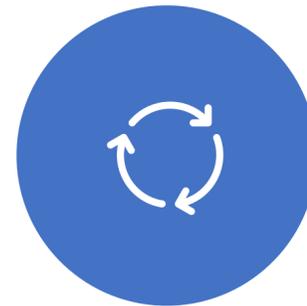
Identify Aims

# Identify aim(s)

- What stage is this research?



PRE-  
IMPLEMENTATION



IMPLEMENTATION  
DE-  
IMPLEMENTATION



SUSTAINMENT  
SPREAD

# Identify aim(s)

- What are the focused question(s) at this stage?
  - Pre-Implementation
    - Gaps in care, including through a diversity, equity, inclusivity lens
      - Identify need for implementation or de-implementation
    - Identification of determinants
  - Implementation/De-Implementation
    - Test implementation strategies
    - Refine implementation strategies
  - Sustainment/Spread
    - Evidence to spread to other clinics/locations
    - Strategies/processes for sustainment

# Implementation Strategies

- Published in 2013
- Useful guide with criteria of:
  - Name it
  - Define it
  - Specify it

## Implementation strategies: recommendations for specifying and reporting

Enola K Proctor<sup>1\*</sup>, Byron J Powell<sup>1</sup> and J Curtis McMillen<sup>2</sup>

### Abstract

Implementation strategies have unparalleled importance in implementation science, as they constitute the 'how to' component of changing healthcare practice. Yet, implementation researchers and other stakeholders are not able to fully utilize the findings of studies focusing on implementation strategies because they are often inconsistently labelled and poorly described, are rarely justified theoretically, lack operational definitions or manuals to guide their use, and are part of 'packaged' approaches whose specific elements are poorly understood. We address the challenges of specifying and reporting implementation strategies encountered by researchers who design, conduct, and report research on implementation strategies. Specifically, we propose guidelines for naming, defining, and operationalizing implementation strategies in terms of seven dimensions: actor, the action, action targets, temporality, dose, implementation outcomes addressed, and theoretical justification. Ultimately, implementation strategies cannot be used in practice or tested in research without a full description of their components and how they should be used. As with all intervention research, their descriptions must be precise enough to enable measurement and 'reproducibility.' We propose these recommendations to improve the reporting of implementation strategies in research studies and to stimulate further identification of elements pertinent to implementation strategies that should be included in reporting guidelines for implementation strategies.

# Implementation Strategies

- Published in 2015
- Comprehensive list of implementation strategies obtained through a modified Delphi process

## 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>

### Abstract

**Background:** Identifying, developing, and testing implementation strategies are important goals of implementation science. However, these efforts have been complicated by the use of inconsistent language and inadequate descriptions of implementation strategies in the literature. The Expert Recommendations for Implementing Change (ERIC) study aimed to refine a published compilation of implementation strategy terms and definitions by systematically gathering input from a wide range of stakeholders with expertise in implementation science and clinical practice.

**Methods:** Purposive sampling was used to recruit a panel of experts in implementation and clinical practice who engaged in three rounds of a modified Delphi process to generate consensus on implementation strategies and definitions. The first and second rounds involved Web-based surveys soliciting comments on implementation strategy terms and definitions. After each round, iterative refinements were made based upon participant feedback. The third round involved a live polling and consensus process via a Web-based platform and conference call.

**Results:** Participants identified substantial concerns with 31% of the terms and/or definitions and suggested five additional strategies. Seventy-five percent of definitions from the originally published compilation of strategies were retained after voting. Ultimately, the expert panel reached consensus on a final compilation of 73 implementation strategies.

**Conclusions:** This research advances the field by improving the conceptual clarity, relevance, and comprehensiveness of implementation strategies that can be used in isolation or combination in implementation research and practice. Future phases of ERIC will focus on developing conceptually distinct categories of strategies as well as ratings for each strategy's importance and feasibility. Next, the expert panel will recommend multifaceted strategies for hypothetical yet real-world scenarios that vary by sites' endorsement of evidence-based programs and practices and the strength of contextual supports that surround the effort.

# Implementation Strategies

- Published in 2017
- Intended to assist with reporting and selecting of implementation strategies based on needs

**Table 2** Five classifications for implementation strategies

Classification	Category of actor [10]	Action target (determinants and levels)	Example strategies
Dissemination strategies	All 3 ISF systems	Awareness, attitude, knowledge, and intention to adopt a specific EBI Targets levels of intervention and individual	<ul style="list-style-type: none"> <li>• Develop EBI messaging, packaging, and pricing customized to audience</li> <li>• Distribute customized EBI messages and packages through channels with optimal reach</li> </ul>
Implementation process strategies	Delivery system	How well teams execute activities required to select, adapt, and integrate EBIs generally Targets level of process	<ul style="list-style-type: none"> <li>• Engage stakeholders</li> <li>• Assess context (need, capacity)</li> <li>• Establish goals and objectives</li> <li>• Select EBI and implementation strategies that fit</li> <li>• Adapt EBI, strategies, and context</li> <li>• Evaluate processes and outcomes</li> </ul>
Integration strategies	Delivery system	Factors that facilitate or impede optimal integration of a specific EBI into a specific setting Targets levels of individual and inner setting	<p>For a specific EBI:</p> <ul style="list-style-type: none"> <li>• Institute reminder systems</li> <li>• Revise professional roles</li> <li>• Provide supervision</li> <li>• Modify medical record systems</li> <li>• Implement tools for quality monitoring</li> </ul>
Capacity-building strategies	Support system	Motivation and capability to engage in implementation process strategies (in general, not related to a specific EBI) Targets levels of individual and processes	<p>Across multiple settings:</p> <ul style="list-style-type: none"> <li>• Training to build general capacity</li> <li>• Technical assistance and facilitation for implementation processes</li> <li>• Tools to support implementation processes</li> </ul>
Scale-up strategies	Support system	Motivation and capacity to integrate a specific EBI into practice Targets level of individual, inner setting, and outer setting	<p>Across multiple settings:</p> <ul style="list-style-type: none"> <li>• Training to build EBI-specific capacity</li> <li>• Technical assistance and facilitation (EBI specific)</li> <li>• Implementation toolkits</li> <li>• Quality improvement collaboratives</li> <li>• Benchmarking</li> <li>• Recognition systems</li> <li>• Infrastructure development</li> <li>• Changes to fee for service lists/formularies</li> </ul>

# Methods and Study Design

# Qualitative and Quantitative

- Qualitative
  - Semi-structured interviews
  - Informal interviews
  - Focus groups
  - Observation and Ethnographic methods
- Quantitative
  - Electronic Medical Record (EMR) data
  - Surveys
  - Questionnaires

# Study Design

**Table 1.** Design types, definitions, uses, and examples from implementation science

Design types	Definitions	Uses	Examples from implementation science
Experimental design			
Between-site design	This design compares processes and output among sites having different exposures	Allows investigators to compare processes and output among sites that have different exposures	Ayieko <i>et al.</i> [13] Finch <i>et al.</i> [14] Kilbourne <i>et al.</i> [15]
Within- and between-site design	The comparisons can be made with crossover designs where sites begin in one implementation condition and move to another	Receiving the new implementation strategy, or when it is unethical to withhold a new implementation strategy throughout the study	Smith and Hasan [16] Fuller <i>et al.</i> [17]
Quasi-experimental design			
Within-site design	This design examines changes over time within one or more sites exposed to the same dissemination or implementation strategy	These single-site or single-unit (practitioner, clinical team, healthcare system, and community) designs are most commonly compared to their own prior performance	Smith <i>et al.</i> [18] Smith <i>et al.</i> [19] Taljaard <i>et al.</i> [20] Yelland <i>et al.</i> [21]
Observational			
Observational (descriptive)	Describes outcomes of interest and their antecedents in their natural context	Useful for evaluating the real-world applicability of evidence	Harrison <i>et al.</i> [22] Salanitro <i>et al.</i> [23]

# Experimental Study Design

- Factorial Designs
  - Multiphase Optimization Strategy (MOST)
    - Three-phase design
      - Preparation (pilot testing to optimize)
      - Refining (randomized experiment to identify optimal strategies combination)
      - Evaluation/Confirming (randomized implementation trial of optimal vs comparison)
  - Sequential Multiple Assignment Randomized Trial (SMART)
    - Adaptive tailoring (sometimes moving from “low-intensity” to “high-intensity” implementation)
    - Multi-stage randomizations where implementation strategies can be modified as needed

# Other Implementation Study Designs/Types

Other designs/methods			
Configurational comparative methods	Combine within-case analysis and logic-based cross-case analysis to identify determinants of outcomes such as implementation	Useful for identifying multiple possible combinations of intervention components and implementation and context characteristics that interact to produce outcomes	Kahwati <i>et al.</i> [24] Breuer <i>et al.</i> [25]
Simulation studies	A method for simulating the behavior of complex systems by describing the entities of a system and the behavioral rules that guide their interactions	Offer a solution for understanding the drivers of implementation and the potential effects of implementation strategies	Zimmerman <i>et al.</i> [26] Jenness <i>et al.</i> [27]
Hybrid Type 1	Tests a clinical intervention while gathering information on its delivery and/or on its potential for implementation in a real-world situation, with primary emphasis on assessing intervention effectiveness	Offers an ideal opportunity to explore implementation to plan for future implementation	Lane-Fall <i>et al.</i> [28] Ma <i>et al.</i> [29]
Hybrid Type 2	Simultaneously tests a clinical intervention and an implementation intervention/strategy	Able to assess intervention effectiveness and feasibility and/or potential impact of an implementation strategy receive equal emphasis	Garner <i>et al.</i> [30] Smith <i>et al.</i> [31]
Hybrid Type 3	Primarily tests an implementation strategy while secondarily collecting data on the clinical intervention and related outcomes	When researchers aim to proceed with implementation studies without completion of the full or at times even a modest portfolio of effectiveness studies beforehand	Bauer <i>et al.</i> [32] Kilbourne <i>et al.</i> [33]

Note: Hybrid studies are *not* designs but are a type of study

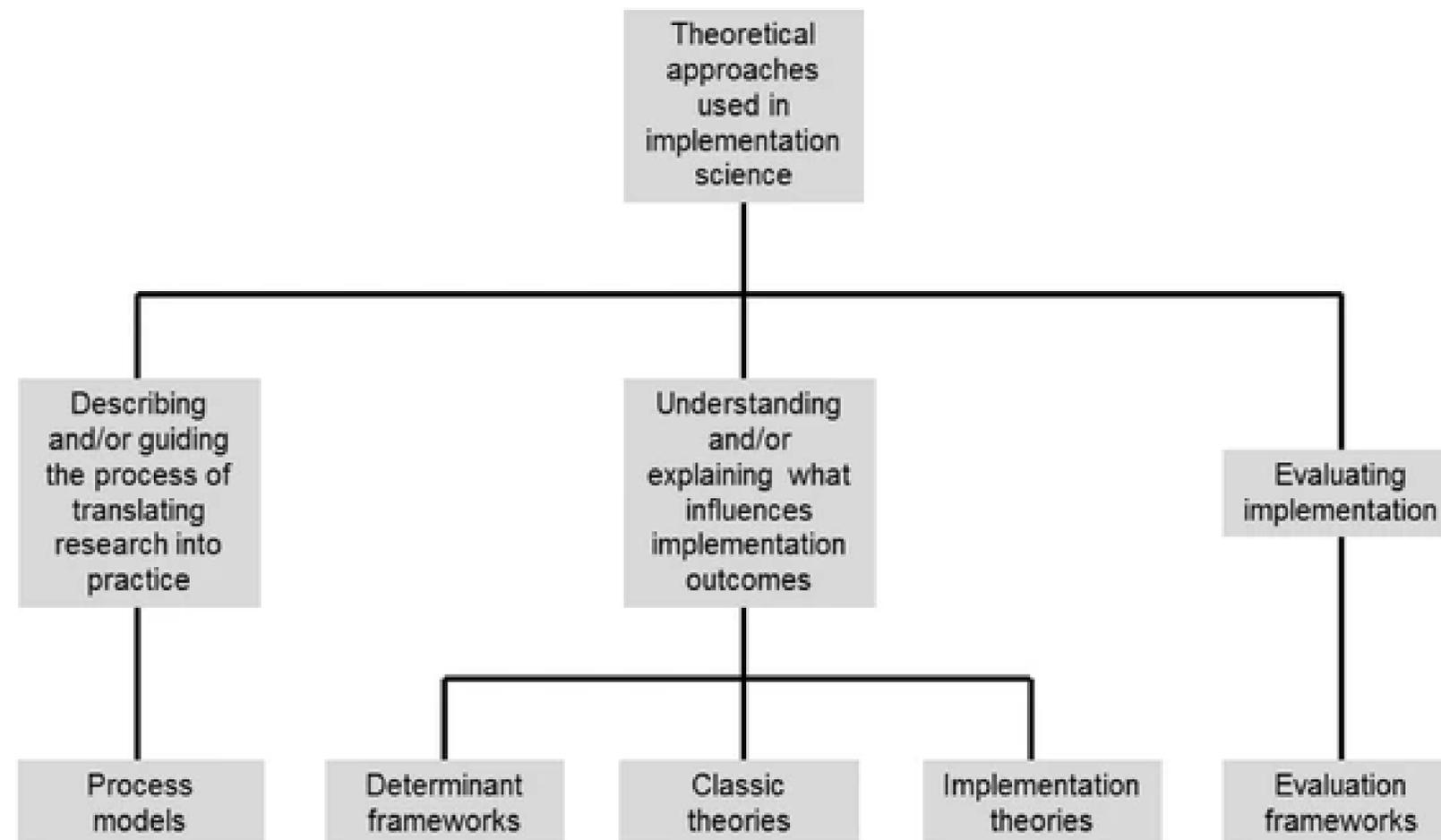
# Theories, Models, & Frameworks (TMFs)

# Figure 1

## Making sense of implementation theories, models and frameworks

Per Nilsen

From: [Making sense of implementation theories, models and frameworks](#)



Three aims of the use of theoretical approaches in implementation science and the five categories of theories, models and frameworks.

# Figure 1

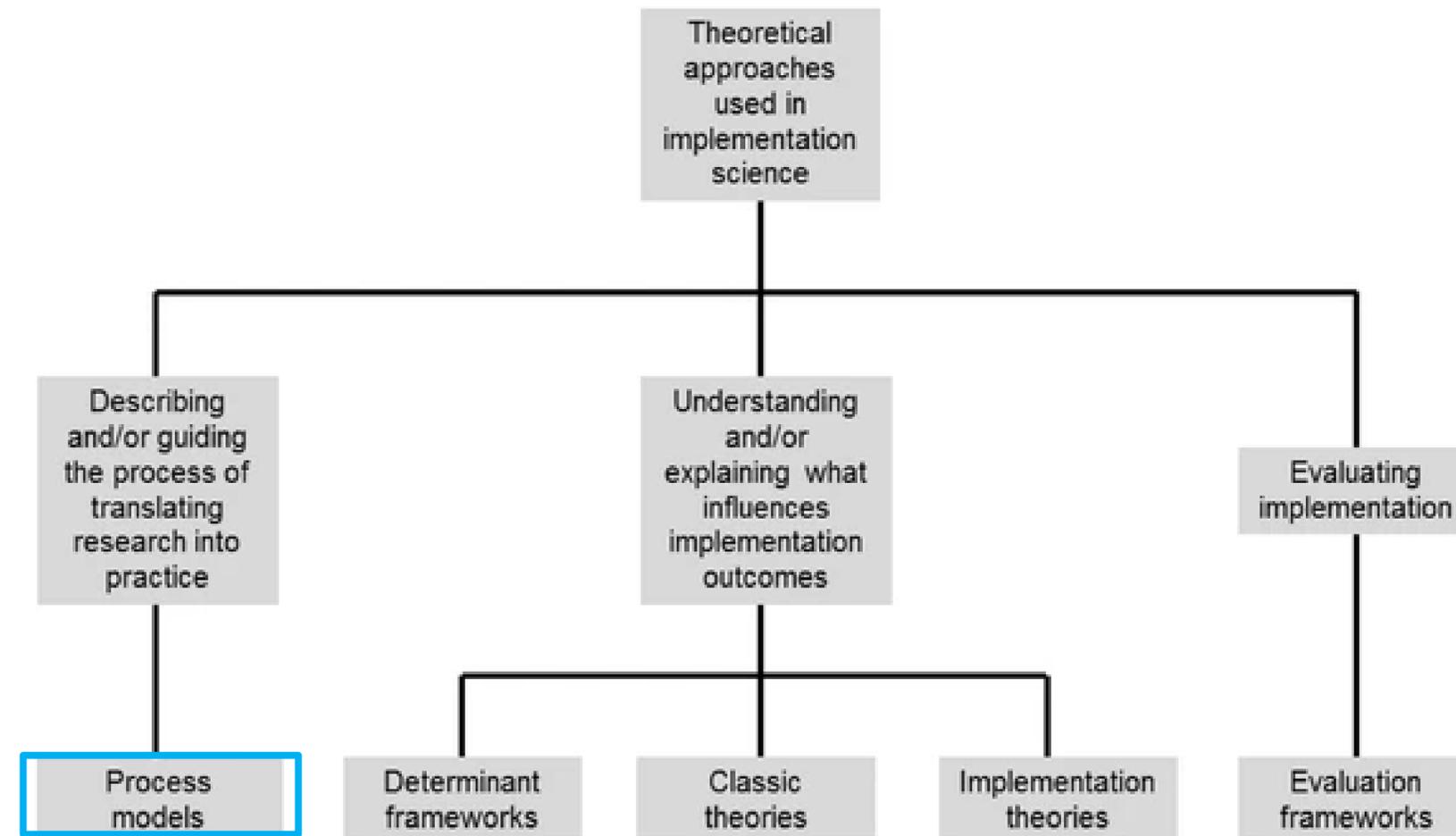
From: [Making sense of implementation theories, models and frameworks](#)

DEBATE

Open Access

## Making sense of implementation theories, models and frameworks

Per Nilsen



Three aims of the use of theoretical approaches in implementation science and the five categories of theories, models and frameworks.

**Table 1 Five categories of theories, models and frameworks used in implementation science**

Category	Description	Examples
Process models	Specify steps (stages, phases) in the process of translating research into practice, including the implementation and use of research. The aim of process models is to describe and/or guide the process of translating research into practice. An action model is a type of process model that provides practical guidance in the planning and execution of implementation endeavours and/or implementation strategies to facilitate implementation. Note that the terms “model” and “framework” are both used, but the former appears to be the most common	Model by Huberman [40], model by Landry et al. [41], model by Davies et al. [43], model by Majdzadeh et al. [44], the CIHR Model of Knowledge Translation [42], the K2A Framework [15], the Stetler Model [47], the ACE Star Model of Knowledge Transformation [48], the Knowledge-to-Action Model [13], the Iowa Model [49,50], the Ottawa Model [51,52], model by Grol and Wensing [53], model by Pronovost et al. [54], the Quality Implementation Framework [27]
Determinant frameworks	Specify types (also known as classes or domains) of determinants and individual determinants, which act as barriers and enablers (independent variables) that influence implementation outcomes (dependent variables). Some frameworks also specify relationships between some types of determinants. The overarching aim is to understand and/or explain influences on implementation outcomes, e.g. predicting outcomes or interpreting outcomes retrospectively	PARIHS [5,64], Active Implementation Frameworks [63,68], Understanding-User-Context Framework [62], Conceptual Model [17], framework by Grol et al. [22], framework by Cochrane et al. [59], framework by Nutley et al. [21], Ecological Framework by Durlak and DuPre [57], CFIR [60], framework by Gurses et al. [58], framework by Ferlie and Shortell [61], Theoretical Domains Framework [66]
Classic theories	Theories that originate from fields external to implementation science, e.g. psychology, sociology and organizational theory, which can be applied to provide understanding and/or explanation of aspects of implementation	Theory of Diffusion [107], social cognitive theories, theories concerning cognitive processes and decision making, social networks theories, social capital theories, communities of practice, professional theories, organizational theories
Implementation theories	Theories that have been developed by implementation researchers (from scratch or by adapting existing theories and concepts) to provide understanding and/or explanation of aspects of implementation	Implementation Climate [116], Absorptive Capacity [117], Organizational Readiness [118], COM-B [119], Normalization Process Theory [120]
Evaluation frameworks	Specify aspects of implementation that could be evaluated to determine implementation success	RE-AIM [124]; PRECEDE-PROCEED [125]; framework by Proctor et al. [126]

# Figure 1

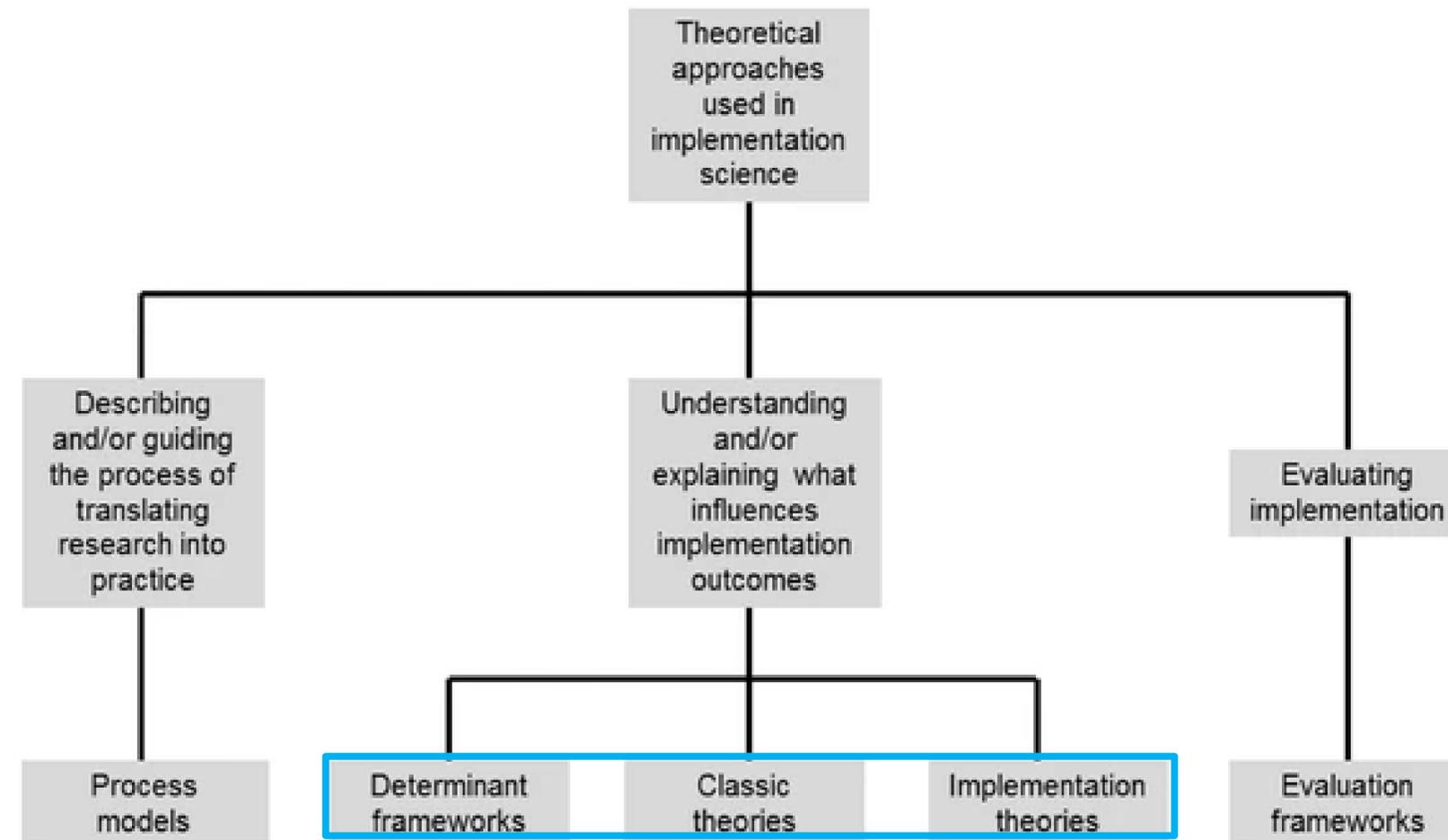
From: [Making sense of implementation theories, models and frameworks](#)

DEBATE

Open Access

## Making sense of implementation theories, models and frameworks

Per Nilsen



Three aims of the use of theoretical approaches in implementation science and the five categories of theories, models and frameworks.

**Table 1 Five categories of theories, models and frameworks used in implementation science**

Category	Description	Examples
Process models	Specify steps (stages, phases) in the process of translating research into practice, including the implementation and use of research. The aim of process models is to describe and/or guide the process of translating research into practice. An action model is a type of process model that provides practical guidance in the planning and execution of implementation endeavours and/or implementation strategies to facilitate implementation. Note that the terms “model” and “framework” are both used, but the former appears to be the most common	Model by Huberman [40], model by Landry et al. [41], model by Davies et al. [43], model by Majdzadeh et al. [44], the CIHR Model of Knowledge Translation [42], the K2A Framework [15], the Stetler Model [47], the ACE Star Model of Knowledge Transformation [48], the Knowledge-to-Action Model [13], the Iowa Model [49,50], the Ottawa Model [51,52], model by Grol and Wensing [53], model by Pronovost et al. [54], the Quality Implementation Framework [27]
Determinant frameworks	Specify types (also known as classes or domains) of determinants and individual determinants, which act as barriers and enablers (independent variables) that influence implementation outcomes (dependent variables). Some frameworks also specify relationships between some types of determinants. The overarching aim is to understand and/or explain influences on implementation outcomes, e.g. predicting outcomes or interpreting outcomes retrospectively	PARIHS [5,64], Active Implementation Frameworks [63,68], Understanding-User-Context Framework [62], Conceptual Model [17], framework by Grol et al. [22], framework by Cochrane et al. [59], framework by Nutley et al. [21], Ecological Framework by Durlak and DuPre [57], CFIR [60], framework by Gurses et al. [58], framework by Ferlie and Shortell [61], Theoretical Domains Framework [66]
Classic theories	Theories that originate from fields external to implementation science, e.g. psychology, sociology and organizational theory, which can be applied to provide understanding and/or explanation of aspects of implementation	Theory of Diffusion [107], social cognitive theories, theories concerning cognitive processes and decision making, social networks theories, social capital theories, communities of practice, professional theories, organizational theories
Implementation theories	Theories that have been developed by implementation researchers (from scratch or by adapting existing theories and concepts) to provide understanding and/or explanation of aspects of implementation	Implementation Climate [116], Absorptive Capacity [117], Organizational Readiness [118], COM-B [119], Normalization Process Theory [120]
Evaluation frameworks	Specify aspects of implementation that could be evaluated to determine implementation success	RE-AIM [124]; PRECEDE-PROCEED [125]; framework by Proctor et al. [126]

# Figure 1

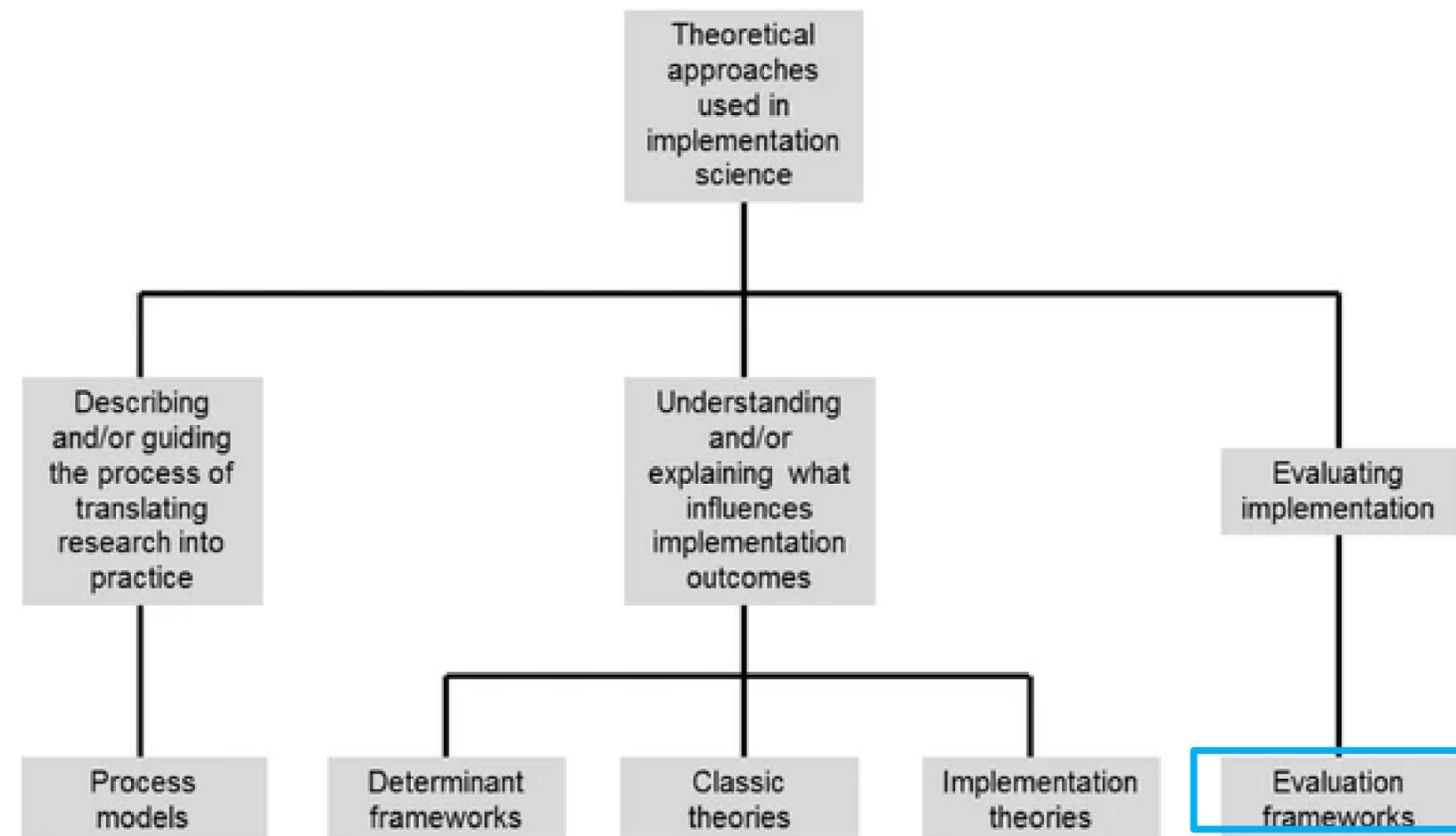
From: [Making sense of implementation theories, models and frameworks](#)

DEBATE

Open Access

## Making sense of implementation theories, models and frameworks

Per Nilsen



Three aims of the use of theoretical approaches in implementation science and the five categories of theories, models and frameworks.

**Table 1 Five categories of theories, models and frameworks used in implementation science**

Category	Description	Examples
Process models	Specify steps (stages, phases) in the process of translating research into practice, including the implementation and use of research. The aim of process models is to describe and/or guide the process of translating research into practice. An action model is a type of process model that provides practical guidance in the planning and execution of implementation endeavours and/or implementation strategies to facilitate implementation. Note that the terms “model” and “framework” are both used, but the former appears to be the most common	Model by Huberman [40], model by Landry et al. [41], model by Davies et al. [43], model by Majdzadeh et al. [44], the CIHR Model of Knowledge Translation [42], the K2A Framework [15], the Stetler Model [47], the ACE Star Model of Knowledge Transformation [48], the Knowledge-to-Action Model [13], the Iowa Model [49,50], the Ottawa Model [51,52], model by Grol and Wensing [53], model by Pronovost et al. [54], the Quality Implementation Framework [27]
Determinant frameworks	Specify types (also known as classes or domains) of determinants and individual determinants, which act as barriers and enablers (independent variables) that influence implementation outcomes (dependent variables). Some frameworks also specify relationships between some types of determinants. The overarching aim is to understand and/or explain influences on implementation outcomes, e.g. predicting outcomes or interpreting outcomes retrospectively	PARIHS [5,64], Active Implementation Frameworks [63,68], Understanding-User-Context Framework [62], Conceptual Model [17], framework by Grol et al. [22], framework by Cochrane et al. [59], framework by Nutley et al. [21], Ecological Framework by Durlak and DuPre [57], CFIR [60], framework by Gurses et al. [58], framework by Ferlie and Shortell [61], Theoretical Domains Framework [66]
Classic theories	Theories that originate from fields external to implementation science, e.g. psychology, sociology and organizational theory, which can be applied to provide understanding and/or explanation of aspects of implementation	Theory of Diffusion [107], social cognitive theories, theories concerning cognitive processes and decision making, social networks theories, social capital theories, communities of practice, professional theories, organizational theories
Implementation theories	Theories that have been developed by implementation researchers (from scratch or by adapting existing theories and concepts) to provide understanding and/or explanation of aspects of implementation	Implementation Climate [116], Absorptive Capacity [117], Organizational Readiness [118], COM-B [119], Normalization Process Theory [120]
Evaluation frameworks	Specify aspects of implementation that could be evaluated to determine implementation success	RE-AIM [124]; PRECEDE-PROCEED [125]; framework by Proctor et al. [126]

# Take-Aways

- Consider stage of implementation and what key questions you aim to answer
- Identify types of data you might collect as well as methods/study type
- Consider application of a TMF

# Objective

1

Learn how D&I models, theories, and frameworks have been applied in complementary and integrative health research



# Applying Implementation Theory: Case Study #1 Examining CIH Therapies in the VA



Stephanie Taylor, PhD<sup>1,2</sup>;

<sup>1</sup> VA Health Services Research, Greater Los Angeles Healthcare System, LA, CA

<sup>2</sup> Department of Medicine and Department of Health Policy and Management, UCLA, Los Angeles, CA

# Acknowledgements

- This project was funded by the Department of Veterans Affairs': Office of Patient-Centered Care and Cultural Transformation, Health Services Research and Development, Quality Enhancement Research Initiative.
- Rendelle Bolton, MA MSW 1,3; Alexis Huynh, PhD 1,2 ; Kelly Dvorin, PsyD 1,3; Rani Elwy, PhD 1,3,4 ; Barbara G. Bokhour, PhD1,3,4
- The views are the author's and do not represent the views of the Department of Veterans Affairs or the U.S. Government.
- 1 Center for Evaluating Patient-Centered Care in VA (EPCC-VA)  
2 Center for the Study of Healthcare Innovation, Implementation and Policy (CSHIIP); Greater Los Angeles Healthcare System, LA, CA
- 3 Center for Healthcare Organization and Implementation Research (CHOIR); Edith Nourse Rogers Memorial VA Medical Center, Bedford, MA;
- 4 Boston University School of Public Health

# Project Purpose

- ~ 10 years ago – VA’s Whole Health initiative to transform from a medical/disease care system to a health care system.
- Overseen by VA Office of Patient Centered Care and Cultural Transformations (OPCCT&CT)
- OPCCT&CT’s ask – tell us how CIH therapies were being implemented.
- Intention –
  - to help shape strategy and policy
  - To support CIH program leads and practitioners with their local CIH implementation.

Taylor SL, Bolton R, Hyunh A, Dvorin K, Elwy AR, Bokhour B, Whitehead A, Kligler B. What Should Health Care Systems Consider When Implementing Complementary and Integrative Health: Lessons from Veterans Health Administration. *J Altern Complement Med.* 2019; 25(S1): S52–S60.

# So What Did We Want to Know?

## - Research Questions

- 1) What challenges do VA medical center staff face when attempting to implement CIH therapies?
- 2) What factors facilitated that implementation?
- 3) Did they use any strategies to overcome challenges?

# So How Did we Get There - Methods

- In-person semi-structured interviews with 150 key informants
- Interview content based
  - Our prior knowledge of VA CIH implementation issues.
  - Greenhalgh's Model of Diffusion in Service Organizations
- 8 VA medical centers
- 2-day site visits February-August 2015
- Qualitative analysis – audio record to get quotes

# Methods – Who Were the 150 Key Informants?

- Executive leadership of hospitals
- Dept. Chairs (Primary care, MH, Rehab, etc)
- MDs in those Depts
- CIH therapy providers
- CIH therapy program leaders

## Greenhalgh's Framework Components

## Examples In Framework, that We Customized for CIH therapies

### System antecedents factors –

Factors that facilitate or hinder a facility's ability to engage in decision process to adopt or delivery CIH therapies

### Structure:

- facility size, maturity,
- degree of differentiation among service units, formalization,
- discretionary funding for innovation, and
- how decision processes are structured

### Absorptive capacity for new knowledge

- Leaders and providers have knowledge and skill set to adopt and deliver CIH,
- integrate new knowledge about CIH;
- Presence, structure of information and communication networks between leadership, providers and staff, among CIH providers, and between VA and public

### Receptive context for change

# Greenhalgh's Framework Components and Her Examples that We Customized for CIH

**System readiness  
factors –**

**Factors that affect  
the ability of facility  
to successfully adopt  
CIH therapies**

- **Alignment between innovation and organizational goals for growth and transformation**
- **Formal and informal structures for innovation communication and dissemination**
- **Advanced and structured planning for innovation adoption and delivery**

# Greenhalgh's Framework Components and Her Examples that We Customized for CIH

Adoption/assimilation drivers –

Factors that influence decision to adopt and deliver CIH Therapies

- **Perceived need** for innovation
- **Evidence on effectiveness** of innovation
- **Motivation, benefits and risks** of adopting innovation
- **Authority/autonomy** to adopt innovation at the department or program level
- **Fit** of innovation modality with adopter's goals
- **Complexity or simplicity** of innovation, level of skill required to adopt
- **Having a "Champion"**
- Use of formal and informal **networks** and other organization structures to communicate and disseminate adoption decisions

# Greenhalgh's Framework Components and Her Examples that We Customized for CIH

## Implementation and Routinization-

### Factors that affect CIH therapy delivery

- Decision making devolved to frontline teams
- Hands-on approach by leaders and managers
- Human resource issues, especially training
- **Dedicated resources**
- Internal communication
- External collaboration
- Reinvention/development
- Feedback on progress

# Interview Topics

1. Leadership support/ Funding/Space allocation
2. Staff and prov availability/ hiring issues
3. Awareness of CIH availability/marketing
4. Knowledge, attitudes, beliefs about scientific evidence
5. Perceived patient demand
6. Provider referral issues
7. Competing national/local priorities
8. Program structure
9. EMR documentation issues/codes
10. Champion
11. Tech support
12. \*\*\*\* Secret sauce- What made them successful

# Methods – Why Did We.....

- **Choose 8 sites**
  - So there was some variation in their geographic location, rural/urban status, and size.... Things that might affect attitudes and resources
- **Conduct site visits as opposed to phone calls**
  - So we could have open and direct conversations about political issues and more easily detect biases via body language

# Results

- We gathered the top 10 facilitators, challenges and strategies to overcome those challenges.
- We supported each with several examples, using quotes to drive the point home.

# Results-10 Main CIH Therapy Adoption or Implementation Facilitators

- 1) Organizing the individual types of CIH into 1 program instead of individually integrating them into depts
- 2) Having a CIH strategic plan and steering comm.
- 3) Having a strong, professional, enthusiastic CIH point of contact and practitioners
- 4) Leadership support
- 5) Providers' positive attitudes toward CIH
- 6) Demonstrating evidence of CIH effectiveness

## Results-10 Main CIH Adoption or Implementation Facilitators

- 7) Having a champion
- 8) Passion and perseverance of CIH points of contact and practitioners
- 9) Marketing the CIH programs
- 10) Positioning CIH as pain treatment options, whole health approach, or patient centered care

# Facilitator Example # 1 – Having One Main Integrated CIH Program Instead of Integrating Individual Types CIH in Depts

- Why is it a facilitator - Allows for greater efficiency and facilitates referrals because providers are more easily aware of the CIH therapies available.
- Quotes - As one department chair put it,  
*“[At first] we didn’t have any department to own the programs. We love it [CIH] and we want to do it. But the problem is owning and sustaining. There are crises and demands that pop up, and [XX department] was able to bring in CIH and make it sustainable.”*

## Facilitator Example # 2 – Having a CIH Strategic Plan

- One person said the most important thing they would tell other facilities to do is to have a strategic plan:  
*“...taking the time to put together a strategic plan with a vision and a mission and three things that we want to do this this year, ...and an articulation of what those are and why that fits into an overall vision for integrative health at the hospital is important....People had sat around in working groups for years and years thinking beautiful thoughts, but putting them on paper makes a difference.”*
- One department chair said,  
*“Starting up CIH is like starting up a business, but we don’t have a business plan, so we really aren’t as successful at doing this as we could be. We don’t really know what we’re doing”.*

# Results: Main Implementation Challenges

- 1) HR issues – Unclear/no occupational codes, credentialing criteria for acupuncturists, massage therapists, and instructors for yoga, tai chi, and qigong practitioners
- 2) Insufficient or inappropriate space to deliver CIH
- 3) Insufficient supply of CIH programs/practitioners
- 4) Inconsistent language to describe CIH (e.g., “CAM”, “CAM”, “CIH”, “IHW”, “IHH”)
- 5) Lack of national codes to document CIH use
- 6) Limited guidance on how to implement CIH programs
- 7) Lack of funding for CIH programs

# **Strategy Example #1-** **How to Gain Leadership Support**

- Provide info on CIH's ROI/business case
- Relay positive patient feedback and demand
- Review CIH evidence in top journals (JAMA, NEJM)
- Provide an opportunity for leadership to experience CIH for themselves at CIH open houses or fairs
- Have providers telling leadership of their support of CIH

# **Examples of Actions VA OPCC&CT Took in Response to these Issues**

## **1) Addressed Difficulties Hiring CIH Practitioners**

- Wrote nationally classified position descriptions, provided guidance around provider minimum proficiencies

## **2) Improved Dissemination of CIH Implementation Info**

- Created an intranet page, wrote Resource Guide to support the field in implementing CIH, Internal listservs, community of Practice Calls

## **3) Provided Consultants for CIH Implementation**

## **4) Promoted Consistent Language to Describe Programs**

(e.g., “CAM”, “CIH”, “IHW”, “IHH”)

## Conclusion

Using a theoretical framework is key to developing a comprehensive but targeted successful interview guide to capture what matters most.

It can help produce rich qualitative data that can be used to collect can be used to inform key stakeholders at all levels in your organization to change policy and practice to support CIH therapy implementation.

## Objective 2

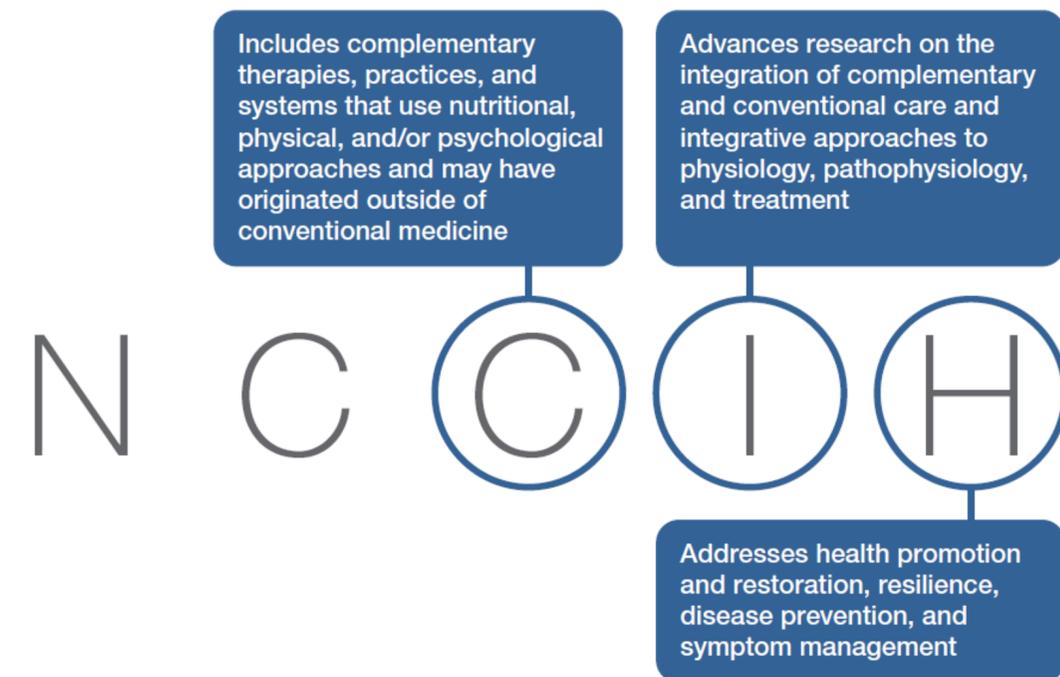
Understand NCCIH  
interests in D&I  
science

Become familiar  
with NIH/NCCIH  
funding  
opportunities and  
other resources for  
conducting D&I  
research



# NCCIH Mission

To determine, through rigorous scientific investigation, the fundamental science, usefulness, and safety of complementary and integrative health approaches and their roles in improving health and health care



<https://www.nccih.nih.gov/about/nccih-2016-strategic-plan>



# NCCIH Research Priorities

## NCCIH Strategic Plan FY 2021–2025

Director's Message

Introduction

+

Objective 1: Advance  
Fundamental Science and  
Methods Development

Objective 2: Advance Research  
on the Whole Person and on  
the Integration of  
Complementary and  
Conventional Care

Objective 3: Foster Research  
on Health Promotion and  
Restoration, Resilience,  
Disease Prevention, and  
Symptom Management

Objective 4: Enhance the  
Complementary and Integrative  
Health Research Workforce

Objective 5: Provide Objective,  
Evidence-Based Information on  
Complementary and Integrative  
Health Interventions

## NCCIH Strategic Plan FY 2021–2025

Share 

*Mapping a Pathway to Research on Whole Person  
Health*



### Executive Summary

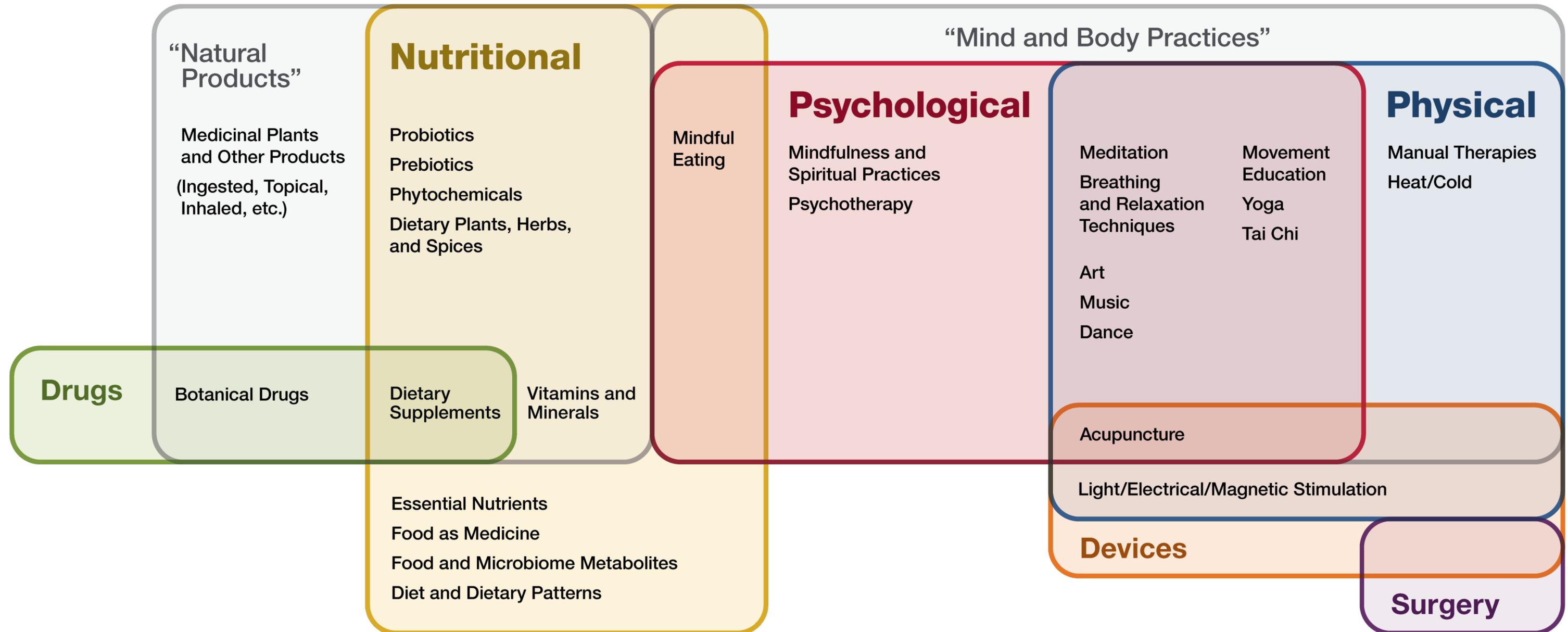
The National Center for Complementary and Integrative Health (NCCIH) was created more than 20 years ago to facilitate the study and evaluation of complementary and alternative health practices. During the past two decades, NCCIH has expanded the scientific knowledge base around these practices and established resources to disseminate this information to the public—ultimately impacting their use. The Center has worked to advance the position that evidence-based complementary therapies should be “integrated” with and not used as an “alternative” to conventional medicine.

NCCIH’s new strategic plan for Fiscal Years (FY) 2021–2025 expands the definition of integrative health to include whole person health, that is, empowering individuals, families

<https://www.nccih.nih.gov/about/nccih-strategic-plan-2021-2025>



# Complementary and Integrative Health Approaches



<https://nccih.nih.gov/about/nccih-strategic-plan-2021-2025>



# Research to Practice Gap in Complementary and Integrative Health

Acupuncture is not reaching people in conventional health care settings.

15-17 years

## Research

Acupuncture demonstrates efficacy and effectiveness for chronic low-back pain, and the American College of Physicians recommend it as a first-line treatment for this condition.

## Dissemination and implementation research

What strategies can we test to increase the uptake and adoption of acupuncture in conventional healthcare?

## Practice



# NCCIH D&I Research Priorities

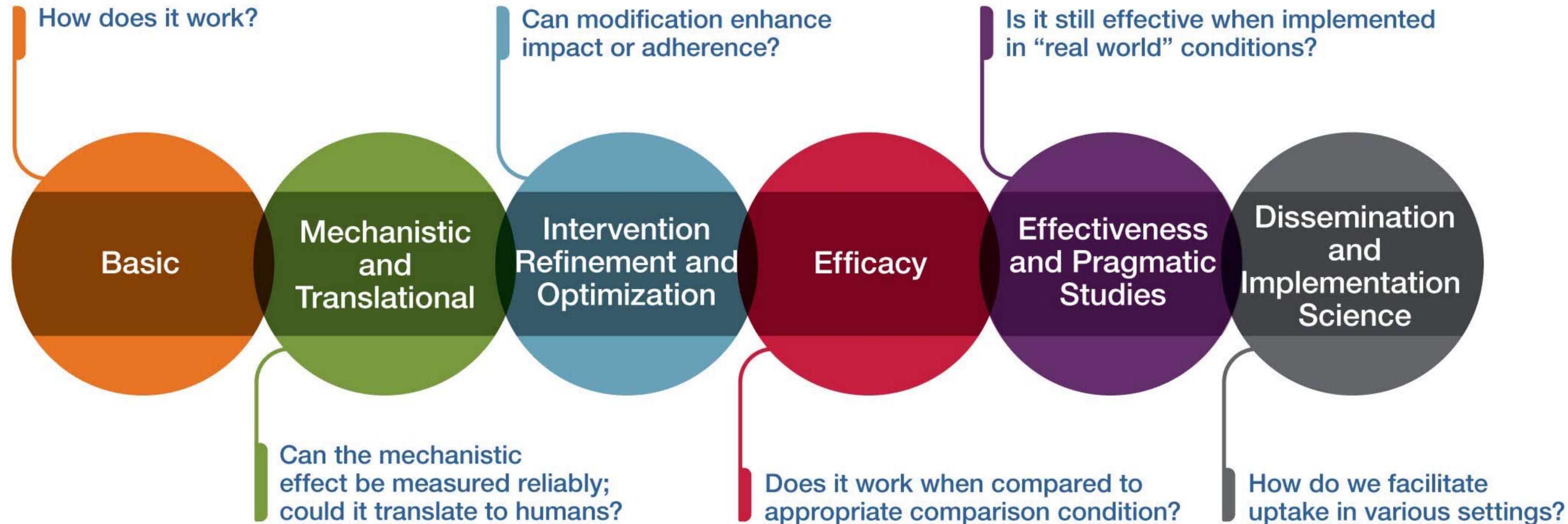
- Consider “implementability” early in the intervention development process
- Strategies that facilitate uptake and adoption of evidence-based complementary and integrative health interventions in real-world settings
- Hybrid studies to simultaneously demonstrate effectiveness and test strategies to increase adoption and uptake
- Complementary and integrative health interventions to foster de-implementation
- Innovative designs (e.g., randomized cluster trials, pragmatic trials)
- Implementation studies that address health disparities
- Methods and tools development
- Training and career development in D&I science

<https://www.nccih.nih.gov/about/nccih-strategic-plan-2021-2025>

<https://www.nccih.nih.gov/top-scientific-priorities/implementation-science-for-complementary-and-integrative-health>



# NCCIH Research Framework

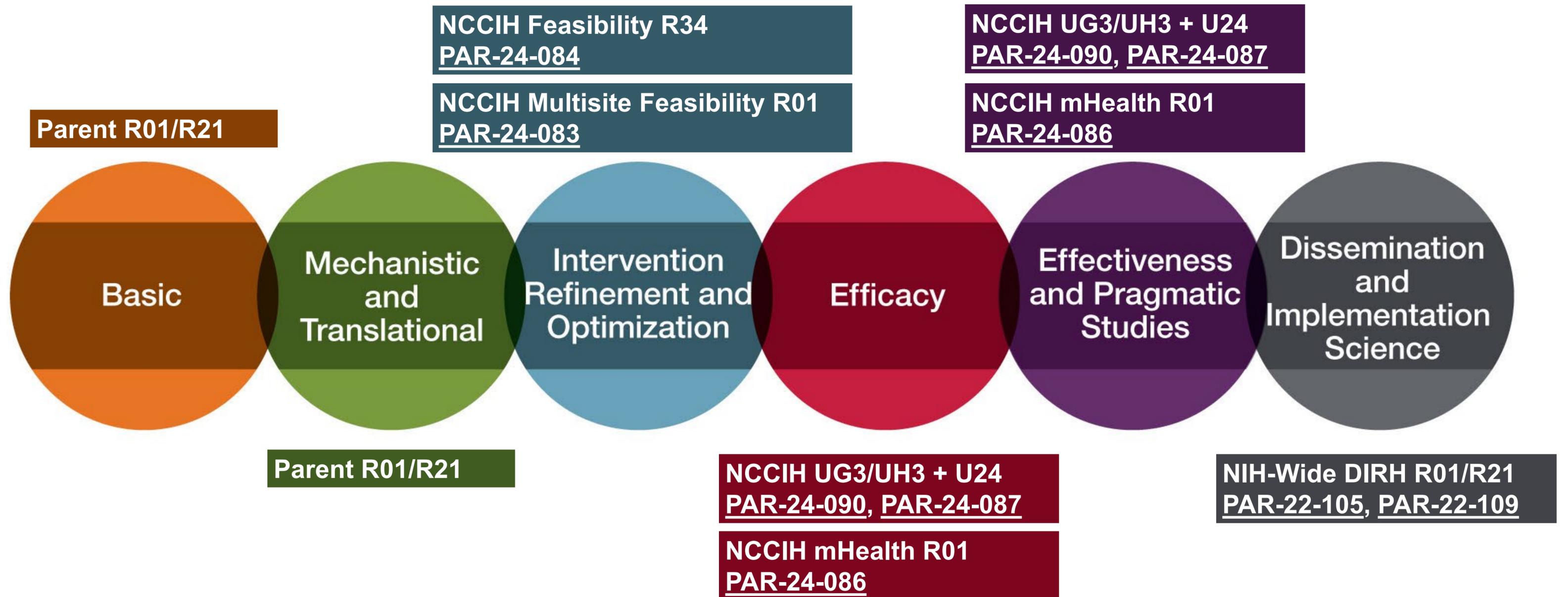


<https://www.nccih.nih.gov/grants/research-framework>



# NIH/NCCIH Funding Opportunities

## Where and When to Conduct D&I Research?



<https://www.nccih.nih.gov/grants/funding/clinicaltrials>



DEBATE

Open Access

# Writing implementation research grant proposals: ten key ingredients

Remember! 

- Evidence that the intervention is feasible and effective
- Clear conceptual theory/model/framework
- Clear engagement process of stakeholders
- Information that reflects the setting's readiness, capacity, or appetite for change
- Strategies to implement the intervention are clearly defined and justified
- Study team has collective experience with the study setting, intervention, and implementation science
- Measurement plan is clear and justified.

Use of scientific methods to study which approaches work better to inform a specific audience about THE THING = **dissemination research**

Use of scientific methods to study how well the strategy works to promote uptake of THE THING = **implementation research**



# How to Find Other NIH D&I-Related Funding Opportunities

## Funding Opportunities

Search a list of federal notices of funding opportunities (NOFOs) related to prevention research. You can filter by topic area or research method. For a list of all active funding opportunities, please visit the [NIH Guide for Grants and Contracts](#).

### Filter Options

- Active funding opportunities
- Expired funding opportunities
- All

#### Prevention Topics

- Alzheimer's Disease
- Cancer
- COVID-19
- Diabetes
- Diet and Nutrition
- Environmental Health
- Heart Disease
- Infectious Disease
- Injury and Violence
- Kidney Disease

#### Cross-Cutting Topics

- Dissemination and Implementation
- Health Disparities
- Screening

#### Research Methods

- Big Data Science
- Informatics
- Methods Development
- Systems Science

#### Organizations

- ODP
- AHRQ



Clear Filters

Dissemination and Implementation NCCIH

Showing 1 - 20 of 28 Results

Items per page

Title	NOFO Number	Release Date	Expiration Date
-------	-------------	--------------	-----------------

<b>Notice of Special Interest (NOSI): Developing and Testing Multi-level Physical Activity Interventions to Improve Health and Well-Being</b>	<b>NOT-OD-24-058</b>	02/20/2024	11/14/2027
---	----------------------	------------	------------

**Activity Code(s):** R01, R03, R21, R34, U24, UG3/UH3  
**Clinical Trials:** Basic Experimental Studies with Humans (BESH) Required, Clinical Trial Not Allowed, Clinical Trial Optional, Clinical Trial Required  
**Organizations:** ODP, NIA, NIAMS, NICHD, NINR, NIMHD, NCCIH, NCI, OBSSR, ODS, ORWH  
**Categories:** Cancer, Obesity, Other Health Conditions, Physical Activity, Substance Use, Methods Development, Dissemination and Implementation, Health Disparities

<b>Transformative Research to Address Health Disparities and Advance Health Equity (U01 Clinical Trial Optional)</b>	<b>RFA-NR-24-004</b>	01/23/2024	03/22/2024
--	----------------------	------------	------------

**Activity Code(s):** U01  
**Clinical Trials:** Clinical Trial Optional  
**Organizations:** NINR, NCCIH, NHLBI, NIA, NIAAA, NIAMS, NIDA, NIDCR, NIEHS, NIMH, NINDS, OBSSR, ODP, ORWH  
**Categories:** Alzheimer's Disease, Environmental Health, Heart Disease, Injury and Violence, Other Health Conditions, Respiratory Disease, Stroke, Substance Use, Methods Development, Dissemination and Implementation, Health Disparities, Tobacco Use, Diet and Nutrition, Obesity

<b>Feasibility Clinical Trials of Mind and Body Interventions for NCCIH High Priority Research Topics (R34 Clinical Trial Required)</b>	<b>PAR-24-084</b>	12/21/2023	11/13/2027
---	-------------------	------------	------------

**Activity Code(s):** R34  
**Organizations:** NCCIH  
**Categories:** Other Health Conditions, Dissemination and Implementation, Methods Development

<b>NCCIH Multi-Site Feasibility Clinical Trials of Mind and Body Interventions (R01 Clinical Trial)</b>	<b>PAR-24-083</b>	12/20/2023	11/17/2026
---	-------------------	------------	------------

<https://prevention.nih.gov/funding/funding-opportunity-announcements/dissemination-and-implementation>



# D&I Research Resources

- Implementation Science Methodologies for Complementary and Integrative Health Research (Clark, et al., 2021, *JACM*)
  - <https://pubmed.ncbi.nlm.nih.gov/33788600/>
- Orientation to the science of dissemination and implementation (video)
  - <https://academyhealth.org/DIScience>
- Helping navigate dissemination and implementation models, theories and frameworks (webtool)
  - <https://dissemination-implementation.org/>
- Samples of successful D&I grant applications
  - <https://cancercontrol.cancer.gov/is/funding/sample-grant-applications>
- Training Institute for Dissemination and Implementation Research in Cancer (TIDIRC)
  - <https://obssr.od.nih.gov/training/training-supported-by-the-obssr/training-tidirh>
- HEAL Data2Action Program implementation guides and resources
  - <https://www.hd2arasc.org/implementation-guides-and-measures/>



# NIH Grant Resources

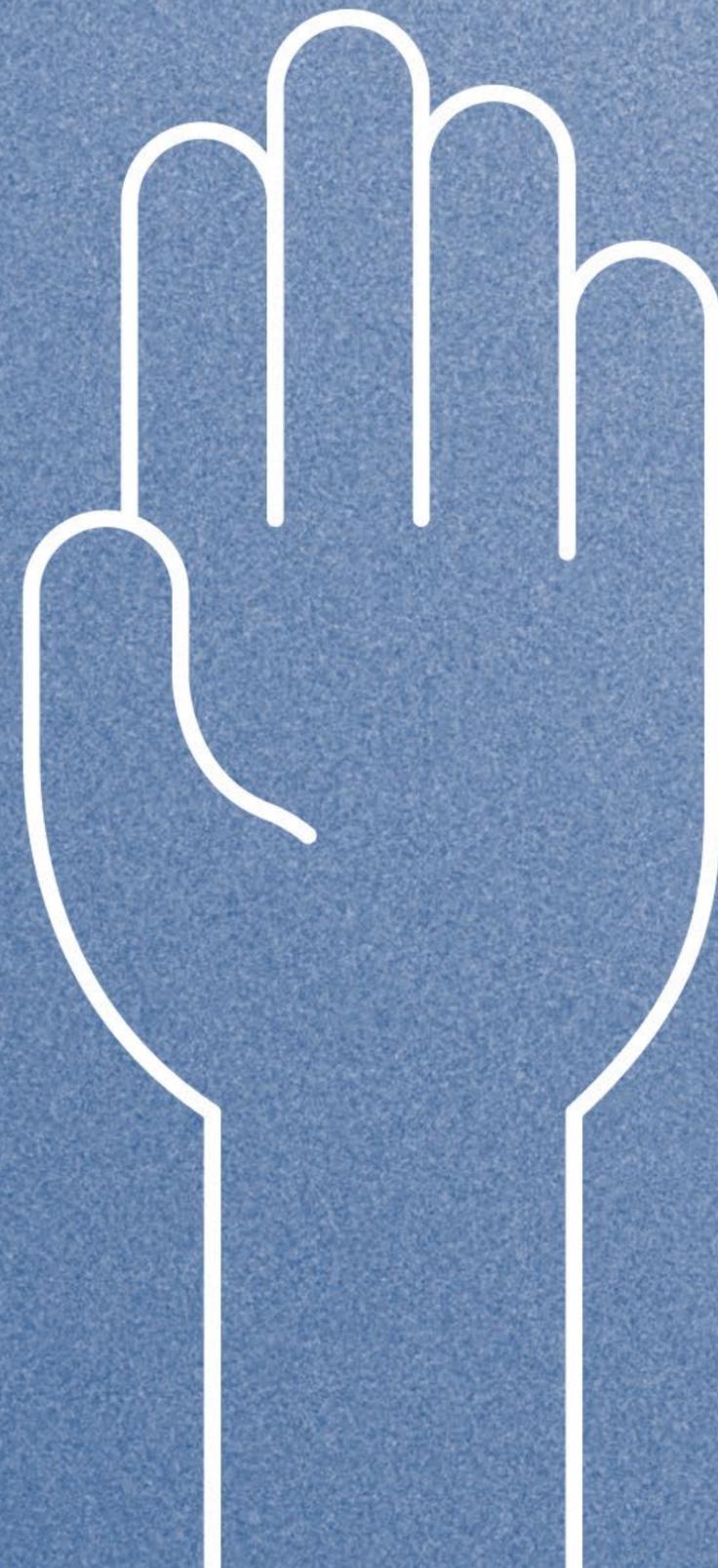
- Finding funded grants
  - <https://reporter.nih.gov/>
  - <https://clinicaltrials.gov/>
- Finding potential collaborators and/or mentors
  - <https://reporter.nih.gov/matchmaker>
- General NIH grant application resources
  - <https://www.nccih.nih.gov/grants/grant-application-resources>
- Crash Course in NIH Grants Fundamentals
  - <https://nexus.od.nih.gov/all/2023/07/12/crash-course-in-nih-grants-fundamentals/>
- Writing a specific aims page
  - <https://www.biosciencewriters.com/NIH-Grant-Applications-The-Anatomy-of-a-Specific-Aims-Page.aspx>



# Questions?

*Let's connect!* 

[Jennifer.Baumgartner@nih.gov](mailto:Jennifer.Baumgartner@nih.gov)



# Networking Break (15 mins)



# Objective 3

Learn about opportunities  
in conducting D&I  
research in  
complementary and  
integrative health in  
diverse settings



# Scaling-Up Integrative Pain Management in Federally-Qualified Health Centers

**Dr. Isabel Roth, DrPH, MS**

Research Assistant Professor

Program on Integrative Medicine

Department of Physical Medicine and Rehabilitation

**Mentors:**

Dr. Jennifer Leeman

Dr. Paula Gardiner

Dr. Shabbar Ranapurwala

Dr. Justin Trogdon

Dr. Susan Gaylord

# Aim 1: Interviews with National Stakeholders

Safety-net providers have been successfully implementing and delivering IMGVs for years. What can we learn from them?

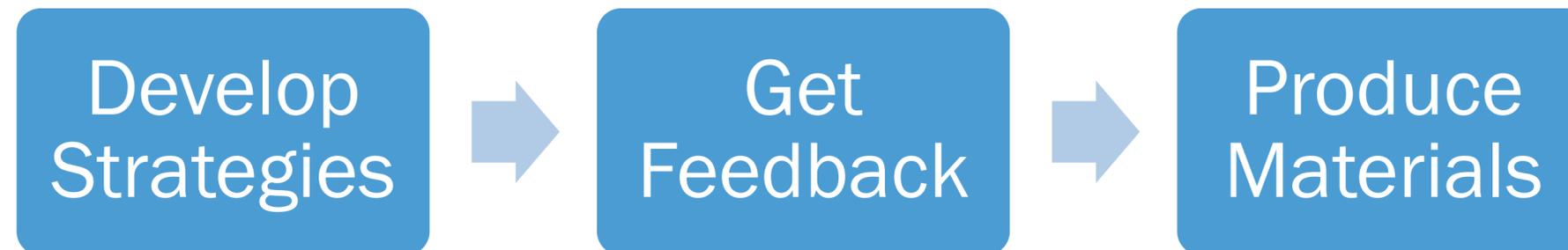
- Qualitative interviews with safety-net providers, staff, and administrators with experience implementing IMGV (or similar) programs for patients with chronic pain
- Recruited through national listservs and snowball sampling
- Qualitative analysis using thematic content analysis, guided by Consolidated Framework of Implementation Research



# Aim 1: Analysis to Identify Strategies

From qualitative data to action

- Implementation Mapping
  - Map barriers and facilitators from interview data to theory-based strategies
- Share proposed strategies with FQHC stakeholders in NC interested in implementing IMGV
- Prepare materials for implementation plan



# Aim 2: Implement and Evaluate

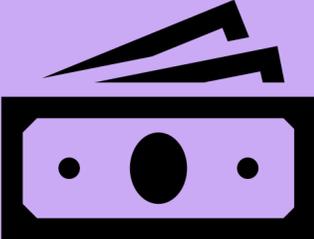
**Pilot Feasibility at Two FQHCs**



**Evaluate patient preceptions and health outcomes**



**Evaluate Cost**



**Assess Provider and Staff Perspectives**



# OPTIMUM Stakeholder Engagement Supplement

**Community  
Advisory Board**



**Focus Groups**



**Interviews**

Optimizing Pain Treatment  
in Medical Settings  
Using Mindfulness

**OPTIMUM  
Research Team**



# Implementing nonpharmacologic treatments for back pain and knee osteoarthritis in primary care settings

ICIMH  
April 13, 2024

---

Eric J. Roseen, DC, PhD  
Assistant Professor, Section of General Internal Medicine  
Director, Program for Integrative Medicine and Health Disparities  
Boston University School of Medicine and Boston Medical Center



Boston University School of Medicine



# Access to chiropractic care for low back pain in community health centers

NCCIH K23 career development award  
(1K23AT010487)

PI: Eric Roseen, DC, PhD – Boston Medical Center (BMC)

Mentors: Robert Saper MD MPH (Cleveland Clinic),  
Natalia Morone MD MS (BMC), David Felson MD MPH (BMC),  
and Roni Evans DC PhD– University of Minnesota

**Clinical Intervention:  
Chiropractic care<sup>1</sup>**

<b>Patient Self-care</b> Patient education Exercise instruction	<b>Therapeutic Modalities</b> Cold/Ice, Heat Electrical simulation Ultrasound Acupuncture
<b>Manual Therapies</b> Spinal manipulation Spinal mobilization Manual traction Soft-tissue therapy	<b>Other</b> Nutritional supplements Orthopedic supports

**Develop and pilot  
Implementation strategies<sup>2</sup>**

Develop network of community-based DCs Identify and prepare champions Identify barriers and facilitators Educational meeting for PCPs/DCs Educational materials for PCPs/patients Changes to the electronic health record Use advisory boards and workgroups
--

**Implementation Outcomes<sup>3</sup>**

<b>Adoption</b> Acceptability Feasibility Appropriateness
--

1. Beliveau 2017, 2. Powell 2015, 3. Proctor 2011

# **TAIHIKNEE Study**

Hybrid type 1 implementation effectiveness trial of remote tai chi for knee OA in four healthcare systems

NCCIH – UG3/UH3 large pragmatic trial  
(1UG3AT012413)

## MPI Team

Chenchen Wang, MD, MSc – Tufts Medical Center

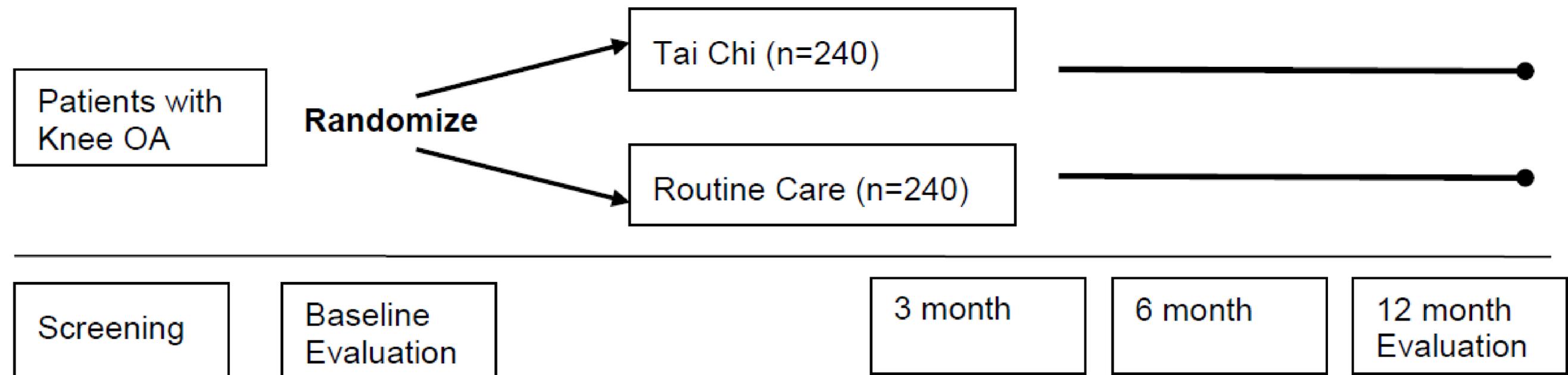
Eric Roseen, DC, PhD – Boston Medical Center

Robert Saper, MD, MPH – Cleveland Clinic

Helen Lavretsky, MD, MS – UCLA Health

# TAI CHI KNEE Trial Overview

<b>Population</b>	Adults over 45 years with Symptomatic knee OA (ACR Criteria)
<b>Setting</b>	Primary care clinics in four healthcare systems
<b>Design</b>	An embedded, pragmatic, randomized trial
<b>Intervention</b>	Remote tai chi (3-month twice weekly)
<b>Control</b>	Routine Care
<b>Clinical outcomes</b>	Pain interference (primary) Knee Pain and Function, Pain medication, Quality of life (secondary)
<b>Anticipated Implementation Strategies</b>	Internal facilitation, educational meeting, development and distribution of educational materials
<b>Implementation outcomes</b>	Feasibility of implementation strategies



# Panel Discussion

- Possible discussion questions:
  - What are some challenges and lessons learned on conducting complementary and integrative health D&I research?
  - Do you have any tips on increasing the implementability of complementary and integrative health interventions, especially during earlier phases of research?
  - How did you get involved in D&I research? What was most helpful to you in getting started?
  - How have you identified and maintained partners?
  - How much evidence is needed to move an intervention to implementation?



# Wrap-up

