Implementation Strategies Demystified: Selecting, Combining & Sequencing to Facilitate Change

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The 5 Stages of Strategic Implementation

- Goal-setting: clarify your vision
  - Define the problem and short- and long-term objectives
  - Identify the process of how to accomplish your objective
  - Customize the process for your staff
- Analysis: gather and analyze baseline data
- Formulate a strategy based on:
  - Existing and needed resources, consider alternative plans
  - Select and combine strategies as needed
- Implement your strategy – role clarity is key!
- Evaluate and control: establish clear metrics
  - Monitor internal and external factors

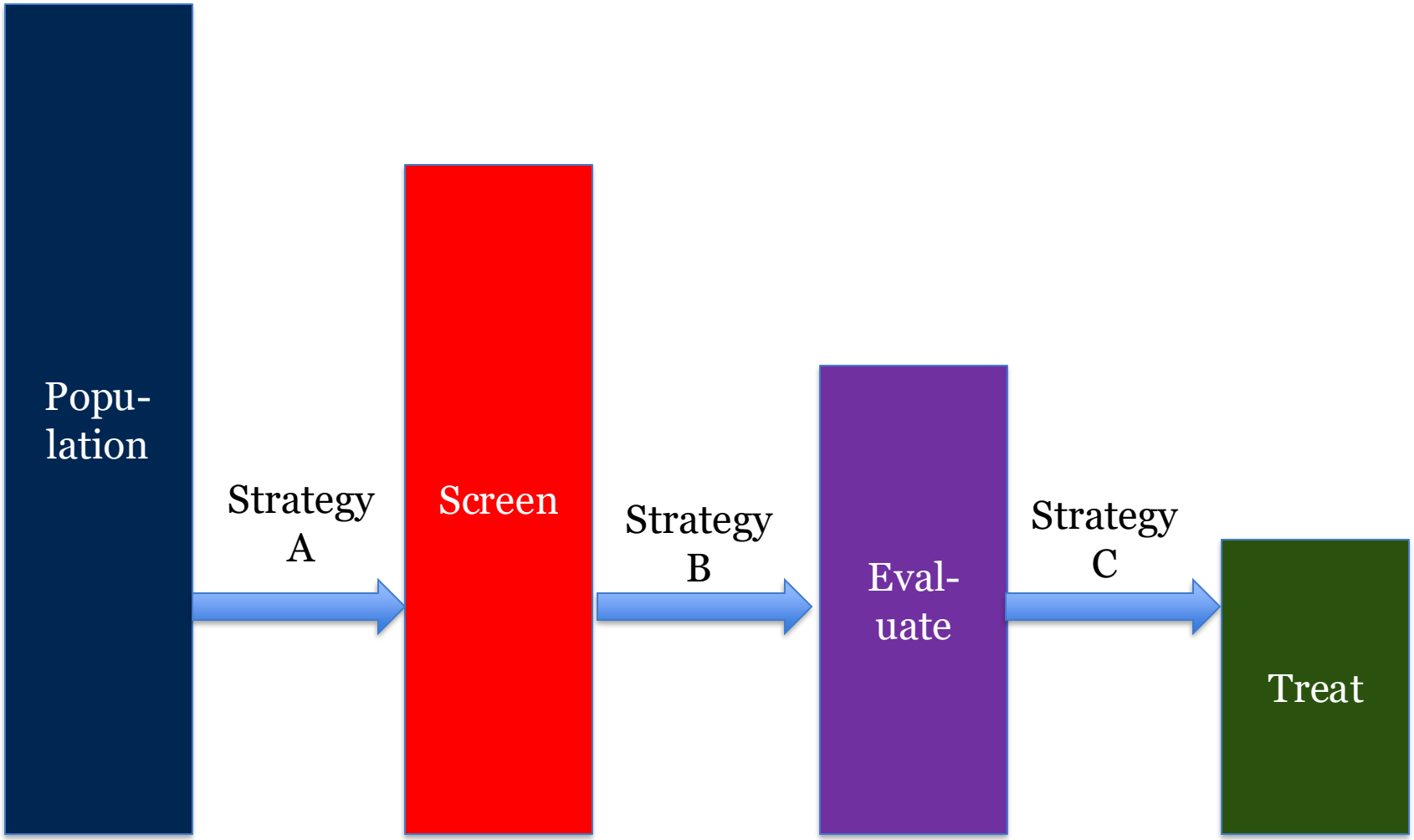
What are implementation strategies?

- Actions or activities taken to increase the adoption, implementation or sustainability of an evidence-based program, intervention or practice.
- They are the “HOW” of implementation science that gets the evidence-based practice ”TO” the people who need it.
- Combinations of implementation strategies – “BUNDLES” – of implementation strategies – as you often must combine them to address barriers across multiple levels of the socio-ecological model.

Types of Implementation Strategies

- **Discrete**: Single action or process (e.g., institute a system or reminders, provide audit and feedback, educational session or workshop)
- **Multi-faceted**: A combination of multiple discrete strategies (e.g., educational training + reminders)
- **Blended**: Multi-faceted strategies that have been protocolized and (often) branded (e.g., *ARC, LOI, NIATx*)
  - Availability of Response and Continuity Intervention, Leadership of Organization Change Intervention, Network for the Improvement of Addiction Treatment

The Need for Combining Implementation Strategies



Taxonomies to Classify Implementation Strategies

- Cochrane Effective Practice and Organization of Care Group (EPOC)
  - Classifies strategies under professional, organizational, financial and regulatory domains – not theory-driven
  - Relatively inflexible as it is designed for systematic reviews and underrepresents the relational, informal and emergent aspects of implementation
- Expert Recommendations for Implementing Change (ERIC)
  - Comprised of 73 discrete strategies in 9 domains and supports pragmatic, stakeholder-oriented pre-planning processes
- Behavioral Change Wheel (BCW)
  - Links individual behavioral determinants to intervention function
  - Strong for "behavior-focused" EBPs, but focuses mostly on individual-level implementation, rather than organizational or system changes
- Normalization Process Theory (NPT)
  - Identifies, characterizes and explains mechanisms that motivate and shape implementation processes

Normalization Process Theory (NPT): Constructs, General and Micro-Implementation Strategies

24 Constructs

4 Micro-implementation strategies

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Powell BJ et al, Implement Sci, 2015

Normalization Process Theory (NPT)

Table 1 NPT construct, implementation micro-strategies and general implementation strategies

NPT Constructs N=24	Implementation Micro-Strategies				General Implementation Strategies
	Information Strategies (what do staff need to *know* to contribute to implementation?)	**Empowerment Strategies (what needs to be *done* to equip staff to participate in implementation?)**	**Service User Strategies (how can service users *contribute* to implementation?)**	**Leadership Strategies (what do leaders need to do to *promote* implementation?)**	
NPT Construct: Strategic Intention How do contexts shape the formulation and planning of interventions and their components?	Determine how information about context influences the goals of implementation [44, 45]	Involve a wide range of staff and stakeholders in the planning process to ensure that differences in perspectives and needs are taken into account [46–48]	Service users should contribute to tailoring the implementation to meet their specific needs and circumstances [49]	Develop a comprehensive plan for staff and service users that outlines the implementation's objectives, taking into account the specific organizational context [45, 50–53]	Undertake collaborative work to build a coherent and inclusive implementation plan for the intervention
NPT Construct: Adaptive Execution How do contexts affect the ways in which users can find and enact workarounds that make an intervention and its components a workable proposition in practice?	Identify aspects of the intervention that might require staff to improvise workarounds or adjustments during implementation	Encourage staff to develop and share workarounds that overcome contextual challenges [54, 55]	Elicit service users' experiences and suggestions of practical workarounds that might not be apparent to healthcare providers [54, 56]	Establish an implementation framework for staff that allows for modifications and adaptations as the implementation is rolled out [47–49, 57–79]	Determine which components of the intervention can be adapted to better fit the target setting
NPT Construct: Negotiated Capacity How do contexts affect the extent that an intervention and its components can fit, or be integrated, into existing ways of working by their users	Engage with staff at all levels to understand their views on how the implementation can be integrated with current practices	Encourage staff to explore the compatibility of the implementation with their existing practices, structures, and capabilities	Elicit service user perspectives on the alignment of the implementation with their lifeworld and its routines	Collaboratively develop strategies with staff that align the implementation with existing workflows, modifying components where necessary to ensure a better fit [46, 47, 55 57, 78, 80–83]	Engage stakeholders to ensure the intervention can be integrated in workflows in its target setting
NPT Construct: Reframing organisational logics How do existing social structural and social cognitive resources shape the implementation environment?	Identify those features of the organization expected to affect implementation [59]	Involve key discussions about the organizational implications of implementation [49, 67, 75]	Assess service users' expectations of care	Deliver targeted initiatives (like training programs or policy revisions) for staff to align implementation with organizational goals and structures [44, 64, 84, 85]	Identify features of the target setting that are likely to support implementation

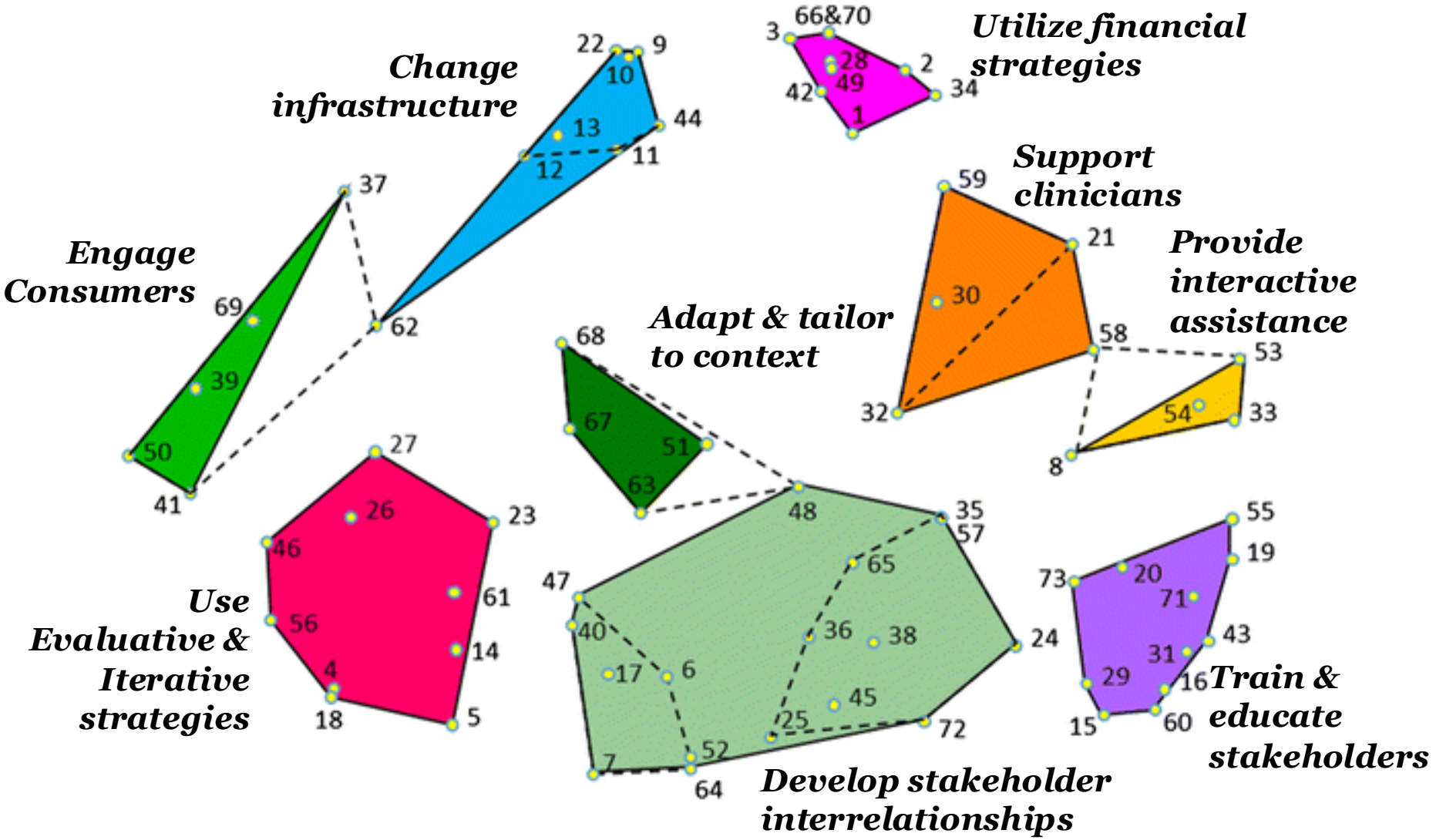
May, C.R. et al, Implement Sci, 2025

Expert Recommendations for Implementing Change (ERIC): Taxonomy of Implementation Strategies

Modified Delphi Method

Powell BJ et al, Implement Sci, 2015

Concept Mapping: 9 clusters (domains) and 73 strategies



Waltz T et al, Implement Sci, 2015

A Selection of Implementation Strategies

Use evaluative and iterative strategies	· Assess for readiness and identify barriers and facilitators · Audit and provide feedback · Purposefully reexamine the implementation
Adapt and tailor to context	· Tailor strategies · Promote adaptability · Use data experts
Train and educate stakeholders	· Conduct ongoing training · Distribute educational materials · Use train-the trainer techniques
Engage consumers	· Increase demand · Use mass media · Involve patients/consumers and family members
Change infrastructure	· Mandate change · Change record systems · Change physical structure and equipment

Waltz T et al, Implement Sci, 2015

A Selection of Implementation Strategies

• Facilitation • Provide local technical assistance • Provide clinical supervision	**Provide interactive assistance**
• Identify and prepare champions • Or Examples-of-implementation-strategies[66] etings • Identify early adopters	**Develop stakeholder interrelationships**
• Remind clinicians • Revise professional roles • Facilitate relay of clinical data to providers	**Support clinicians**
• Alter incentive/allowance structures • Access new funding • Fund and contract for the clinical innovation	**Utilize financial strategies**

Waltz T et al, Implement Sci, 2015

Implementation Strategies are Often Selected Through Thoughtful Pre-Implementation Research

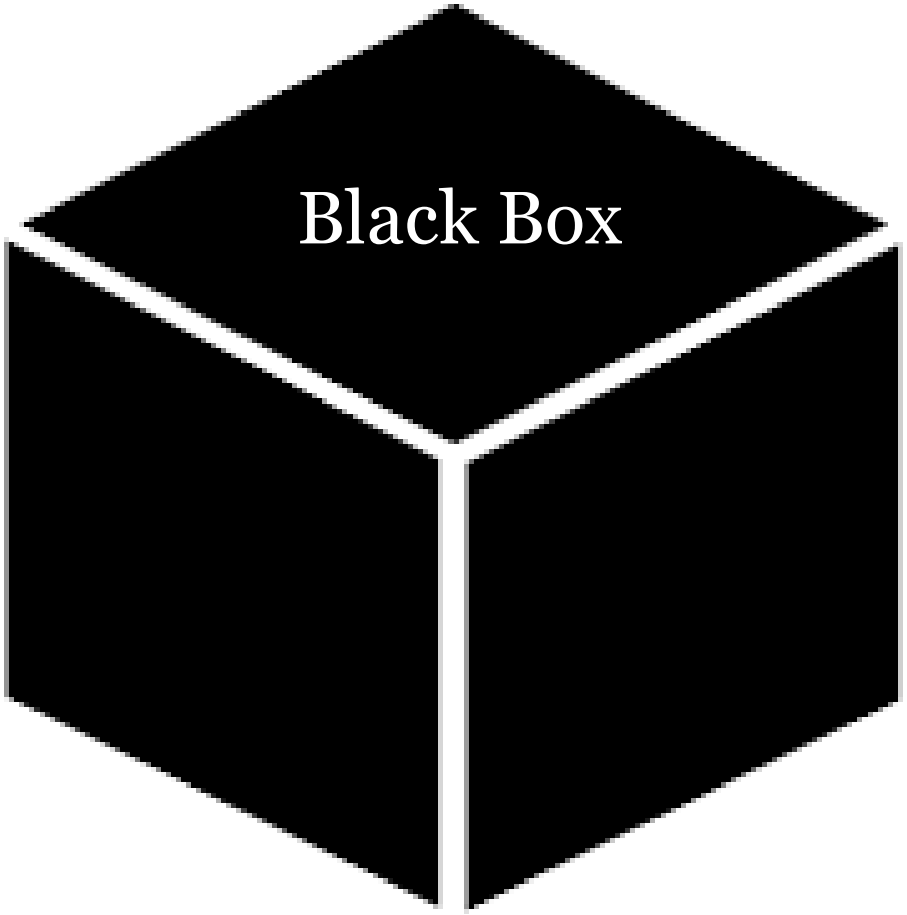
Understand the Barriers and Facilitators to Guide Selection and Tailoring of Implementation Strategies

- Essential to understand the implementation barriers and facilitator in order to guide implementation strategy(ies) to select
- Crucial to examine multi-level barriers and facilitators
- When strategies don't work as planned, it is critical to either re-assess barriers and/or tailor implementation strategy
- The Socioecological Model is an excellent framework to examine facilitators and barriers

Socio-Ecological Model – Multi-level

Selecting Your Intervention Strategy (or Strategies)

Pre-Implementation Research



Selected Implementation Strategies

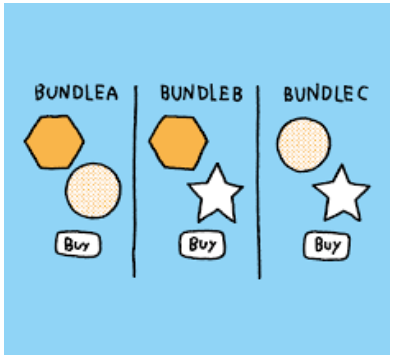
Selecting Your Intervention Strategy (or Strategies)

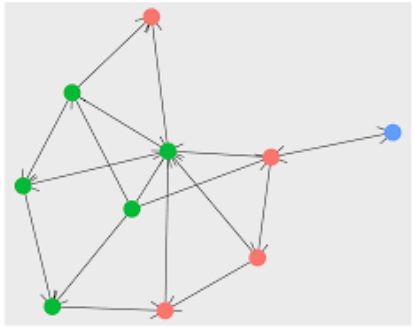
Concept Mapping

Group Model Building

Conjoint Analysis

Intervention Mapping

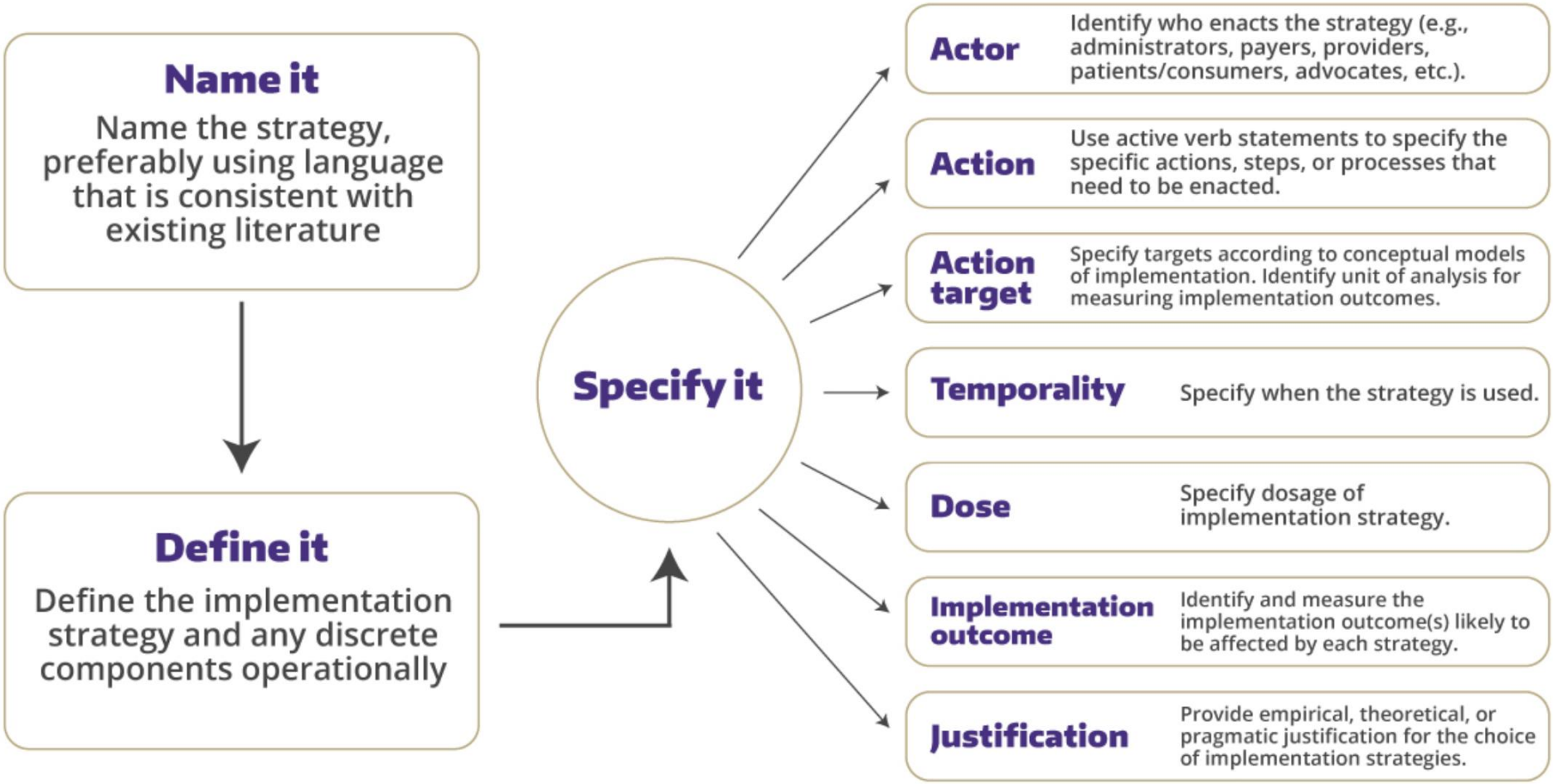




Require advanced methodological skills – not always easy!

Powell BJ et al, J Behav Health Svs Res, 2015

Specifying and Reporting Implementation Strategies for Reporting



Proctor EK et al, Implement Sci, 2013

Use of the Consolidated Framework for Implementation Research (CFIR) to Guide Selection

Strategy Design

Although the prospective use of the CFIR has been relatively infrequent, the CFIR can be used to inform design of implementation strategies. After completing a context assessment and identifying barriers and facilitators to implementing an innovation, strategies to mitigate barriers and leverage facilitators can be identified. This process can also be used to refine implementation processes through the course of implementation.

If you are using the CFIR to identify potential barriers to implementation, this knowledge can be used to help guide choice of implementation strategies to mitigate those barriers.

We have developed a tool that helps you "match" strategies to address barriers that were identified using the CFIR. Our published article describes how this tool was developed and its limitations. This article is also highlighted in our Blog section.

Implementation strategies were drawn from the Expert Recommendations for Implementing Change (ERIC) list of strategies. These strategies are described within the following articles:

- **Powell et al 2015: This article lists all 73 ERIC strategies with short descriptions. Longer rationale and descriptions are documented in Additional File 6 published with this article.**

CFIR x ERIC Matching Tool

Balancing the Selection of Strategies

Examples of Tailoring Strategies to Determinants (i.e., Barriers)

Identified Determinant*	Implementation Strategy
Lack of knowledge	Interactive educational sessions Social media campaigns
Perception/reality mismatch	Audit and feedback Digital support tools - dashboards
Lack of motivation	Incentives and sanctions
Beliefs and attitudes	Peer influence / opinion leaders
Systems of Care	Process redesign

* Often there is a mismatch between the perceived barrier and the strategy selected (level) or that the dose of the strategy is insufficient to overcome the barrier.

Tailoring of Strategies to the Local Context

"… strategies to improve professional practice that are planned, taking account of prospectively identified determinants of practice. *Determinants* of practice are factors that could influence the effectiveness of an intervention … and have been … referred to [as] barriers, obstacles, enablers, and facilitators [within the context in which the intervention occurs]."

"… can be effective, but the effect is variable and tends to be small to moderate. The number of studies remains small and more research is needed, including … studies to develop and investigate the components of tailoring (identification of the most important determinants, selecting interventions to address the determinants)."

Baker R et al, Cochrane Database Sys Rev, 2015

Tailoring Implementation Strategies Involves Several Steps

- Assess and understand determinants within the local context
- Identify change methods (theoretically and empirically based techniques that influence identified determinants) to address those determinants
- Develop or choose strategies that use those methods to address the determinants (i.e., barriers)

Kok G, Health Psych Rev, 2016
Bartholomew ELK, 2016 [book]

Most Important Factors Influencing the Selection of Implementation Strategies

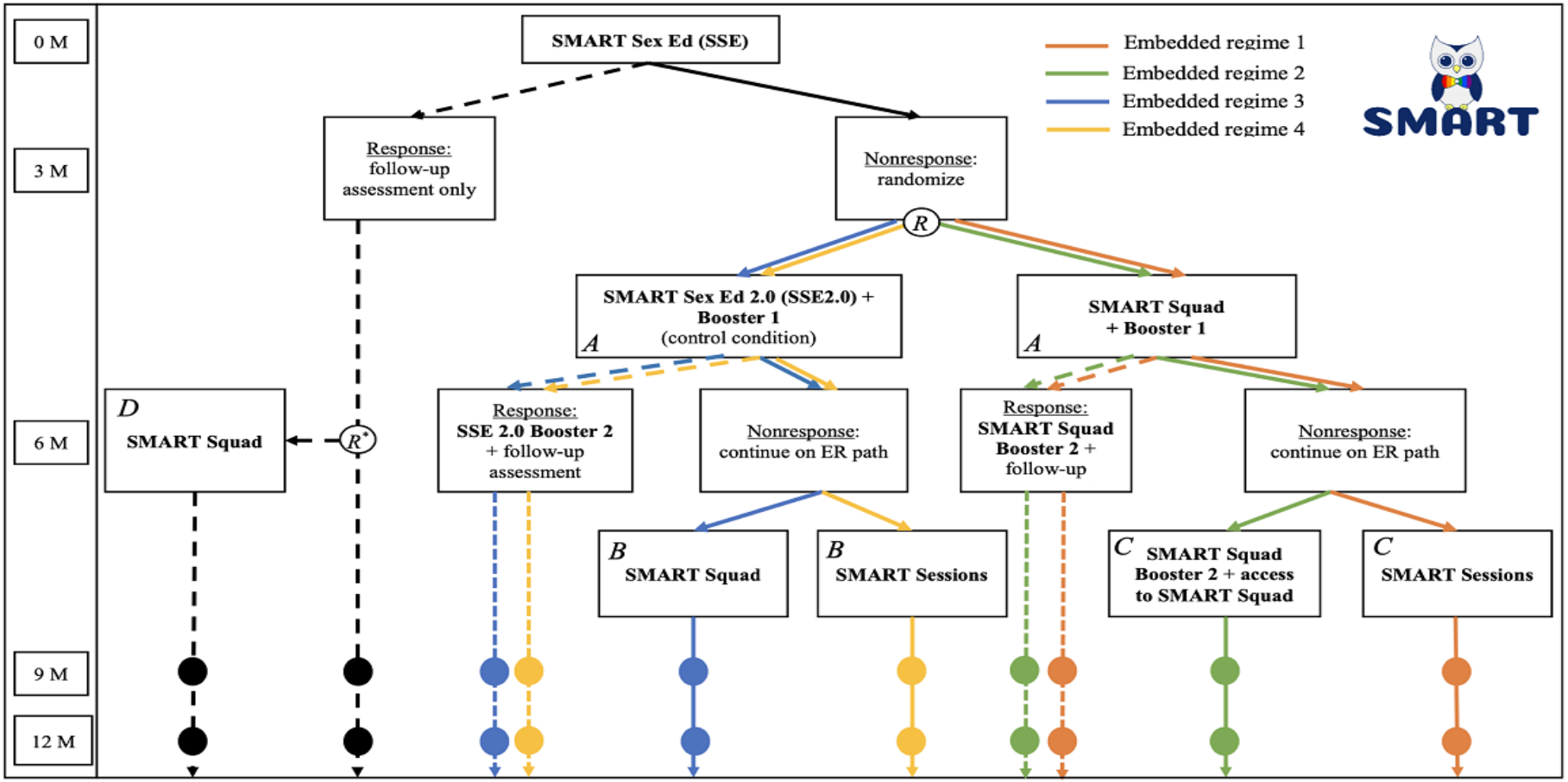
Factor	Somewhat %	Extremely %
Relevance *Does the strategy have direct relevance to the barrier?*	14.8	85.2
Improvement opportunity *Will this strategy make a big impact?*	34.4	63.9
Feasibility *Can the strategy realistically be applied to the barrier?*	38.5	53.3
Validity *Is the evidence base for the strategy compelling?*	62.3	24.6
Level of difficulty What are the work and resource requirements for the strategy?	51.6	20.5

* Factors incorporated into the CFIR-ERIC tool

Sequencing & Adaptive Design in Implementation Science

- **Sequential Multiple Assignment Randomized Trials (SMART)** and **Stepped-care** designs offer a structured way to tailor implementation strategies over time based on performance feedback.
- These designs test decision rules: "if-then" pathways—that determine which strategy to apply next depending on responsiveness.
- In HIV research, stepped-care enables efficient use of resources by first offering low-intensity interventions to all, then escalating only for non-responders, emulating real-world decision-making.
- These designs are well suited for adaptive implementation, particularly in behavioral prevention and adherence support.

Stepped Care for Adolescent MSM – Online Multi-Modal Prevention – N=1298



A: Efficacy of SMART Squad (including booster) relative to control (SMART Sex Ed 2.0) for AMSM who did not respond to general web-based sex education (SSE).
B: Efficacy of SMART Sessions relative to SMART Squad content for AMSM who did not respond to web-based sex education (SSE) or additional web-based sex education (SSE2.0).
C: Added benefit of SMART Sessions above an extended dose of SMART Squad for AMSM who did not respond to web-based sex education (SSE) or intensive HIV education (SMART Squad).
D: Added benefit of SMART Squad for AMSM who responded to web-based sex education (SSE).

Pre-Implementation Planning for Scaling Up PrEP in MSM in Peru – (5,000 on PrEP of 90K needing it)

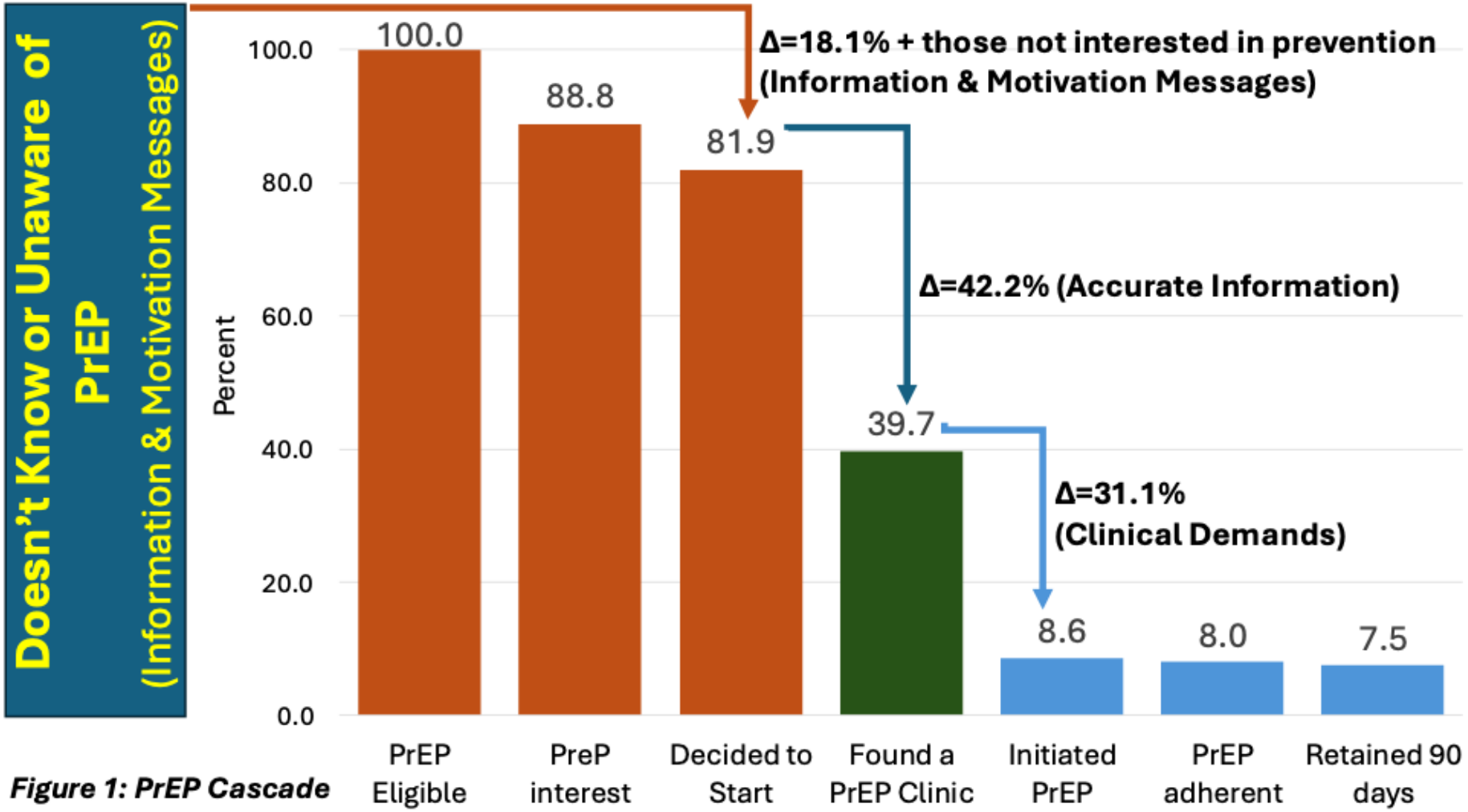


Figure 1: PrEP Cascade

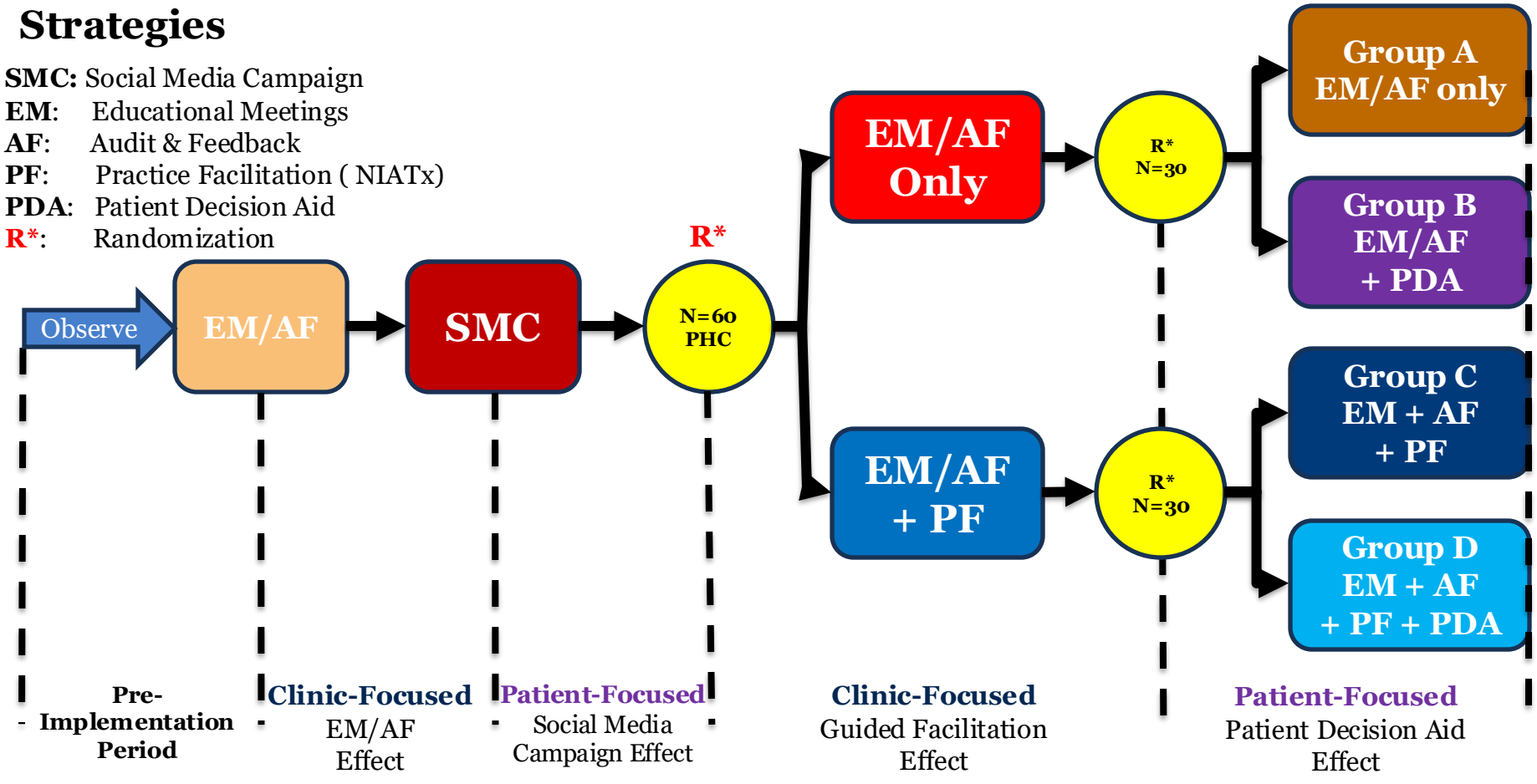
Mixed Methods Research with Multiple Stakeholders

- **Barriers**
  - Information/Motivation deficits in MSM
  - High burden on clinical staff
  - Inadequate training of clinicians
  - High staff turnover (challenges with knowledge transfer w/PrEP)
  - Unclear PrEP reporting processes
- **Facilitators**
  - Adequate physical resources
  - Prior successful SMCs
  - Clinical requirements for clinical support (CME, practice improvement)
  - Support for a community of practice related to share best practices and address challenges

Sequential, Non-Randomized Stepped Implementation (or Roll-out) Design → Measurement-Based, Stepped Implementation-to-Target Design

Strategies

SMC: Social Media Campaign
EM: Educational Meetings
AF: Audit & Feedback
PF: Practice Facilitation (NIATx)
PDA: Patient Decision Aid
R*: Randomization

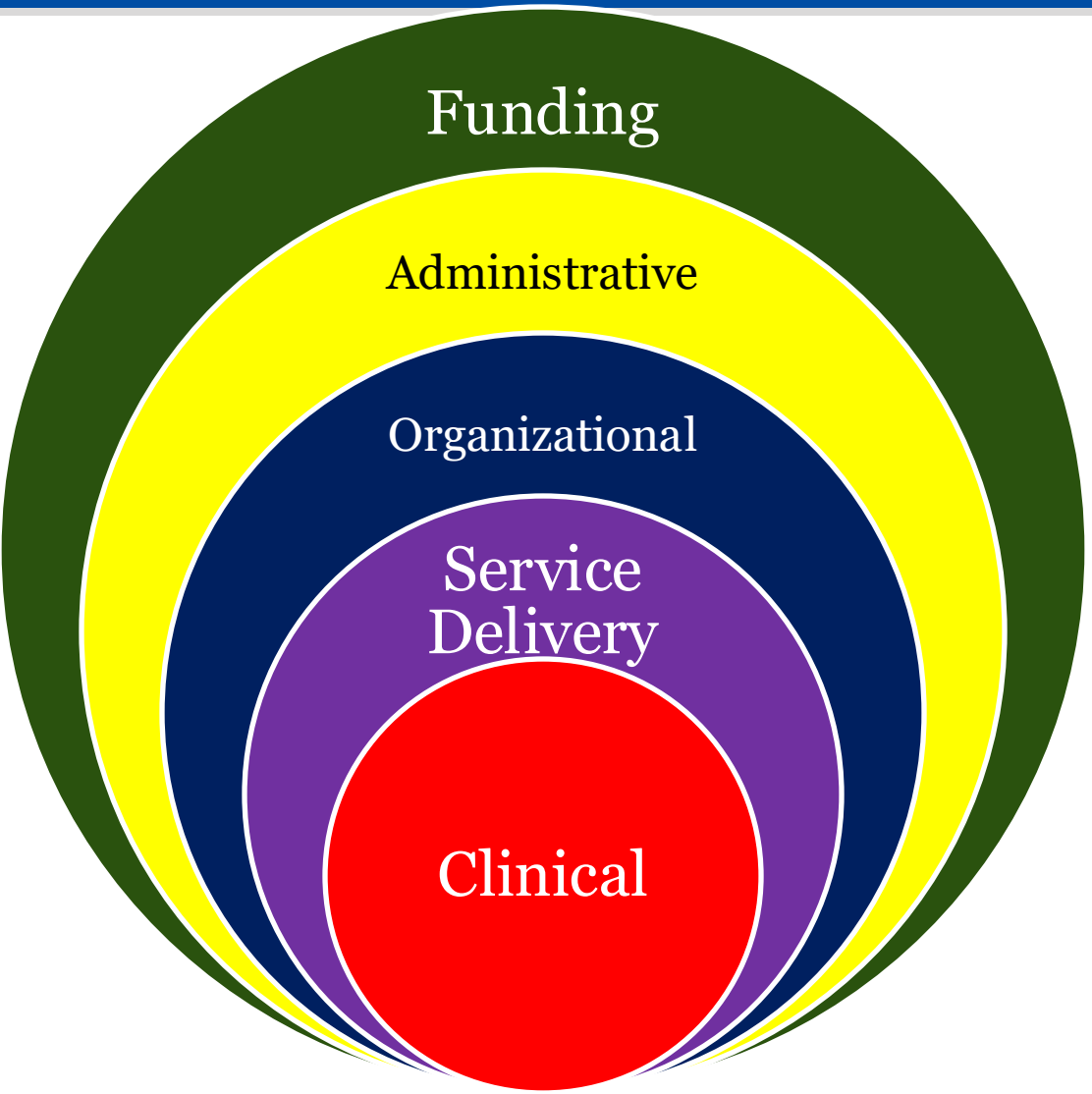


Case Examples: Integrated Care

Facilitation Strategies for Integrated Care: Systematic Review of Integrating Alcohol and Other Drug Services

- A systematic review of 14 studies:
  - *What factors/strategies contribute to or improve integration between AOD services?*
  - *What factors/strategies contribute to or improve integration between AOD and non-AOD services, such as mental health, primary care, housing and other services?*
- The major problems (barriers):
  - Serial treatment: provided before or after treatment of other conditions
  - Siloed healthcare delivery system – lack of coordination
  - Lack of training and support for specialty treatment conditions
- Strategies often targeted several levels, sometimes in combination

Facilitation Strategies Used for Each Level of Service Delivery Integration



System investment (funding)
Inter-departmental collaboration
Co-funding of service delivery

None: Executive sponsorship

Inter-agency agreements (MOA)
Common agency goal-setting
Co-location of services

Staff training
Information sharing
Case management
Referral services
Professional networks

Screening practices
Joint care planning – teams
Staff supervision

Slavic M et al, Sub Abuse Treat Prevent Policy, 2017

Organizational: Co-Location of Services

- **Barriers**
  - FQHCs had behavioral health counselors (SWs) either within or nearly in the FQHCs – they provided audit and feedback to clinicians to screen for AODs (↑ number of patients referred to behavioral health) ***but*** …. ↑ SW caseload with "urgent" referrals decreased ability to care for chronic patients.
  - Primary care providers did not have confidence to screen and treat AODs
- **Suggested strategies**
  - *Support Clinician* time by assigning one SW each day to handle urgent referrals (role clarity)
  - Training and education (single training vs sustained telementoring)
  - Audit and feedback

Gurewich D et al, JSAT, 2014
Haddad M, Drug Alcohol Depend, 2015

Clinical: Screening and Treatment

- **Barriers**
  - Clinicians did not feel comfortable screening and/or treating AODs
  - Screening activities took too long for their limited clinic time
  - Screening involved too many conditions (alcohol, tobacco, other drugs, depression)
- **Suggested Strategies**
  - Train and educate clinicians – initial vs continuous
  - Use QR code to have patients self-screen in waiting room
  - Train and task-shift screening to others
  - Use simplified and/or broad-based screening instruments (tools)
  - Audit and feedback

Sterling S, Current Psych Rep, 2012
Lubman DI, Mental Health Sub Use, 2008

Summary

- We need implementation strategies!
- There are still “black boxes” related to implementation strategies!
- We need better tools to identify and select the right ones – including combinations across multi-level barriers!

Questions?