From Barriers and Facilitators to Implementation Strategies

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The 5 Stages of Strategic Implementation

- Goal-setting: clarify your vision – ”The Gap”
  - 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

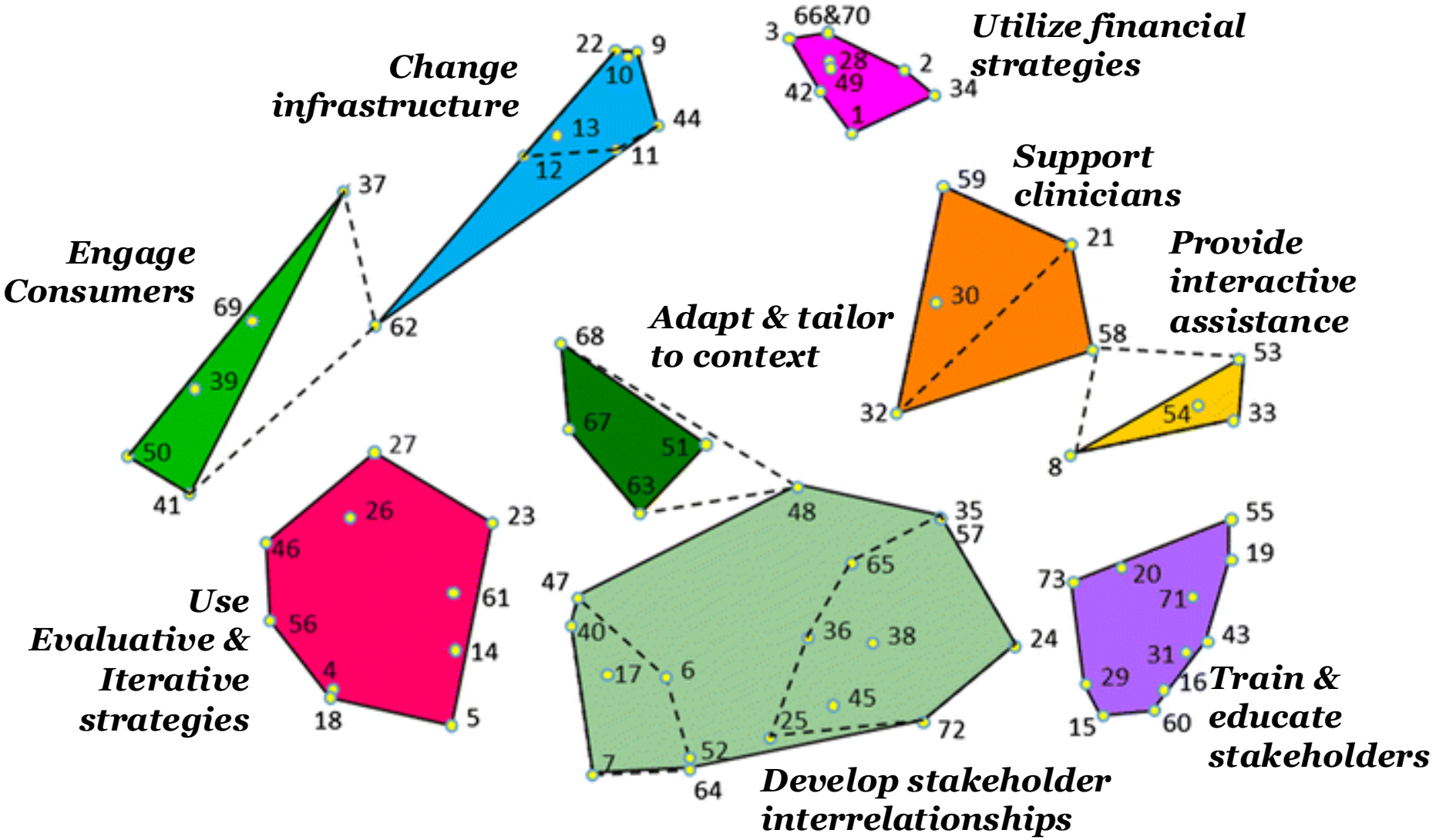
- **Discrete**: Single action or process (e.g., institute a system or reminders, provide audit and feedback, educational session or workshop)
- **Multi-faceted**: A combination of multiple discrete strategies (e.g., educational training + reminders)
- **Blended**: Multi-faceted strategies that have been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

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

Modified Delphi Method

Powell BJ et al, Implement Sci, 2015

Concept Mapping: 9 clusters and 79 strategies



Waltz T et al, Implement Sci, 2015

Selection of Implementation Strategies (9 clusters)

Train & Educate Stakeholders	Use evaluative & iterative strategies	Provide interactive assistance
Conduct ongoing training, develop educational materials, make training dynamic, distribute materials, use train-the-trainer	Audit & feedback, Assess readiness, identify determinants, purposefully re-examine implementation, PDSA	Facilitation, provide local technical assistance, provide clinical supervision, centralize technical assistance
Adapt & Tailor to context	**Develop stakeholder relationships**	**Support clinicians**
Tailor strategies, promote adaptability, use data experts, use data warehousing techniques	Prepare champions, organize implementation team meetings, recruit, designate, and train for leadership, inform local opinion leaders, identify early adopters	Facilitate relay of clinical data to providers, remind clinicians, develop resource-sharing agreements, revise professional roles, create new clinical teams
Engage consumers	**Change infrastructure**	**Financial strategies**
Involve patients, consumers, and family members, prepare patients and consumers to be active participants, increase demand, use mass media	Mandate change, change record systems, change physical structure and equipment, create or change credentialing and licensure standards, change service sites	Fund and contract for the innovation, access new funding, add the innovation to formularies, alter incentive or allowance structures, make billing easier

Waltz T et al, Implement Sci, 2015

Selection of Implementation Strategies

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Selection of Implementation Strategies

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Waltz T et al, Implement Sci, 2015

Selection of Implementation Strategies

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Selection of Implementation Strategies

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Engage consumers

Involve patients, consumers, and family members, prepare patients and consumers to be active participants, increase demand, use mass media

Waltz T et al, Implement Sci, 2015

Selection of Implementation Strategies

Financial strategies

Fund and contract for the innovation, access new funding, add the innovation to formularies, alter incentive or allowance structures (P4P), make billing easier

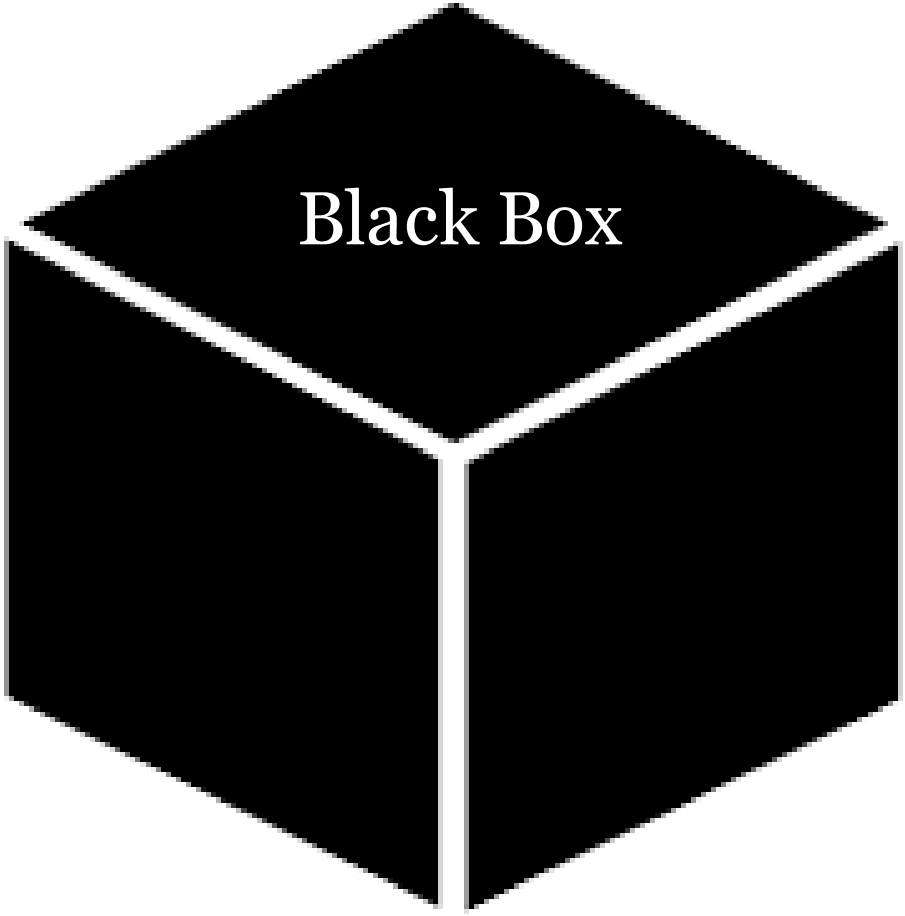
Waltz T et al, Implement Sci, 2015

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)

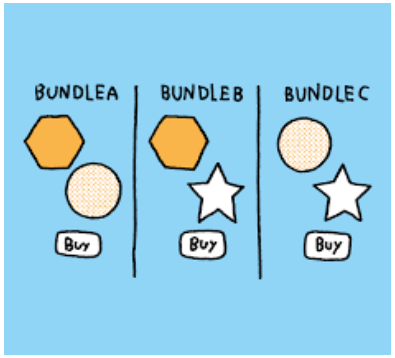


Selecting an Implementation Strategy (or Strategies)

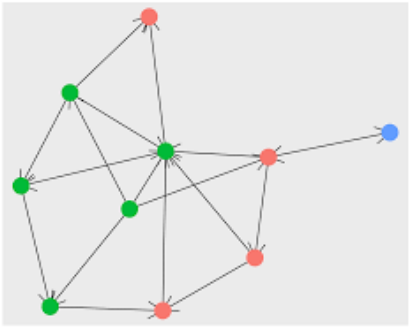
Concept Mapping

Group Model Building

Conjoint Analysis



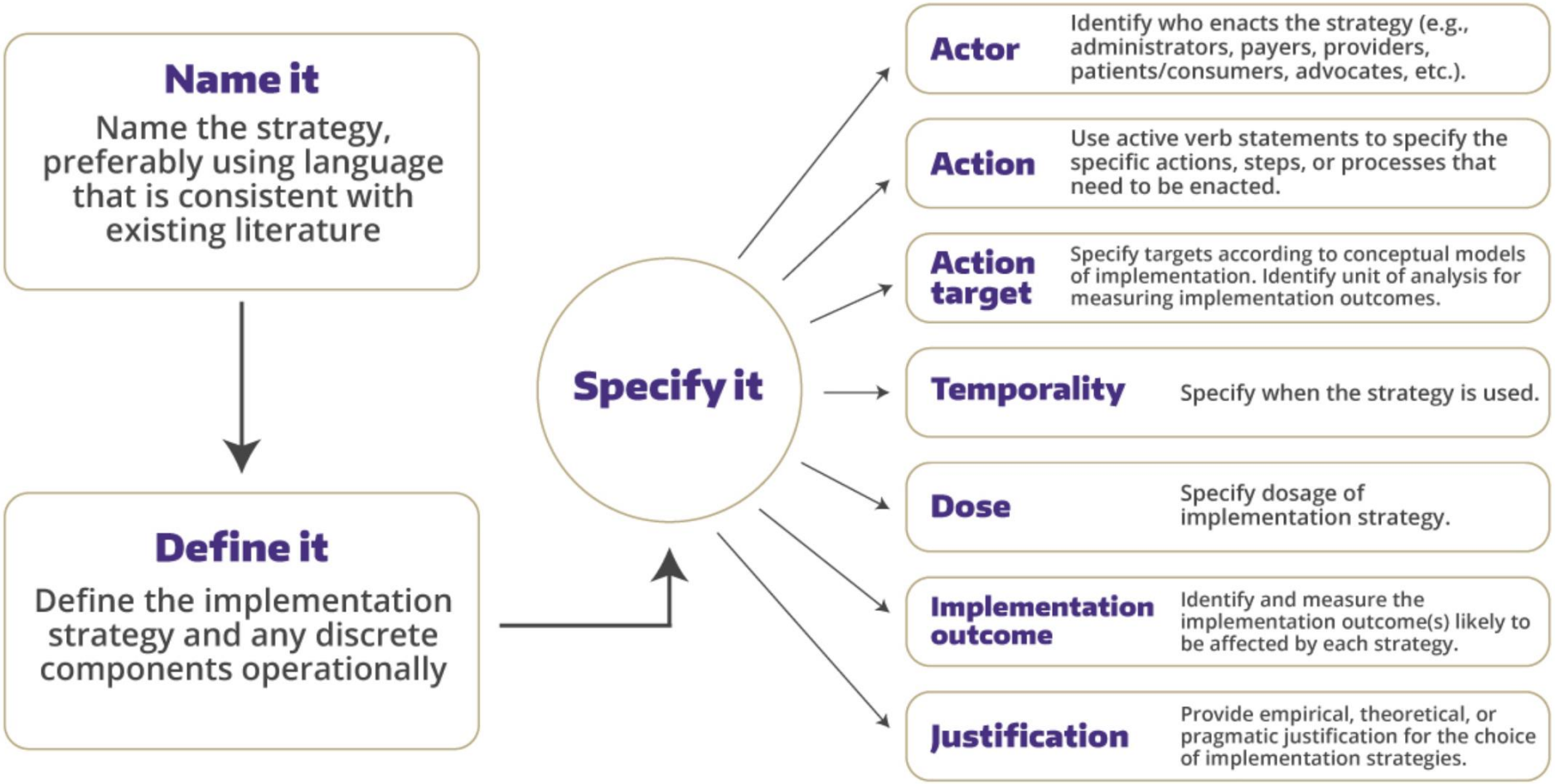
Intervention Mapping



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

A named strategy is not yet a reproducible strategy

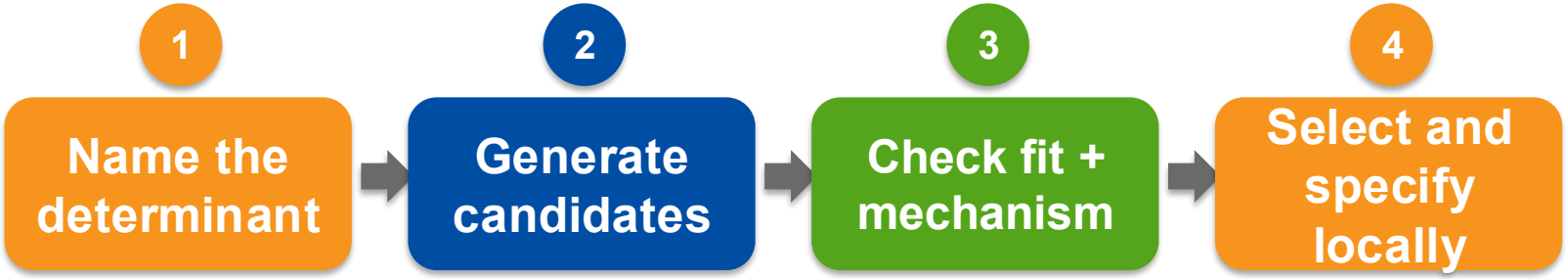
ACTOR	ACTION	TARGET	TIME
Who delivers it?	What exactly happens?	Who/what must change?	When and for how long?

DOSE	OUTCOME	WHY
How much and how often?	What should improve?	Evidence or theory?

Example: A PrEP nurse (actor) reviews each clinic's missed opportunities monthly (action/time/dose) with prescribers (target) to increase PrEP offers (outcome), because audit-feedback corrects perception–reality gaps (why).

Proctor EK et al. Implement Sci. 2013;8:139.

Tool 1: CFIR–ERIC—fast way to generate a shortlist



STRENGTHS
Quick • broadens options • easy for beginners

LIMITATIONS
Expert opinion • heterogeneous rankings • often too many options

Best use: generate candidates. Do not let the tool make the final decision.

Waltz TJ et al. Implement Sci. 2019;14:42. The authors recommend cautious use plus a systematic local selection process.

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.

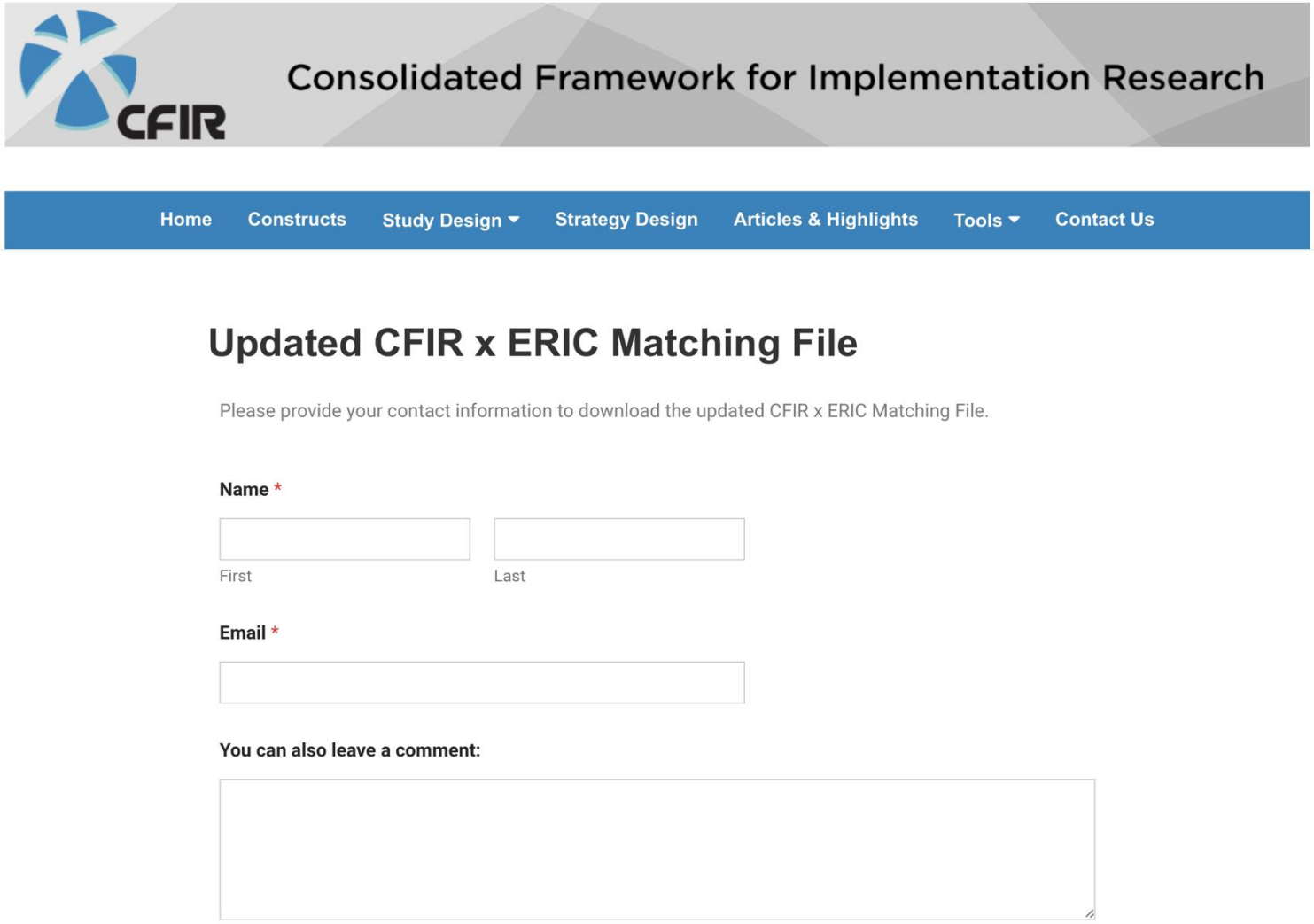
If you are using the CFIR to identify potential barriers to implementation, this knowledge can be used to help guide choice of implementation strategies to mitigate those barriers.

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



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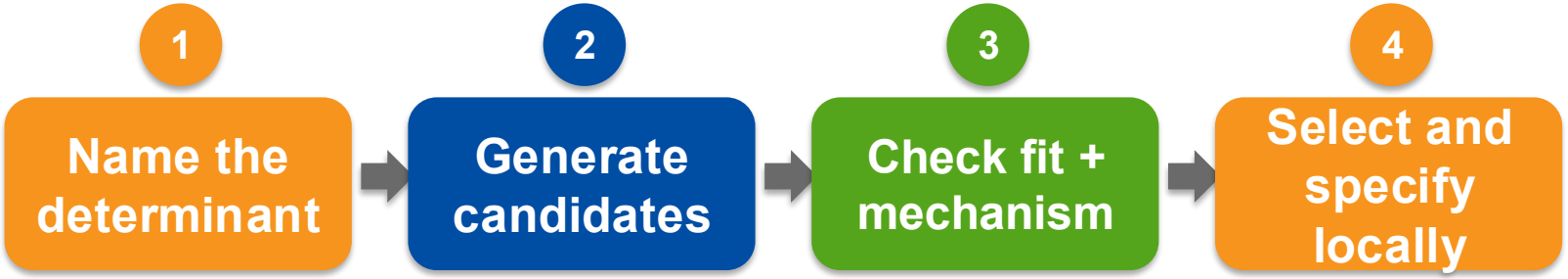

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Tool 2: Implementation Mapping—most rigorous blueprint

1. Needs + actors
2. Outcomes + performance objectives
3. Mechanisms + strategies
4. Protocols + materials
5. Evaluate implementation

PROS
Transparent • theory-linked • stakeholder-engaged • produces a protocol

CONS
Time-intensive • requires facilitation • can feel complex for small projects

Best use: complex, multilevel implementation packages where you must defend every strategy-to-determinant link.

Fernandez ME et al. Front Public Health. 2019;7:158.

Tool 3: TDF / COM-B—best when the target is a behavior

CAPABILITY
Knowledge • skills

OPPORTUNITY
Time • resources • social norms

MOTIVATION
Beliefs • identity • reinforcement

TARGET BEHAVIOR
"Clinician screens for substance use in every patient"

PRO
Excellent for clinician or patient behavior

CON
Less complete for financing, regulation, or system structure

Michie S et al. Implement Sci. 2011;6:42. Atkins L et al. Implement Sci. 2017;12:77.

Tool 4: participatory selection—local fit and legitimacy

Nominal Group Technique	**Fast ranking; prevents one voice from dominating**
Delphi	**Useful when experts cannot meet; multiple rounds**
Concept mapping	**Shows clusters and relative importance/feasibility**
Co-design workshop	**Strong local ownership; can produce practical adaptations**

Strength: contextual relevance. Risk: stakeholders may select familiar or politically acceptable strategies rather than effective ones.

Waltz TJ et al. Implement Sci. 2015;10:109. Participatory methods should be paired with evidence and explicit decision criteria.

Balancing the Selection of Strategies

Which selection tool should I use?

What is your implementation problem?

Need a quick shortlist?	One target behavior?	Complex multilevel package?
CFIR–ERIC + local scorecard	**TDF / COM-B → Behavioral change technique**	**Implementation Mapping**

At every branch: engage stakeholders and document the causal logic.

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

Identified Determinant*	Implementation Strategy
Lack of knowledge	Interactive educational sessions
Perception/reality mismatch	Audit and feedback
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.

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

Waltz TK et al, Implement Sci, 2019

Compare candidate strategies with a simple scorecard – there is seldom a single strategy

CRITERION	Training only	Workflow redesign	Pharmacy PrEP
Direct match	3	2	4
Likely impact	2	4	5
Feasibility	5	3	4
Evidence	3	3	3
Equity	2	4	5
Sustainability	2	4	4

1 = weak
5 = strong

A scorecard makes judgment transparent. It does not turn uncertain evidence into mathematical certainty.

Selection criteria informed by Waltz TJ et al. Implement Sci. 2019;14:42; add equity and sustainability for local decision-making.

Strategy bundles: coherent package—not a kitchen sink

COHERENT BUNDLE

- ✓ Each strategy targets a named determinant
- ✓ Mechanisms are complementary
- ✓ Dose and actor are specified
- ✓ Redundancy is intentional—not accidental

KITCHEN SINK

- × Many activities with no causal map
- × Training is added by default
- × No decision about what is core
- × Cannot tell what failed

Rule: every strategy must earn its place by completing a determinant → mechanism → outcome pathway (IRLM)

Smith JD et al. Implement Sci. 2020;15:84. Lewis CC et al. Implement Sci. 2020;15:21.

Case Examples

HIV treatment example 1: same-day ART in rural Lesotho

DETERMINANTS	STRATEGY PACKAGE	MECHANISM
Travel • clinic delay • loss after referral • Stigma	Home testing • same-day ART • navigation • simplified linkage	• Fewer handoffs • Lower burden • Immediate action

RESULT

Linkage by 3 months: 68.6% vs 43.1% • Viral suppression at 12 months: 50.4% vs 34.3%

The strategy did not "motivate patients" in the abstract; it redesigned the pathway from diagnosis to medication.

Labhardt ND et al. JAMA. 2018;319:1103–1112. CASCADE randomized clinical trial.

HIV treatment example 2: HPTN 074 among people who inject drugs

MULTILEVEL BARRIERS	STRATEGY PACKAGE	TARGETED CHANGE
Stigma • fragmented services • misinformation • navigation burden	Systems navigation • flexible counseling • ART and MOUD linkage	Trust • self-efficacy • fewer handoffs • continuity

TRIAL FINDINGS
Improved ART use, viral suppression, MOUD use, and survival.

Miller WC et al. Lancet. 2018;392:747–759. HPTN 074 randomized vanguard trial in Indonesia, Ukraine, and Vietnam.

HIV prevention example 3: pharmacy-delivered PrEP in Kenya

DETERMINANTS	STRATEGY PACKAGE	TARGETED CHANGE
Clinic stigma • long waits • limited hours • privacy concerns	Train pharmacists • assisted HIV self-testing • PrEP protocol • referral link	Convenience • privacy • respectful access • fidelity

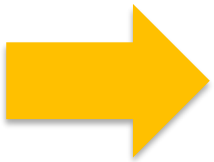
PILOT CASCADE
575 screened → 476 eligible → 287 initiated PrEP; 159 (55%) refilled.

Ortblad KF et al. J Int AIDS Soc. 2023;26:e26131. Omollo V et al. JAIDS. 2023;93:379–386.

HIV treatment example 4: community-based ART delivery

Delivery burden—not adherence alone—was the key determinant.

CLINIC MODEL
Travel + waiting
Rigid appointments
Facility stigma
Repeated pickup



COMMUNITY MODEL
Change service site
Task shift
Home/community delivery
Simplified monitoring

DO ART trial: viral suppression at 12 months was about 74% with community delivery vs 63% with clinic-based care.

Barnabas RV et al. Lancet Glob Health. 2020;8:e1305–e1315. Community-based ART delivery in South Africa and Uganda.

Exercise

Exercise: Select strategies for a PrEP implementation gap

SCENARIO

A clinic identifies many PrEP-eligible patients, but only 18% initiate. **Determinants** show long waits, limited privacy, clinician uncertainty, and concern about follow-up workload.

1. **Choose the TWO highest-priority determinants.**
2. **Name the mechanism that must change.**
3. **Select no more than THREE strategies.**
4. **Choose one implementation outcome.**

Exercise debrief: one defensible strategy package

DETERMINANT	MECHANISM	STRATEGY	OUTCOME
Long waits / workflow	Reduce steps and waiting time	Process mapping + task shifting	Time-to-initiation
Limited privacy	Increase perceived confidentiality	Private pharmacy or tele-PrEP option	Reach / acceptability
Clinician uncertainty	Increase confidence and consistency	Training + decision support + consultation	Adoption / fidelity
Follow-up workload	Reduce follow-up burden	Multi-month dispensing + reminders	Persistence / feasibility

There is no single "correct" bundle. The quality of the answer depends on the explicit causal links and local feasibility.

Six rules for selecting implementation strategies

1. **Start with the measurable implementation gap.**
2. **Make determinants specific and multilevel.**
3. **Prioritize—do not try to fix everything.**
4. **Name the mechanism before choosing the strategy.**
5. **Use tools to generate and compare options—not to outsource judgment.**
6. **Specify actor, action, target, timing, dose, outcome, and rationale.**

The goal is not more strategies. It is the smallest coherent package that can change the right determinants.

Questions?