Dissemination and Implementation science methods:

Identifying priority implementation strategies to improve health equity for Native communities

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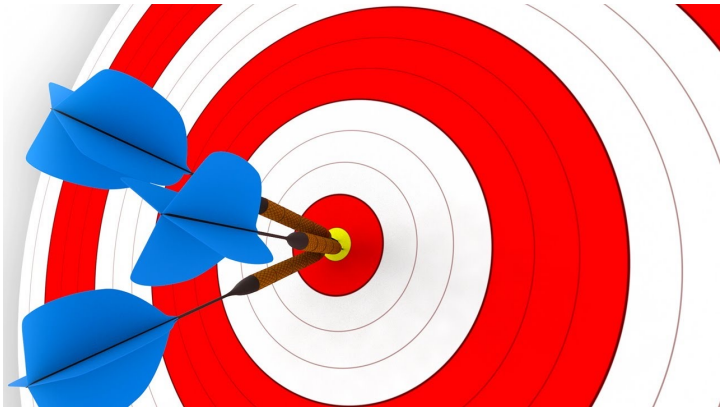
Objectives



- Why use Dissemination and Implementation (D&I) Science methods?
  - Improve Health Equity
  - Research funders are increasingly requesting use of D&I methods
- Understand a mile-high overview of D&I methods
- Recognize benefits of implementation strategies
  - Tailor interventions to fit local context
- Apply D&I methods with an example use case – school-based asthma
- Identify useful implementation strategies for tailoring to context
  - Specifically for Native populations

Mile-high overview of Dissemination and Implementation (D&I) research

Dissemination and Implementation (D&I) research – subcategory of Health Services Research

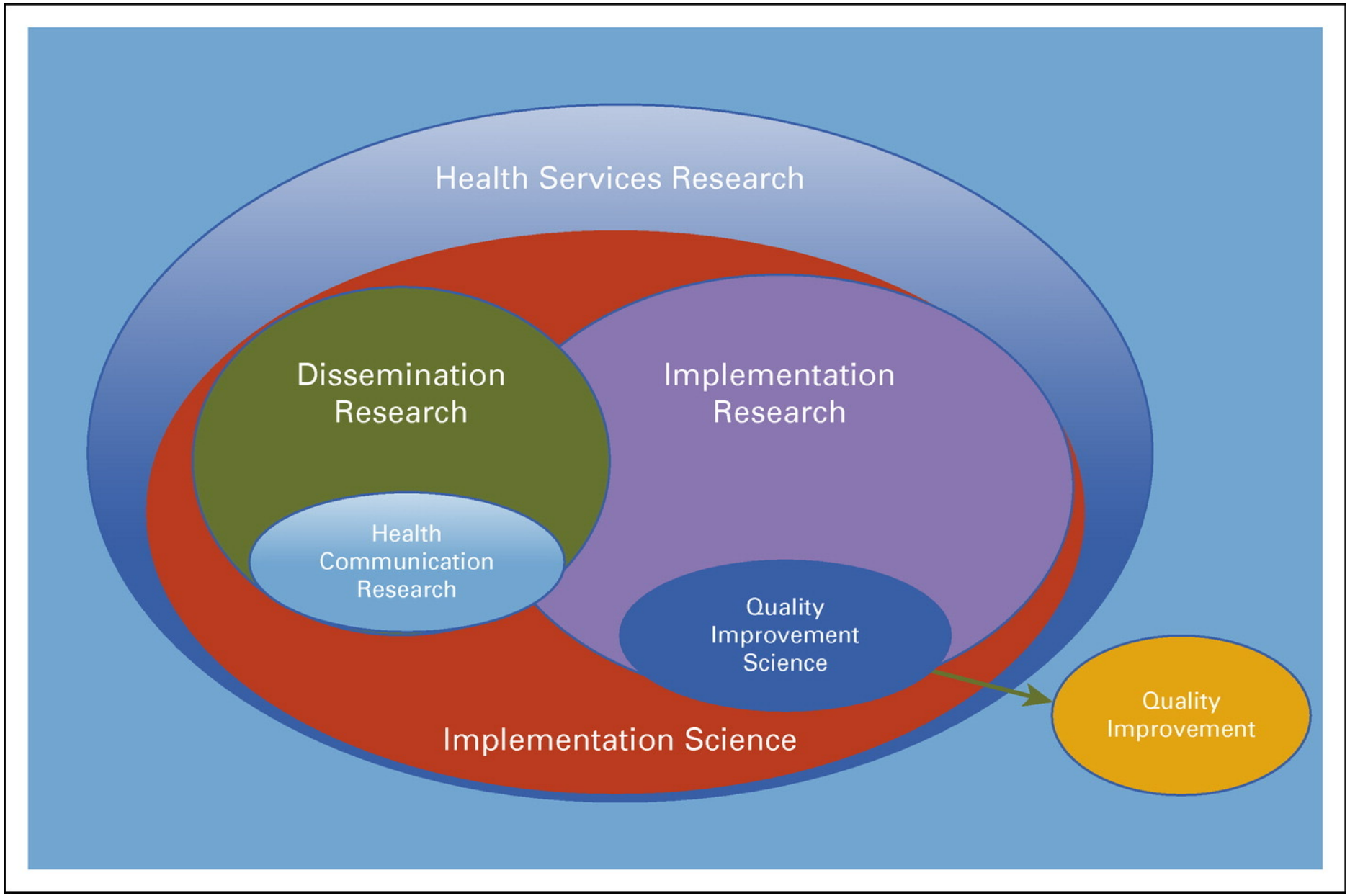


Diagram acknowledgement: Sandra A. Mitchell; David A. Chambers; *Journal of Oncology Practice* 2017; DOI: 10.1200/JOP.2017.024729; Copyright © 2017 American Society of Clinical Oncology

DEFINITIONS - what is D&I research?

- Dissemination research: Scientific study of targeted distribution of information and intervention materials to a ***specific public health or clinical practice audience***.

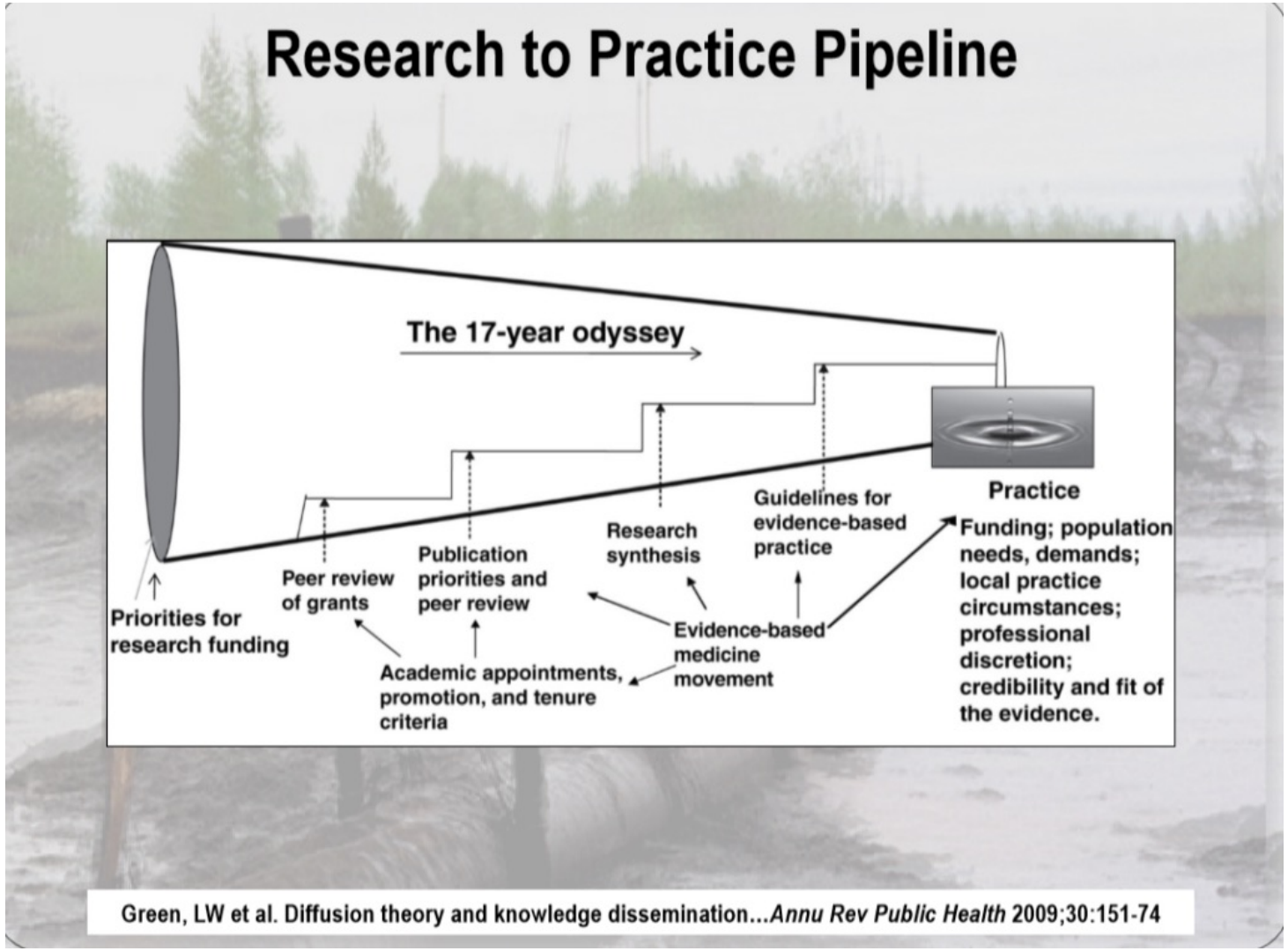
Considerations: how best to package, persuade/communicate about, and deliver evidence-based interventions to a specific audience?

- Implementation Research: Scientific study of the use of strategies to adopt and integrate evidence-based health interventions into clinical and community settings to improve individual outcomes and benefit population health.

Considerations: How best to support the uptake, integration, and sustained use of evidence-based interventions in specific settings?

PAR-22-105 – Dissemination and Implementation Research in Health

Why use D&I research?



Traditional translational approaches

14% of evidence translated over 17 years

But there is hope. . .

With Active D&I Approach

May be able to achieve up to 80% translation over 3 years

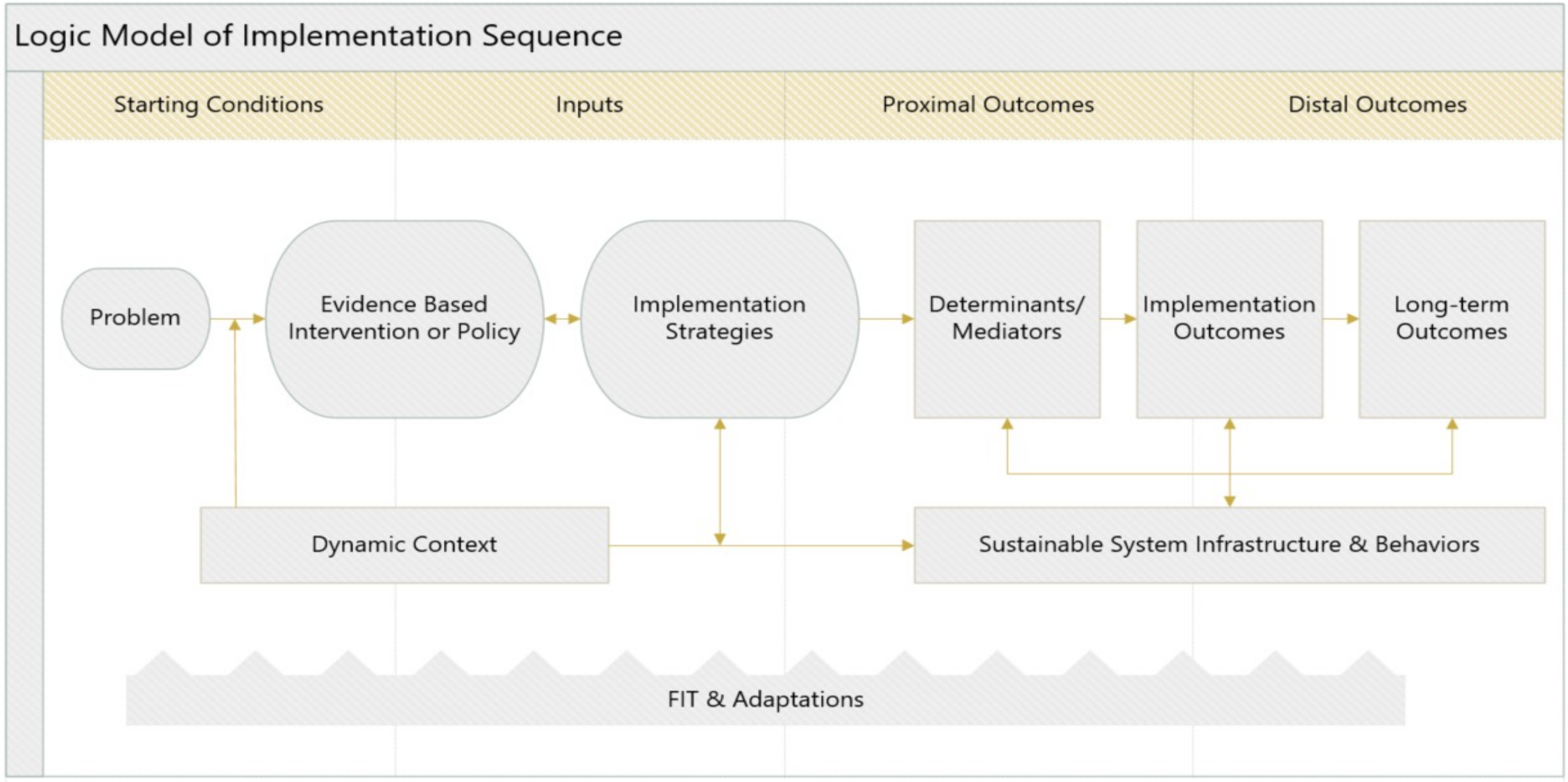
D&I frameworks can also inform equitable translation

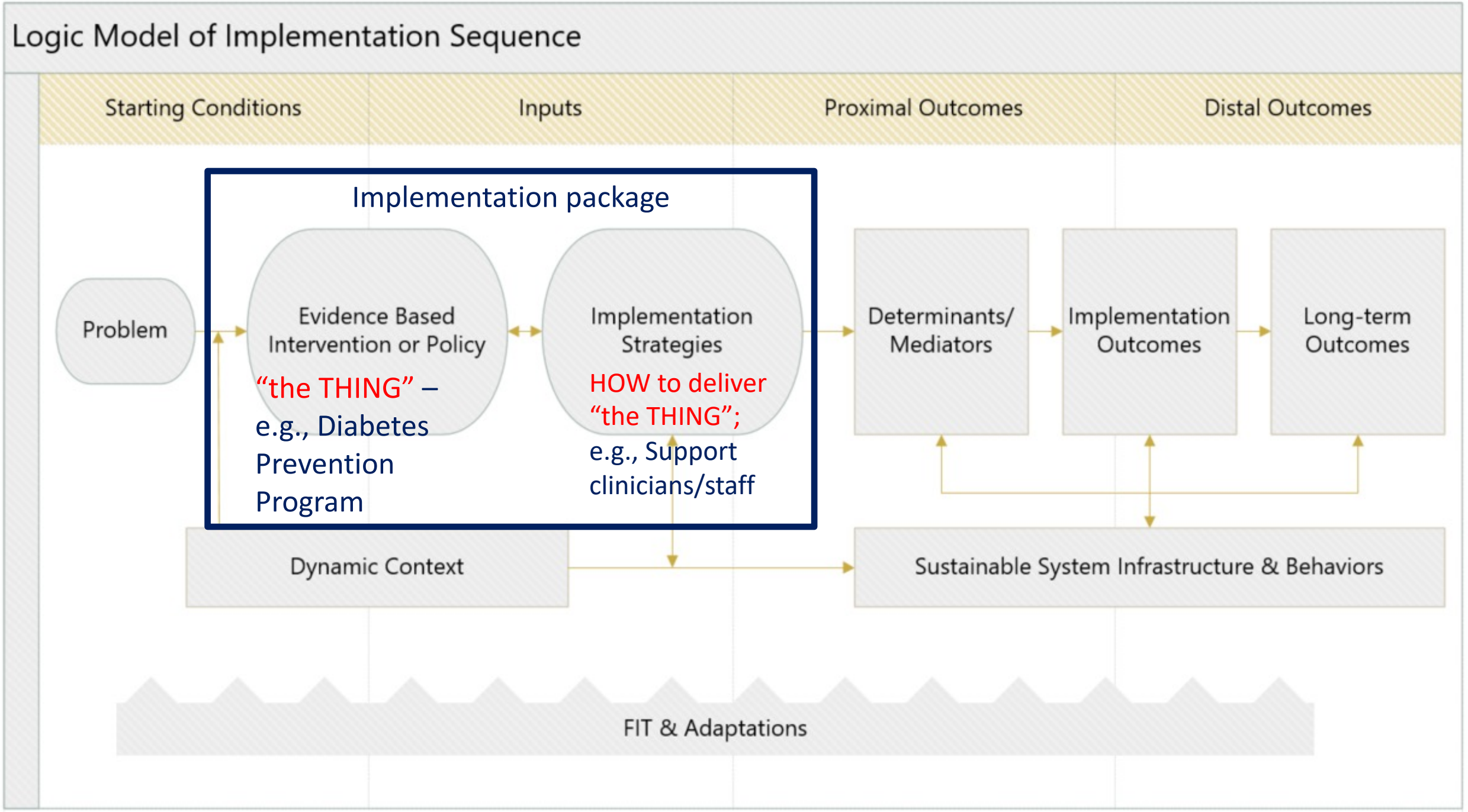
Balas & Boren, 2000; Green, 2008, Fixsen, Blasé, Timbers & Wolf, 2001, Saldana & Chamberlain, 2012

Examples of funding for D&I research

- NIH PAR-22-105 – Dissemination and Implementation Research in Health
- NIH RFA-DK-22-038: Pilot Interventions to Integrate Social Care and Medical Care to Improve Health Equity (R01 Clinical Trial Required)
- NIH NOT-HD-22-043 Implementation Science to Advance Maternal Health and Maternal Health Equity
- Other funders are also interested in these methods: AHRQ, PCORI

Logic models – ways to conceptualize D&I research




Logic Model of Implementation Sequence
Starting Conditions
Inputs
Proximal Outcomes
Distal Outcomes
Implementation package
Problem
Evidence Based Intervention or Policy
"the THING" – e.g., Diabetes Prevention Program
Implementation Strategies
HOW to deliver "the THING"; e.g., Support clinicians/staff
Determinants/ Mediators
Implementation Outcomes
Long-term Outcomes
Dynamic Context
Sustainable System Infrastructure & Behaviors
FIT & Adaptations

Definitions

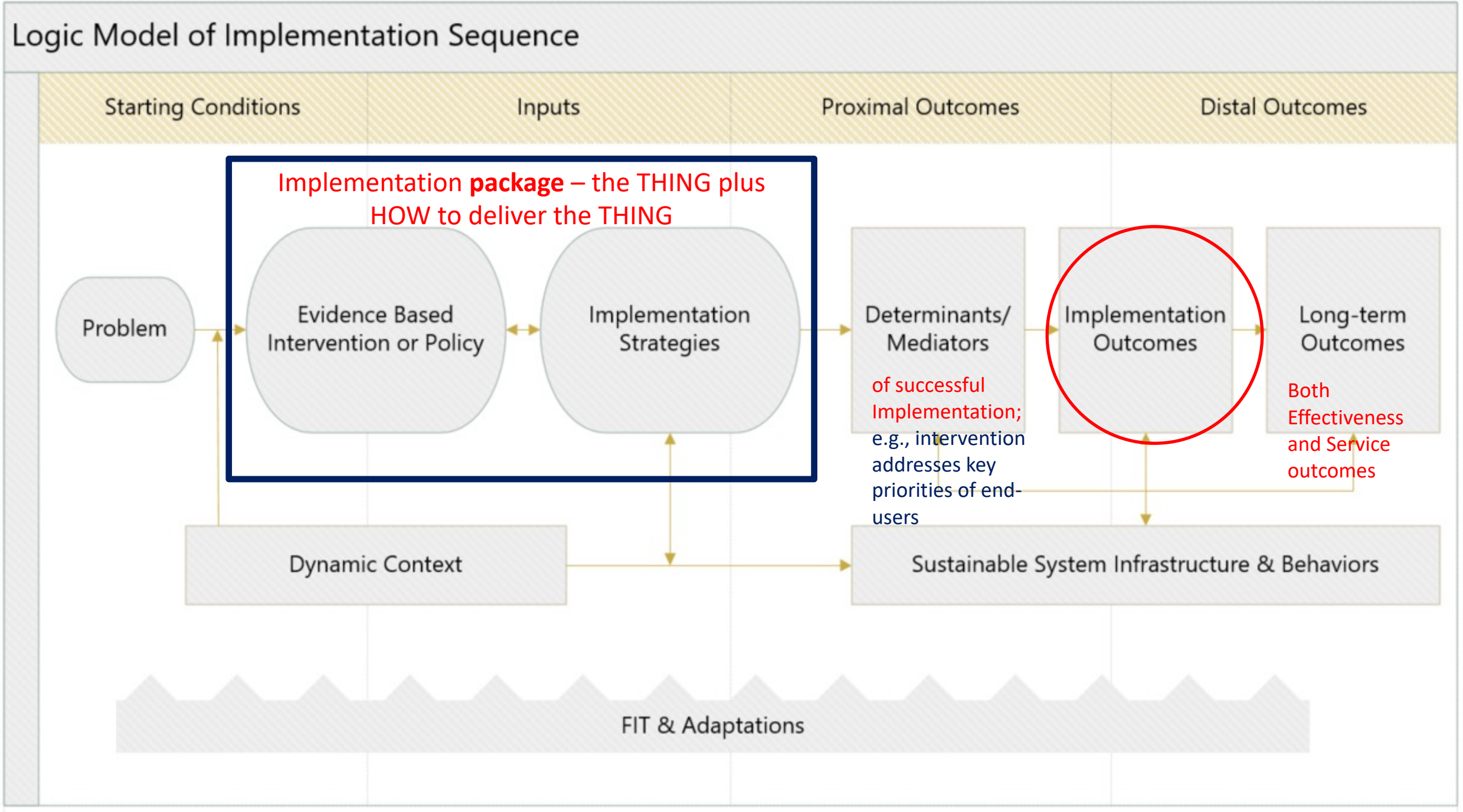
- **Evidence based interventions** - **The Thing** – effective programs, practices, principles, procedures, products, pills, or policies
  - Shown to improve health behaviors, health outcomes, or health environments

- **Implementation strategies - How** we get "The Thing" to work or fit with local context

Implementation strategies are active techniques to enhance the adoption, implementation, and sustainment of research-supported clinical interventions into practice

(Proctor et al., 2012; Powell et al., 2012)

Examples of Implementation strategies
Engage participants or patients
Support clinicians/staff delivering "the thing"
Technology upgrade/change record systems


Logic Model of Implementation Sequence
Starting Conditions
Inputs
Proximal Outcomes
Distal Outcomes
Implementation package – the THING plus
HOW to deliver the THING
Problem
Evidence Based Intervention or Policy
Implementation Strategies
Determinants/ Mediators
of successful Implementation; e.g., intervention addresses key priorities of end-users
Implementation Outcomes
Long-term Outcomes
Both Effectiveness and Service outcomes
Dynamic Context
Sustainable System Infrastructure & Behaviors
FIT & Adaptations

Types of Outcomes in Implementation Research

Implementation Outcomes

- Acceptability
- Reach; Adoption
- Appropriateness
- Costs
- Feasibility
- Penetration
- Sustainability

Service Outcomes

- Efficiency
- Safety
- Equity
- Patient-centeredness
- Timeliness

Effectiveness Outcomes

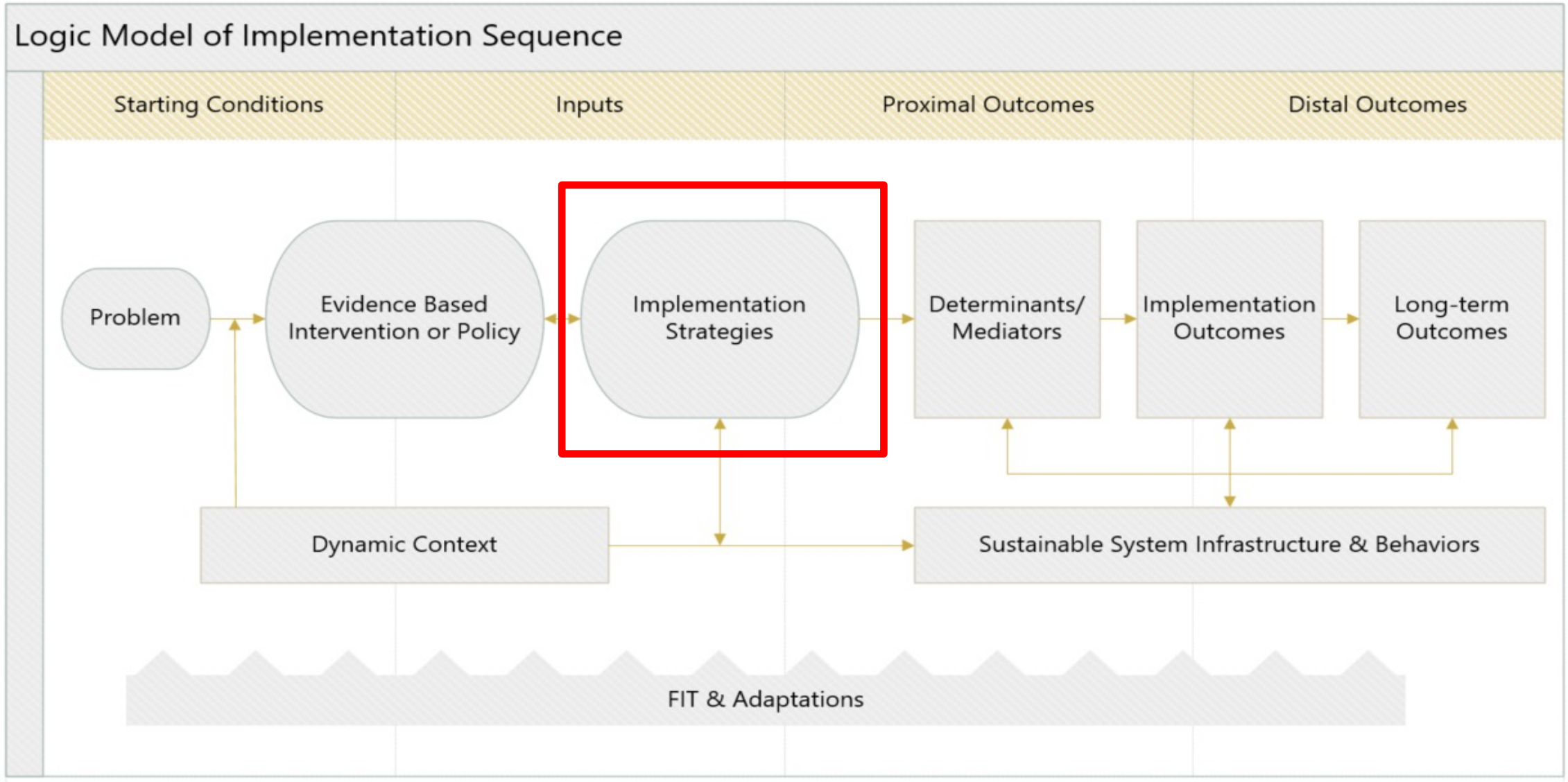
- Satisfaction
- Function
- Symptoms

In prior logic model diagram, both Effectiveness and Service outcomes = "long-term outcomes"

Proctor EK, et al. (2011). Outcomes for implementation research, *Adm Policy Ment Health*, 2011.

Table 14.1 in Lewis, Proctor, Brownson et al., *Measurement issues in Dissemination and Implementation Research*, in Dissemination and Implementation Research in Health, 2nd edition, 2017.

Diving in further – more about implementation strategies



Implementation strategies – single vs. multiple

- Implementation strategy: Method or technique used to enhance the adoption, implementation or sustainment and scale-up of an evidence-based intervention.

- Single, Discrete strategy: single action or process (e.g., reminders, audit and feedback)

- Multi-faceted strategy: Combination of multiple discrete strategies in one implementation package

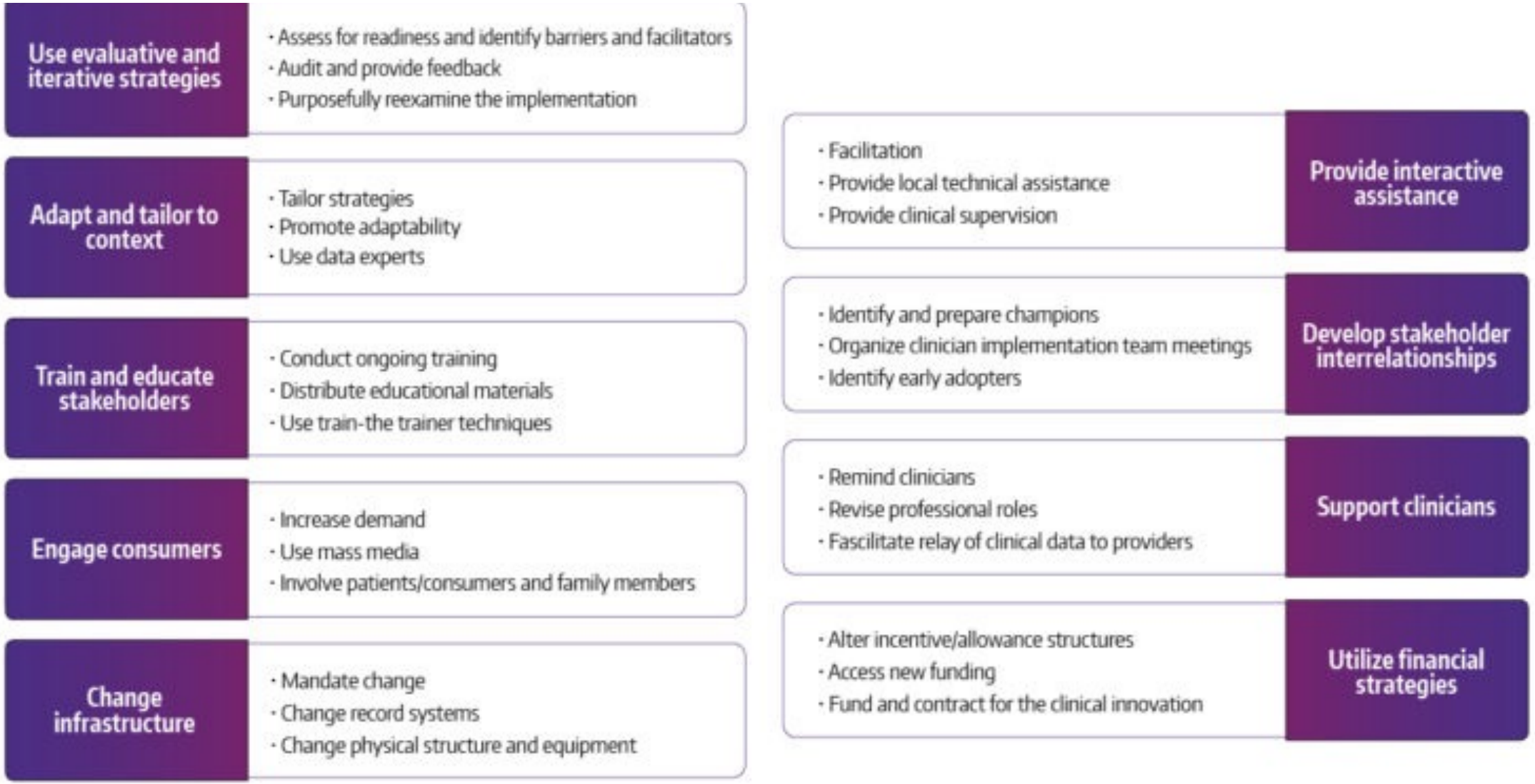
Slide credit – Byron Powell - Powell et al., 2012, 2015, 2019; Proctor et al., 2013

Example of tailoring discrete strategies to context

Context - Specific Barrier identified	Relevant implementation strategy to address
Lack of Knowledge	Conduct educational outreach
Mismatch of perception with reality (“*I’m doing OK, it’s all of the other providers here that aren’t doing well*”)	Audit and Feedback
Unfavorable perceptions of intervention	Identify and prepare champions

Slide credit: Byron Powell - Powell et al., 2012, 2015, 2019; Proctor et al., 2013

Implementation Strategy categories: Expert Recommendations for Implementing Change (ERIC)



Slide credit: impsciuw.org; Powell BJ, et al., 2015

School Implementation Strategies, Translating ERIC Resources (SISTER) – revised from ERIC for school settings

Prev Sci. 2019 Aug;20(6):914-935. doi: 10.1007/s11121-019-01017-1.

Adapting a Compilation of Implementation Strategies to Advance School-Based Implementation Research and Practice

Clayton R Cook [1], Aaron R Lyon [2], Jill Locke [2], Thomas Waltz [3], Byron J Powell [4]

Original ERIC Strategy and Definition	SISTER Adapted Strategy and Definition
Develop and implement tools for quality monitoring Develop, test, and introduce into quality-monitoring systems the right input—the appropriate language, protocols, algorithms, standards, and measures (of processes, patient/consumer outcomes, and implementation outcomes) that are often specific to the innovation being implemented.	**Develop instruments to monitor and evaluate core components of the innovation/ new practice** Develop, validate, and integrate measurement instruments or tools to monitor and evaluate the extent to which school personnel are implementing the core components of the intervention (i.e., with fidelity).
Obtain and use patients/consumers and family feedback Develop strategies to increase patient/consumer and family feedback on the implementation effort.	**Obtain and use student and family feedback** Develop strategies to increase student and family feedback on the implementation effort.

Example of D&I Funding opportunities: DECIPHeR

PURPOSE: Develop and test **implementation research strategies** for optimally and sustainably delivering **two or more proven-effective**, evidence-based multi-level interventions to reduce or eliminate heart and/or lung disease disparities.

FUNDER: National Heart Lung Blood Institute

TIMELINE: 3-year planning phase (UG3)/4-year clinical trial phase

Example of Funding opportunities: DECIPHeR

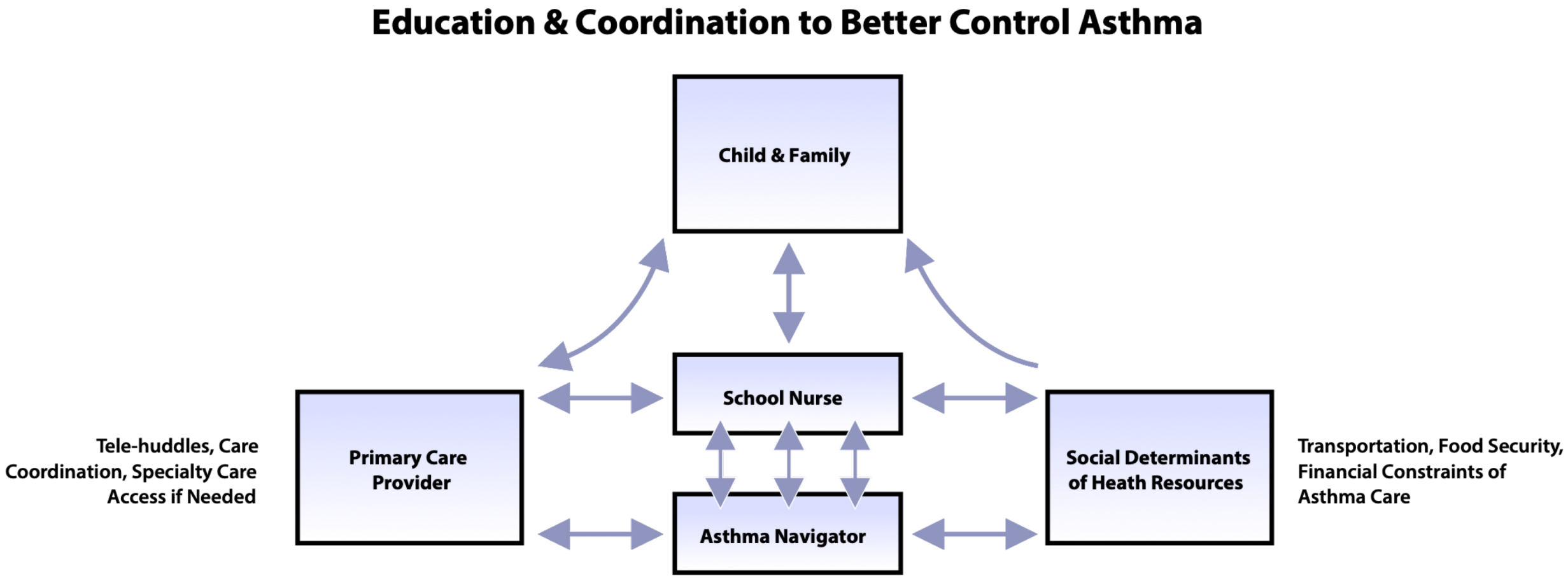
DECIPHeR Expectations

- The implementation research strategies developed should promote/improve population health **and reduce/eliminate disparities** in heart and/or lung disease risk in **specified high-burden communities**.
- Strategies developed should facilitate sustainable uptake of proven-effective interventions into **routine clinical practice and community-based settings** and maximize the impact on population health & health disparities.
- **Strategies should test implementation outcomes** rather than efficacy/effectiveness as the primary outcomes of interest.

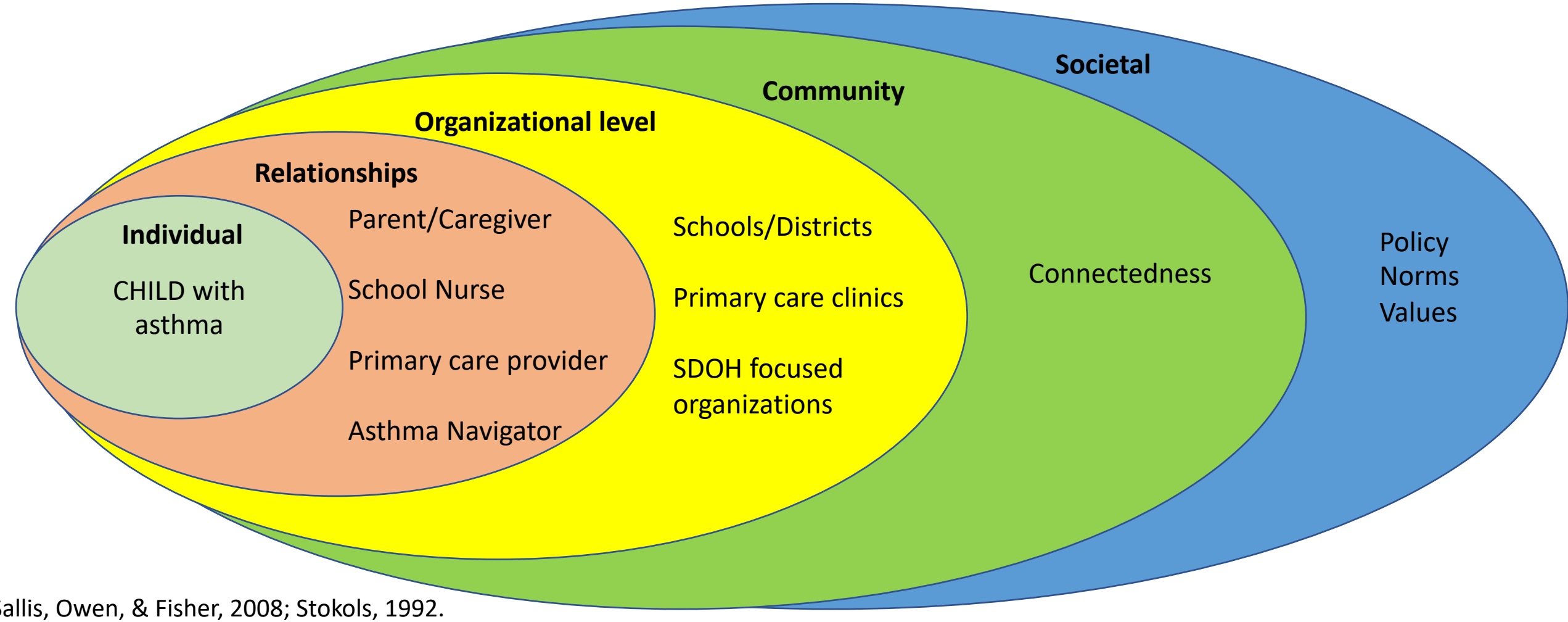
Case Example: Colorado DECIPHeR-funded study

- Asthma is a common chronic disease for children that disproportionately impacts low-income families.
- Over the past 2 decades, our team has sought to address pediatric asthma disparities:
  - Developed a school-based asthma program in partnership with urban, low-income schools and communities
  - Active care management of asthma and social determinants of health (SDOH)
  - Our program has reduced **health care utilization** and **school absences**
- In 2020, we received NHLBI Disparities Elimination through Coordinated Interventions to Prevent and Control Heart and Lung Disease Risk (DECIPHeR) funding to promote health equity by scaling out this program across 5 regions of Colorado

“The thing”: Better Asthma Control for Kids Intervention



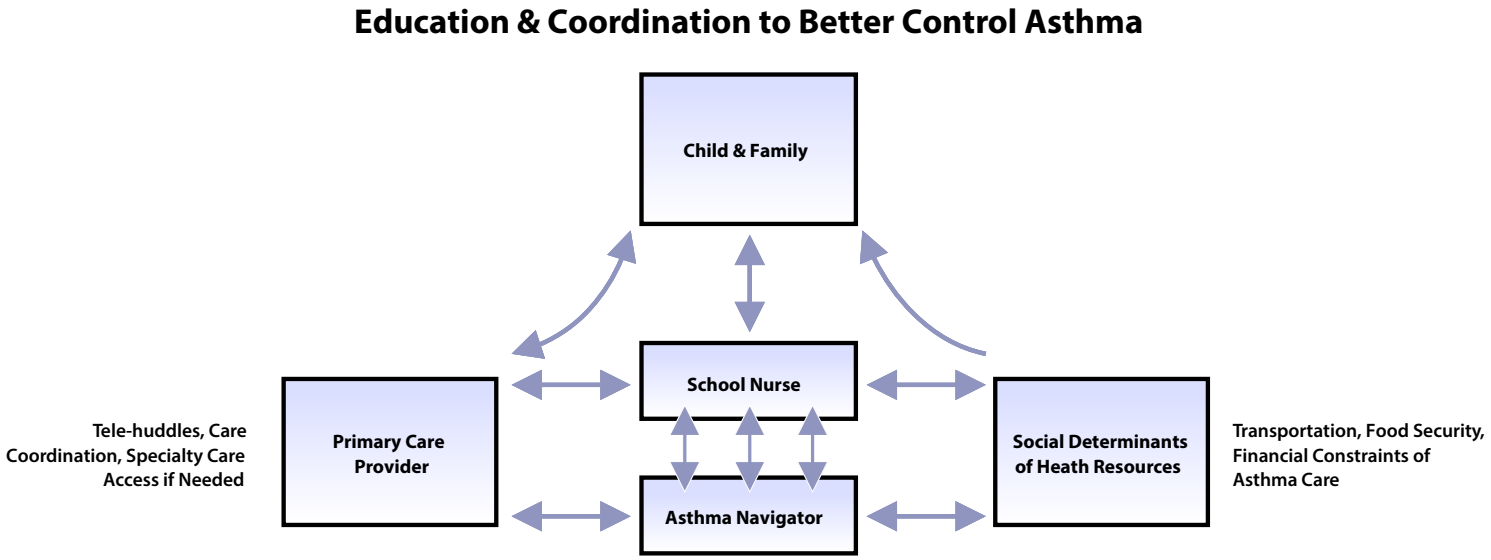
Relevant partners for BACK



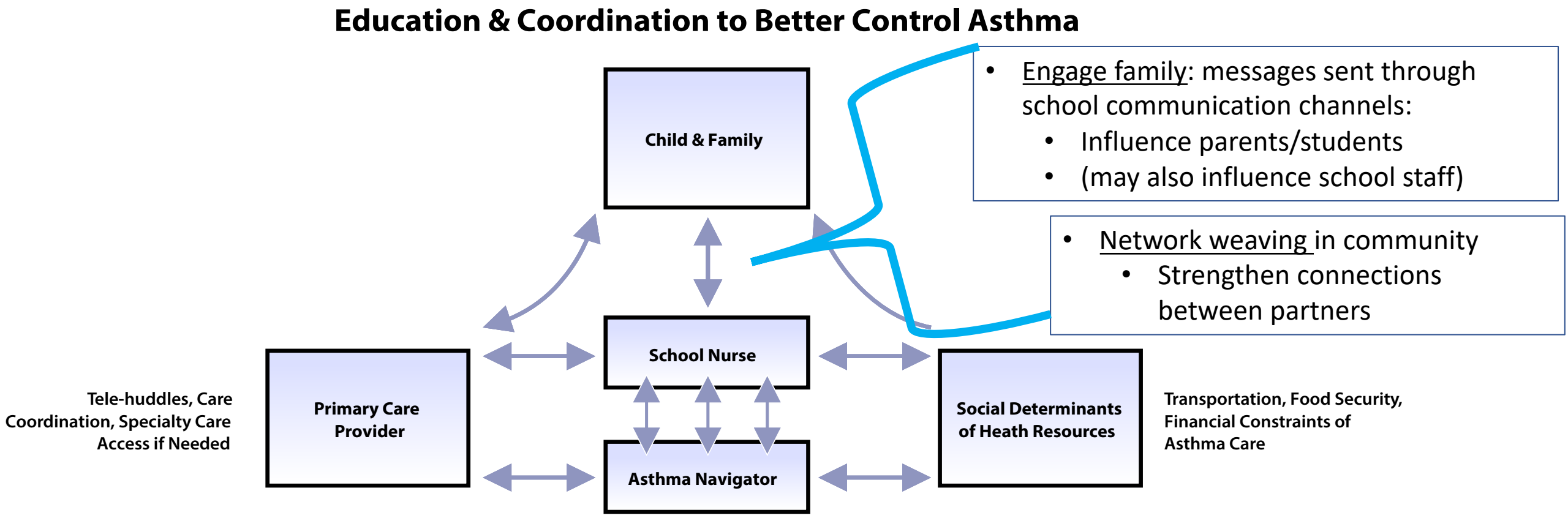
Sallis, Owen, & Fisher, 2008; Stokols, 1992.

Core components of the BACK Intervention

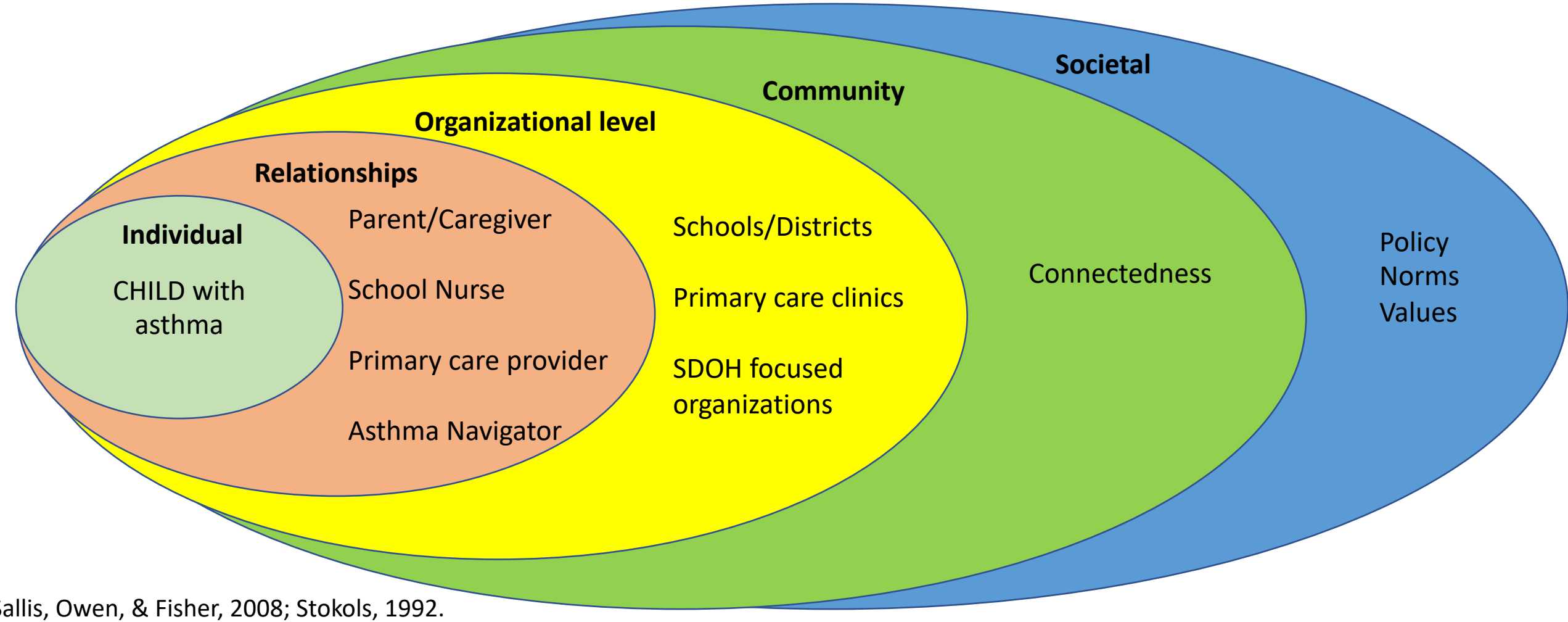
- Identify students with asthma
- Complete asthma assessment
- Assure quick acting reliever at school
- Instruction to acquire self-management skills
- Tailored instruction by asthma navigator to support asthma case management and care coordination
- Assess and manage social determinants of health



Example of a multi-faceted implementation strategy for BACK



Relevant partners for BACK



Sallis, Owen, & Fisher, 2008; Stokols, 1992.

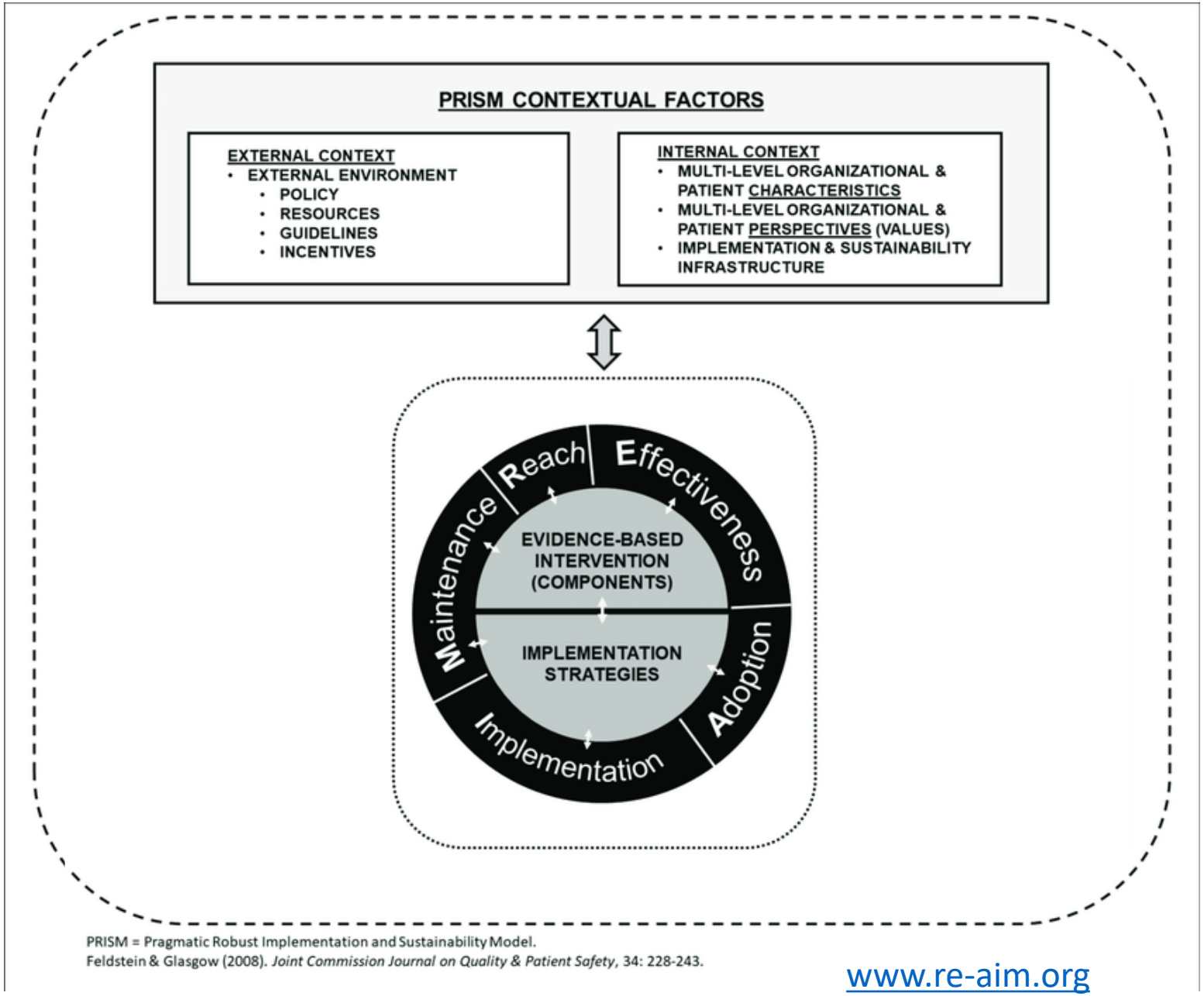
PRISM: Expanded RE-AIM framework for D&I research/Equity

- ***Framework/Model:*** PRISM
  - Representation
    - Organizational levels
    - Patients/End-users

- ***Implementation strategies***
  - Tailor how intervention is delivered to fit context

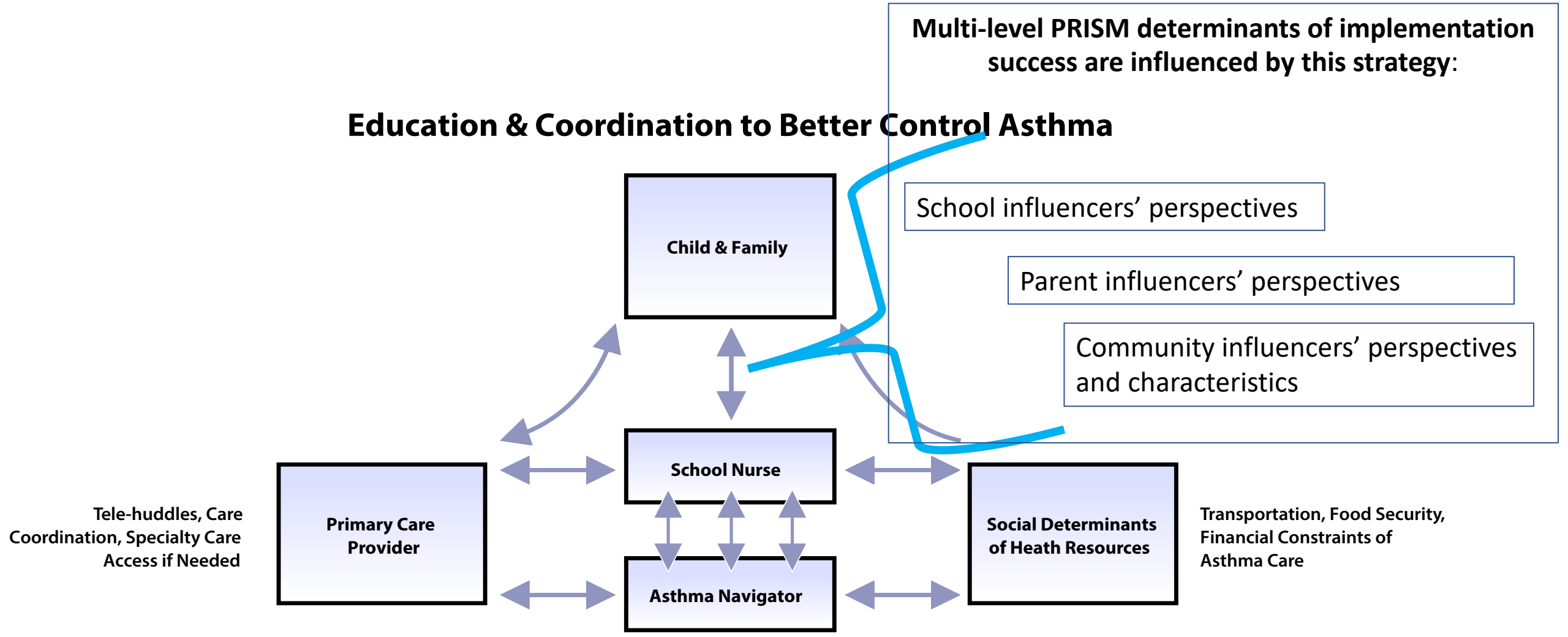
- ***Intervention:***
  - Tailor form of the intervention function to fit goals/priorities

- ***Outcomes***: assess equity (representativeness) for each RE-AIM outcome



www.re-aim.org

Example of a BACK Implementation Strategy: Engage School/Community



Summary

- D&I research methods are useful to translate evidence into practice:
  - Improve the fit of a program with local context
  - Address health disparities
- Implementation strategies are:
  - specific ways to deliver an intervention
  - contribute to successful local use (adoption/implementation) and sustainment

Acknowledgements

- **CAIANDTR leadership –** including Dr. Sarah Stotz as organizer for this lecture series
- **ACCORDS D&I science program leadership and colleagues**
- **Funders**

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NIH NATIONAL CANCER INSTITUTE

NIH National Heart, Lung, and Blood Institute

- **Affiliations**

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