

What is ACCORDS?

Adult and Child Center for Outcomes Research and Delivery Science

ACCORDS is a 'one-stop shop' for pragmatic research:

- A multi-disciplinary, collaborative research environment to catalyze innovative and impactful research
- Strong methodological cores and programs, led by national experts
- Consultations & team-building for grant proposals
- Mentorship, training & support for junior faculty
- Extensive educational offerings, both locally and nationally



ACCORDS Upcoming Events

December 19, 2022 12:00-1:00 PM MT	Methods and Challenges in Conducting Health Equity Research Basketball, Bloodlines, Bourbon, and Burley: Community-Engaged Research to Change the Lung Cancer Landscape in Kentucky <i>Presented by: Jamie Studts, PhD</i> (CU Anschutz)
Beginning spring 2023; 1 st Wednesdays each month	Hot Topics in Mixed Methods and Qualitative Research A mini series running from January - May
June 5-7, 2023 10:00 -3:00 PM MT	COPRH Con 2023 Save the date! More info coming soon!



Leveraging Community Engagement and Implementation Science Methods to Reduce Pediatric Asthma Disparities

Presented by:

Amy Huebschmann, MD, MSc

Andrea Jimenez-Zambrano, PhD, MPH



Leveraging community engagement and implementation science methods to reduce pediatric asthma disparities

Amy Huebschmann, MD, MSc and Andrea Jimenez-Zambrano, PhD, MPH



ACCORDS Health Equity seminar series

November 14, 2022



Disclosures

No relevant conflicts of interest to disclose

“It takes a village” – we owe much credit to many:

- Stop Asthma Attacks research team (MPIs: Szeffler, Cicutto, Huebschmann)
- Our advisors: 5 Community Advisory Boards, State Advisory Board, Scientific Advisory Committee
- DECIPHeR coordinating center advisors and NHLBI Technical Advisory panel
- ACCORDS Primary Care research fellowship for Dr. Jimenez-Zambrano (T32HP42016)
- ACCORDS Implementation Science program and Qualitative/Mixed Method core



Objectives

- Identify ways that implementation science methods may be used to tailor evidence-based programs to the local context across socio-ecological levels
- Learn an approach to develop consensus on local community priorities for an evidence-based program
- Recognize qualitative approaches to explore differences in needs for an evidence-based program among Latinx and non-Latinx families



Presentation Overview

1. Project Overview and implementation science methods to promote equity
2. Community engagement methods to promote equity
 - Priority outcomes for Stop Asthma Attacks
 - Understanding patient/family context
3. Next steps and discussion



Equality

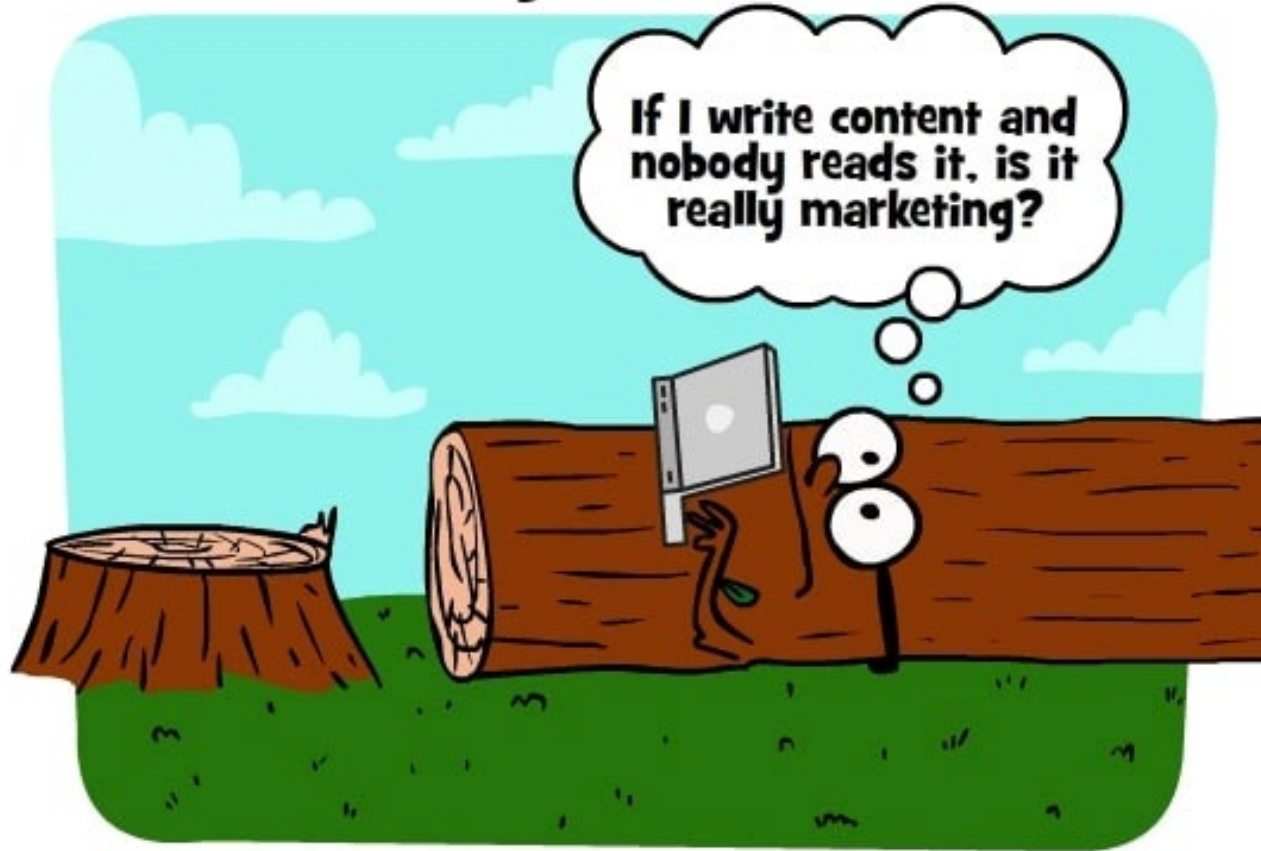


Equity



Implementation Science and Impact

Marketing Existentialism



brandmanagecamp.com



Factors to promote external validity through a health equity lens*

Pre-Implementation (Design/Plan)

- **Who should be considered as invested partners?** – represent across levels of the socio-ecological model
- **Address high-priority problems** with acceptable interventions and strategies – *vet with partners*
- **Design for relevance**
- **What is success?** – ask partners to identify
- **Equity considerations** – identify inequities in the context to address
- **Plan to Adapt:** adapt form of the intervention function to fit context

Implementation

- **Set up sites for success**
- Monitor progress towards **partner-identified** outcomes of success
- Monitor for **inequities** in outcomes – **create feedback channels** to identify and act on any emerging inequities (e.g., unequal reach)
- **Researcher accountability** – checks & balances on decision-making
- **Monitor adaptations** – why/how they are needed and what works

Evaluation/Sustainment

- Evaluate **partner-identified** outcomes of success: understand drivers of inequities
- Disseminate findings, including adaptations and context-dependent effects
- **Is it worth sustaining?** Evaluate the return on investment – clinician/system impact and benefits to end-users/patients
- If value is acceptable to invested partners, develop a **business plan** for sustaining the program
- Set up **equity-promoting assessment** as part of sustainment



Spectrum of Increasing External Validity through a Health Equity lens:

↑ Representation of invested partners across all 3 phases leads to: ↑ Equity / ↑ Representativeness of outcomes

*Trinkley KT, Fort M, McNeal DM, Fort MP, Green LW, Huebschmann AG. *Furthering Dissemination and Implementation Research: Paying more Attention to External Validity through an Equity lens* in 3rd edition, *Dissemination and Implementation Research in Health*, eds. *Brownson, Colditz and Proctor. (in press)*

Background: NHLBI Expectations for DECIPHeR

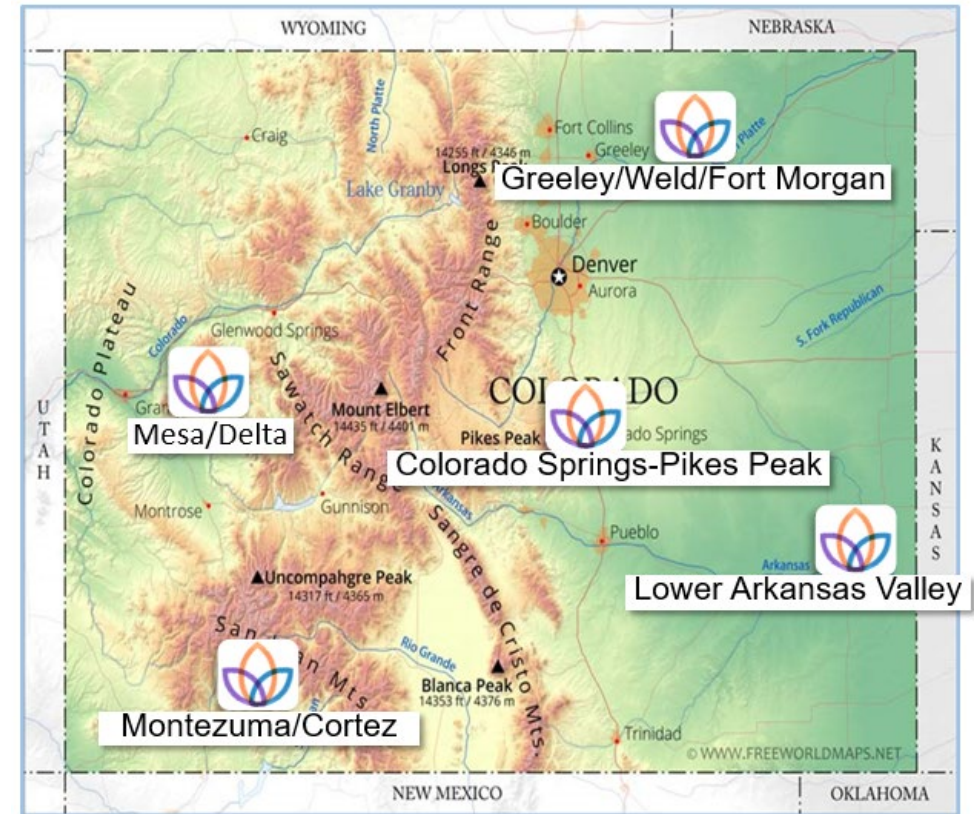
PURPOSE: Develop and test implementation research strategies for optimally and sustainably delivering two or more proven-effective, evidence-based multi-level interventions to reduce or eliminate heart and/or lung disease disparities.

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.

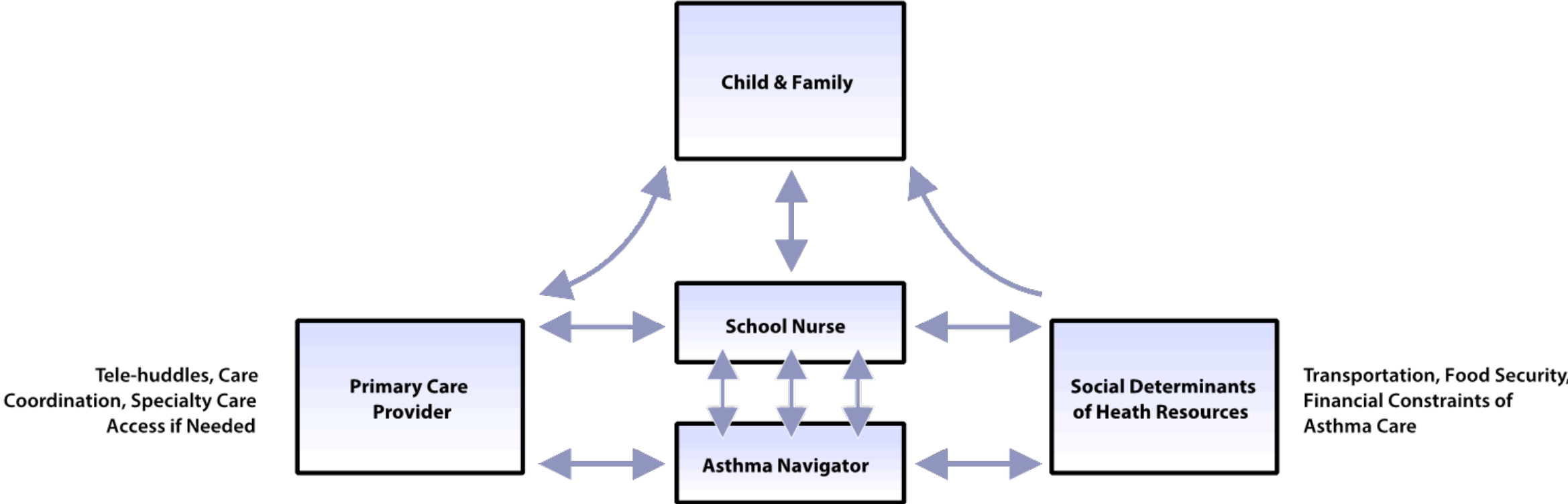
Colorado DECIPHeR-funded study

- 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



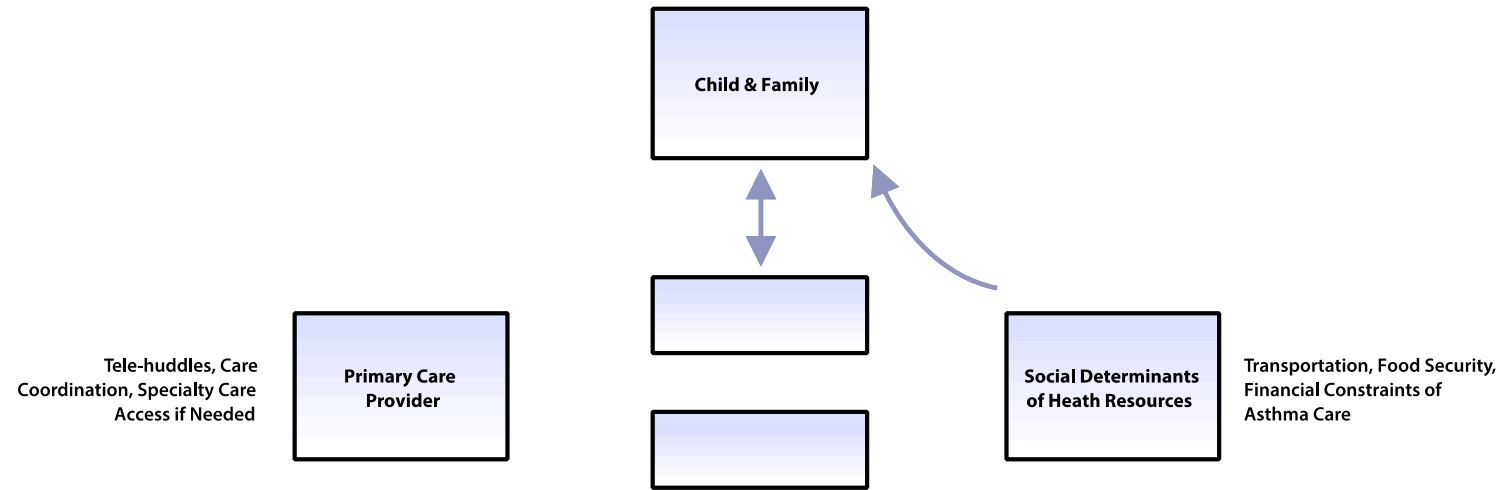
Visual schema: Stop Asthma Attacks Intervention

Education & Coordination to Better Control Asthma



Core Functions: Stop Asthma Attacks (SAA) 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



DECIPHeR Colorado Program: Main Health Outcomes, Study Population and Health Disparities

Goal: Broad program reach and benefits to reduce disparities in asthma attacks and symptoms among low-income students

Design: Type II hybrid effectiveness-implementation trial; randomized by nurse, open cohort, parallel cluster randomized trial where intervention conditions are phased in over two years

Population: 5 regions in Colorado; 300 students with uncontrolled asthma ages 5 to 12 years including rural and mid-sized urban cities with minority population

Interventions: Stop Asthma Attacks (SAA) Program: 1. SAA program; 2. SAA program with enhanced community/school engagement

Measures: Evaluation conducted using the reach, effectiveness, adoption, implementation, maintenance (RE-AIM) framework

Primary outcomes:

Reach (primary implementation outcome);

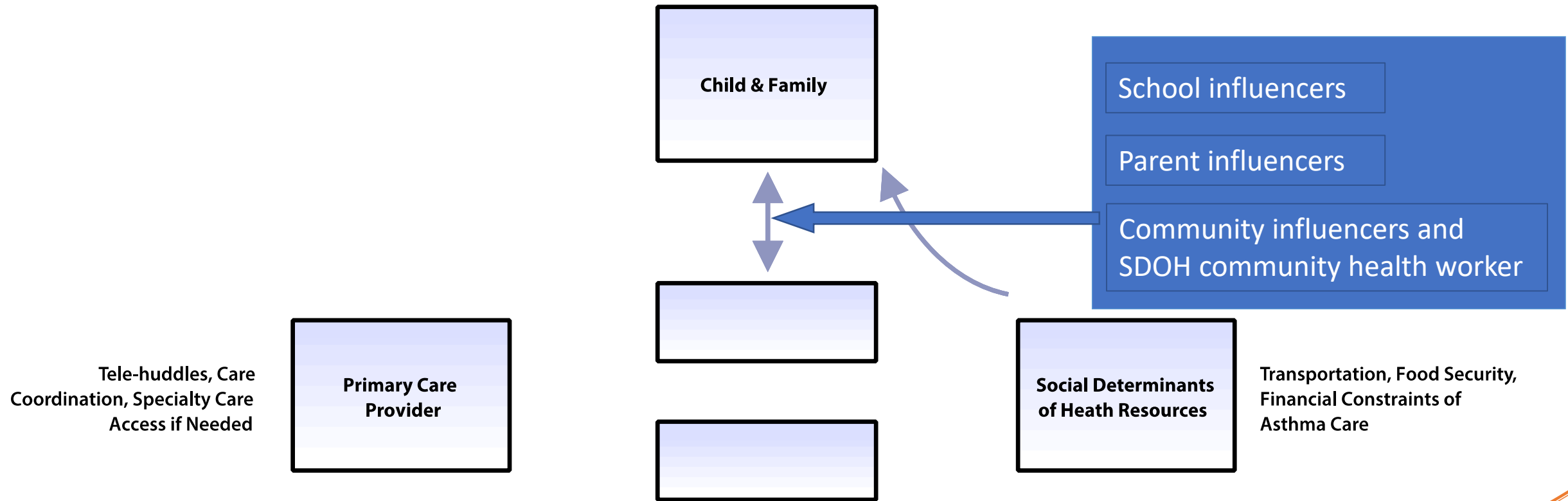
Asthma attacks, Asthma symptoms (co-primary effectiveness outcomes)

Deliverable: Online website/dissemination guide (a.k.a. playbook) – includes implementation resources for schools to train school nurses/community health workers, and to engage students and families



Enhanced School/Community Engagement with Community Health Worker volunteer

Education & Coordination to Better Control Asthma



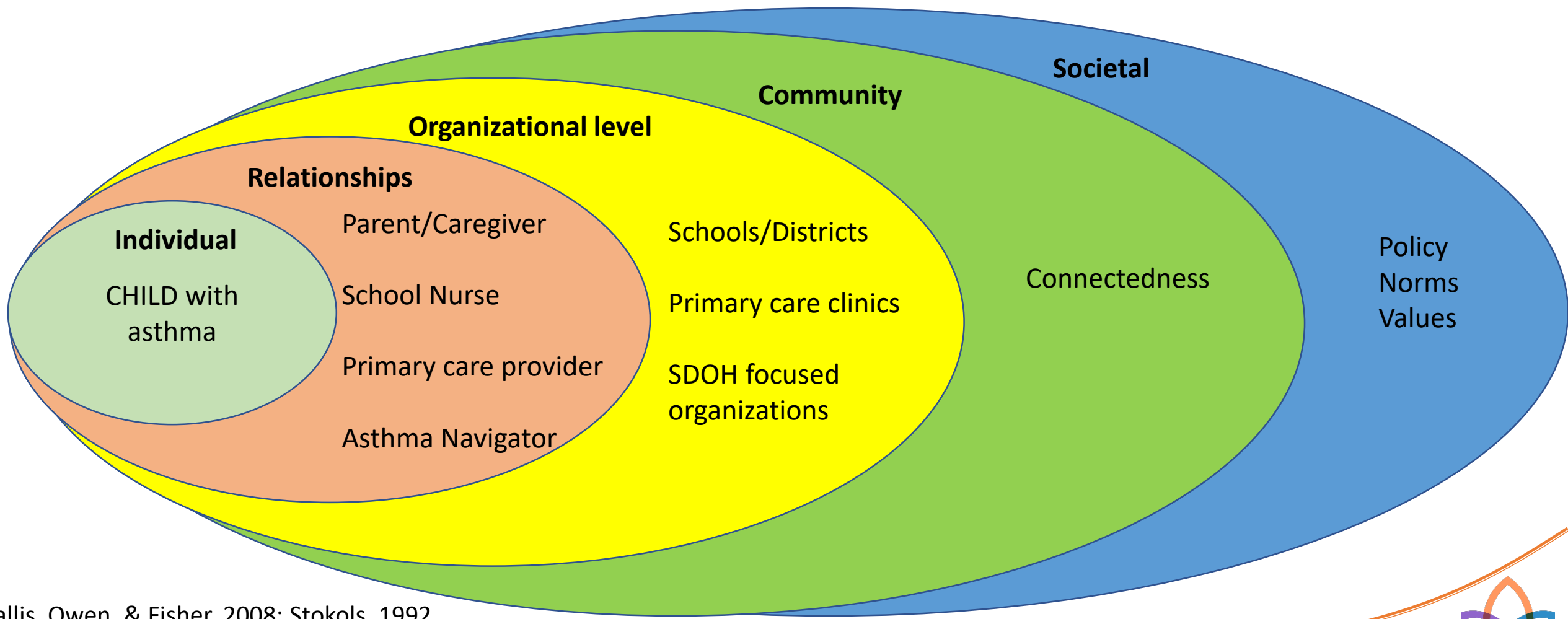


Implementation science methods leveraged to address disparities

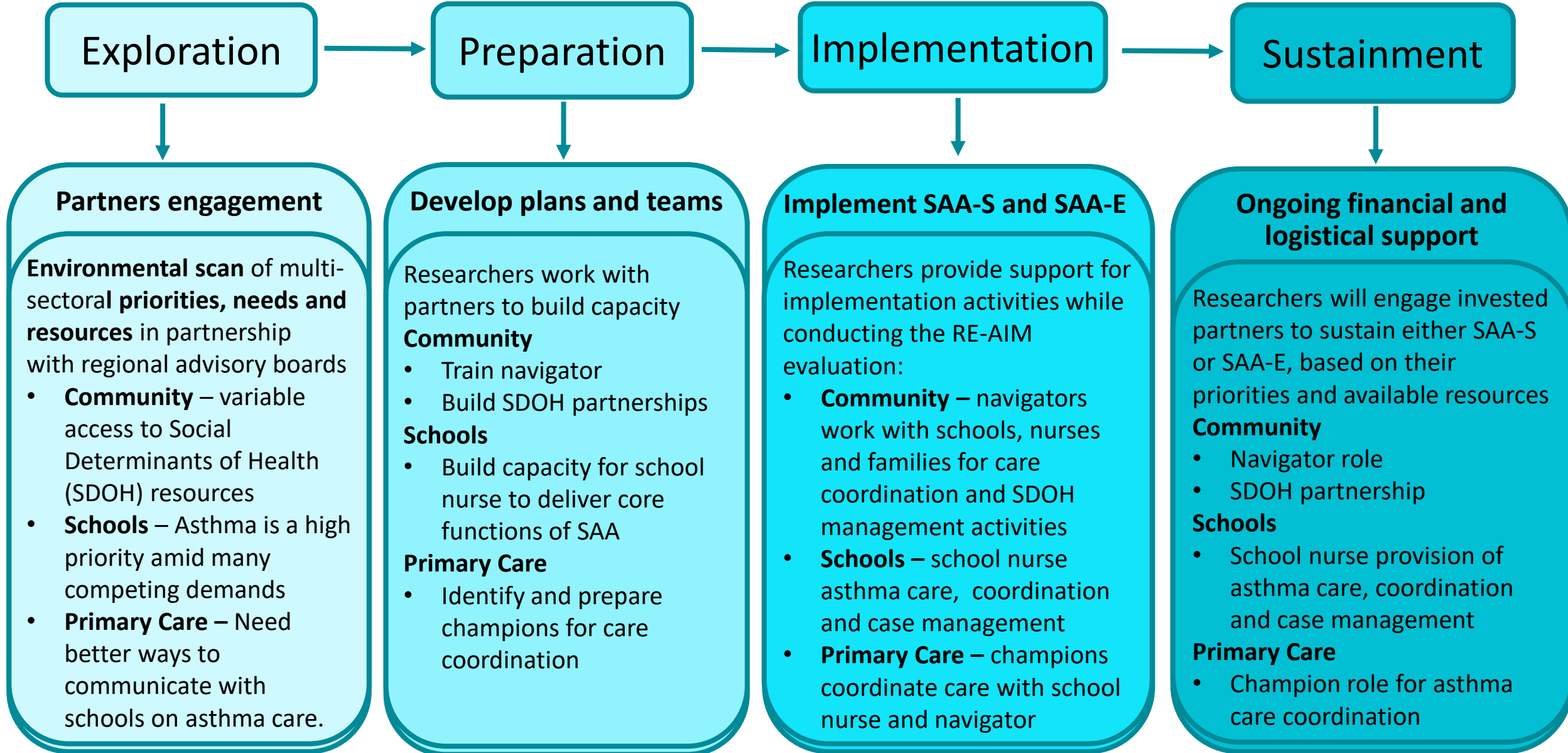
- Implementation Science Frameworks – process, contextual determinants and implementation outcomes
- Assessment of context at multiple socio-ecological levels
- Tailoring to context



Relevant partners for Stop Asthma Attacks



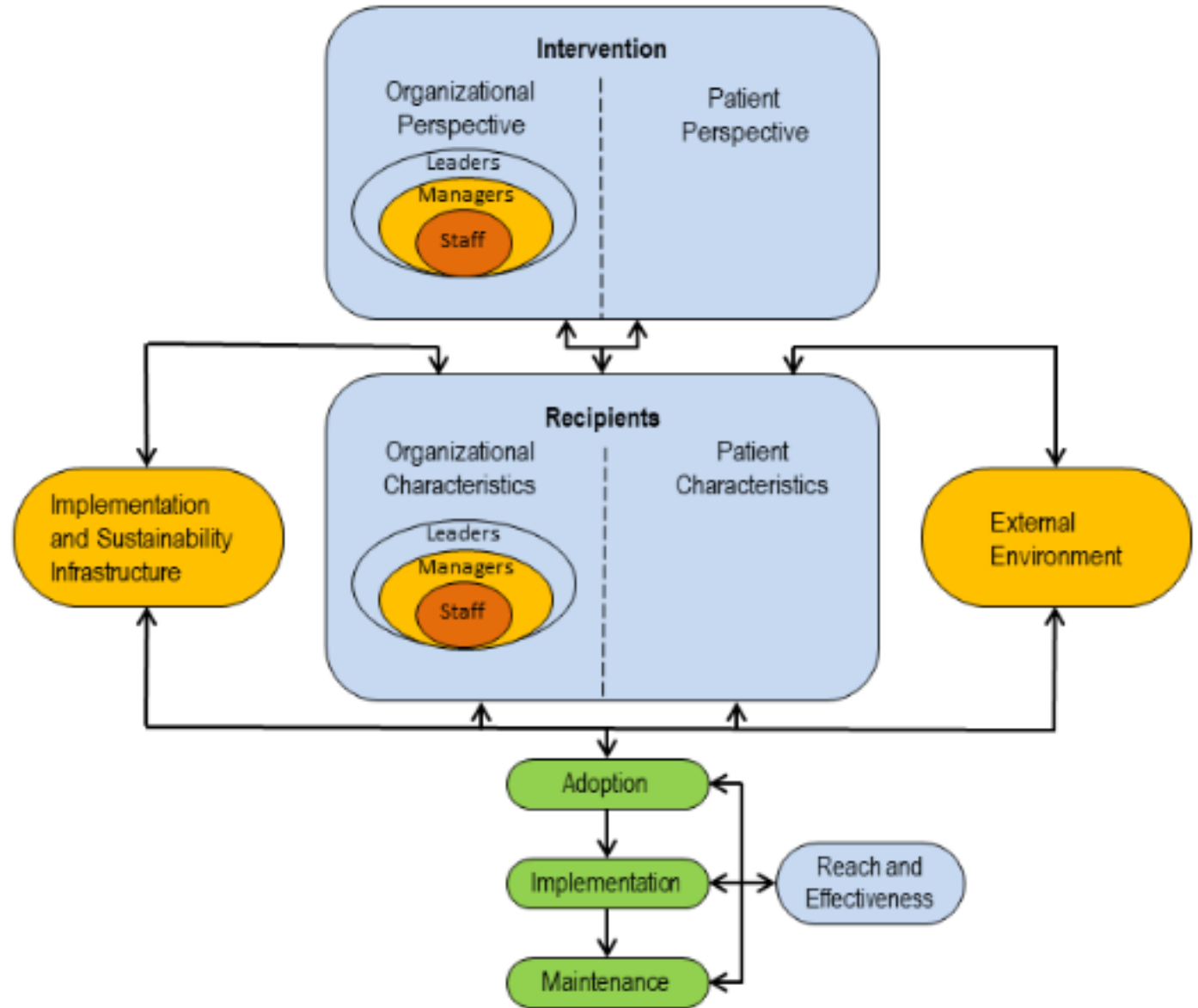
EPIS Process model guides work with community, school and primary care partners across phases



Framework: expanded RE-AIM

(Pragmatic, Robust, Implementation and Sustainability Model (PRISM) contextual factors that predict RE-AIM outcomes of Reach, Effectiveness Adoption, Implementation, and Maintenance)

www.re-aim.org



Exploration- Key Informant Interviews and Surveys

- **What: Key informant interviews and surveys**
 - Context related to PRISM determinants of implementation success
 - Priorities
 - Needs
 - Resources/Strengths
 - Readiness for change
- **Who: Community organizations, families living with asthma, health care professionals, schools, public health**



Preparation- Plan, Develop, Build Capacity

- **Co-identification with SAB/CABs of important indicators/outcomes of success to be measured in UH3 trial**
- **Co-development with regional CABs and schools (sites for implementation)**
 - Generic implementation plan: Fall 2021
 - SDOH Resource book for state and regions/communities: Fall 2021
 - Site-specific implementation plans: Winter 2022
 - Playbook for tailored implementation: Spring 2023
 - Interactive website for implementation support, guidance and resources – a **key deliverable to use with schools and to further refine in the UH3 phase**



Examples of Community engagement – presented by Andrea Jimenez-Zambrano, PhD



DECIPHeR Team and Community Partners



Principles guiding engagement:

- Community engaged research
- Community-based participatory research
- Effective community partnerships

- Inclusion and diversity of voices
- Collaboration and shared purpose
- Openness and learning from one another
- Transparency
- Building on strengths and resources of communities
- Focus on local relevance of issues on multiple determinants of health
- Participatory planning and preparation
- Participatory action for community impact
- Sharing and discussing results and plans
- Use of iterative systems development processes (cyclical and iterative process) for improvement
- Sustained engagement



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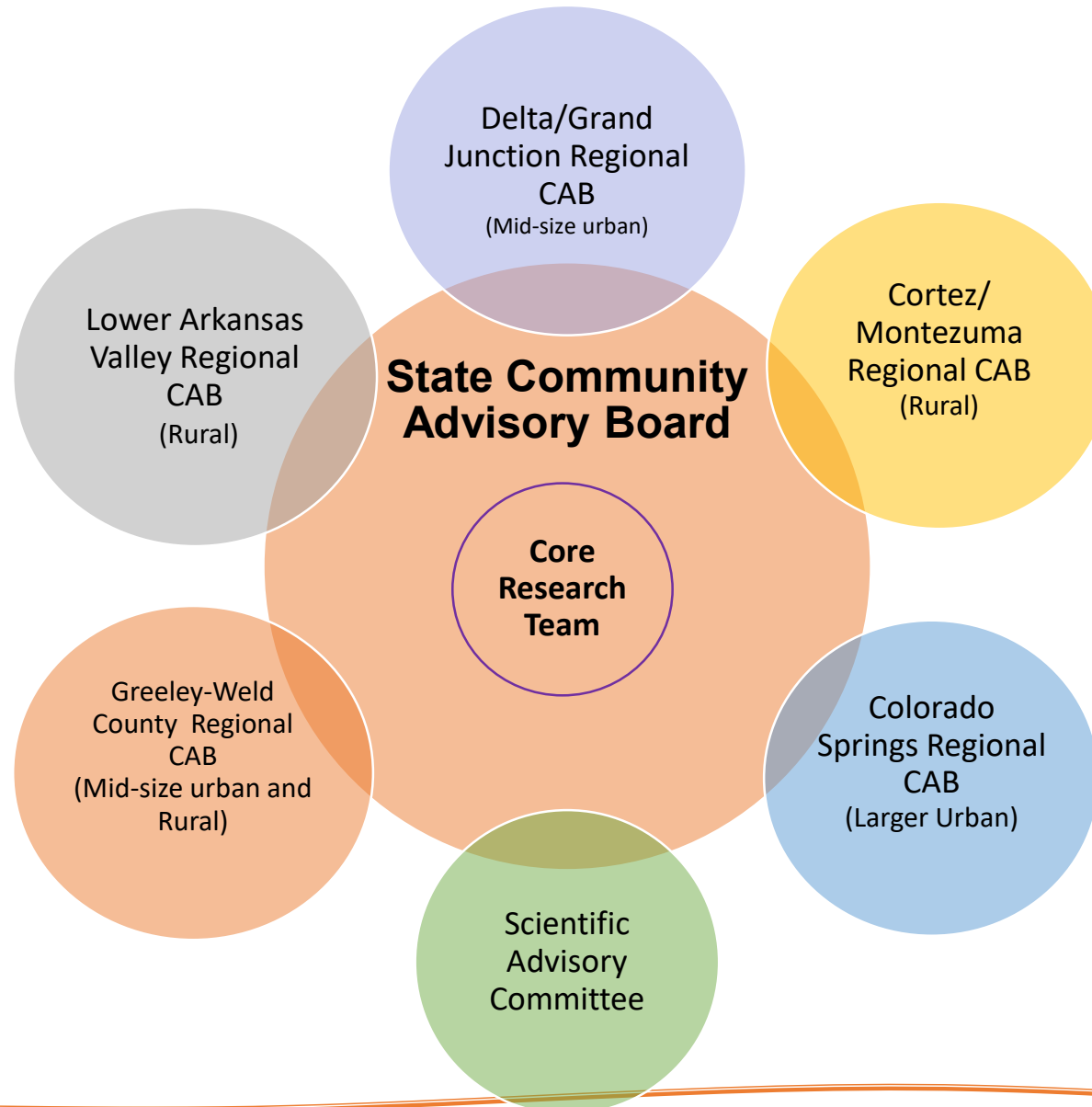
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Engagement Model



- Quarterly meetings
- Each regional CAB has representative on State Advisory Board
- Community CAB members paid for time, unless disallowed by their position



Composition of CAB Members

Variety of community partner roles were represented across the 5 CABs

- Health care providers
- School nurses
- Parents of child with asthma
- Local SDOH agency members
- Local public health



Priority Outcomes of Success

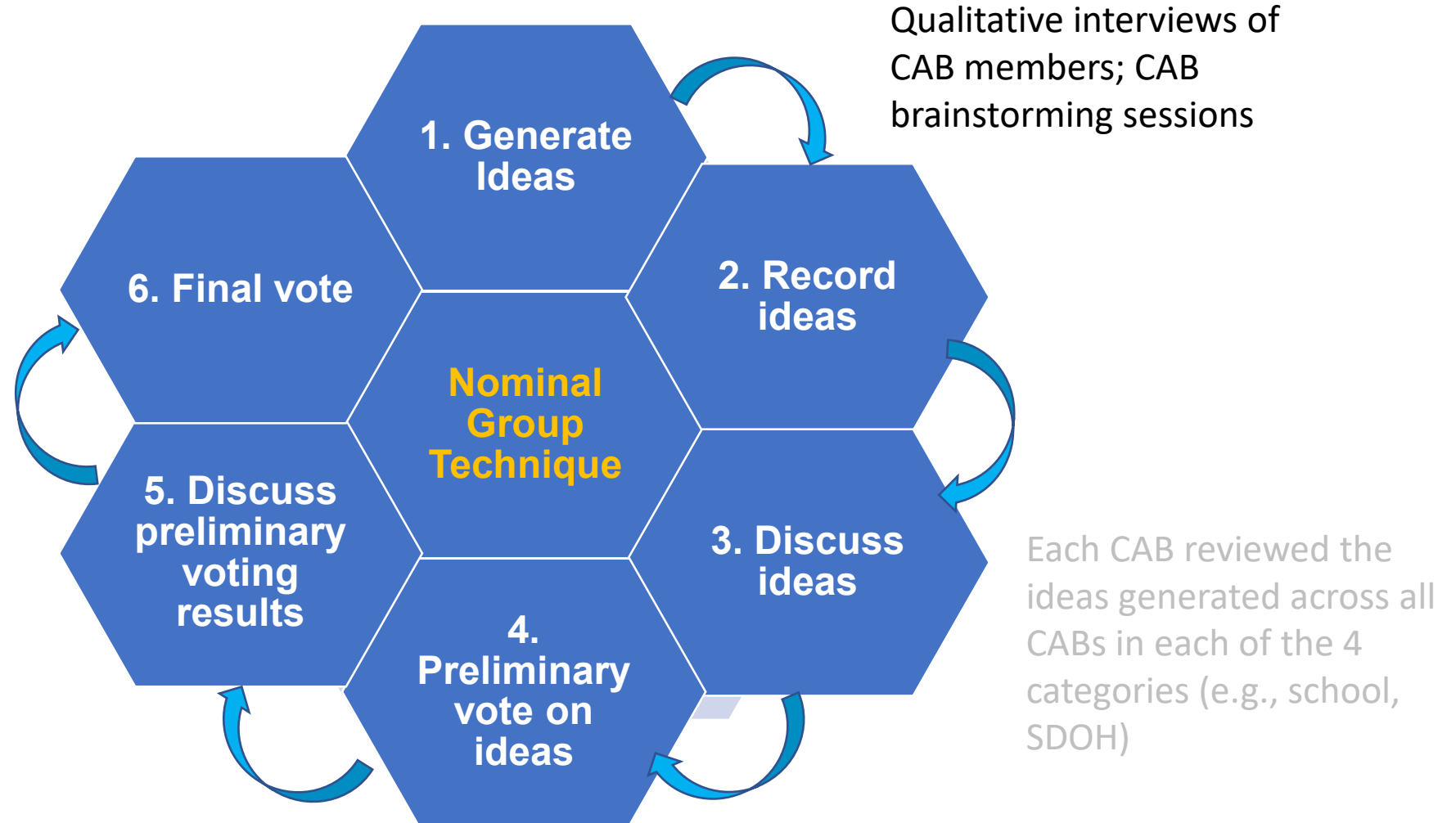


Key Objective in Planning Phase

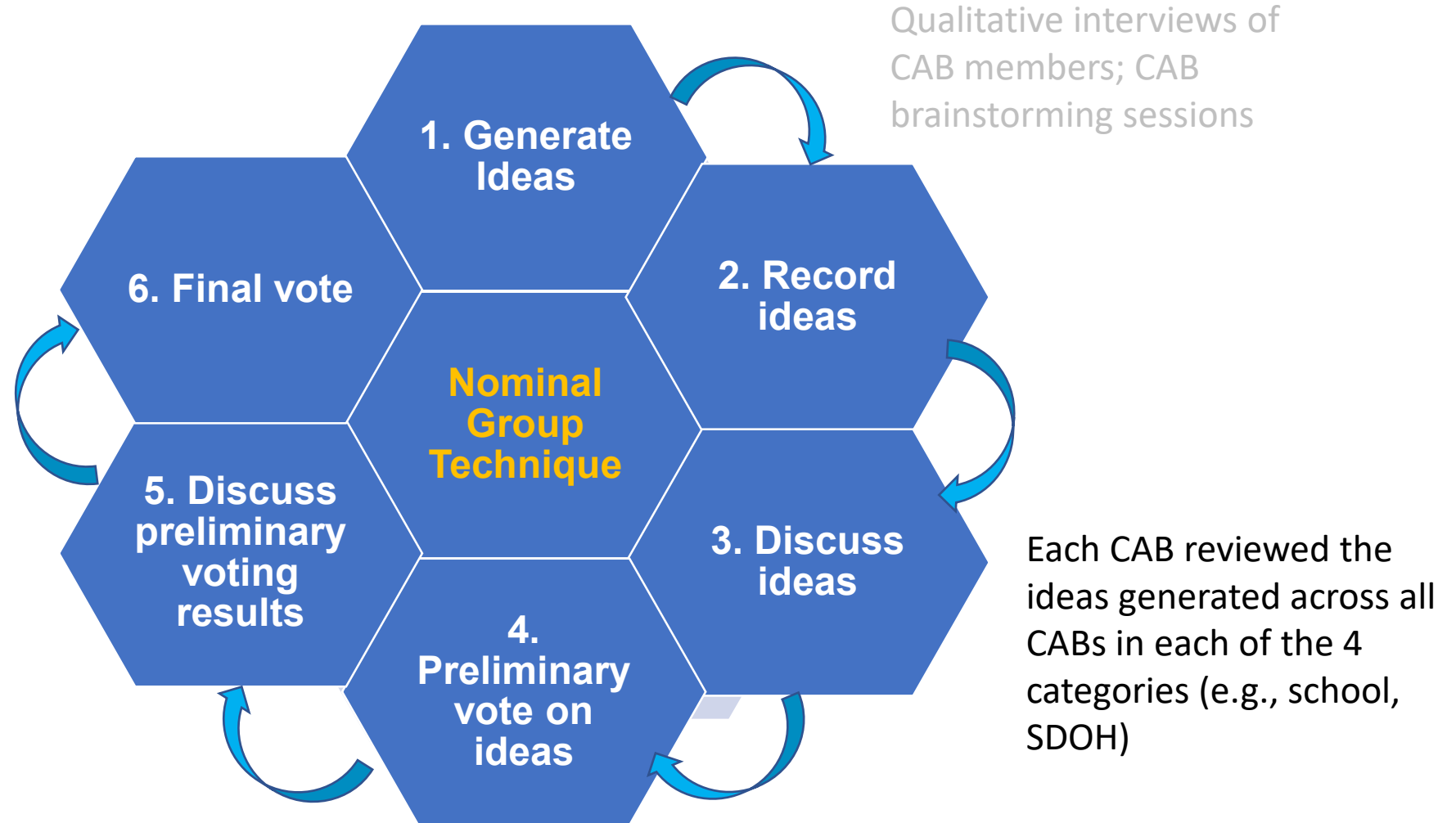
- Engage regional Community Advisory Boards (CABs) to come to consensus on priority outcomes of success
 - Ranked priority outcomes of success within 4 distinct categories
 - ✓ **Schools**
 - ✓ **Social Determinants of Health**
 - ✓ Child/Family
 - ✓ Health Care Providers



Our consensus-building method



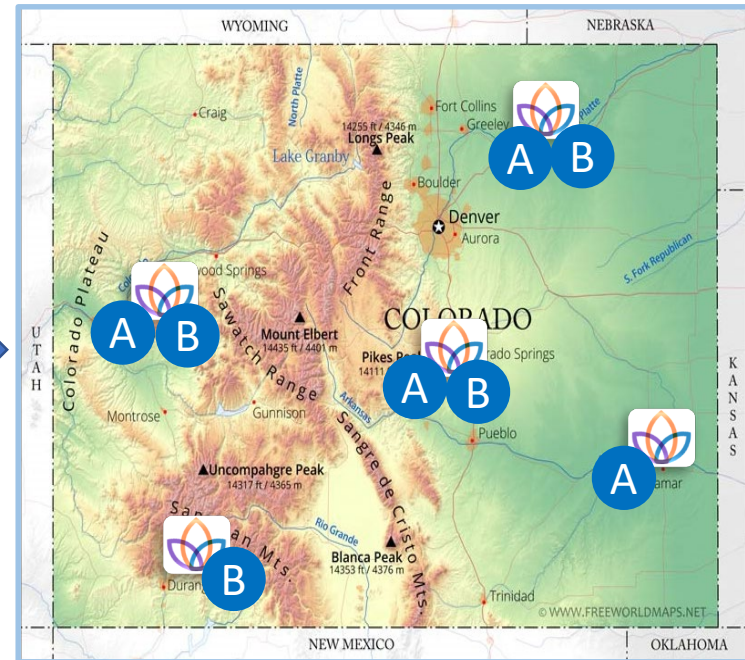
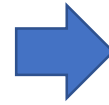
Our consensus-building method



Results

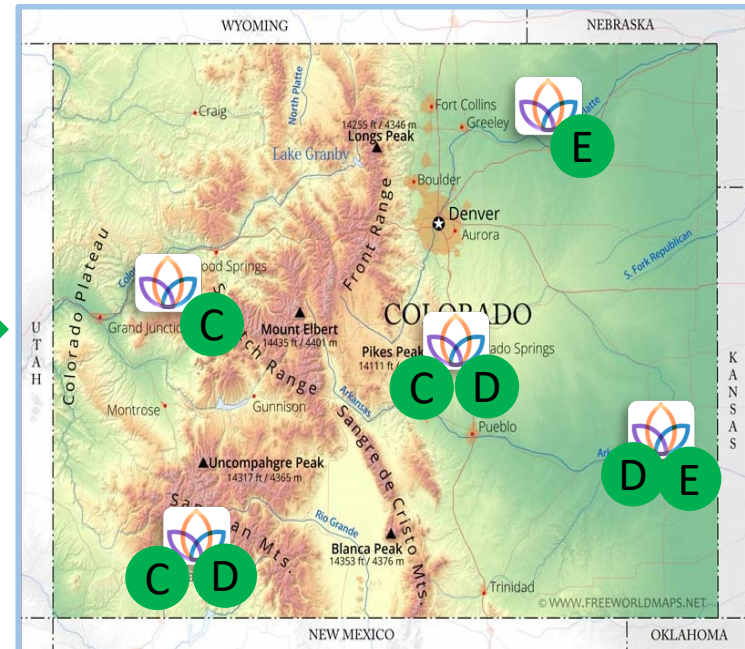
Schools:

- A** Increased **school asthma care plan on-file** for students early in school year (4 out of 5 regions)
- B** Increased **connection between schools and health care providers** (4 out of 5 regions)



Community/SDOH Agencies:

- C** Address **health literacy needs** for parents/family (3 out of 5 regions)
- D** **Transportation resources** (3 out of 5 regions)
- E** Availability of **fun, low-literacy, educational resources** (e.g., how-to-use inhaler resources for children) (2 out of 5 regions)



Lessons Learned

- Nominal Group Technique approach engaged CAB members to ensure diverse community perspectives were heard and priority “successes” identified and measured.
- More regional consensus about school outcomes than SDOH outcomes – implications for tailoring to regions.
- Using this process to prioritize outcomes of success has informed:
 - Implementation strategy selection
 - Study outcomes we will track/report back to CABs
- This process may be replicated for other studies.



Child/Family Engagement



Exploring the factors to tailor SAA program for acceptability and cultural responsiveness of families living in rural and smaller metropolitan areas of Colorado



Objective

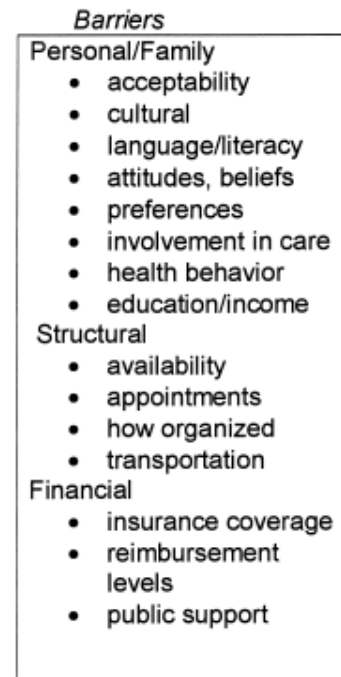
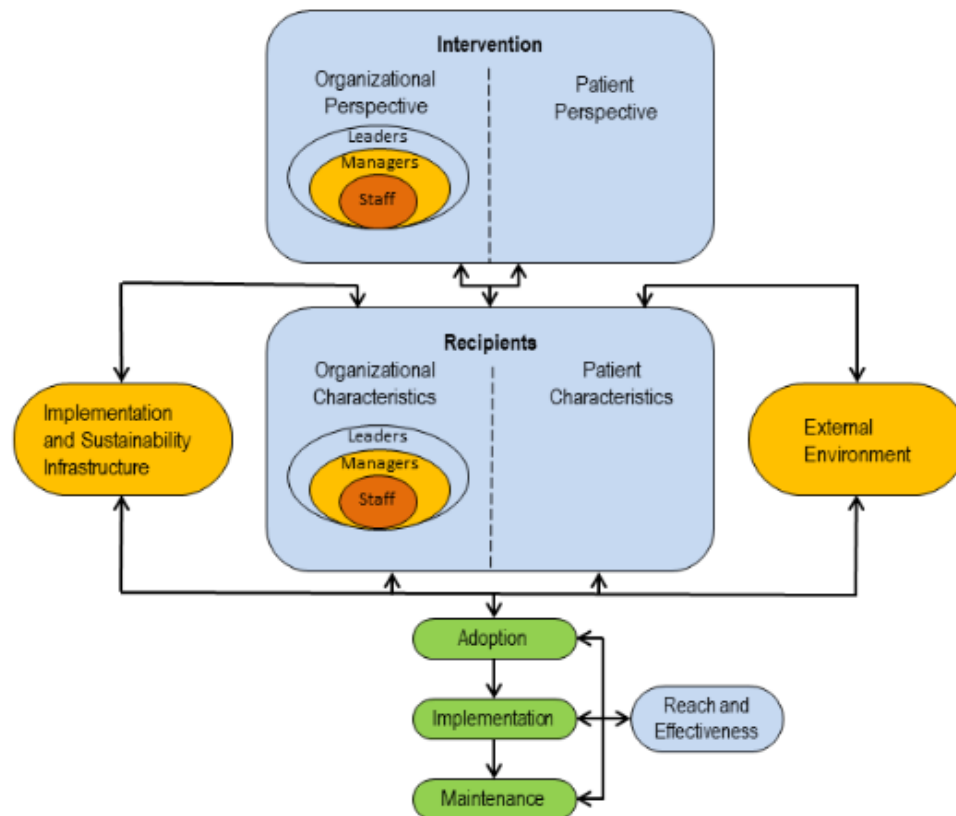
Aim 1-This project seeks to understand in-depth which barriers and facilitators might influence rural family's engagement with the SAA program

Aim 2- Identify possible adaptations to the program to ensure accessibility, acceptability and cultural responsiveness that would support their engagement.



Methods

- In-depth semi-structured interviews guided by PRISM and the Cooper's Health Equity frameworks.



Use of Services

- Visits
- primary care
 - specialty
 - emergency
- Procedures
- preventive
 - diagnostic
 - therapeutic

Mediators

- Quality of providers
- cultural competence
 - communication skills
 - medical knowledge
 - technical skills
 - bias/stereotyping
- Appropriateness of care
- Efficacy of treatment
- Patient adherence

Outcomes

- Health Status
- mortality
 - morbidity
 - well-being
 - functioning
- Equity of Services
- Patient Views of Care
- experiences
 - satisfaction
 - effective partnership



Methods

- In-depth semi-structured interviews guided by PRISM and the Cooper's Health Equity frameworks.
- Participants were identified at primary care practices using ICD-10 codes:
 - SALUD Ft. Morgan
 - High Plains Community Health Center
- Inclusion criteria:
 - English or Spanish speaker
 - Reside in the LAV or in the Weld/Fort Morgan
 - At least 18 years of age
 - Parent/caregiver of a child between 5-12 years of age with asthma



Preliminary Emerging Themes- Acceptability

Barriers

- Theme 1: A lack of education about asthma and how to manage it impacts effective and sustained management among children.
- Theme 2: Both rural locations described similar experiences with PCPs and emergency care utilization.
- Theme 3: Financial situations influence medication access at school.

Facilitators

- Theme 4: General acceptability and openness among participants to take part in an asthma program at school.



Preliminary Emerging Themes- Tailoring to Fit

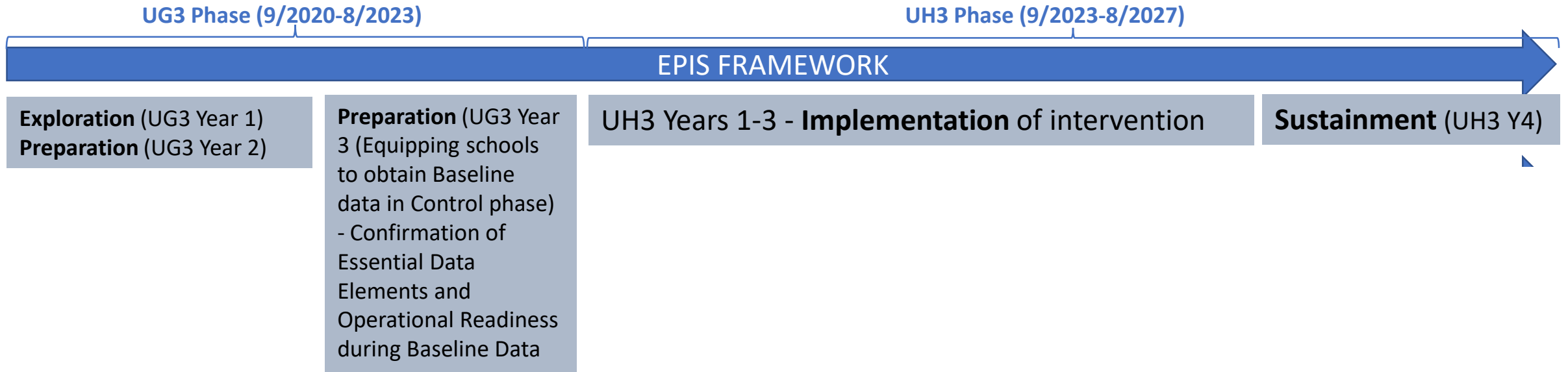
- Theme 1: School involvement in asthma management seems to be related to more severe asthma, more involvement from school, and increased likelihood of having ACP in place and/or inhaler at school
- Theme 2: Language barriers negatively impact asthma management making it more difficult to understand an asthma diagnosis, access medication, and communicate with providers.



Next steps



Current Proposed Study Design and Timeline for Colorado



Study Design: open cohort, parallel cluster randomized trial where intervention conditions are phased in over two years.



Current Proposed Study Design and Timeline for Colorado

UG3 Phase (9/2020-8/2023)

UH3 Phase (9/2023-8/2027)



Exploration (UG3 Year 1)
Preparation (UG3 Year 2)

Preparation (UG3 Year 3 (Equipping schools to obtain Baseline data in Control phase) - Confirmation of Essential Data Elements and Operational Readiness during Baseline Data

UH3 Years 1-3 - **Implementation** of intervention

Sustainment (UH3 Y4)

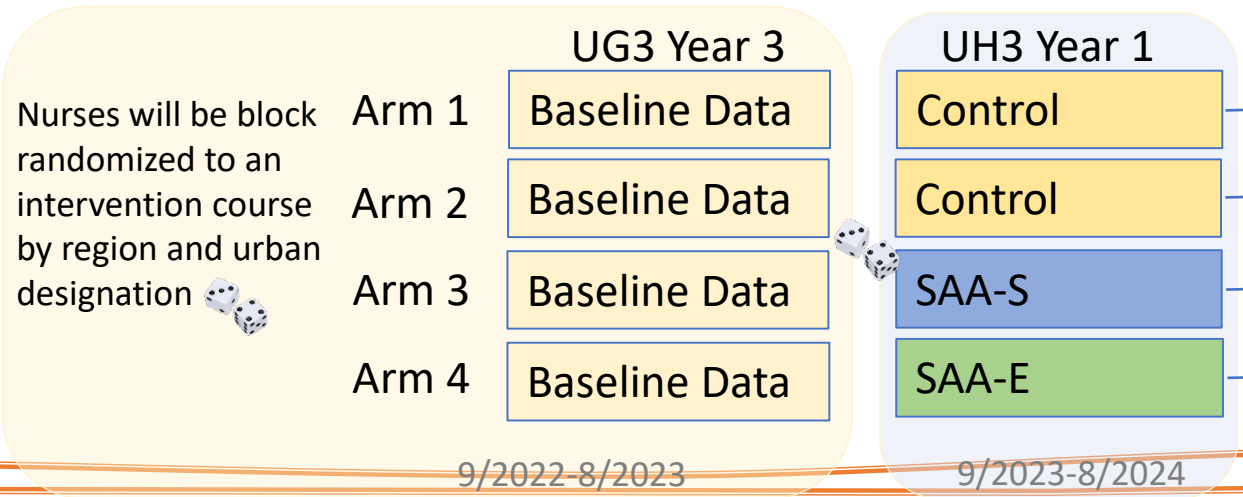


- Reach
- Adoption
- Implementation

Evaluation of Eff

- SAA-S vs. SAA-E
- SAA-S vs. Usual Care
- SAA-E vs. Usual Care

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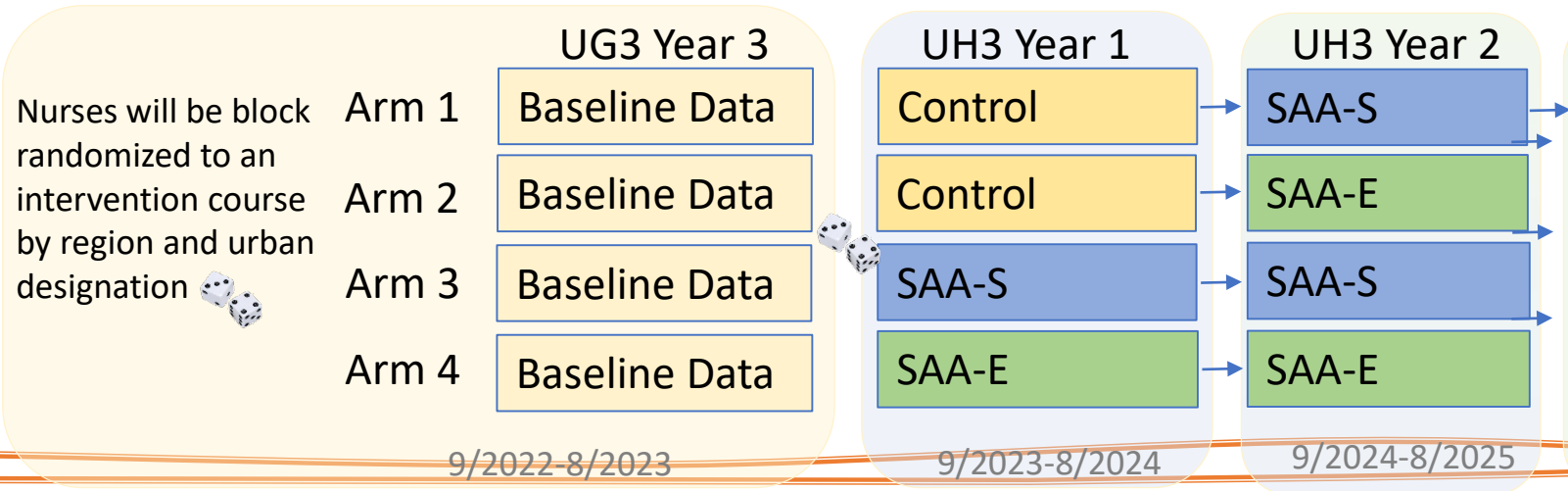


Reach	Reach
Adoption	Adoption
Implementation	Implementation



SAA-S vs. SAA-E
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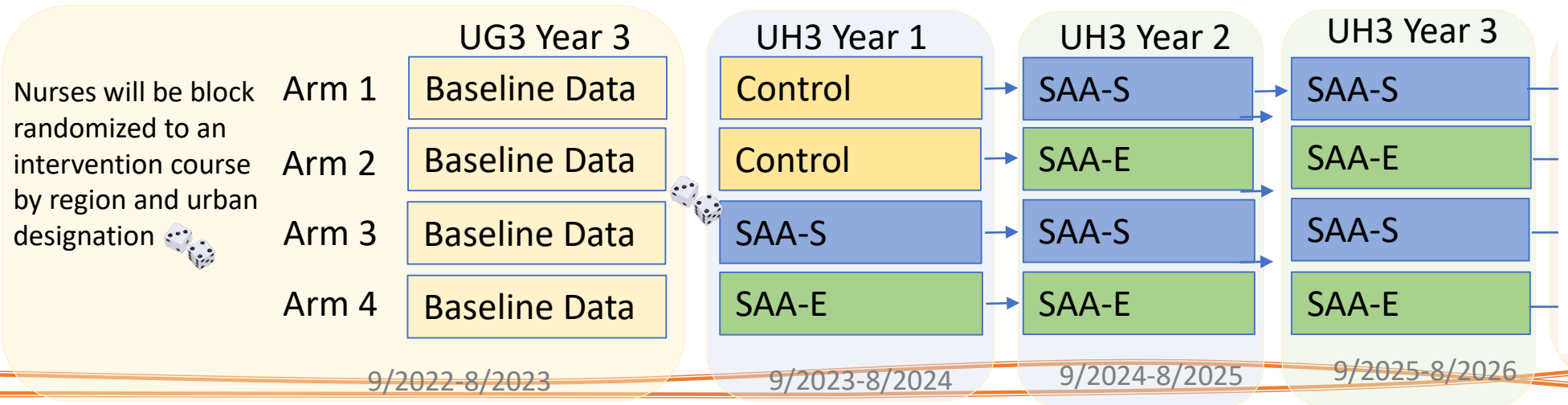


Reach	Reach	Reach
Adoption	Adoption	Adoption
Implementation	Implementation	Implementation



SAA-S vs. SAA-E SAA-S vs. Usual Care SAA-E vs. Usual Care	SAA-S vs. SAA-E Control for covariates and modifiers, examine cont
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UH3 Years 1-3 - Implementation of intervention | **Sustainment (UH3 Y4)**



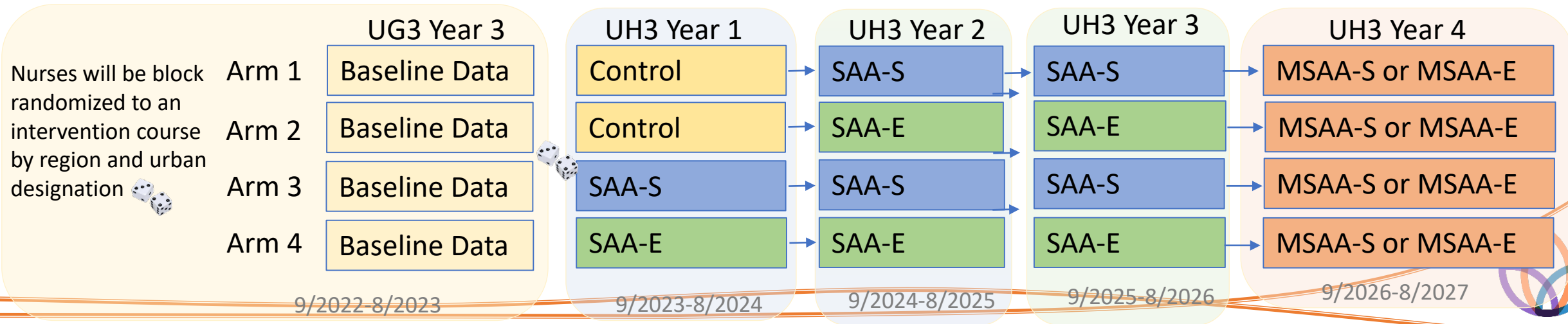
Reach	Reach	Reach	Reach
Adoption	Adoption	Adoption	
Implementation	Implementation	Implementation	Implementation
			Maintenance



SAA-S vs. SAA-E
SAA-S vs. Usual Care
SAA-E vs. Usual Care

SAA-S vs. SAA-E
Control for covariates and potential modifiers, examine contextual factors

Study Design: open cohort, parallel cluster randomized trial where intervention conditions are phased in over two years.



Next Steps

Planning Phase Year 3 (9/2022 – 8/2023)

1. Finalize protocol for sponsor approval
2. Data Safety Monitoring Board review and approval
3. Complete school nurse recruitment
4. Hire data collectors for each region
5. Collect aggregate data from each school
6. Finalize list of participating schools for site randomization
7. Hire/train asthma navigators

Years 4-7: Program implementation 9/2023



School Nurse Recruitment

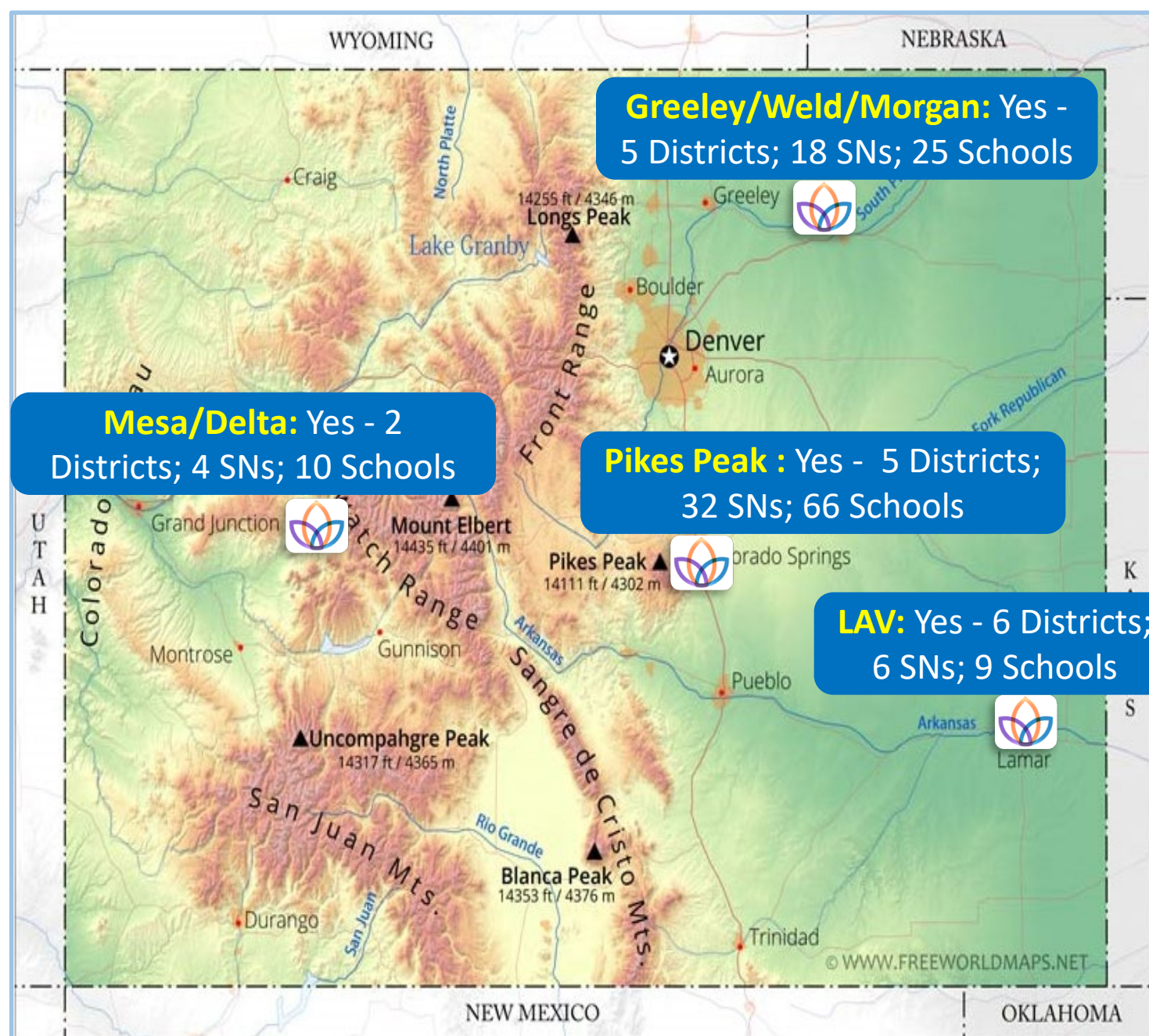
Totals

Yes

Districts: 18
Nurses: 60
Schools: 110
Potential participants: 1435

Yes and Maybe

Districts: 24
Nurses: 73
Schools: 150
Potential participants: 1902



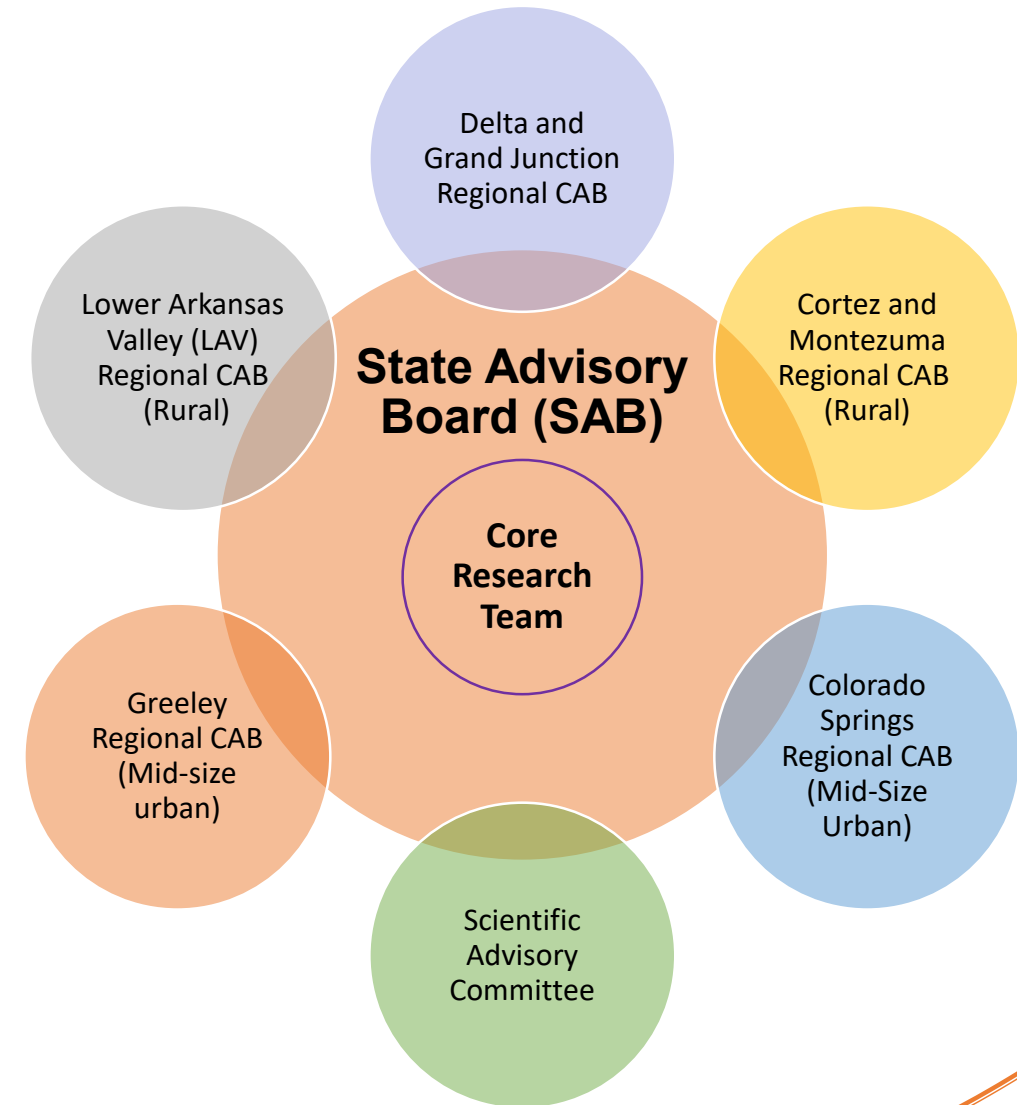
Key Challenges

1. Seeking sufficient finances to include all eligible and interested schools -- looking for supplemental funding options from foundations and potential future sponsors in the sustainment phase
2. Not letting the cart get ahead of the horse – still studying effectiveness of the adapted program in new contexts



Credit to our team and advisors!

- Stan Szeffler, MD (MPI) – Asthma/School-based research
- Lisa Cicutto, RN, ACNP(CERT), PhD (MPI) - Rural community engagement, Asthma/School-based research
- Amy Huebschmann, MD, MSCS (MPI) - Dissemination and Implementation science
- John Brinton, PhD – Biostatistician, Design and Analysis
- Lisa DeCamp MD, MSPH – General pediatrician, health disparities research
- Melanie Gleason, PA, MS – Asthma/School-based programs – major role in implementing/training
- Arthur McFarlane –Asthma/School-based evaluation and social determinants of health outreach
- Sarah Brewer, PhD – Mixed methods and qualitative research
- Nicole Wagner, PhD – Dissemination and Implementation science
- Misha Brtnikova, PhD, MPH - Project manager
- Anowara Begum, MPH - Project Coordinator
- Julia Reedy, MA - Qualitative Analyst
- Rachel Armstrong, BA - Project Coordinator



Community partners

Lower Arkansas Valley

- **Meagan L Hillman PA-C, MBA** - Director Prowers County Public Health
- **Sandy Malouff** - Director, Sante Fe Trail BOCES
- **Su Korbitz** - Otero County Public Health Environmental Services Program Director
- **Gino Figlio, MD** - High Plains Community Health Center
- **Jessie Wallace, RN** - Otero School District
- **Kirsten Bolstad, Physician Assistant** - Valley-Wide Health Systems
- **Haley Morales, RN** - Lamar school nurse

Greeley/Weld/Morgan

- **Debra Pettit, RN** - Highland School District Nurse
- **Jodi Walker** - Kids at their Best
- **Lori McCarty, RN** - Greeley Schools nurse
- **Amy Driscoll, MD** - Pediatrician, University Health
- **Hannah Sellnow** - Physician Assistant , Sunrise Community Health
- **Mechelle Beck** - Health Promotion and Prevention Manager, Northeast Colorado Health Department
- **Sandalyn Garcia** - Director, Salud Family Health Centers



Community partners

Mesa/Delta

- Benjamin Hughes, MD CHCO - Pediatric Pulmonologist and Sleep Medicine physician in Grand Junction
- Andrea L Nederveld, MD – Primary Care Med-Peds physician – Director of PEACHnet, Grand Junction
- Alicia Morrill - Parent of a child with asthma
- Megan Murray - Regional school nurse, Grand Junction
- David Scott, MD - Allergy/Immunology physician
- Rachel Slogar , RN - School district nurse for Delta

Montezuma/Cortez

- Moriah Tarpey, MD - Pediatrician
- Imu Suko – Trailheads Regional Public Health Connector
- Kim Caruso, MD – Pediatric doctor, school health champion
- Leigh Sand – Cortez school nurse
- Jaclyn Hall, BSN, RN – Montezuma school nurse

Pikes Peak

- Michelle Largent -School nurse Harrison School District
- Amy Dreher - School nurse El Paso County
- Patricia Eells, NP CHCO - CHCO Pulmonary provider
- Jamie Clayton - Director of Healthcare Integration, YMCA
- Amanda Taylor - CHCO Asthma Care Coordinator
- Kat Wyns, MD - Primary Care Provider (TriCare/Military)
- Grace Houser - Healthcare Administrator (Director of Population Health, CHCO Colorado Springs)
- Crystal Joyner - mom of a Tricare Insured child



Questions?

Email us with any questions: stopasthmaattacks@ucdenver.edu

Reference: Szeffler SJ, Cicutto L, Brewer SE, Gleason M, McFarlane A, DeCamp LR, Brinton JT, Huebschmann AG. Applying Dissemination and Implementation Research Methods to Translate a School-Based Asthma Program. *J Allergy Clin Immunol.* 2022;150:535-48.

