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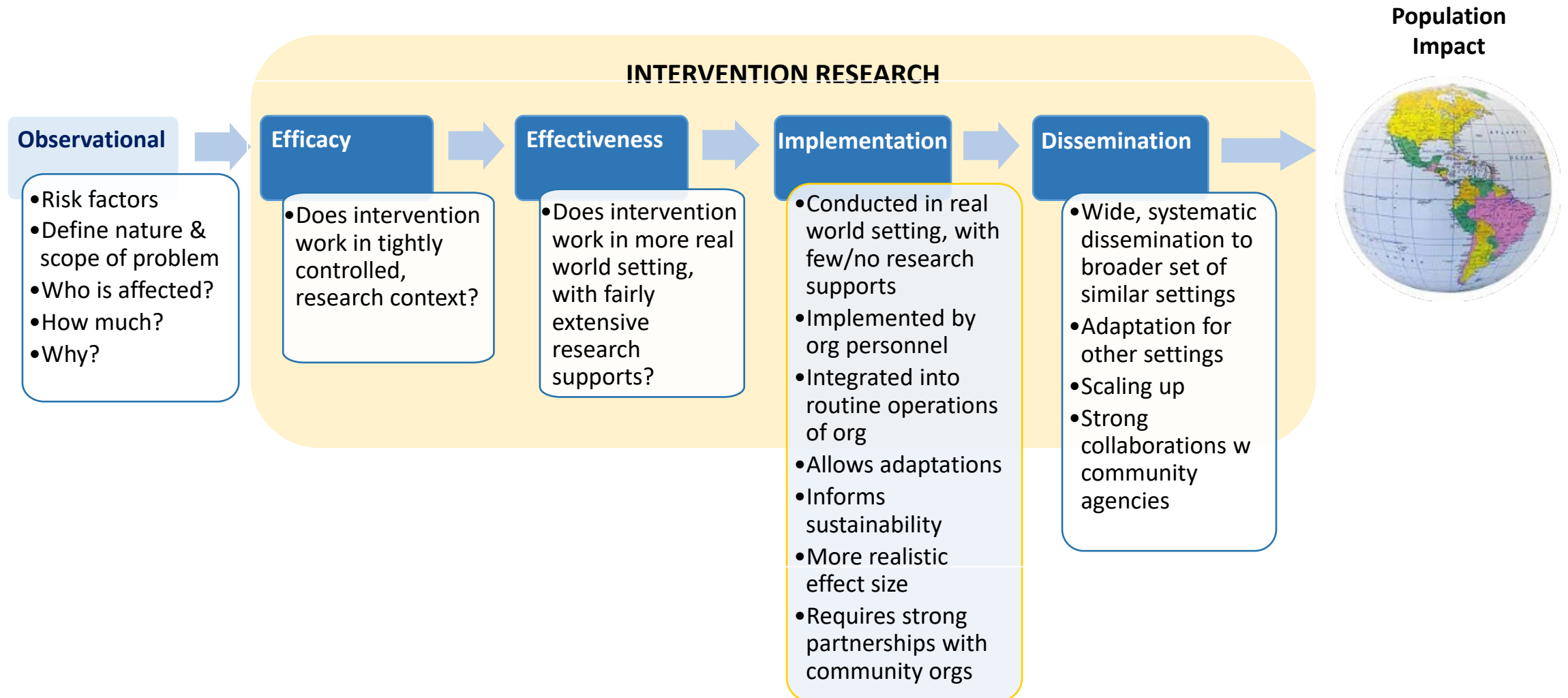
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Co-Investigators: Beth Glenn, PhD; Alison Herrmann, PhD;
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Community Principal Investigator (CCRC): Susan Savage, PhD

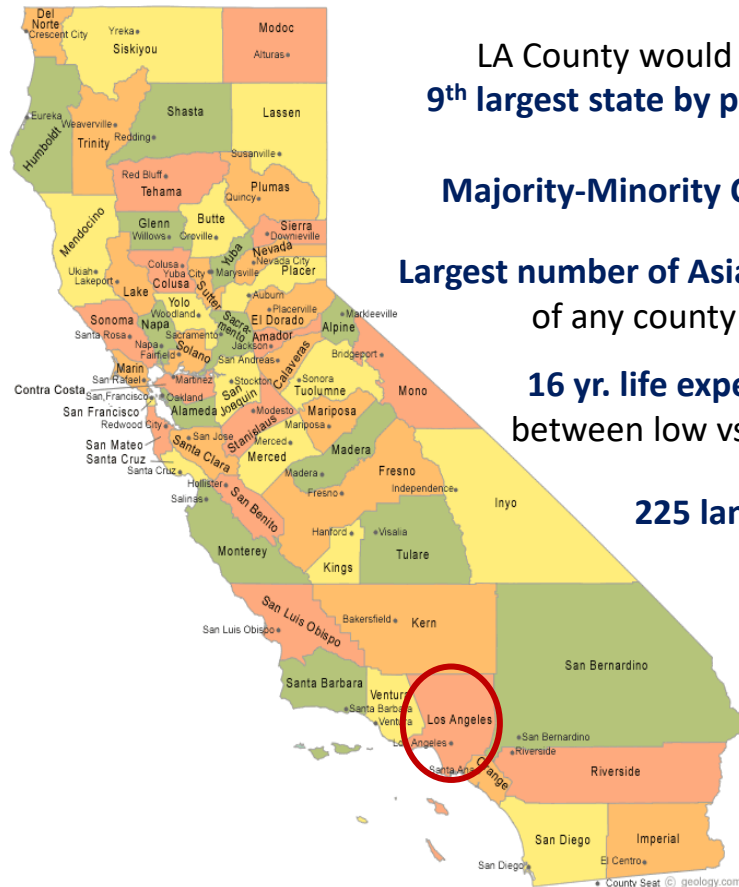
**Bernard Tyson School of Medicine, Kaiser Permanente*

Research Continuum Spanning Problem Definition to Public Health Impact



Los Angeles County, California

Most Populous and Most Diverse County in U.S.



LA County would be the
9th largest state by population

Majority-Minority County – 74%

**Largest number of Asian immigrants
of any county in US**

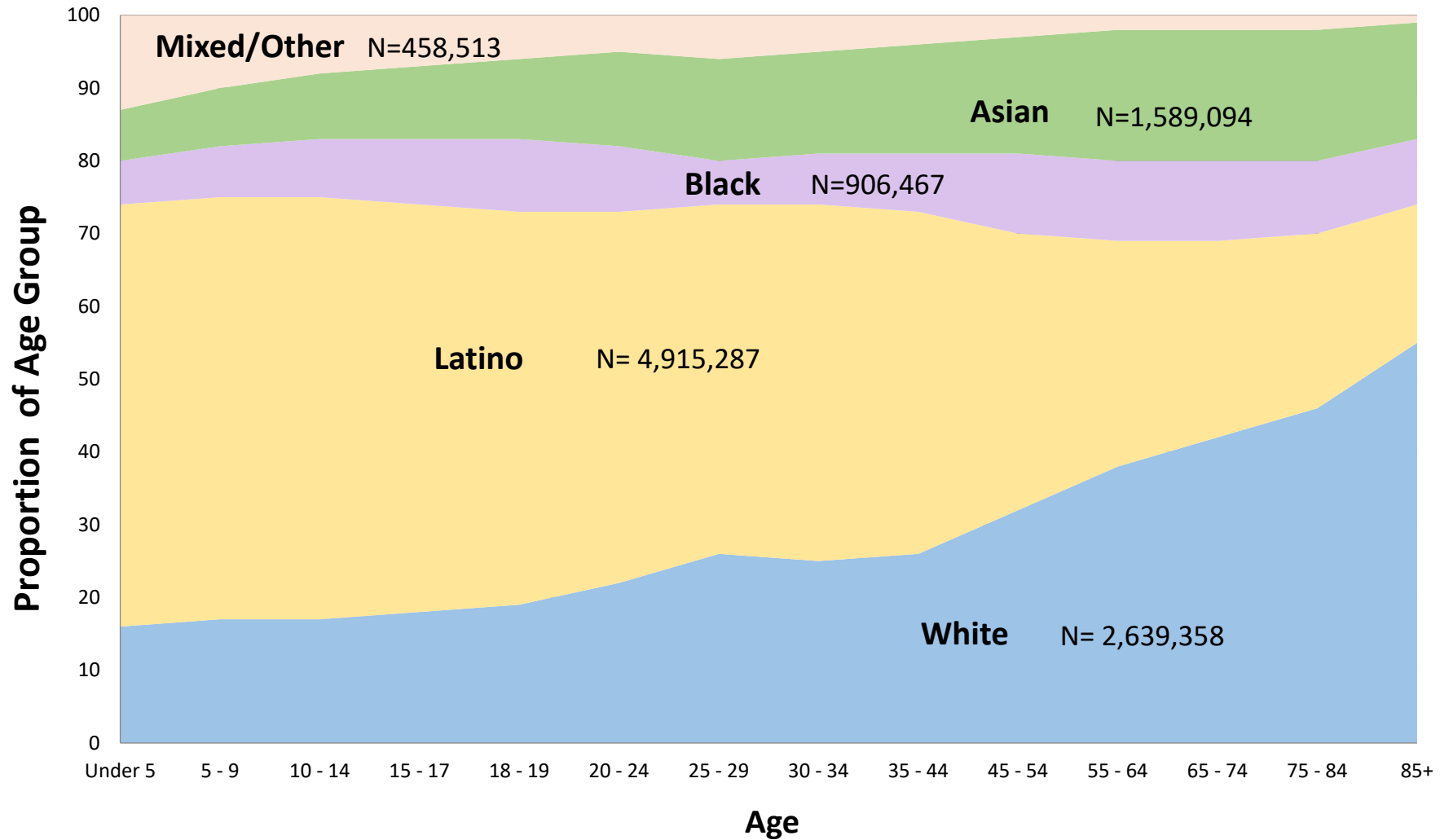
**16 yr. life expectancy difference
between low vs high income areas**

225 languages spoken

	<u>LAC</u>	<u>CA</u>	<u>US</u>
Total Population	10.2 million	39.6 million	327 million
Latino	49%	39%	18%
White	26%	37%	60%
Asian/PI	15%	15%	6%
Black	8%	6%	13%
Foreign Born (adults)	45%	27%	13%
Non-English at home	57%	44%	21%
Persons per sq mile	2,420	239	87

U.S. Census Bureau, 2018.
LACDPH Key Indicators of Health, 2017.

Ethnic Composition by Age in Los Angeles County



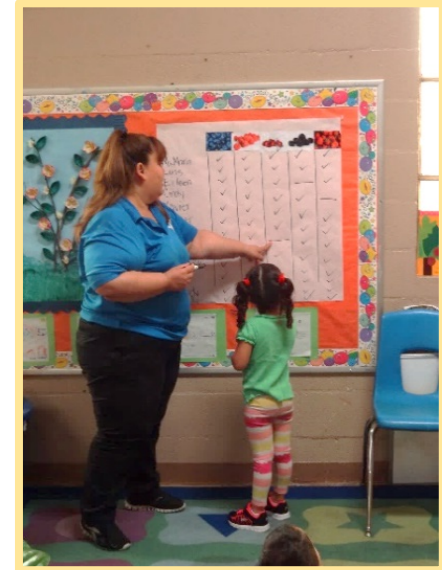
Addressing Obesity in Preschool Settings

Obesity linked to many early onset chronic diseases e.g., T2DM, fatty liver, cancer, cardiovascular disease

- Obesity prevention efforts need to shift to younger ages
- Low-income Latinos and African Americans have highest obesity rates
- High rates of overweight/obesity in LAC preschools (pilot study in 100 preschools)
 - 38% of children, 42% of teachers, 59% of parents

Community Partner: Child Care Resource Center (CCRC)

- Serves 50,000 children a month across 22,500 square-mile service area
- Supports 1,500 preschools in LA, part of national network of 700 CCRCs
- Over 65% of children are Latino/Black/Asian
- CCRC offers: workforce training and development through coaches
 - Provide support for policies, curriculum, child development, health and wellness
 - Establish quality improvement goals individualized to sites and classrooms
 - Family engagement through workshops and events



Study Design & Outcomes

Cluster Randomized Implementation Trial in 60 Preschools

- Underserved areas of San Fernando & Antelope Valleys (high concentration of Latinos)
- Multilevel system intervention (policies, curriculum, teacher/parent engagement)
- **Primary Outcome** – child BMI z-score
- Secondary Outcomes:
 - Child nutrition & physical activity - parent reported
 - Teacher & parent self-reported nutrition, phy activity, height/weight
 - Preschool: on-site observations to document implementation
- **Assess Implementation** - to inform dissemination & scale up

➔ **RE-AIM Framework**



Study Design & Methods

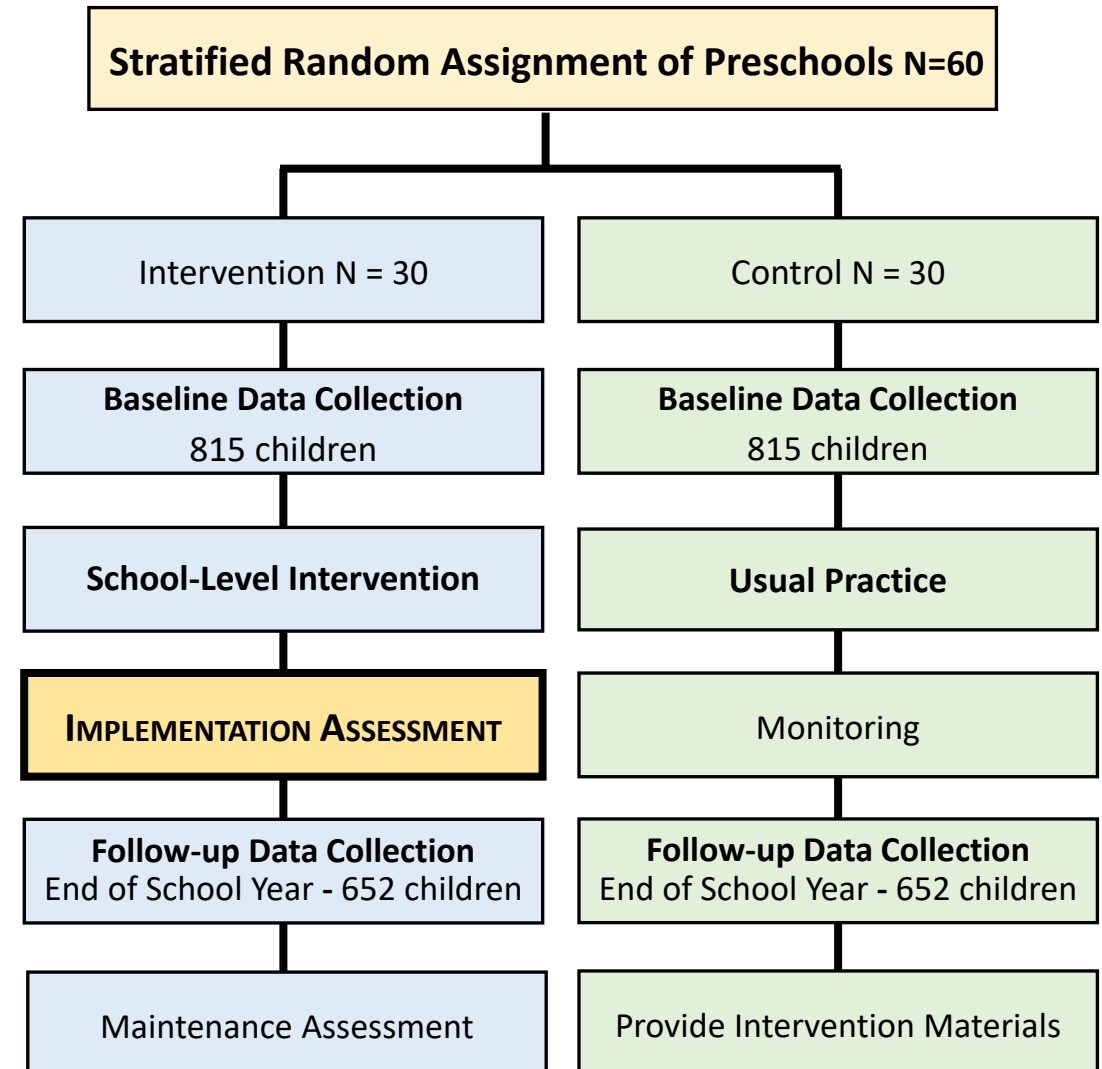
Primary Outcome: Child BMI z-scores

Secondary Outcomes:

- Parent-reported child nutrition and physical activity
- Teacher and parent self-report of nutrition, physical activity, and height/weight
- Observation of preschool environment (EPAO)*

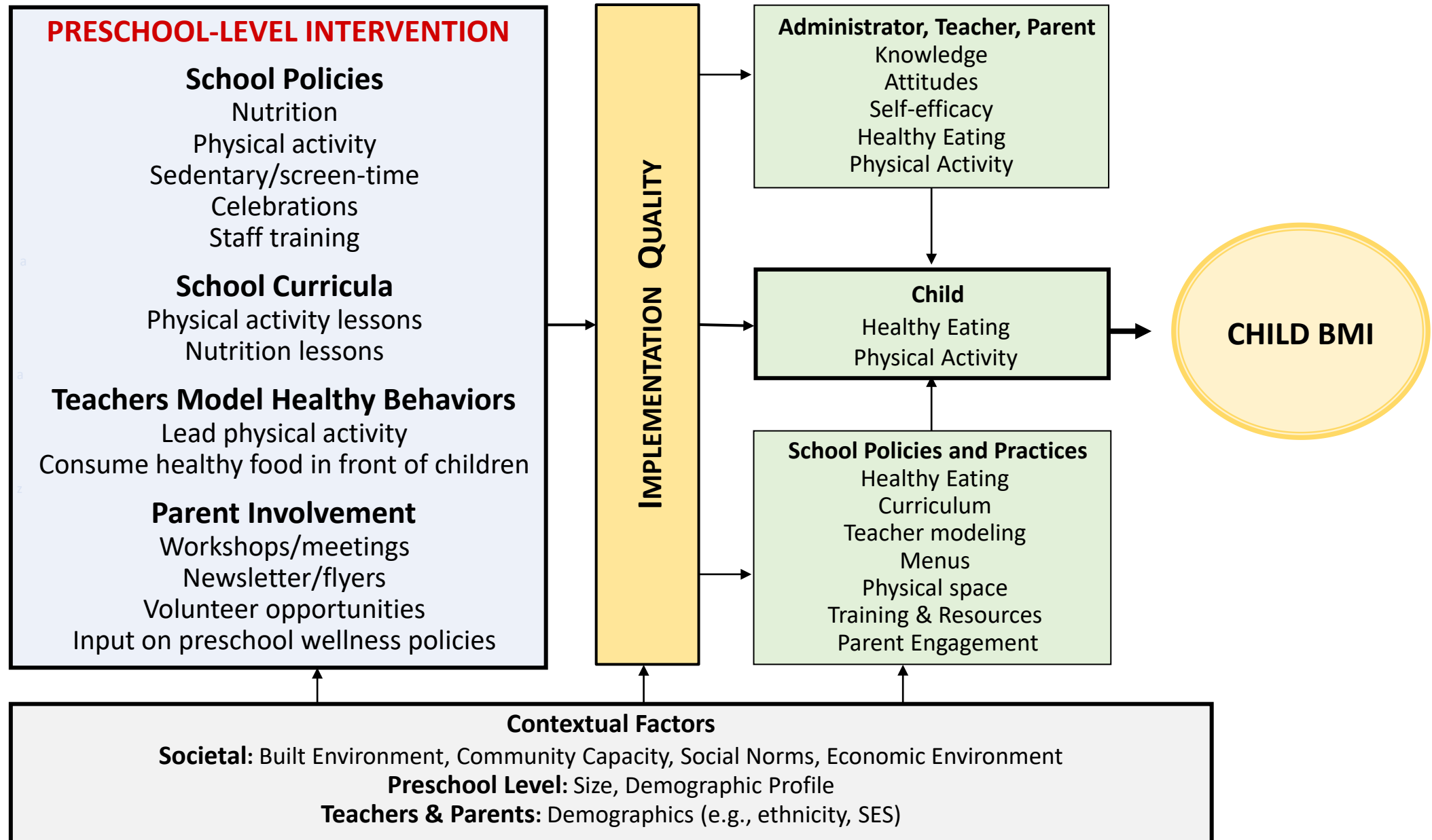
Implementation Outcomes: RE-AIM Framework

- Policy adoption (organization level)
- Curriculum implementation (classroom level)
- Teachers model healthy behaviors
- Parent engagement (family/child level)



*Environment & Policy Assessment & Observation

Healthy-by-Default Framework (Bastani et al.)



Implementation Outcomes: RE-AIM Framework

<u>REACH</u>	<u>Preschool-level</u> : % of eligible preschools that enroll, out of all contacted <u>Parent-level</u> : % of parents in preschool who enroll in study (agree to data collection)
<u>EFFECTIVENESS</u>	Primary outcome: Child BMI z-score; Secondary outcomes via parent, teacher, site director surveys
<u>ADOPTION</u>	% of preschools/classrooms adopting (yes vs. no) each intervention component <u>Source</u> : Adoption elements of Site Director Survey, EPAO, Teacher Logs, Improvement Plans
<u>IMPLEMENTATION</u>	Intensity/frequency of implementation of intervention components e.g., # weekly Nu/PA lessons, parent engagement activities, meal menus <u>Source</u> : Teacher Logs, Quality Improvement Plan, implementation components of the Site Director Survey & EPAO to allow comparison of intervention and control sites (menu changes, staff trainings, parent events)
<u>ADAPTATION</u>	Document modifications to intervention: content vs. contextual, level at which modification was made (e.g., classroom, preschool), person who made modification, nature of the modification <u>Source</u> : Teacher Logs, Quality Improvement Plans, EPAO
<u>MAINTNANCE</u>	Continuation of intervention elements in Cohort 1 (12, 24, and 36 months after posttest), Cohort 2 (12, and 24 months after posttest), and Cohort 3 (12 months after posttest). <u>Source</u> : Maintenance Assessment Form and Modification Classification Form

Multi-level Intervention Components & Examples

COACHING

Preschool Policy



Healthy Birthday Celebration

(Share a book vs. eat cupcakes)

Classroom Practices



Family Style Eating

(Establish social norms, teacher modeling, satiety awareness)

Curriculum



Sesame Street Healthy Habits for Life

(Simple lesson plans to emphasize healthy eating/physical activity and learning)

Parent Engagement



Parent-Child Cooking Activity

(Workshops, fun runs, shopping activities, newsletters, listserves)

COVID-19 Related Modifications



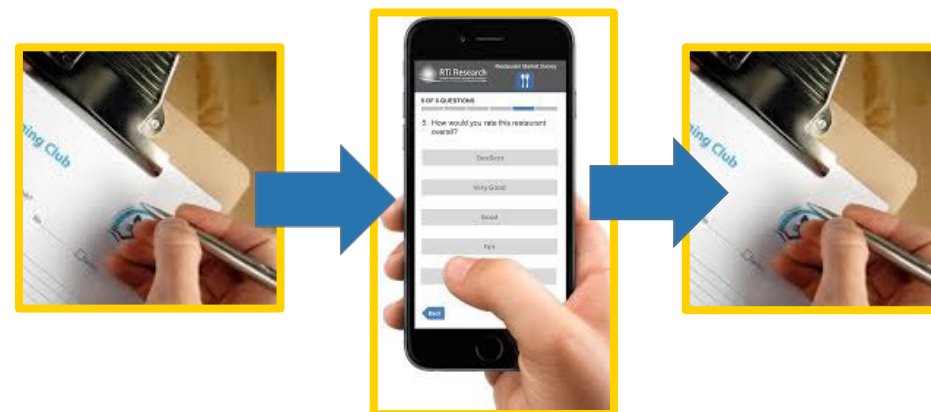
On Hold - Family style dining, in person parent engagement, on site observations



In-person to Virtual Teacher Coaching, & Parent Activities

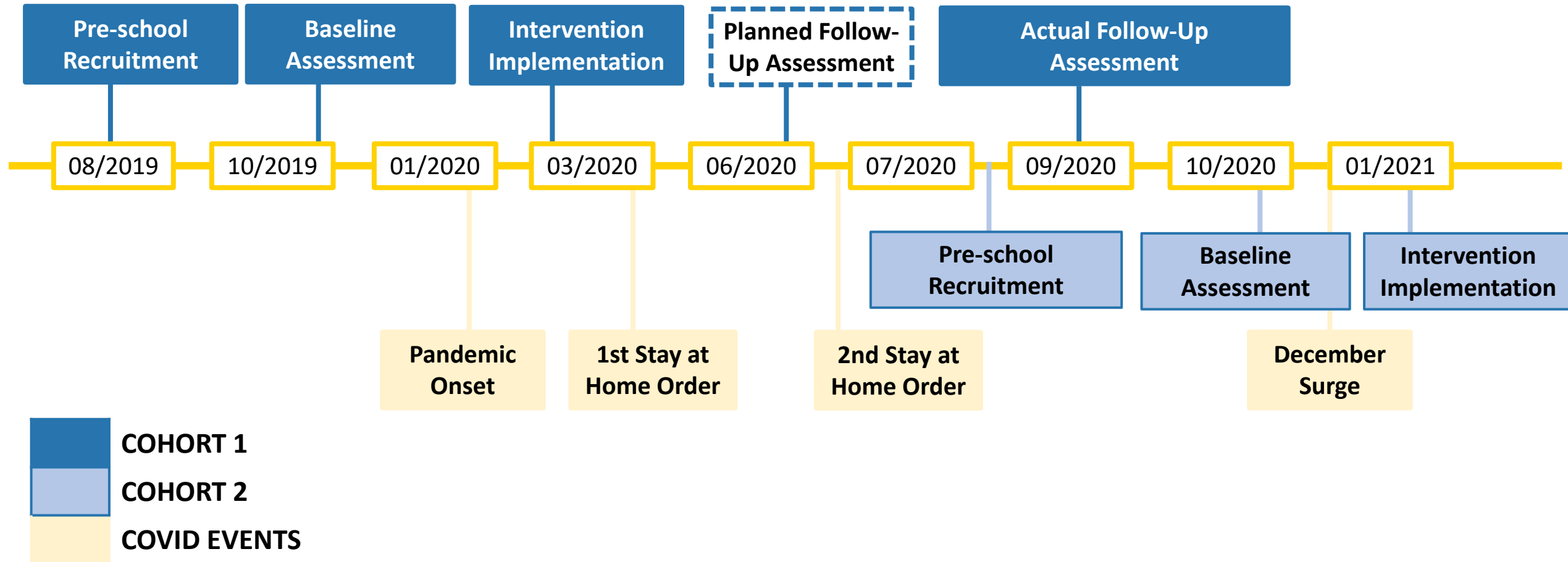


Study Website

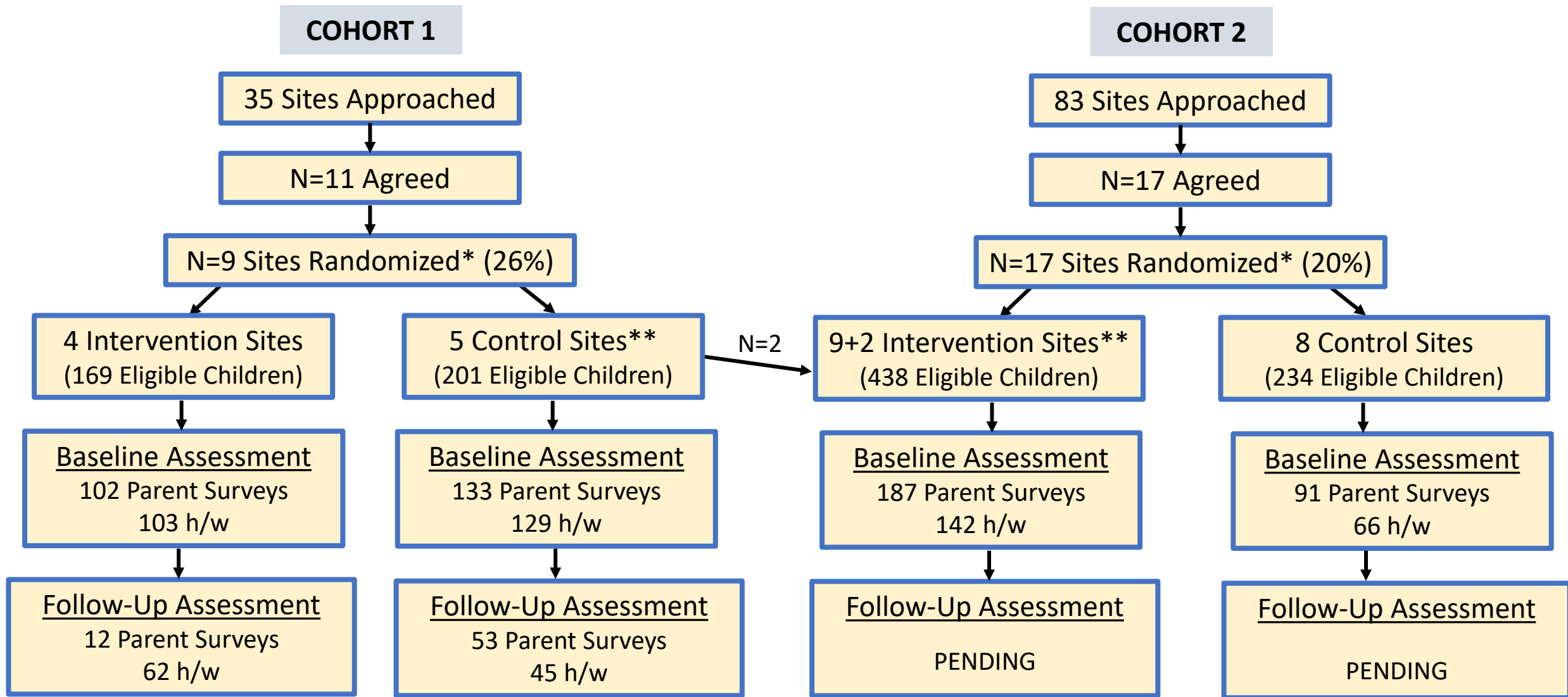


Data Collection: Changes to Format and Content (shorter, added COVID-19 related Qs, USDA food security)

Project Timeline & COVID-19 Impacts



Recruitment and Retention - REACH



**Two control sites from Cohort 1 crossed over to intervention sites for Cohort 2

*One Site closed (plumbing issues), another site withdrew on principal's request

Modifications to Study Design & Procedures: COVID-19 Impacts

Option for control sites to crossover to intervention condition post follow-up assessment

Primary outcome: BMI z-score (original plan was for on-site measures by research staff)

Modification:
Teachers/staff are trained to measure height/weight on-site

UCLA provides:
training, equipment, & protocol for preschools
Parents - provided detailed instructions on measuring height & weight at home

Option for consents and surveys online via Qualtrics

Parent, teacher, and site director surveys.
Many still opted for paper surveys

Pause on-site observations by UCLA staff (EPAO)

Continued collecting policy docs from sites (subpart of EPAO)

Continued implementation tracking via Quality Improvement Plans & Teacher Logs

Return of teacher logs: fell due to competing responsibilities (e.g., child behavior issues, sanitizing toys & supplies, addl time for food/meal prep)

Coaching: Tailored Site-Level Implementation (Adoption and Implementation)

Coach meetings with site director to review policies associated w nutrition & physical activity best practices in preschools

- Based on data collected from EPAO observations (suspended during COVID)
- COVID-19 period – based on policy document review, site director survey

Select policies targeted for implementation during intervention period

- Provide access to water throughout day
- Provide 120 min physical activity per 8 hr day
- Provide 1 fruit & 1 veg or 2 veg at lunch

Update parent & teacher manuals

- Formalize policies that were not in writing
- New policies re celebrations/food, fruit & vegetable offerings, staff training on Nu/PA

Coaching: Tailored Classroom-Level Implementation (Adoption and Implementation)

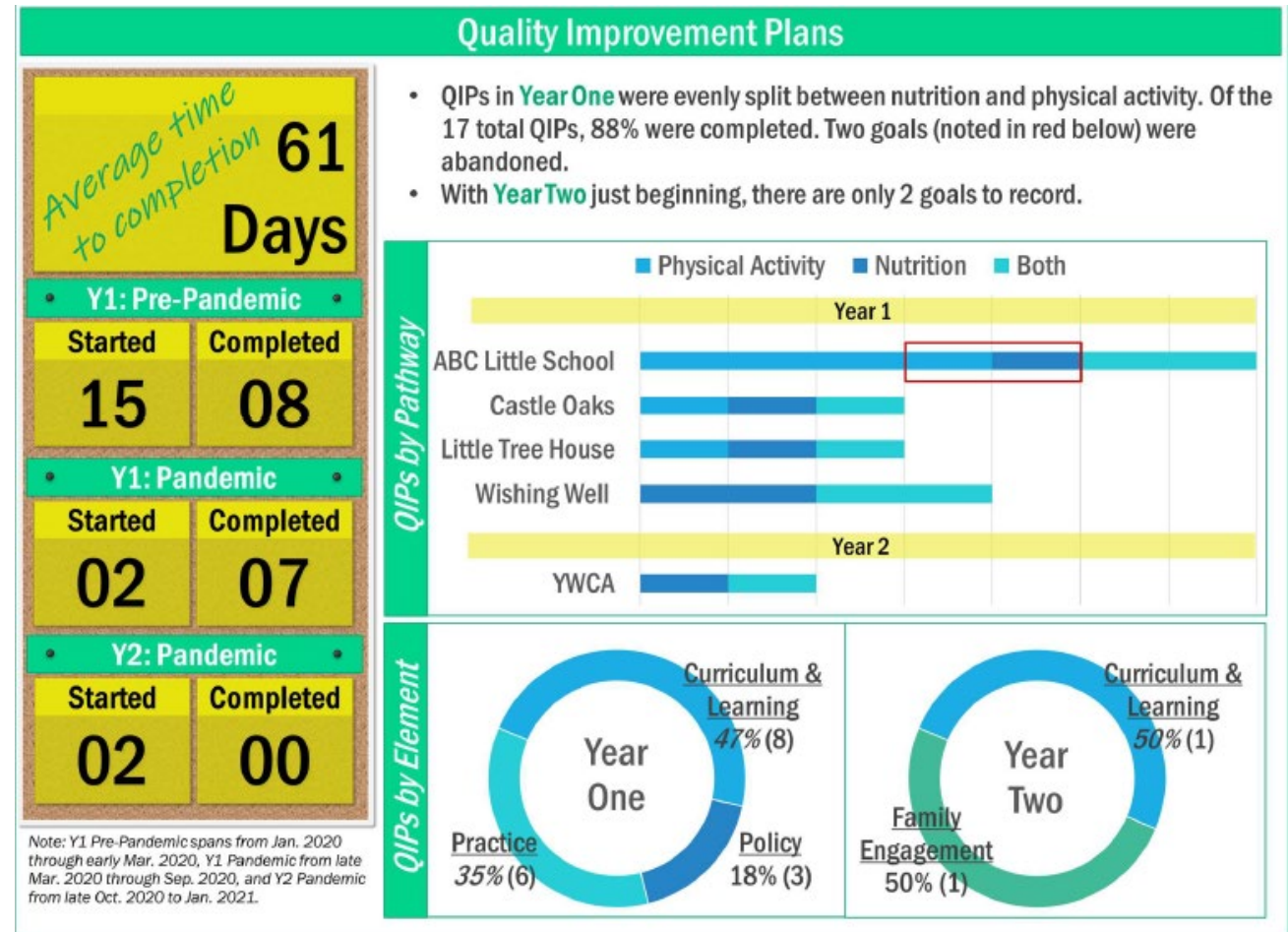
Coaches develop quality improvement plans tailored at teacher/classroom level to assist teachers w implementing curricular & modeling content



How to integrate teacher-led structured/unstructured play time throughout day

How to implement family engagement activities (using Zoom)

How to serve family style meals with young children (pre COVID)



Tracking Curriculum Implementation (Adoption, Implementation, Adaptation)

Coach works with teachers to modify curriculum to include nutrition and physical activity lessons

- Some use own lesson plan; others adopt ABC Healthy Me template

Submit weekly lesson plans

- Description of activity
- Indicate source Sesame Street teacher identified, repeat activity
- Include associated family engagement activity if applicable (newsletter, event, handout)

UCLA Nutrition/Physical Activities

Month: _____ Center: _____ Teachers: _____

Lesson Plan

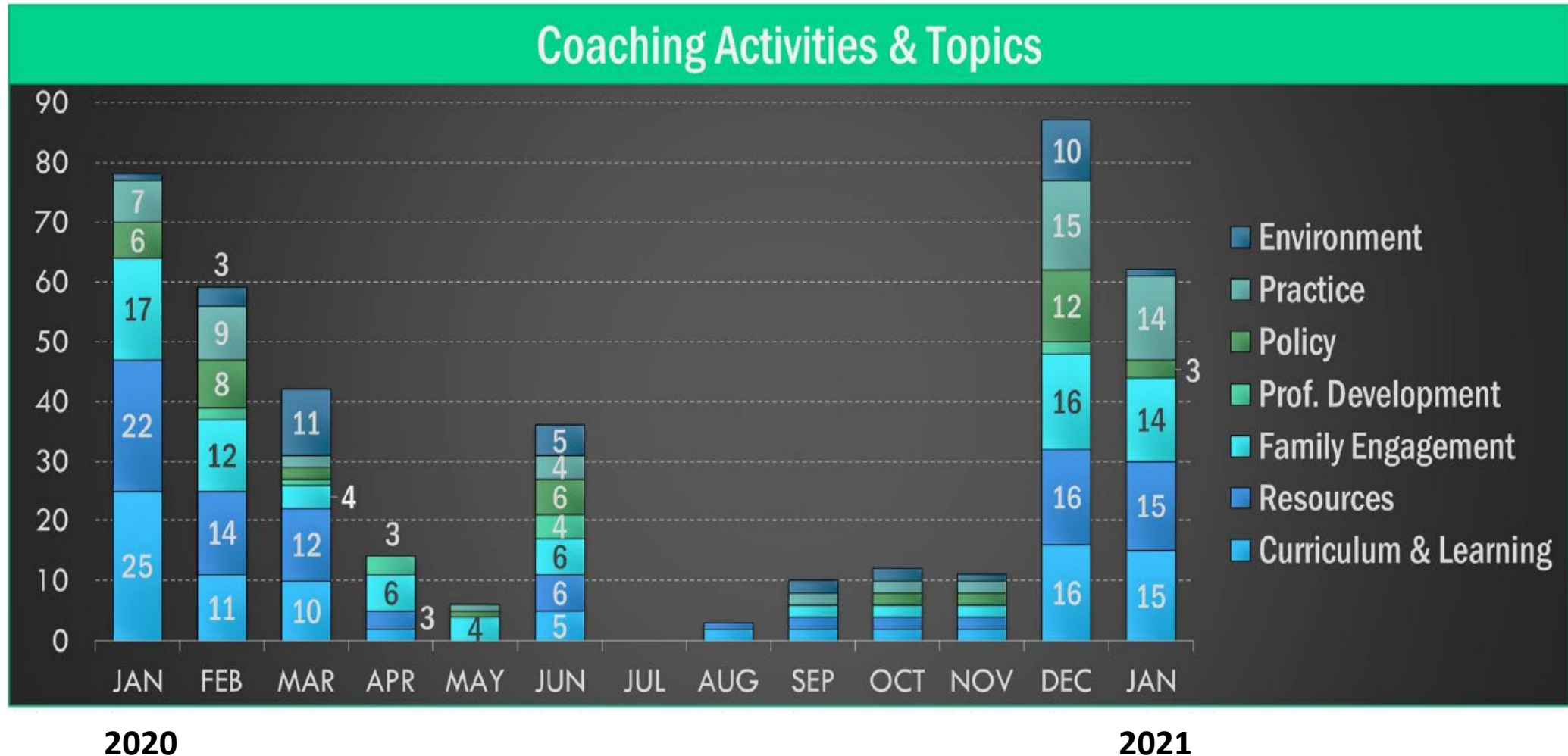
Events & Play Experiences

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Let's Eat Healthy! Students will learn how to make healthy choices. They will sort food into healthy & unhealthy categories & describe (PA) ☐ (N) ☐ (F) ☐	We're going on a Bear Hunt At a comic book store. Read OLIVER! Fruit Salad by Vivian French. (PA) ☐ (N) ☐ (F) ☐	Fruit or Veggies? Children will identify sort food into the categories Fruit/Veggies. Freeze Dance (PA) ☐ (N) ☐ (F) ☐	What's your favorite fruit? Children will draw their favorite fruit, and discuss different types of fruits. (PA) ☐ (N) ☐ (F) ☐	Vegetable Fries Children will make Sriracha vegetable fries. Duck Duck Goose (PA) ☐ (N) ☐ (F) ☐
Activity Obtained From	Sesame Street ☐ Teacher's Idea ☐ Both ☐ Previous Lesson ☐ Other: _____	Sesame Street ☐ Teacher's Idea ☐ Both ☐ Previous Lesson ☐ Other: _____	Sesame Street ☐ Teacher's Idea ☐ Both ☐ Previous Lesson ☐ Other: _____	Sesame Street ☐ Teacher's Idea ☐ Both ☐ Previous Lesson ☐ Other: _____	Sesame Street ☐ Teacher's Idea ☐ Both ☐ Previous Lesson ☐ Other: _____
Family Activity Or Hand Out		Handout: Be a healthy role model.			

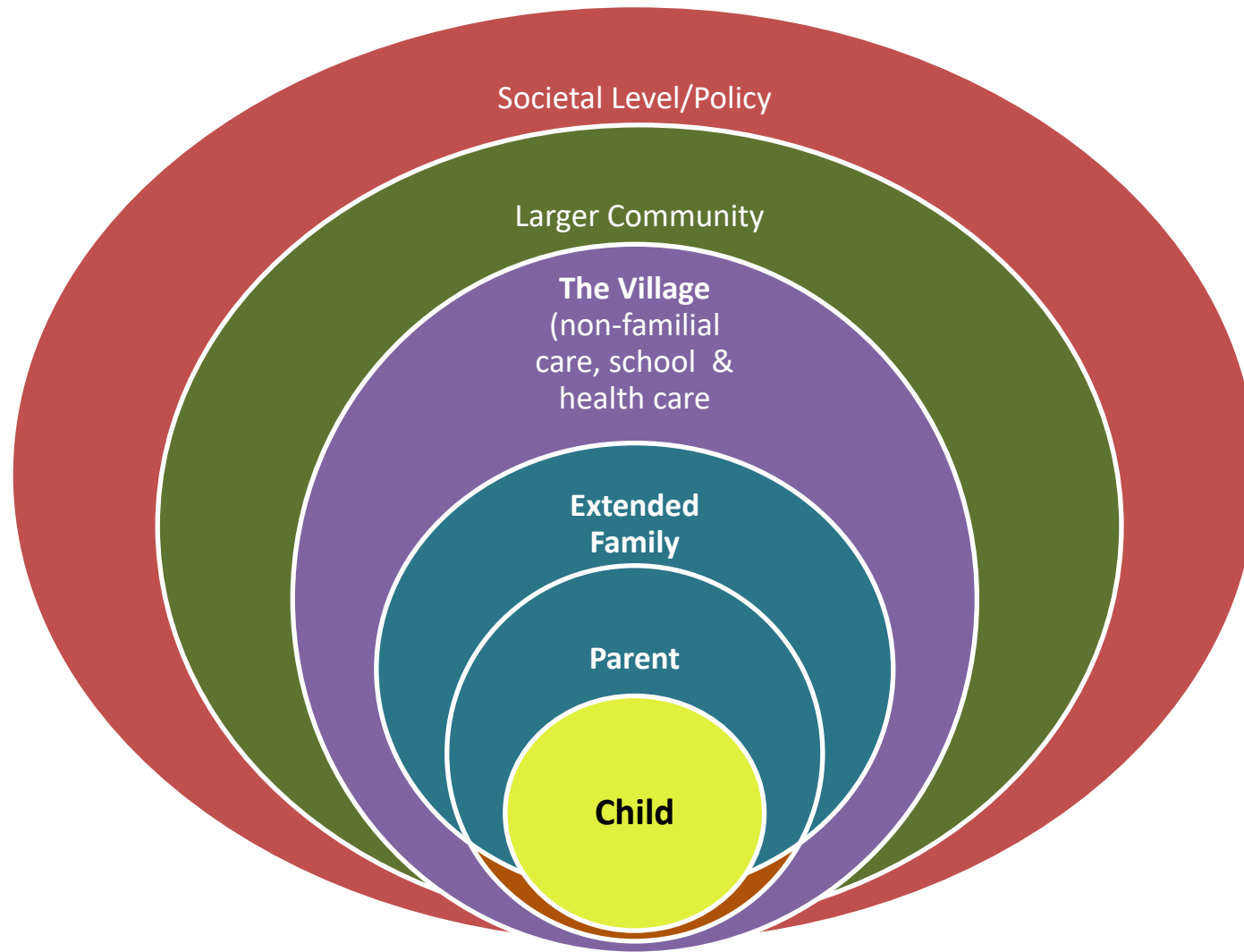
Week on: 1/25-29/21 Teachers: Anna, Sarah, Cathy Parent Signature: _____ Key Experiences: UCLA PA, RA, SA, S (circle in red pen)
Associates: Anna, Sarah, Cathy Site Director: _____ N: Nutrition M: Multicultural L: Literacy MA: Math S: Science

CIRCLE TIME	PLANNING TIME / RECALL TIME	WORKTIME	SMALL GROUP TIME	OUTSIDE TIME	INSIDE ACTIVITIES	STORY TIME	ASSESSMENT OF DAILY ACTIVITIES
Good morning! Veggies, fruits and fruits. DRDP/KEY EXP	Planning Time: What day is today? Recall Time: _____	Art: Fruits. Blocks: Quiet. Other: _____	Recognize Fruits. Make fruit. DRDP/KEY EXP	Ride Tricycle. Play with balls. Draw with chalk. DRDP/KEY EXP	Building a table. Play with blocks. DRDP/KEY EXP	Fruits, Shapes Book	Most of the children were able to cut fruits.
Good morning! What's your name? ABC's and DRDP/KEY EXP	Planning Time: What's your name? Recall Time: _____	Art: dot paint. Blocks: Quiet. Other: _____	Coloring Banana. DRDP/KEY EXP	Play cars. Slide. DRDP/KEY EXP	Brigitte. Builder. Bottom box. DRDP/KEY EXP	The wheel on the school bus.	Most of the children were able to participate in story book.
Hello! Say color fruits books. DRDP/KEY EXP	Planning Time: What day is today? Recall Time: _____	Art: cutting. Blocks: Quiet. Other: _____	Painting apple. DRDP/KEY EXP	Tricycles. DRDP/KEY EXP	Cutting. Magnets. Coloring. DRDP/KEY EXP		
Good morning! ABC's sound. Shapes. DRDP/KEY EXP	Planning Time: _____ Recall Time: _____	Art: Puzzle. Blocks: Quiet. Other: _____	Make Playdough. DRDP/KEY EXP	Collecting sticks. DRDP/KEY EXP	Playdough. People. Cars. DRDP/KEY EXP		
DRDP/KEY EXP	Planning Time: _____ Recall Time: _____	Art: _____ Blocks: _____ Quiet: _____ Other: _____	DRDP/KEY EXP	Watering plants. Play balls. DRDP/KEY EXP	Puzzle. Farm animals. DRDP/KEY EXP		

Tracking Coaching Interactions (Implementation)



Levels of Influence on Child Health



Lessons



Importance of maintaining flexibility in **all aspects of research**

Compromises often required in **research design** and **intervention choices** and implementation

- will have effect on strength of design, ability to detect intervention effect, generalizability of findings

Closely monitoring and documenting **intervention implementation**

- important for interpretation of study findings
- Keeping track of “external” events & context**
- could influence data, intervention implementation

Data on study outcomes and correlates is based on multiple sources and data collection formats

Reliance on a single primary outcome not advisable

- strive for **triangulation** from multiple data sources to assess intervention effect
- analyze data in multiple ways e.g., assess outcomes stratified by weight status

Thank you!

ACKNOWLEDGMENTS

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