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# Preventing Early Childhood Obesity: Family Spirit Nurture Study Design and Methods



NNR-16.264

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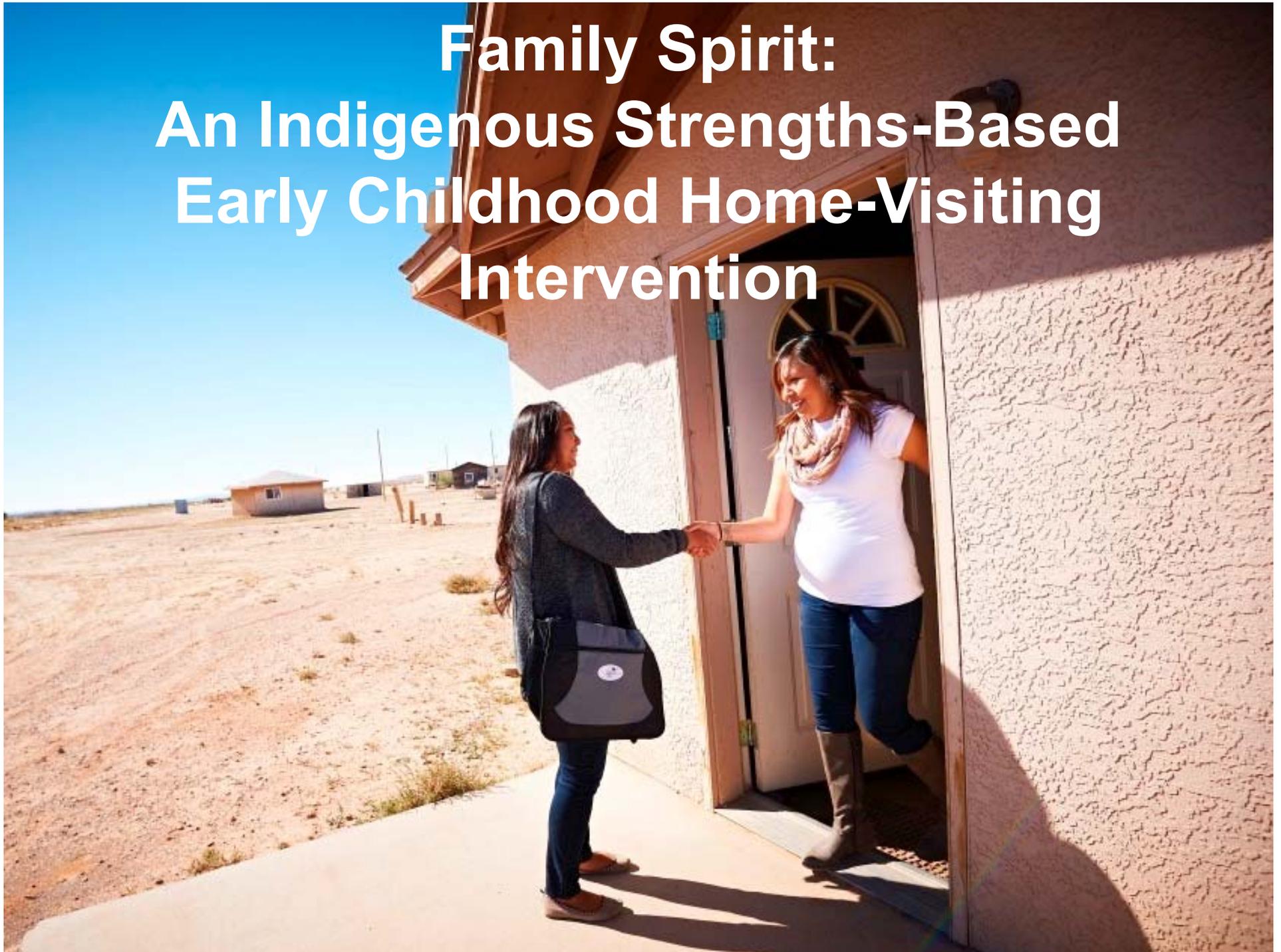


# Presentation Agenda

- Background on Family Spirit Program
- Development of Family Spirit Nurture
- Family Spirit Nurture Study Design and Methods
- Acknowledgements
- Questions/Discussion



# Family Spirit: An Indigenous Strengths-Based Early Childhood Home-Visiting Intervention



# What is the Family Spirit Program?



Home-Based Outreach



Family Involvement



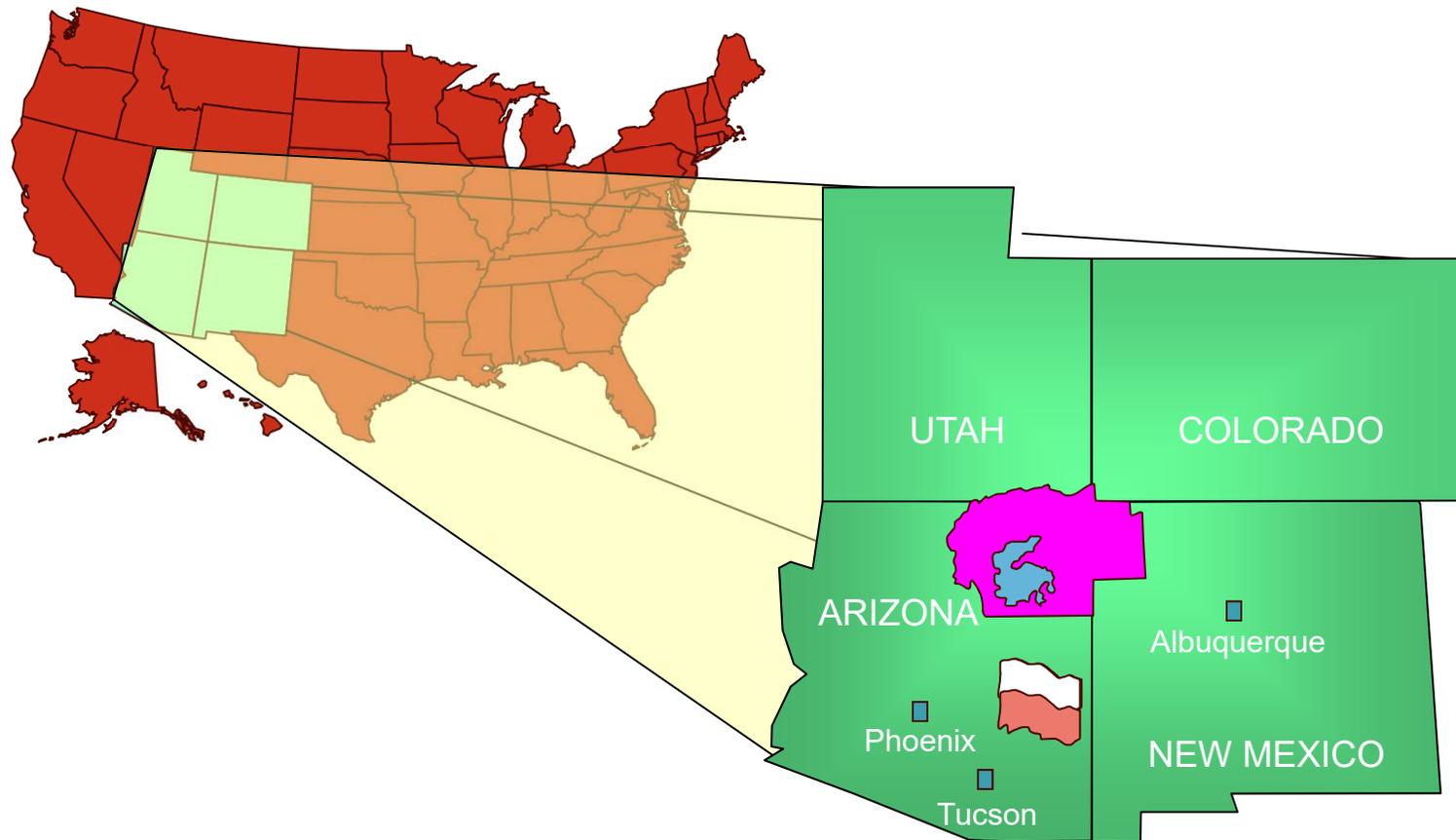
Evidence-based home visiting program taught by American Indian home visitors to young mothers from pregnancy – 36 mos post-partum



Community Referrals

# Tribal Communities in Southwest US

## Co-Created Family Spirit



## Family Spirit Video



# Current Status - Replication Nationwide





*Family*  
 Promoting Maternal and Early Child Health

**SPIRIT® Affiliate Communities**

- Native Communities
- Non-Native Communities

## New Direction: Family Spirit Nurture

- **Goal: In response to community needs, tailor Family Spirit curriculum to address early childhood obesity**
- **Why is this important?**
  - Childhood obesity (<5 years old) can affect children's health for the rest of their lives.
  - Native American children suffer the highest rates of early childhood obesity and related lifetime consequences of any racial or ethnic group in the US.
    - *41.2% of Native preschoolers are overweight/obese compared to 30.5% of all races/ethnicities.*
    - *Diabetes rates among Native youth ages 10-19 are 2.6 times higher than US general population and 7.0 times higher than whites.*

# Why Focus on Pregnancy & Early Childhood?

Risks for early childhood obesity begin in the womb.

- Mothers' biology and habits matter.

Early childhood overweight starts at birth.

- 12% of Native children large for gestational age at birth.

Early childhood is a critical time for obesity prevention.

Children are:

- Developing taste preferences
- Learning to walk and play
- Mimicking healthy and unhealthy behaviors of their caregivers

# Goals for Family Spirit Nurture Research

Develop and evaluate a Family Spirit Nurture curriculum that:

- Promotes breastfeeding & the proper introduction of complementary foods
- Promotes responsive parenting and feeding practices
- Delays the introduction of sugar sweetened beverages (SSBs)
- Promotes early childhood physical activity



# Family Spirit Nurture Study, Part 1

## Evaluation of a Brief Family Spirit Nurture Curriculum (3-9 Months Postpartum)

- Site: Shiprock, NM
- Participants: 136 moms with infants
- Recruitment Timeline: March 2017 – February 2018
- Intervention: 6 home-based Family Spirit Nurture lessons focused on eliminating/reducing Sugar Sweetened Beverage (SSB) intake among infants and positive infant feeding practices
- Design: Randomized Controlled Trial, with control group receiving home safety education
- Additional key components:
  - Delivery of **drinking water** for all participants to look at the impact of water insecurity on SSB intake
  - **Oral health** data collection to inform future intervention development

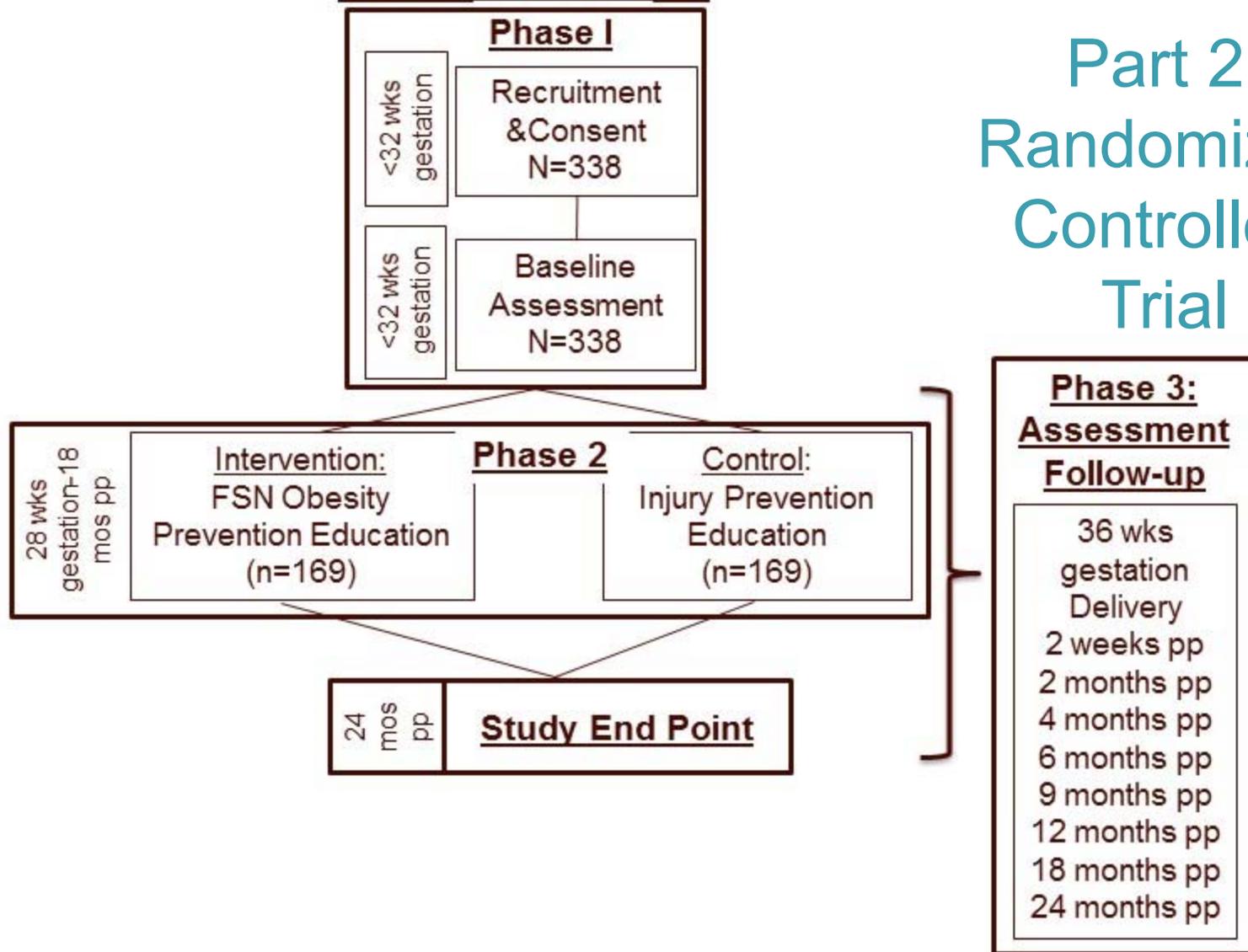


## Family Spirit Nurture Study, Part 2

### Evaluation of the Full Family Spirit Nurture Curriculum (Prenatal - 18 Months Postpartum)

- Sites: Shiprock, Fort Defiance, Gallup, Whiteriver
- Participants: 338 expectant women age 14-22 years old
- Recruitment Timeline: September 2017 – August 2019
- Intervention: Home-based Family Spirit Nurture lessons between pregnancy and 18 months, focused on: optimal infant feeding; infant/toddler physical activity; maternal psychosocial well-being; optimization of food/beverage availability; safe play spaces in the home
- Design: Randomized Controlled Trial, with control group receiving injury prevention education
- Additional Key Components:
  - All participants receive transportation to prenatal and well-baby visits

Figure 2: Study Design



## Part 2: Randomized Controlled Trial

# Blood Sample Collection

<b>Blood Sample Collection Time Point</b>	<b>Payment Amount</b>
<b>Delivery - Baby</b>	\$15 gift card
<b>Delivery - Mom</b>	\$15 gift card
<b>6 months - Baby</b>	\$15 gift card
<b>6 months - Mom</b>	\$15 gift card
<b>12 months - Baby</b>	\$15 gift card

Maternal and infant blood samples will be collected at delivery (cord blood for infants) and at 6 months postpartum. Infant blood samples will also be collected at 12 months postpartum.

The blood samples will be used to measure:

- Glucose
- Lipids
- Insulin
- Leptin
- Adiponectin
- c-reactive protein

# Who Is Delivering the Lessons? *Family Health Coaches*

- **Local Community Health Professionals**
  - Deliver FSN curriculum to intervention participants;
  - Provide social support, help with problem solving;
  - Facilitate referrals to community services; and
  - Maintain relationships with participants and healthcare providers.



# Evaluation Measures

*All measures below are used in the Part 2 study;  
a subset of these measures are used in the Part 1 study.*

## **Interviews:**

- Maternal Demographics
- Modified Child Beverage Intake Questionnaire (BEVQ)
- Household Food Security Survey

## **Self-Report:**

- Current Eating Environment Assessment
- Infant/Toddler Responsive Feeding Scales
- Baby/Children's Eating Behavior Questionnaire
- Perceptions of Growth Scale
- Child Physical Activity Assessment
- Maternal Knowledge Questionnaire – Nutrition/Physical Activity Practices
- Water Availability Assessment
- Parenting Stress Index – Short Form
- CESDR-10
- Alcohol, Smoking, and Substance

Involvement Screening Test (ASSIST)

- Mastery Scale
- Infant Temperament
- BITSEA
- Brief Infant Sleep Questionnaire (BISQ)
- Participant Satisfaction Questionnaire
- Maternal Knowledge – Injury Assessment

## **Observations:**

- Toddler PA Assessment (Accelerometer)
- Maternal/Child Height & Weight
- Home Safety Environment Scan

## **Blood Sample Collection (Mother & Child)**

## **Process Form: Session Summary Form**

## **Medical Chart Reviews (Mother & Child)**

## Current Status

- Part 1 has enrolled 66 participants in Shiprock
  - 76 lessons taught
  - 101 assessments completed
  - 37 water deliveries completed
- Part 2 was recently launched in Fort Defiance/Gallup, Shiprock and Whiteriver.
- *The curriculum and study methods are well-received by staff, participants, and community partners.*

# Acknowledgements

- Thank you to the Navajo Nation Human Research Review Board for their ongoing thoughtful review of this research project (NNR-16.264).
- Thank you to numerous community partners, providers, and families from the Navajo Nation and White Mountain Apache Tribe for their contributions to Family Spirit Nurture program development and evaluation.
- Thank you to Johns Hopkins staff members for their commitment to the program and dedication to all participating families.

# Questions / Discussion

