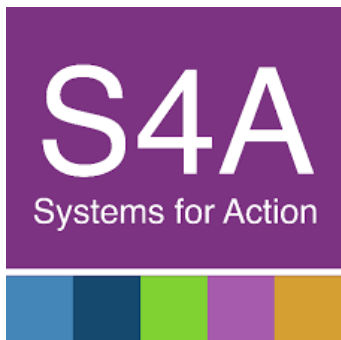# Aligning Health and Social Systems to Expand Evidence-Based Home-Visiting

Strategies to Achieve Alignment, Collaboration, and Synergy Across Delivery and Financing Systems

Research-In-Progress Webinar
July 8, 2020
12-1pm ET

S4A
Systems for Action

colorado school of
public health

Agenda

Welcome: **Chris Lyttle, JD**

Deputy Director for Systems for Action

Presenters: **Venice Ng Williams, PhD, MPH & Greg Tung, PhD, MPH**
Colorado School of Public Health

Chris Arestides, MPH, BSN, RN
Nurse-Family Partnership

Q&A: **Chris Lyttle, JD**

Presenters

Venice Ng Williams, PhD

Health Systems, Management & Policy
colorado school of public health

Venice Ng Williams is a mixed-methods prevention researcher at CU Anschutz's Prevention Research Center for Family & Child Health and Adjunct Instructor in Health Systems, Management & Policy at the Colorado School of Public Health. She holds a PhD in Health Services Research. Her research relates to improving the implementation of Nurse-Family Partnership through cross-sector collaboration and systems integration. Venice has a range of experience in health services research, including conducting health impact assessments to inform child welfare policy, evaluating systems-change interventions with Urban Indian health centers and developing collegiate tobacco control policies.

Presenters

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Greg Tung, PhD, MPH

Health Systems, Management & Policy
colorado school of **public health**

Dr. Tung's research interests relate to how scientific evidence is incorporated into policy and program decision making, with a special emphasis on injury prevention. He works on a diverse range of injury topics, including the prevention of youth violence, suicides, poisonings and child abuse. Dr. Tung's research interests also include the integration of health services and public health systems, with a focus on non-profit hospital community benefit activities. He is a mixed methods researcher and utilizes both quantitative (e.g. longitudinal, multi-level, and time-to-event analysis) and qualitative (e.g. case studies) methods. Dr. Tung is also faculty in the Program for Injury Prevention, Education and Research (PIPER).

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Chris Arestides, BSN, RN, MPH

Chris Arestides, MPH, BSN, RN is manager of healthcare integration and strategic partnerships at the Nurse-Family Partnership National Service Office.

Nurse-Family Partnership
Helping First-Time Parents Succeed®

PROJECT TEAM & COLLABORATORS

- Principal Investigator and Co-Investigators
  - Venice Ng Williams, PhD, MPH
  - Greg Tung, PhD, MPH
  - Mandy Allison, MD, MSPH, MA
- Project team
  - Mike Knudtson, MS
  - Connie Lopez, BSN, RN, MA
  - Carol Franco, MA

- Collaborators/Advisory Committee:
  - David Olds, PhD
  - Chris Arestides, BSN, RN, MPH
  - Jade Woodard, MPA

illuminate
Building Brighter Childhoods

Nurse-Family Partnership
Helping First-Time Parents Succeed®

CU Department of Pediatrics
SCHOOL OF MEDICINE
UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

Health Systems, Management & Policy
colorado school of public health

OUR PROJECT

- Study Purpose:

  - To examine the effects of *multi-sector financing and delivery strategies* in expanding the *reach and impact* of the Nurse-Family Partnership® (NFP) program across the United States using a *mixed-methods* approach

Adverse pregnancy outcomes are more common in the US than any other developed country.
This is compounded among women living in poverty.

"THERE IS A MAGIC WINDOW DURING PREGNANCY...IT'S A TIME WHEN THE DESIRE TO BE A GOOD MOTHER AND RAISE A HEALTHY, HAPPY CHILD CREATES MOTIVATION TO OVERCOME INCREDIBLE OBSTACLES INCLUDING POVERTY, INSTABILITY OR ABUSE WITH THE HELP OF A WELL-TRAINED NURSE."

- DAVID OLDS

NFP EVIDENCE

Year	1977	1990	1994
Location	Elmira, NY	Memphis, TN	Denver, CO
Participants	400	1,138	735
Population	Low-income whites	Low-income Blacks	Large proportion of Latinx
Studied	Semi-rural area	Urban area	Nurses vs. paraprofessionals

![Nurse-Family Partnership — Helping First-Time Parents Succeed®]

- Community replication began in 1996, overseen by National Service Office (NSO)

- Outcomes include:
  - Reduced pre-term birth
  - Increased breastfeeding
  - Increased child immunizations
  - Improved educational and employment outcomes

HEALTHIER MOMS, HEALTHIER BABIES

child-focused · two generation approach · parent-focused

whole family

https://www.nursefamilypartnership.org/about/proven-results/published-research/

RESEARCH TRIALS +

Principles of Replication:

1. **Develop** it well
2. **Test** thoroughly *before* investment
3. **Replicate** carefully
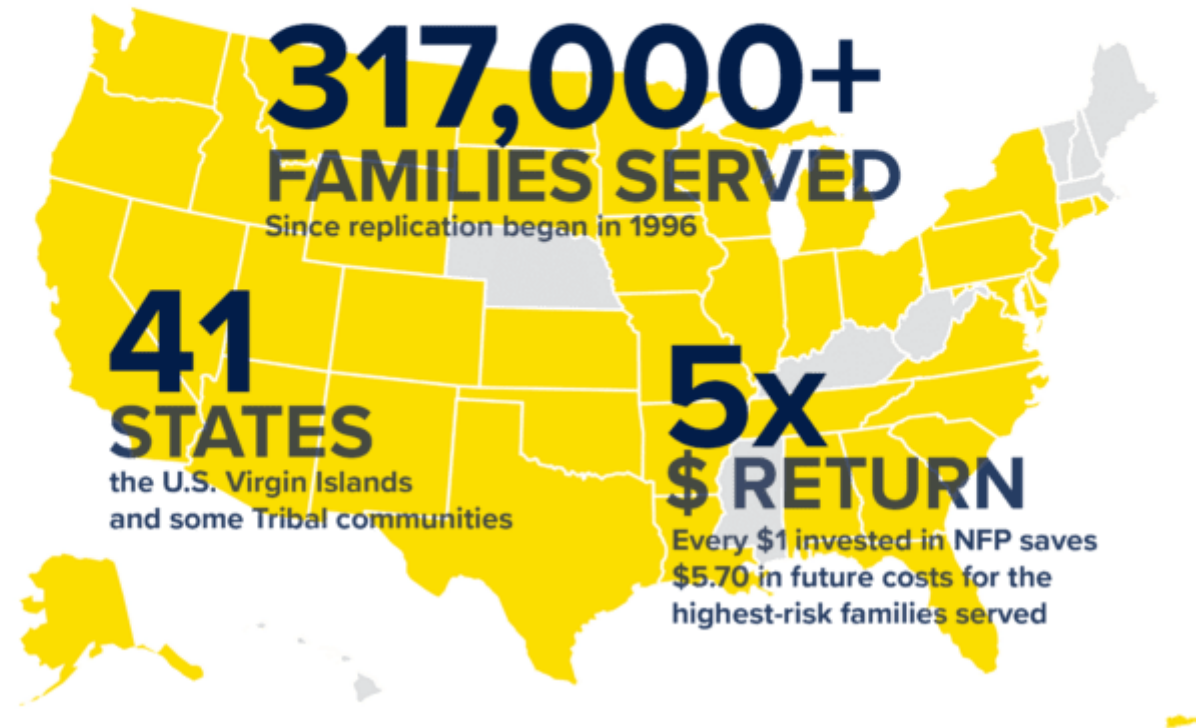4. **Improve** continuously

Link to additional information on replication including national and international implementation research:
https://www.nursefamilypartnership.org/about/proven-results/

NFP IMPLEMENTATION

- NFP NSO contracts with and provides support to states and local organizations that deliver the program
  - State and county departments
    - Public Health
    - Social Services
  - Community-based organizations
  - Health care
    - Hospitals and health systems, Managed care
    - Federally Qualified Health Centers
    - Visiting Nursing Associations (VNAs), Other healthcare related organizations

NURSE-FAMILY PARTNERSHIP® IS A COMMUNITY HEALTH PROGRAM THAT TRULY CHANGES LIVES – FOR GENERATIONS TO COME.

317,000+
FAMILIES SERVED
Since replication began in 1996

41
STATES
the U.S. Virgin Islands
and some Tribal communities

5x
$ RETURN
Every $1 invested in NFP saves
$5.70 in future costs for the
highest-risk families served

History of NFP funding

1970s-90s

Original **trials** funded by Bureau of Community Health Services, RWJF, W. T. Grant Foundation, Colorado Trust

1990s

Replication funded by US Department of Justice in 6 locations

2000s

Foundation support: RWJF, Edna McConnell Clark Foundation, The Colorado Trust
State & Local investments

2010s

Federal investments through Maternal, Infant & Early Childhood Home-Visiting (MIECHV)
Pay for Success

Present

Health-related: health system financed, Medicaid, substance use/ mental health
Social services: Family First Prevention

NFP FUNDING SOURCES

Medicaid
MIECHV- Federal Grant
State and Local General Funds and Grants
Private Philanthropy
Tobacco Settlement
Pay for Success/Social Impact Bond
Managed Care
TANF/Public Welfare
Child Abuse Prevention
Juvenile Justice
Substance Abuse and Mental Health
School Readiness
Hospital Systems

NFP only reaches a small percentage of the women and children who could benefit and are eligible for the service…

NFP HEALTHCARE INTEGRATION

- NFP Integration with healthcare is part of the NFP National Service Office Strategic Plan
- Includes both healthcare payment and delivery systems

Healthcare Delivery

- Operational structure of NFP and how nurses function within healthcare
- Use of Electronic Health Records
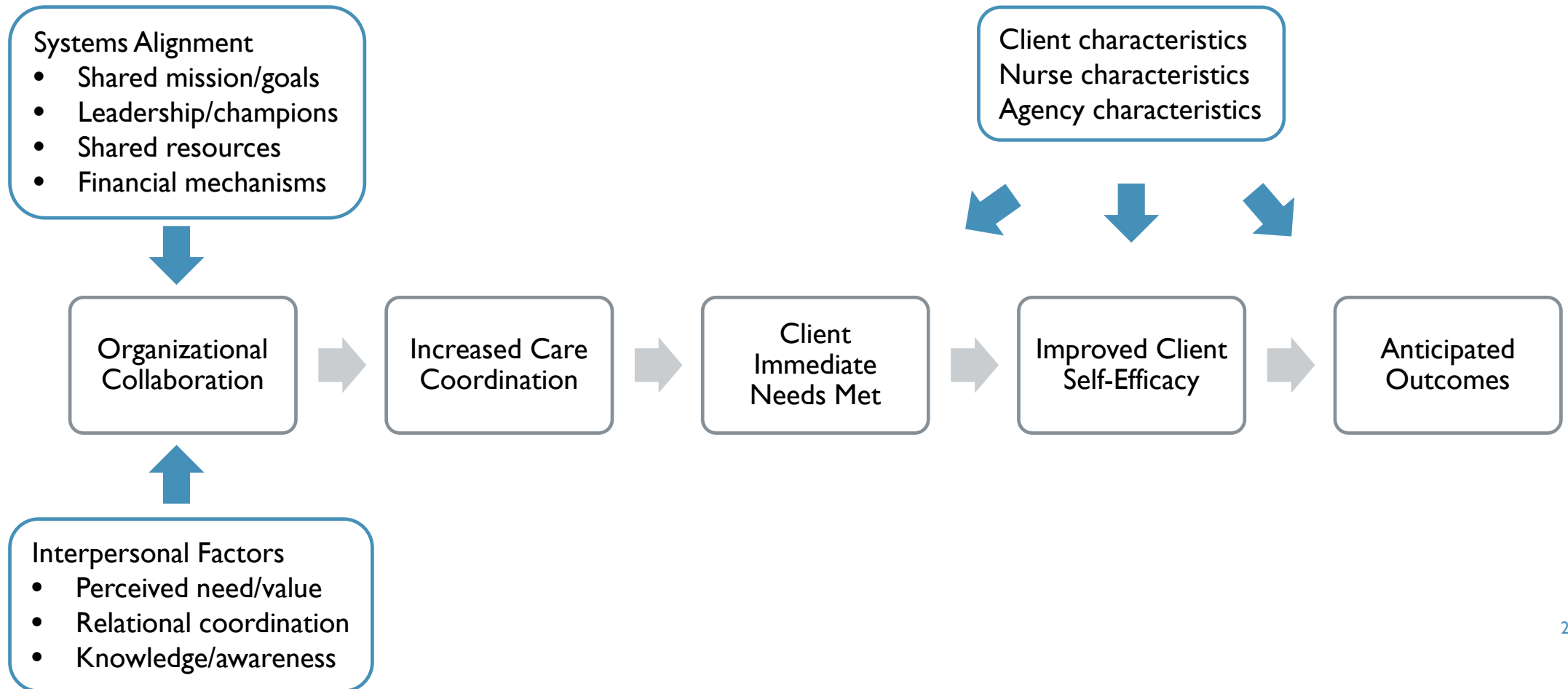- Placement and engagement of NFP within health systems

Healthcare Payment

- Medicaid payment
- Working with Managed Care
- Exploring payment arrangements

OUR PROJECT

- Aim 1. Assess degree of collaboration by site between NFP and cross-sector providers including healthcare systems and social services

- Aim 2. Estimate the relationship between site-level collaboration and program outcomes

- Aim 3. Identify and disseminate best practices of successful collaboration with health systems and social services

CONCEPTUAL MODEL

Systems Alignment
- Shared mission/goals
- Leadership/champions
- Shared resources
- Financial mechanisms

Client characteristics
Nurse characteristics
Agency characteristics

Organizational Collaboration → Increased Care Coordination → Client Immediate Needs Met → Improved Client Self-Efficacy → Anticipated Outcomes

Interpersonal Factors
- Perceived need/value
- Relational coordination
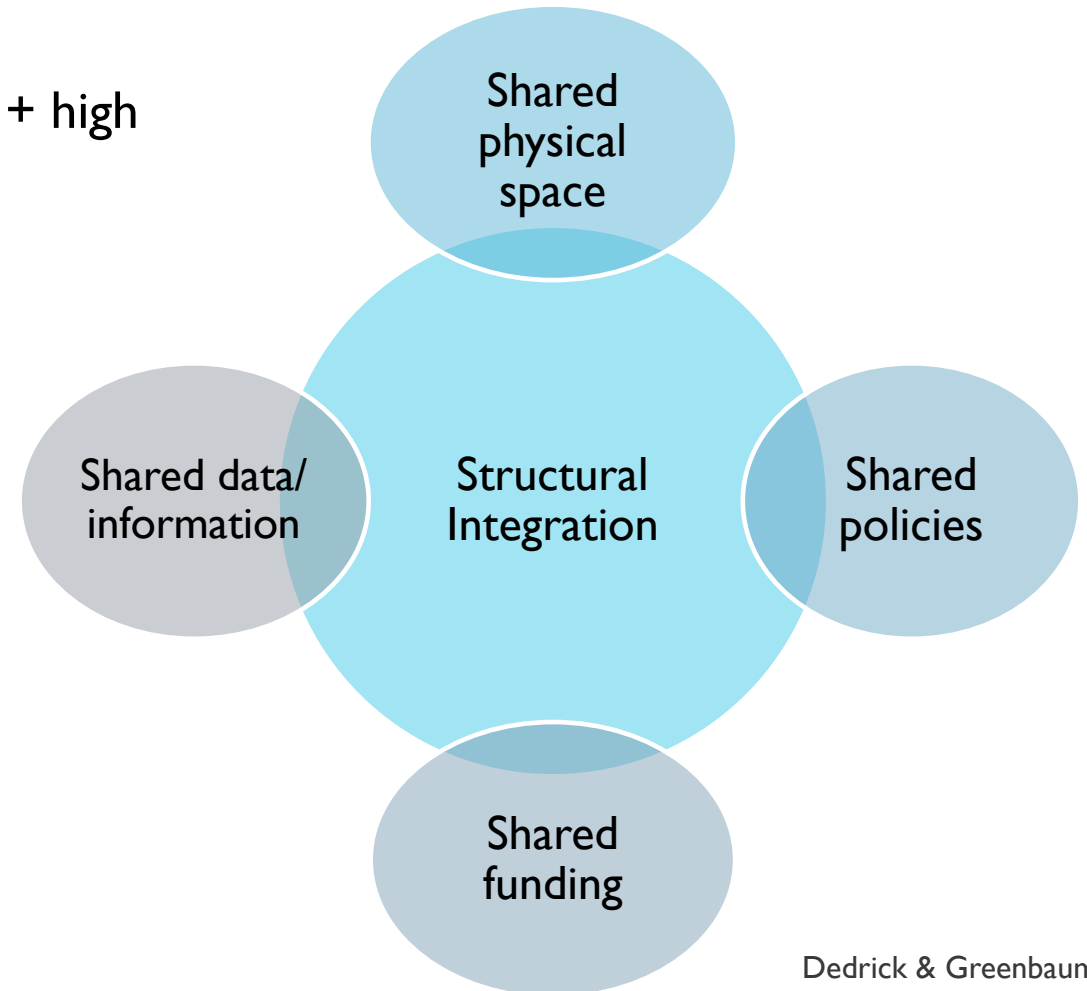- Knowledge/awareness

AIM 1: COLLABORATION CHANGES OVER TIME

Research Question: *Has systems-level collaboration between NFP and other cross-sector providers changed in response to "naturally-occurring" efforts to facilitate enhanced collaboration?*

- Longitudinal survey methodology

- NFP nurse collaboration with other healthcare and social service providers

- Measures relational coordination and structural integration

MEASURING COLLABORATION

Relational Coordination =
high quality relationships + high
quality communication

Relationships
Shared goals
Shared knowledge
Mutual respect

Communication
Frequent
Timely
Accurate
Problem-solving

Shared physical space

Shared data/information

Structural Integration

Shared policies

Shared funding

Dedrick & Greenbaum 2011

AIM 2: COLLABORATION & OUTCOMES

Research Question: ***What is the relationship between improved NFP-community provider collaboration and program outcomes?***

- Random effect (mixed) models with client-, nurse-, and site-level factors
- Compare healthcare-financed sites vs. social service-financed sites

OUTCOMES

Infant health

Maternal behaviors

Program Implementation
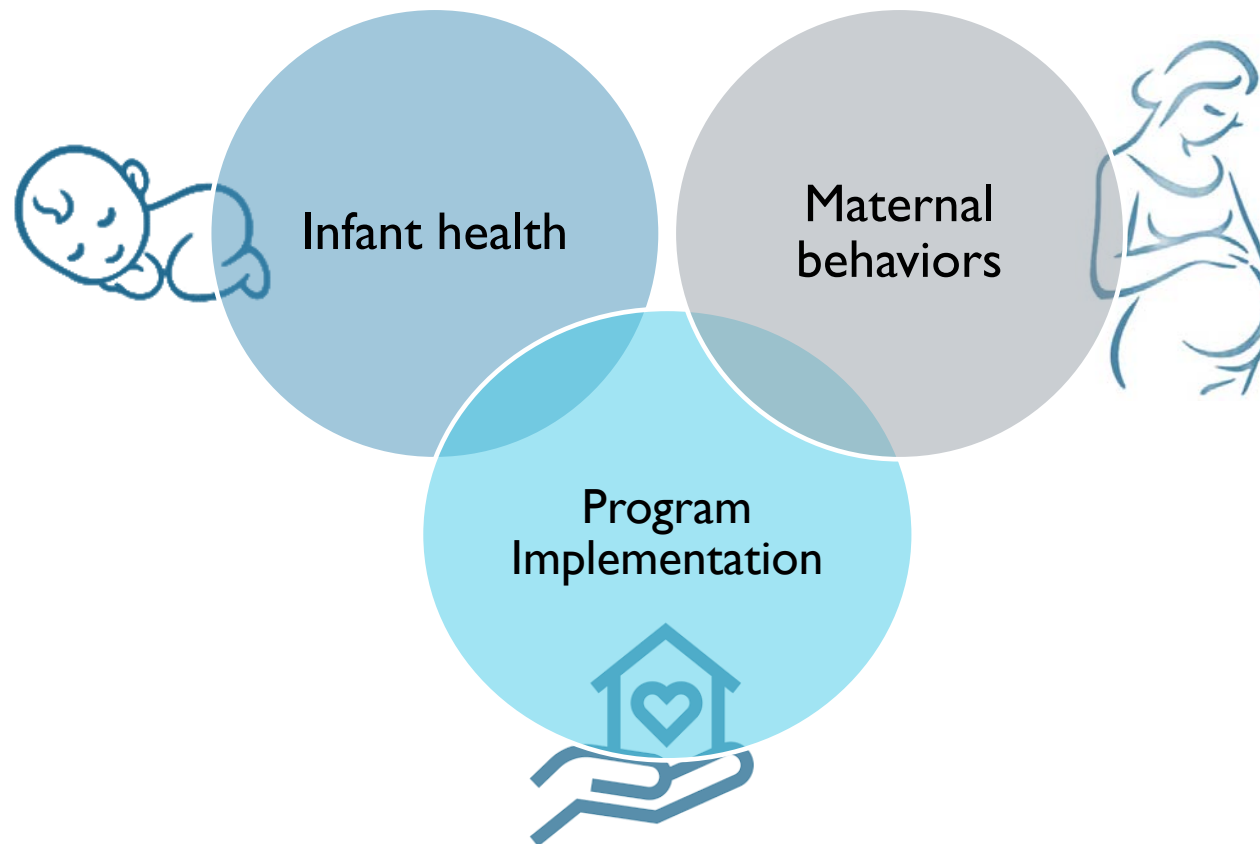
SUB AIM 2

Research Question:

What is the relationship between collaboration and program outcomes among Black, African-American and Latinx clients in the program?

AIM 3: BEST PRACTICE MODELS

Research Questions: *Which highly collaborative NFP sites are the top performers based on identified program outcomes in Aim 2?*

What are the best practices, activities, and dynamics to collaboration among high-performing NFP sites?

- Positive deviance approach to identify high-performers

- Conduct qualitative case studies

- Create best practice models of collaboration (including financing mechanisms)

What do we already know?

Positive associations with client retention
Positive associations with smoking cessation
Mixed associations with childhood injury

	Client retention at birth Adjusted Odds Ratio (SE)	Client retention at 12 months Adjusted Odds Ratio (SE)	Prenatal smoking cessation Adjusted Odds Ratio (SE)	ED use for injury Adjusted Odds Ratio (SE)	ED use for ingestion Adjusted Odds Ratio (SE)
Relational Coordination with Obstetrics	1.016 (-0.036)	n/a	0.951 (-0.045)	n/a	n/a
with Pediatrics	n/a	1.046 (-0.043)	n/a	1.029 (-0.062)	1.018 (-0.131)
with **WIC**	0.955 (-0.029)	1.010 (-0.033)	1.104* (-0.044)	0.875** (-0.044)	0.782* (-0.0780)
with Early intervention	1.012 (-0.033)	0.999 (-0.037)	0.926 (-0.038)	1.104 (-0.060)	0.857 (-0.098)
with Mental health	0.942 (-0.038)	0.938 (-0.041)	1.097 (-0.057)	1.092 (-0.067)	1.007 (-0.132)
with **Substance use treatment**	1.177*** (-0.043)	1.041 (-0.041)	1.112* (-0.054)	0.994 (-0.056)	1.121 (-0.144)
with **Child Welfare**	0.998 (-0.040)	1.041 (-0.048)	1.009 (-0.052)	1.002 (-0.063)	1.269* (-0.152)
with Housing	0.995 (-0.032)	1.045 (-0.036)	0.928 (-0.039)	0.981 (-0.050)	1.105 (-0.114)
with **Parenting**	1.037 (-0.033)	1.064 (-0.035)	0.966 (-0.038)	1.062 (-0.053)	1.244* (-0.127)
Structural Integration with Obstetrics	1.012 (-0.008)	n/a	0.989 (-0.001)	n/a	n/a
with **Pediatrics**	n/a	0.972** (-0.009)	n/a	1.009 (-0.012)	1.043 (-0.025)
with **WIC**	0.985* (-0.007)	0.991 (-0.007)	0.980** (-0.007)	1.022* (-0.011)	1.028 (-0.020)
with Early intervention	0.994 (-0.007)	0.989 (-0.009)	0.996 (-0.010)	0.986 (-0.013)	1.015 (-0.027)
with **Mental health**	0.993 (-0.007)	1.01 (-0.008)	0.979* (-0.009)	0.976* (-0.011)	0.984 (-0.021)
with Substance use treatment	0.995 (-0.010)	0.997 (-0.010)	1.013 (-0.012)	1.028 (-0.016)	0.973 (-0.032)
with **Child Welfare**	1.062*** (-0.013)	1.032** (-0.012)	1.006 (-0.015)	0.984 (-0.017)	0.908* (-0.039)
with **Housing**	1.007 (-0.024)	1.042 (-0.026)	1.074** (-0.029)	0.970 (-0.031)	0.987 (-0.067)
with Parenting	0.994 (-0.008)	1.004 (-0.008)	0.983 (-0.010)	1.022 (-0.012)	0.990 (-0.026)
Nurse-level variance	0.206 (0.019)	0.301 (0.027)	0.098 (0.030)	0.402 (0.040)	0.135 (0.150)
Intra-class correlation	0.059	0.084	0.029	0.058	0.040
Observations	36900	28917	9604	26264	26264

*p<0.05, ** p<0.01, ***p<0.01

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Collaboration matters but the exact dynamics are challenging and complicated to interpret

- Better coordination with substance use and integration with Child Welfare may improve client retention

- Additional research is needed to understand the relationship between collaboration and maternal-reported behaviors (i.e. smoking and ED use)

What will we learn?

❖ Additional evidence that collaboration improves outcomes

❖ Effects of systems alignment including financial mechanisms

❖ Measure collaboration changes over time

❖ Health equity and trauma violence informed care

IMPLICATIONS

- Integrate findings into NFP nursing practice and site development
- Maximize nurse productivity to serve families experiencing adversity
- Relevant for coordination and systems integration efforts in other public health, healthcare, and social service settings

Commentary

Chris Arestides, BSN, RN, MPH

IMPLICATIONS FOR NFP HEALTHCARE INTEGRATION

- Integration of the model within healthcare payment and delivery systems:
  - Aligns with nursing practice and may impact nurse satisfaction
  - May improve maternal and child health outcomes
  - Assists families in managing their health and their experience of care
  - Improve NFP sustainability
  - And reduce overall healthcare costs.
- NFP Healthcare Integration Goals:
  - Increase provider awareness and engagement with NFP
  - Generate/sustain payment through healthcare payment mechanisms
  - Improve coordination of care
  - Build skills and satisfaction of NFP nursing workforce
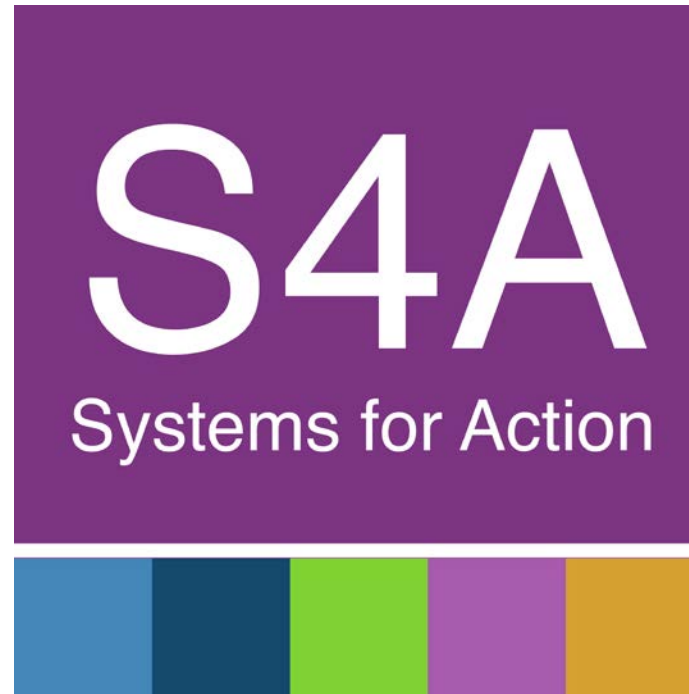
QUESTIONS?

Venice Ng Williams, PhD, MPH
venice.williams@cuanschutz.edu

Greg Tung, PhD, MPH
gregory.tung@cuanschutz.edu

Chris Arestides, BSN, RN, MPH
chris.arestides@nursefamilypartnership.org

Questions?

www.systemsforaction.org

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Certificate of Completion

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If you would like to receive a **certificate of completion**
for today's ResProg webinar, please
complete the survey at the end of the session.

One will be emailed to you.

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$1 million is available for research investigating the effectiveness of existing, currently operating system alignment mechanisms in mitigating social, economic and health disruptions associated with the COVID-19 pandemic. Applications must leverage ongoing or recently completed research on the system alignment mechanism of interest.

2020 S4A Supplemental Research on COVID-19 Response & Recovery Call for Proposals

Letters of Intent due July 20, 2020
Proposals due August 5, 2020

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Upcoming Webinars

July 22 | 12 pm ET

[Transit and Treatment: Effectiveness of Transit System to Improve Substance Abuse and Mental Health in Connecticut](#)

Jeffrey P. Cohen, PhD and Carla J. Rash, PhD

University of Connecticut

August 5 | 12 pm ET

[Investigating Systems Alignment of Multi-Sector Agencies to Address Child Maltreatment in St. Louis](#)

Melissa Jonson-Reid, PhD & Trisha Kohl, PhD, Washington U in St. Louis

Acknowledgements