Moving Local Research and Evaluation Findings into Practice

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National Home Visiting Summit

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Learning Objectives

- To understand how local data can be leveraged to inform improvements in practice.
- To use the staged system of moving data from discovery to practice using systematic procedures and tools.
- To identify barriers and facilitators to implementation of the system.

Statement of the problem

- Clinical trials of home visiting programs have yielded mixed and sometimes conflicting results.
- There have been incredible advances in our understanding of child development and parenting. This creates opportunities for increasing the impact of home visiting programs.
- Local contextual factors can contribute to differential outcomes.
- Most home visiting programs collect data and conduct evaluations, but typically these are not used locally.
- What is the best way to identify local learnings and apply these to home visiting programs?

Why now?

- Local data collection is now common
  - Funders, models, stakeholders
- Most programs have evaluations
- QI initiatives provide an appreciation for the usefulness of data in guiding practice
- Appreciation for the impact of local contexts and their impact on performance
- Funders and other stakeholders increasingly looking for data-driven decision making

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the *power* of 1000 days

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Overview

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Mission and Goals

- **Mission**:
- *Provide an optimal start for children by promoting positive parenting and healthy child development prenatally and during the important first 1,000 days of life*.

- **Goals:**
- Promote healthy births
- Foster sensitive, responsive parenting
- Optimize child health & development
- Assist families to achieve life goals

- Believe all parents want the best for their children
- Inspired by brain research
- Target mothers w/demographic risks, enrolled prenatal through 3 months
- Serve family until baby age three
- Implement 4 national evidence-based HV models: Healthy Families America®, HANDS, NFP, SafeCare
- Since 1999: 27,000 families and 650,000 home visits

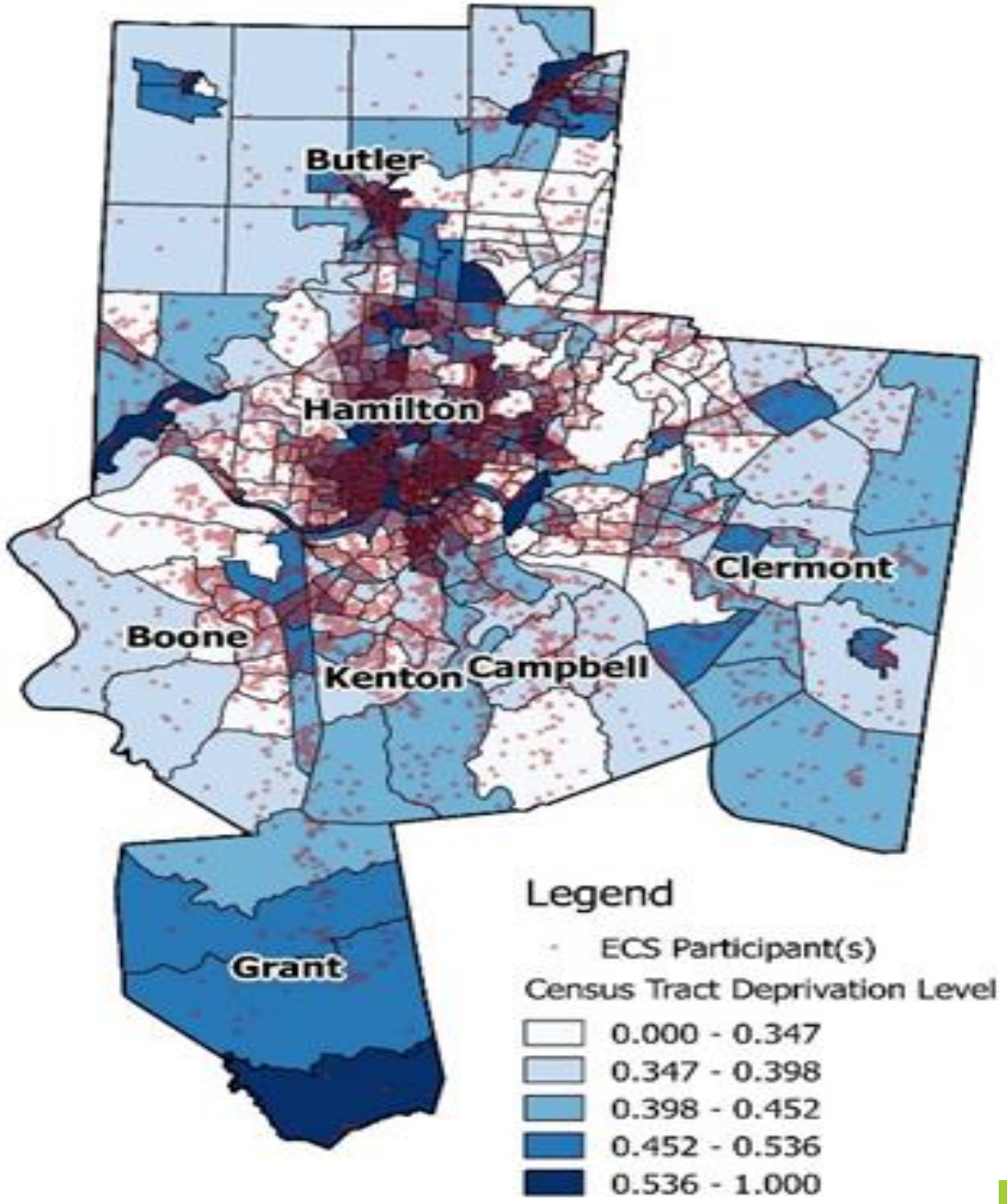
- Three Founding Partners
  - CCHMC serves as managing partner
- Regional Reach
  - Two states; seven counties
- Collaborative Approach
  - Eight provider agencies
  - 50+ referral sources

- Public/Private Funding Mix
  - United Way of Greater Cincinnati
  - Kentucky HANDS
  - Ohio Help Me Grow/MIECHV

Infrastructure for Innovation & Learning

- Operate within academic medical center
- Research and innovation are part of ECS mission
- Dedicated staff for research & evaluation

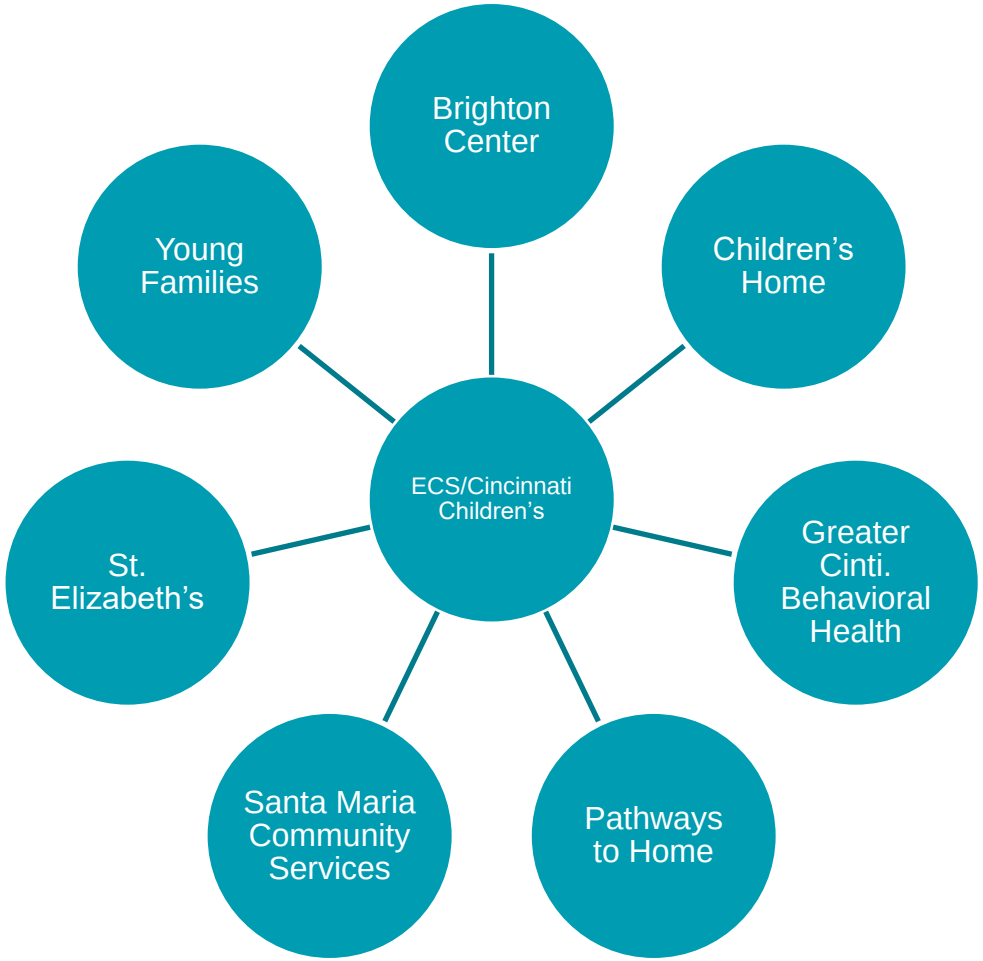
- IRB protocol
- QI Program
- Standardized data collection



Reaching 21% of eligible families in our region

96% Low income
90% Unmarried
29% Late or no prenatal care
22% Teen
43% Black, 36% White, 12% Hispanic

Collective Impact



ECS Community Partners

- Start Strong project
- Cradle Cincinnati
- OB/Prenatal Healthcare Providers
- UW/Success by Six
- CCHMC All Children Thrive
- WIC

Two Generation Outcomes: **FY19**

1,998 families served
26,806 home visits provided

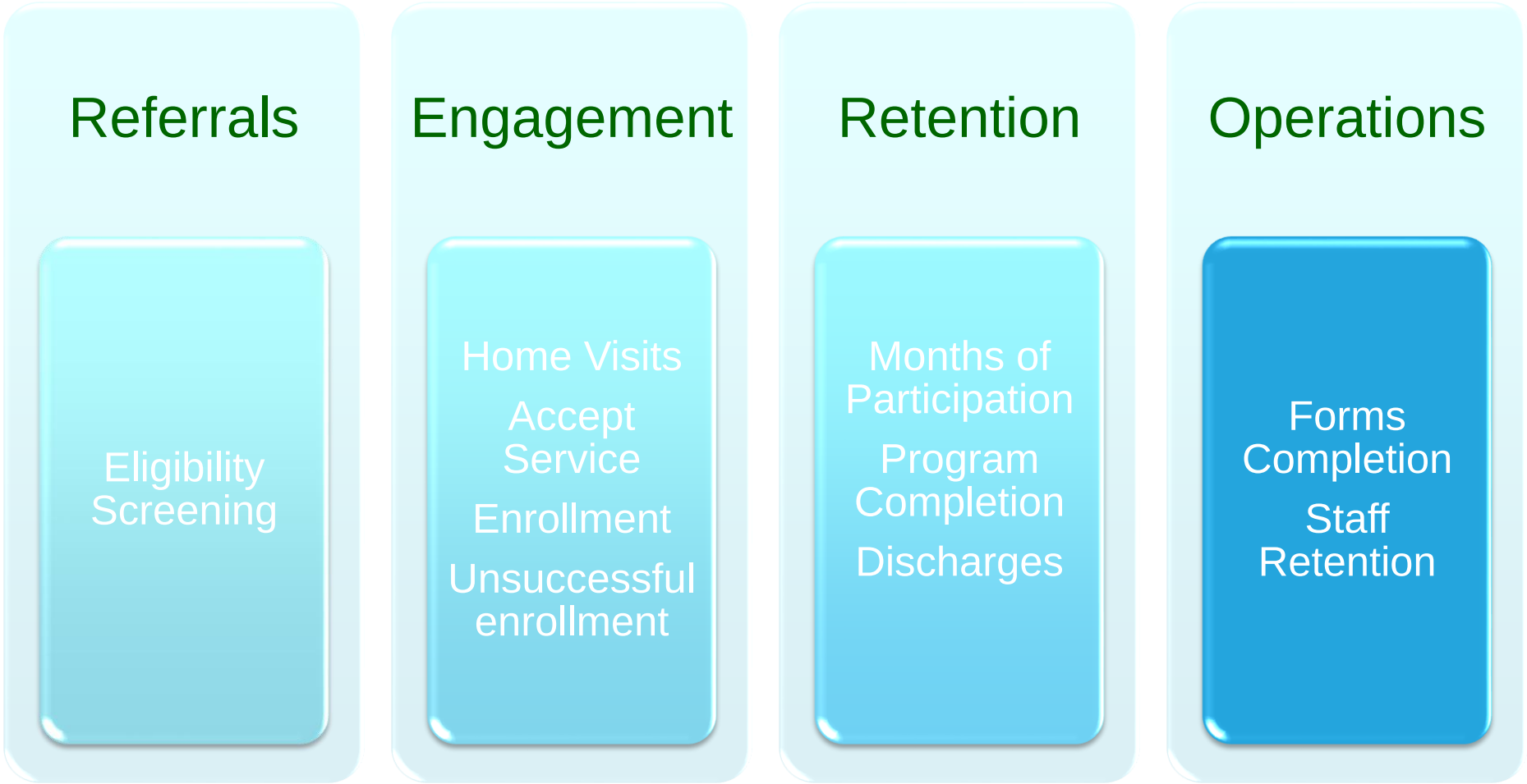
- **92%** of moms received more than 10 prenatal healthcare visits
- **88%** of children born at healthy gestational age
- **85%** of moms initiated breastfeeding
- **86%** of moms attended the postpartum visit
- **70%** of moms with major depressive disorder recovered following MBD treatment
- **89%** of children receive at least 3 of 5 well-child visits expected by 6 mos of age

Commitment to Quality Improvement

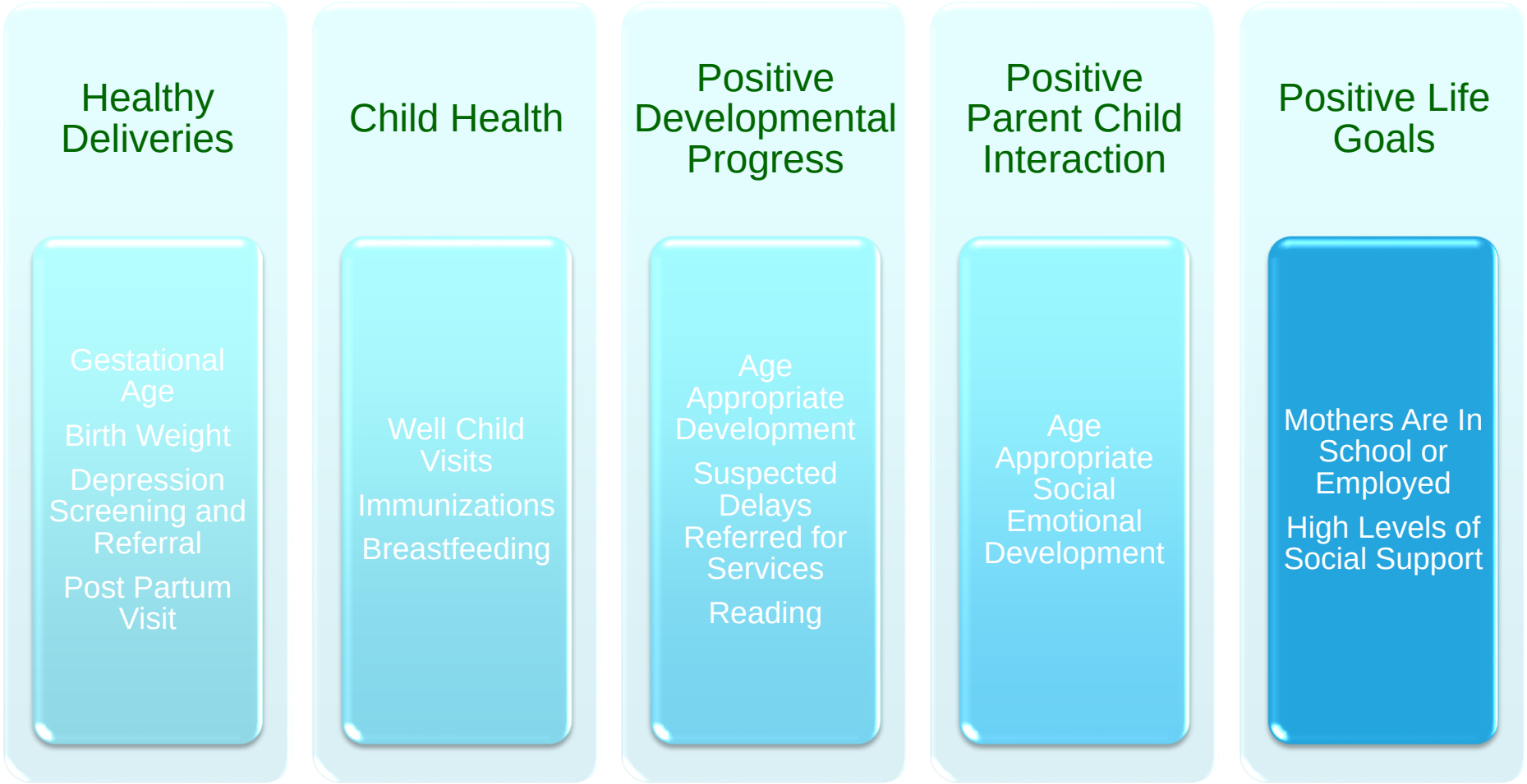
- Integrated with Cincinnati Children's Hospital Medical Center
  - Cincinnati Children's Vision
    - Cincinnati Children's Hospital Medical Center will be the leader in improving child health.
    - Community Focus: Help Cincinnati's kids be the healthiest in the nation through strong community partnerships
- Improvement activities required by funders

'Be the best at getting better' ~ Lee Carter, Former CCHMC Chairman of the Board

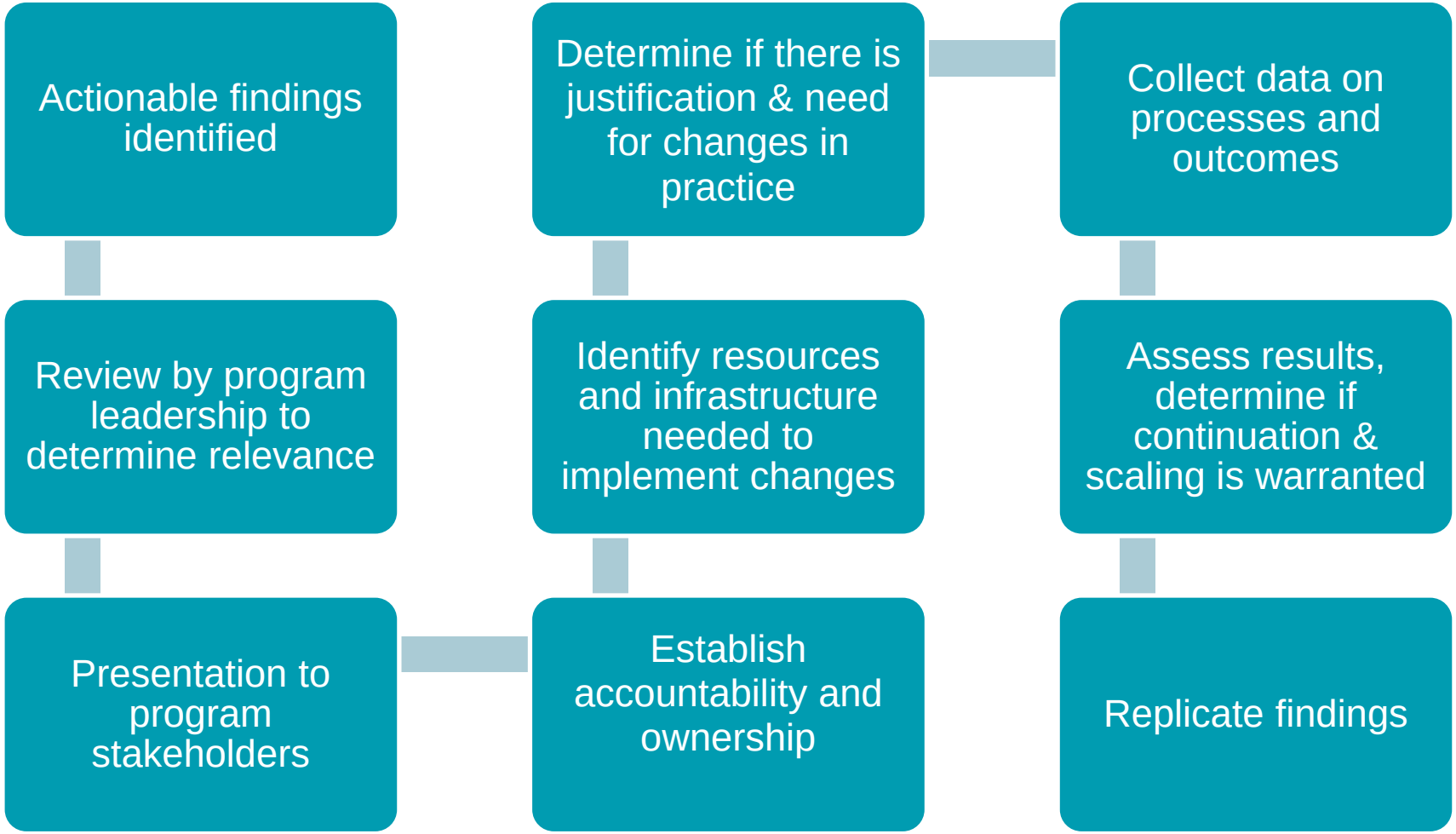
Performance Metric Measures- Process Measures



Performance Metric Measures- Outcome Measures



A System for Moving Actionable Findings into Practice


Actionable findings identified
Review by program leadership to determine relevance
Presentation to program stakeholders
Establish accountability and ownership
Identify resources and infrastructure needed to implement changes
Determine if there is justification & need for changes in practice
Collect data on processes and outcomes
Assess results, determine if continuation & scaling is warranted
Replicate findings

Actionable findings identified & reviewed by key stakeholders

- Is the finding meaningful and important?
- Is there sufficient confidence in the finding, and in mechanisms driving the finding, to warrant program changes?
- How does the finding relate to the field and current knowledge?
- How does the finding relate to model requirements?

Changes in practice and resources needed

- What changes in practice are needed?
- Are the changes feasible and can they be accommodated?
- What kind of training and support is needed?

Accountability and data collection

- Assemble team responsible for implementation
- Identify ownership and responsibilities
- Operationally define practice changes and expected outcomes
- Determine design for testing
- Determine measures and data collection procedures
- Establish oversight and monitoring of initiative

Assess findings, determine next steps

- Analyze data and review findings
- Consider confidence in findings and justification for continuation
- Plan for scalability
- Replicate findings

Moving Beyond Depression as an Example

Actionable Findings (1):

- Prevalence of depression identified
- Lack of treatment identified
- Association with maternal abuse histories documented
- Anecdotal reports collected

Moving Beyond Depression as an Example (cont)

Actionable Findings (2):

- Local grant obtained to develop treatment
- In-home CBT piloted
- Outcomes for treated mothers contrasted with those who did not receive treatment using quasi-experimental design and positive findings obtained
- *Review by key stakeholders supported more rigorous testing before adoption*
- Funding from NIMH obtained to conduct a clinical trial, findings positive

Moving Beyond Depression as an Example (cont)

Decision made and resources identified:

- Review by stakeholders determines that evidence is sufficient to make program changes
- Program processes changed to accommodate new approach to maternal depression
- Funding for service obtained and 2 therapists hired

Moving Beyond Depression as an Example (cont)

Ownership established and data collection system created:

- Program oversight and key leaders assigned
- Data collection procedures and infrastructure established
- QI methods used
- Regular reports produced

Moving Beyond Depression as an Example (cont)

Assess results and scaling:

- Review of implementation by stakeholders determines that evidence is sufficient to continue and to grow as needed
- Moving Beyond Depression established, program disseminated to home visiting programs in 11 states
- Findings replicated in implementations across sites nationally

Interactive exercise:

Examples and opportunities in your programs, barriers and facilitators

A second example: early enrollment, engagement, and preterm birth

Dosage Effect of Prenatal Home Visiting on Pregnancy Outcomes in At-Risk, First-Time Mothers

abstract

BACKGROUND AND OBJECTIVE: Home visiting programs seek to improve care management for women at high risk for preterm birth (<37 weeks). Our objective was to evaluate the effect of home visiting dosage on preterm birth and small for gestational age (SGA) infants.

METHODS: Retrospective cohort study of women in southwest Ohio with a singleton pregnancy enrolled in home visiting before 26 weeks' gestation. Vital statistics and hospital discharge data were linked with home visiting data from 2007 to 2010 to ascertain birth outcomes. Eligibility for home visiting required ≥1 of 4 risk factors: unmarried, low income, <18 years of age, or suboptimal prenatal care. Logistic regression tested the association of gestational age at enrollment and number of home visits before 26 weeks with preterm birth. Proportional hazards analysis tested the association of total number of home visits with SGA status.

RESULTS: Among 441 participants enrolled by 26 weeks, 10.9% delivered preterm; 17.9% of infants were born SGA. Mean gestational age at enrollment was 18.9 weeks; mean number of prenatal home visits was 8.2. In multivariable regression, ≥8 completed visits by 26 weeks compared with ≤3 visits was associated with an odds ratio 0.38 for preterm birth (95% confidence interval: 0.16–0.87), while having ≥12 total home visits compared with ≤3 visits was significantly associated with a hazards ratio 0.32 for SGA (95% confidence interval: 0.15–0.68).

CONCLUSIONS: Among at-risk, first time mothers enrolled prenatally in home visiting, higher dosage of intervention is associated with reduced likelihood of adverse pregnancy outcomes. *Pediatrics* 2013;132:S118–S125

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KEY WORDS
home visit, preterm birth, small for gestational age, low birth weight, prenatal care

ABBREVIATIONS
aOR—adjusted odds ratio
CI—confidence interval
ECS—Every Child Succeeds
HR—hazard ratio
MIECHV—Maternal, Infant, and Early Childhood Home Visiting
SGA—small for gestational age

Dr Goyal conceptualized and designed the study, performed statistical analysis, and drafted the initial manuscript; Dr Hall coordinated and supervised administrative data collection and data linkages and reviewed and revised the manuscript; Dr Meinzen-Derr assisted with study design, supervised all statistical analysis, and reviewed and revised the manuscript; Dr Kahn assisted with design of the study and interpretation of the data and reviewed and revised the manuscript; Ms Short coordinated data collection for the home visiting program, assisted with interpretation of the data, and critically reviewed the manuscript; Dr Van Ginkel supervised data collection for the home visiting program and critically reviewed the manuscript; Dr Ammerman supervised the conceptualization of the study and designed the study, supervised interpretation of the data, and reviewed and revised the manuscript; and all authors approved the final manuscript as submitted.

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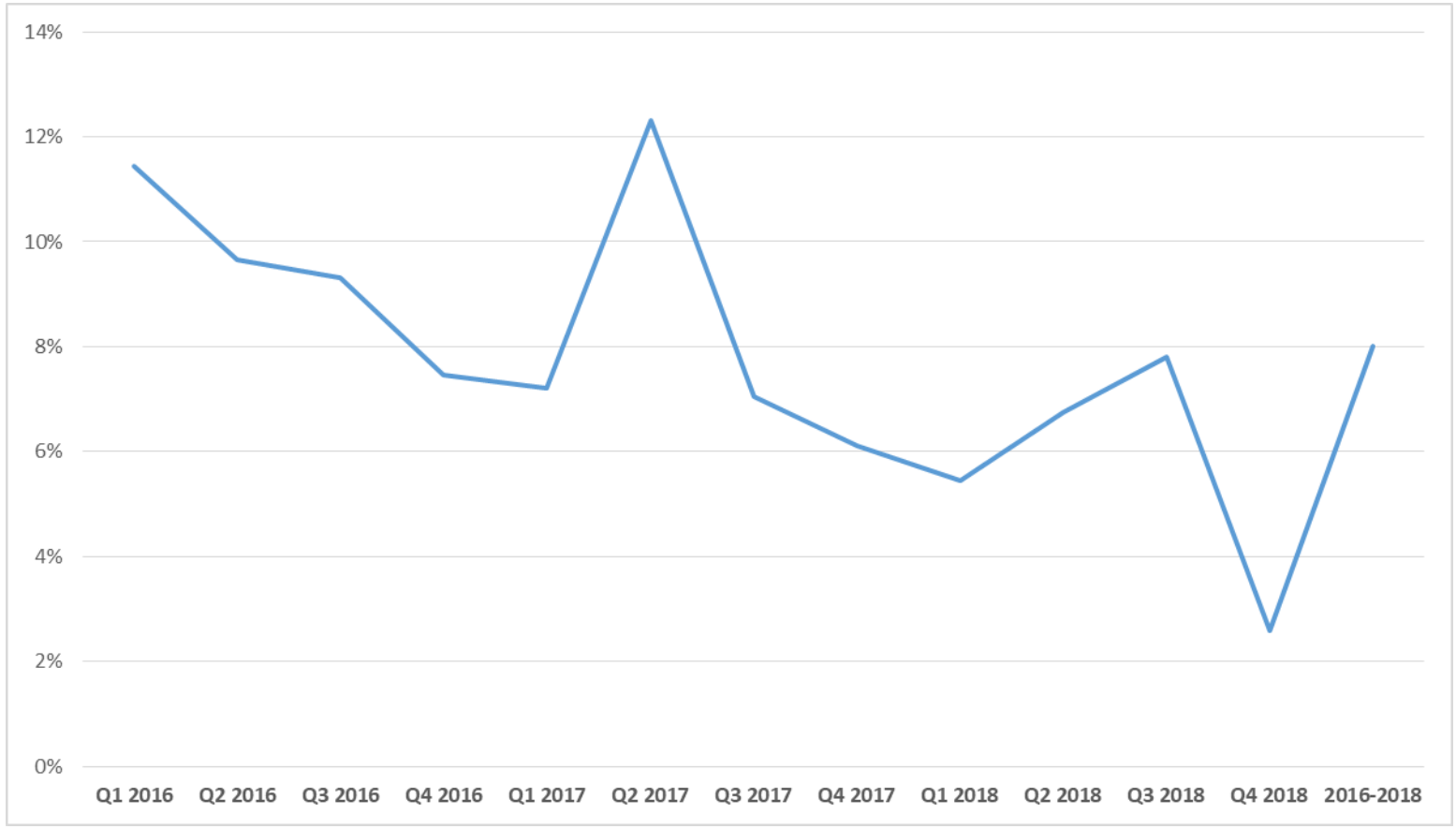
TABLE 3 Multivariable Logistic Regression of Predictors With Preterm Birth, AORs

	Birth < 37 wk, aOR (95% CI)[a]	Birth < 35 wk, aOR (95% CI)
Race		
White	Reference	Reference
African American	0.94 (0.51–1.73)	0.87 (0.32–2.37)
Other	3.31 (0.75–14.48)	(Omitted due to collinearity)
Multirace	0.81 (0.21–3.08)	1.79 (0.67–4.79)
Maternal education		
High school degree completed	Reference	Reference
No high school degree	1.49 (0.79–2.82)	2.34 (0.93–5.89)
Maternal age		
≥18 y	Reference	Reference
<18 y	1.61 (0.75–3.47)	1.35 (0.49–3.71)
Hypertension/preeclampsia	2.99 (1.66–5.41)[b]	4.18 (2.04–8.58)[b]
Chorioamnionitis	1.73 (0.80–3.76)	3.51 (1.55–7.95)[b]
Previous poor birth outcome	2.87 (1.52–5.44)[b]	6.09 (2.22–16.68)[b]
Disorders of placentation	6.77 (1.58–29.0)[b]	19.37 (4.97–75.42)[b]
Percent below poverty level, by census tract[c] (%)	1.00 (0.98–1.03)	0.99 (0.96–1.02)
Number of home visits before 26 wk gestation		
1–3 prenatal home visits	Reference	Reference
4–7 prenatal home visits	0.67 (0.31–1.45)	0.60 (0.17–2.12)
≥8 prenatal home visits	0.38 (0.16–0.87)[b]	0.31 (0.10–0.89)[b]
Gestational age at enrollment, wk	0.97 (0.91–1.04)	0.98 (0.86–1.11)

[a] Final covariates retained in the multivariable analysis of preterm birth were race, maternal education, maternal age <18 y of age, chorioamnionitis, hypertension/preeclampsia, disorders of placentation, previous poor birth outcome, and percent of residents living below poverty by census tract. Model also adjusts for clustering by individual home visiting agency by using robust variance estimators.

[b] Values indicate statistical significance with $P < .05$.

Percentage of enrolled mothers who received 8 or more HVs by 26 weeks gestation



Activities to date

- State of the evidence and confidence to move forward: Program Committee determines yes
- What do we want to do?
  - Examination of mothers who receive high intensity early enrollment home visiting with those who don't, interview home visitors
- Measurement: how will we know if it works?
  - Tracking of enrollments and visit intensity
- Ownership assignments made
- Barriers examined and discussed

Concluding thoughts

- Opportunities for advancement of the filed
- Leveraging the enormous amount of data that has been collected around the country
- Taking advantage of knowledge acquired that has not been subjected to formal research
- Challenges to consider