

# Connecting the Hospital Neonatal Intensive Care Unit with Community Health Centers to Provide Breastfeeding Support to Vulnerable Babies

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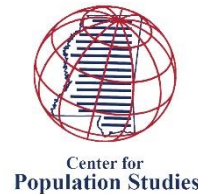
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# Why Should Development Researchers and Practitioners be Concerned About Birth Outcomes and Breastfeeding?

- Children are the most vulnerable to morbidity and mortality at the earliest stages in life.
- Maternal-child health outcomes, especially prenatal and infant health, are sensitive to local and regional environmental and socioeconomic conditions.
- They are also responsive to medical, public health, and other interventions.
- A wide range of development frameworks, including the Sustainable Livelihoods Framework and the Capabilities Approach to community and economic development, view maternal-child health outcomes as good indicators of broader population health and wellbeing.

## Illustrative sources:

De Haan, L., & Zoomers, A. (2005). Exploring the frontier of livelihoods research. *Development and Change*, 36(1), 27-47.

Frisbie, W. P. (2005). Infant mortality. In D. L. Poston & M. Micklin (Eds.) *Handbook of population* (251-282). New York, NY: Springer.

Sen, A. (1999). *Development as freedom*. Oxford, England: Oxford University Press.

Nussbaum, M. C. (2011). *Creating capabilities: The human development approach*. Cambridge, MA: Belknap Press.

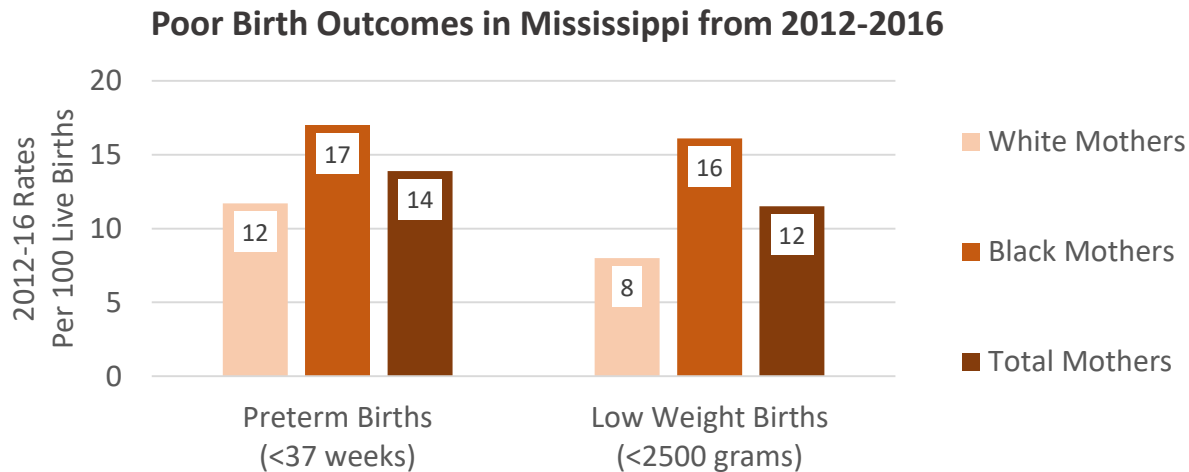
Yaukey, D., Anderton, D. L., & Lundquist, J. H. (2007). *Demography: The study of human populations*. Prospect Heights, IL: Waveland Press.

# Need

- Nationally, the 2015 preterm birth (< 37 weeks) rate was approximately 9.6 per 100 live births, and the low birthweight (<2,500 grams) rate was approximately 8.1.

(See: <https://www.cdc.gov/nchs/data/databriefs/db258.pdf> and <https://www.cdc.gov/nchs/data/hus/2016/005.pdf>)

- Mississippi has high rates of preterm and low weight births that vary widely by race...

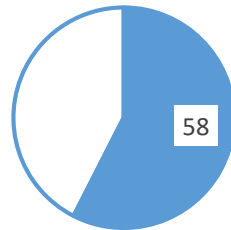


Source: Mississippi State Department of Health – Mississippi Statistically Automated Health Resource System. Additional calculations by the University of Mississippi Center for Population Studies. Total includes mothers classified as white, black, and other racial groups.

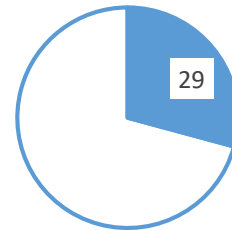
- ... coupled with low rates of breastfeeding initiation and duration (which are much lower than *Healthy People 2020* goals).

### Breastfeeding Rates in Mississippi for Babies Born in 2014

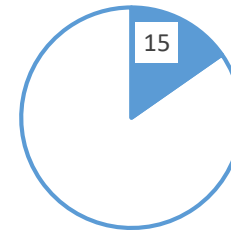
% Babies Ever Breastfed



% Breastfed at 6 Months



% Breastfed at 12 Months



Source: The CDC National Immunization Survey, 2015 and 2016 Data shown here are for births from 2014. Mississippi margins of error (95% confidence levels) = 6.6% ever breastfed, 5.8% breastfed at 6 months, 4.5% breastfed at 12 months. Figure constructed by the University of Mississippi Center for Population Studies.

- Further analysis of the national data demonstrate substantial disparities in breastfeeding rates by state, race/ethnicity, maternal education, and poverty status. (See: [https://www.cdc.gov/breastfeeding/data/nis\\_data/rates-any-exclusive-bf-socio-dem-2014.htm](https://www.cdc.gov/breastfeeding/data/nis_data/rates-any-exclusive-bf-socio-dem-2014.htm))
- Innovative programs and policies are needed to help vulnerable children get on a path to good health.

# Right! From the Start NICU Breastfeeding Initiative

*Connecting Hospital NICUs and  
Community Health Centers to  
Serve the Most Vulnerable Families*

- The *Right! From the Start NICU Breastfeeding Initiative* promotes and supports breastfeeding for mothers with low and very low birth weight babies from the Delta region who are hospitalized at the University of Mississippi Medical Center's Neonatal Intensive Care Unit (NICU).
- Additionally, it engages the power of community health centers (CHCs) to link individual-level clinical care with community action to improve population health.
- Focus population consists of mothers and their low birth weight babies (<2,700 grams) admitted to the Jackson-based NICU from eight Delta counties: Bolivar, Coahoma, Leflore, Panola, Sunflower, Quitman, Tallahatchie, and Washington.
- This intervention is data-driven and will help inform broader efforts for quality improvement across Mississippi and the nation, thereby continuing the legacy of grassroots development to address health challenges.
- **Partners**
  - Women and Children Health Initiatives, Inc.
  - University of Mississippi Medical Center Division of Newborn Medicine
  - Aaron E. Henry Community Health Services Center, Inc.
  - Delta Health Center
  - University of Mississippi Center for Population Studies & Department of Pharmacy Administration
  - Community Foundation of Northwest Mississippi
- The W.K. Kellogg Foundation provides support for this initiative.

## Right! From the Start NICU Initiative Activities and Successes

- Development of a care coordination network model linking the hospital NICU with CHCs, thus spanning the rural-urban continuum.
- Communication with Mississippi Division of Medicaid to inform policy changes for coverage of maternal transport services to deliver breast milk to hospitalized babies.
- Creation of positions, hiring of staff, and cross-training for lactation specialists, community health workers, and social workers to provide interdisciplinary team-based care.
- Train-the-trainers activities for outreach and collecting water samples to reduce lead exposure in collaboration with the University of Mississippi School of Pharmacy Division of Environmental Toxicology and the National Sea Grant Law Center.
- Face-to-face interviews conducted by program staff with 51 mothers to help inform ongoing program development from a grassroots perspective.
- Formalization of policies and procedures for case management and care coordination on topics including screenings, behavioral health, and crisis management.
- Outreach with other maternal-child health programs in the region and state.
- Development and implementation of an online medical records and research data system using REDCap.
- Since receiving IRB approval in October 2017, enrollment of 29 mothers and their 30 babies from the Delta region who were hospitalized in the NICU.
- Pursuit of synergistic improvements to help families have better experiences in the NICU and CHCs.



*"Health Care with Care"  
Since 1965*



**Table 1: Right! From the Start NICU Program Descriptive Statistics – Maternal Characteristics**

Maternal Characteristics		N	%
Race	African American	21	91.30%
	Caucasian/ White	1	4.35%
	Other	1	4.35%
Hispanic/Latina - No		22/23	95.65%
Highest Education	< High School	1	4.35%
	GED	3	13.04%
	High School Degree	7	30.43%
	College, No Degree	5	21.74%
	Associates Degree	5	21.74%
	Bachelors Degree	1	4.35%
	≥ Masters Degree	1	4.35%
Marital Status	Single	18	78.26%
	Committed	1	4.35%
	Married	4	17.39%
Housing Status	Own	7	30.43%
	Rent	15	65.22%
	Other	1	4.35%
Living Arrangement	House	14	60.87%
	Apartment	5	21.74%
	Mobile Home	4	17.39%
Currently Enrolled in WIC - Yes		21/23	91.30%
Plan to Enroll in WIC - Yes		2	100.00%
Maternal Characteristics		N	M (SD)
Number of Children <18 in House		22	2.00 (1.35)

\*Two control participants are not reported here

<b>Table 2: Right! From the Start NICU Program Descriptive Statistics – Infant Characteristics</b>			
<b>Infant Characteristics</b>		<b>N</b>	<b>%</b>
Sex – Female		17/27	62.96%
<b>Infant Characteristics</b>		<b>N</b>	<b>M (SD)</b>
Gestational Age (weeks)	Overall	27	31.10 (3.87)
	Minimum		23.40
	Maximum		37.10
Birth Weight (grams)	Overall	27	1465.37 (582.43)
	Minimum		510.00
	Maximum		2520.00
*Two control participants are not reported here			



**Table 3: Right! From the Start NICU Program Descriptive Statistics – Maternal Depression**

Maternal Characteristics		N	M (SD)
Edinburgh Postpartum Depression Scale **	Intake	26	4.88 (3.97)
	6 Weeks	16	3.13 (3.58)
	3 Months	11	3.00 (4.22)
	6 Months	8	2.00 (2.56)

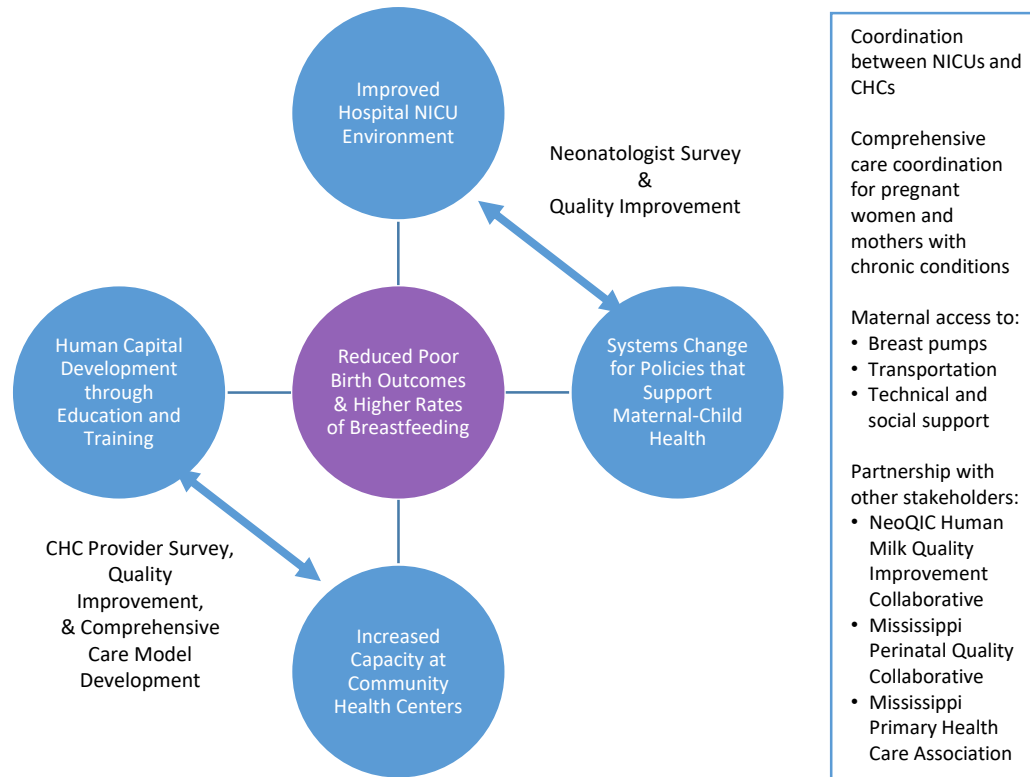
\*Two control participants are not reported here

\*\*Higher scores indicate more depressive symptoms

# Looking to the Future

- Continue existing programming.
- Expand programming through research, outreach, and education for quality improvement at NICUs and CHCs across the state.
- Focus on comprehensive care models for pregnant women and mothers with chronic conditions in the Delta, as well as expansion of the Lead Project.

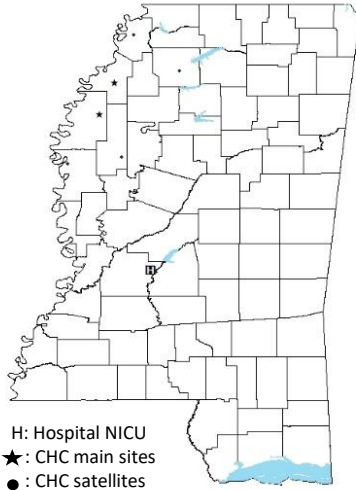
## Right! From the Start Model



# Potential Impacts

- The current Right! From the Start NICU Initiative is serving families from the Delta by connecting organizations in Jackson and their home communities.

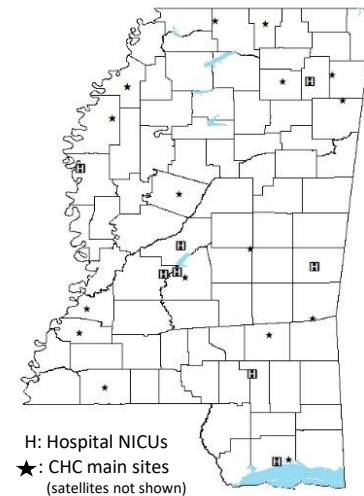
## Current RFTS Organizational Reach



Map produced by the University of Mississippi Center for Population Studies.

- Expansion of this work has the potential to impact those on the Gulf Coast, given synergistic UMMC and CHC locations, to further develop the rural-urban model.
- Additionally, through outreach, education, and training, a NICU and CHC quality improvement model can be implemented across the state.
- Pursuit of this strategy will require intensive coordination and planning.

## Expanded RFTS Organizational Reach



Note: Locations with both a hospital NICU and CHC show up with an H only.  
Map produced by the University of Mississippi Center for Population Studies.