



## NEW PROMISE FOR NORTH CAROLINA

Study Shows Significantly Fewer Very Pre-Term Births and Neonatal Intensive-Care Unit (NICU) Admissions Among Nurse-Family Partnership Participants

Nurse-Family Partnership (NFP) is an evidence-based community health program that connects low-income, first-time parents with maternal and child health nurses who provide support for a healthy pregnancy, knowledgeable and responsible parenting, and a strong start in infancy.

A new study by researchers at the University of North Carolina at Chapel Hill evaluated the NFP program's effects in North Carolina, showing statistically significant improvements in two areas critical to infant health and healthcare costs in our state.

### A Research-Proven Program

The Coalition for Evidence-Based Policy has identified NFP as the only prenatal or early childhood program that meets the Top Tier evidence standard used by the U.S. Congress and executive branch to distinguish research-proven programs. *JAMA Pediatrics*<sup>1</sup> recently reported compelling improvements in mortality and health for infants and mothers linked to NFP. The program is now being administered statewide in South Carolina.<sup>2</sup>

### A win-win that saves money, improves lives

On average, Medicaid births in North Carolina cost \$30,285 for an infant born prematurely or with low birthweight, compared to \$3,183 for an infant born full-term and normal weight.<sup>3</sup> As a result, the Nurse-Family Partnership approach represents an important opportunity to reduce these costs while significantly improving outcomes for the most vulnerable babies.

### KEY FINDINGS

**1.** NFP participation was associated with reduction in the rate of “very pre-term” births (28-31 weeks) and NICU admission. NFP cut the risk of very pre-term birth by 66.7% (from 2.1% to .7%) and the rate of NICU by approximately 20% (from 7.5% to 5.9%). Both of these outcomes are known to be associated with healthier infants and reduced costs.

#### VERY PRE-TERM BIRTHS (FROM 2.1% TO .7%)



#### USE OF NEONATAL INTENSIVE CARE UNIT (FROM 7.5% TO 5.9%)



**2.** NFP had the largest benefits for African-American women.

When disaggregated by race, all specific categories of pre-term birth were significantly reduced for both Caucasian and African American women. The effect of NFP on pre-term birth rates for African-American women was double that for Caucasian women.

<sup>1</sup> Olds, D. L., Kitzman, H., Knudtson, M. D., Anson, E., Smith, J. A., & Cole, R. (2014). Effect of home visiting by nurses on maternal and child mortality: Results of a 2-decade follow-up of a randomized clinical trial. *JAMA Pediatrics*, 168(9): 800-806. doi:10.1001/jamapediatrics.2014.472

<sup>2</sup> South Carolina Department of Health and Human Services. Fact sheet: South Carolina nurse-family partnership pay for success project. Retrieved from <http://www.scdhhs.gov>

<sup>3</sup> HCUP State Inpatient Databases, Agency for Healthcare Research and Quality, based on data collected by the NC HHS. <http://hcupnet.ahrq.gov/HCUPnet.jsp>. Mean Medicaid costs in North Carolina, 2013, for principal diagnosis categories 219 (short gestation, low birth weight) and 196 (normal delivery).

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## About the New Study

This evaluation of the Nurse-Family Partnership program offered in North Carolina focused on priority health outcomes of women and infants. The research team analyzed North Carolina birth certificate data for 2011–2013 and matched NFP clients to similar mothers based on birth certificate data. The study adjusted for other factors known to affect birth outcomes, including maternal age, race/ethnicity, education, marital status, WIC participation, adequacy of prenatal care and smoking behaviors before and during pregnancy.

Effects on nine outcomes were examined:

- Pre-term birth, including any pre-term birth and the separate categories of moderately, very, and extremely pre-term
- Low birthweight, including any low birthweight and the separate categories of moderately and very low birthweight
- NICU admission
- Breastfeeding initiation recorded at hospital discharge

Examining outcomes between similar NFP participants and non-participants giving birth within the same hospital,\* the study found that NFP participation statistically reduced the rates of very pre-term birth and NICU admissions. Findings show a clear statistically significant trend in reducing all specific stages of pre-term birth for Caucasian and African American women, and further, that the effect size of NFP is markedly larger and statistically different for African American women as compared with Caucasian women.

\*The full report describes three alternative sets of analyses performed with control groups defined at state, county, and hospital levels. This summary focuses on the third set of analyses, with the control group drawn from the same hospitals used by NFP participants.

Outcome	Probability of Outcome Without NFP	Probability of Outcome With NFP	Difference attributable to participation in NFP
Any pre-term (<37 weeks)	13.6%	12.6%	-1%
Moderately pre-term (32-36 weeks)	11.5%	11.1%	-0.3%
Very pre-term (28-31 weeks)**	2.1%	0.7%	-1.4%
Extremely pre-term (<28 weeks)	0.9%	0.8%	-0.1%
Any low birthweight (<2500 g)	12.6%	11.7%	-0.9%
Moderately low birthweight (1500-2499 g)	11.4%	10.2%	-1.2%
Very low birthweight (<1500 g)	1.7%	1.6%	-0.1%
NICU admission **	7.5%	5.9%	-1.5%
Breastfeeding initiation	64.3%	66.6%	2.3%

\*\*Statistically significant at 5% level

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**[Find Evaluation of the Nurse Family Partnership in North Carolina, the full report on study findings, at www.unc.edu/~gholmes/NFPmarch2016.pdf](http://www.unc.edu/~gholmes/NFPmarch2016.pdf)**

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