Children's Hospital of Philadelphia
PolicyLab

# Children in Low-Income Families Exhibit Poorer Cognitive Development as Early as Age One

*New Study Suggests Support for Families and Children in Poverty Cannot Begin Too Early*

**Philadelphia, Pa. – July 12, 2017** – By age one, infants in low-socioeconomic families have already been exposed to greater environmental disadvantages that contribute to poorer cognitive and language development, according to a new study from PolicyLab and the Division of Neonatology at Children's Hospital of Philadelphia (CHOP). Published in the Journal of Developmental & Behavioral Pediatrics, this study shows that poverty can impact a child's development as early as age one.

As part of a larger study designed to determine how poverty influences brain development, children were assessed at age one using validated developmental assessments that measure infant cognitive and language functioning. The researchers found that infants in low-income families (defined as a family of four with an annual income of $23,500 or less) had significantly poorer cognitive and language performance than infants in higher-income families. For example, infants in low-income families demonstrated lower levels of problem-solving behaviors and understanding of caregiver communication than higher-income participants at age 12 months.

Additionally, this study is among the first to evaluate multiple aspects of the maternal, home and neighborhood environments of infants growing up poor. The results demonstrate a portrait of disadvantage. Low-income families were more likely to experience higher levels of stress and food insecurity, have fewer age-appropriate toys and books for their children, and provide less child-centered households. Low-income mothers scored lower on measures of verbal and visual spatial skills and were more likely to experience concentrated neighborhood disadvantage.

"The effects of poverty on older children have been well-documented by researchers over the past few decades, but this is the first study to illustrate the multiple disadvantages infants face before they turn one-year-old," said Hallam Hurt, MD, a neonatologist and professor of pediatrics at CHOP, faculty member at PolicyLab, and lead author on the study. "Today, many vulnerable children don't receive the support of programs like Head Start until age three. Our research suggests a window of opportunity for initiation of interventions at much earlier ages for both infants and their families."

"Early divergence of cognitive and language performance between low- and higher-income children increases over time," said Laura Betancourt, PhD, of the Division of Neonatology at CHOP, who conducted the developmental assessments and is an author on the study. Given this anticipated decline, Drs. Hurt and Betancourt emphasized the urgency for provision of resources for infants and mothers facing environmental disadvantage.

Although the study sample was small – 52 families from Philadelphia – it was made up of a homogeneous and healthy group of African American mothers and female babies, allowing the researchers greater ability to isolate the effects of poverty. Future research is needed to replicate this study in larger, more diverse cohorts in different locales.

**Citation:** Hurt H, Betancourt, LM. Turning one year of age in low socioeconomic environment: A portrait of disadvantage. Journal of Developmental and Behavioral Pediatrics, 2017.

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**About PolicyLab at Children's Hospital of Philadelphia:** PolicyLab at Children's Hospital of Philadelphia (CHOP) is dedicated to achieving optimal child health and well-being by informing program and policy changes through interdisciplinary research. Founded in 2008, PolicyLab is a Center of Emphasis within the CHOP Research Institute, one of the largest pediatric research institutes in the country. With more than 25 highly-regarded faculty and 35 passionate staff who bring expertise from myriad of fields covering health, research and health policy, our work focuses on improving public systems, improving health care delivery and improving child health outcomes. For more information, visit http://www.policylab.chop.edu.

**About Children's Hospital of Philadelphia:** Children's Hospital of Philadelphia was founded in 1855 as the nation's first pediatric hospital. Through its long-standing commitment to providing exceptional patient care, training new generations of pediatric healthcare professionals and pioneering major research initiatives, Children's Hospital has fostered many discoveries that have benefited children worldwide. Its pediatric research program is among the largest in the country. In addition, its unique family-centered care and public service programs have brought the 546-bed hospital recognition as a leading advocate for children and adolescents. For more information, visit http://www.chop.edu.

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