

## PRETERM BIRTH AMONG AFRICAN AMERICAN AND WHITE WOMEN WITH A LIFELONG RESIDENCE IN HIGH-INCOME CHICAGO NEIGHBORHOODS: AN EXPLORATORY STUDY

**Objective:** To explore the association between race and preterm birth among women with a lifelong residence in high-income neighborhoods.

**Methods:** Stratified and multivariable logistic regression analyses were performed on the Illinois transgenerational birthfile (infants born 1989–1991 and mothers born 1956–1975) with appended US Census income data. African American ( $n=777$ ) and non-Hispanic White ( $n=2,327$ ) infants born to mothers with a lifelong residence in Chicago census tracts with median family incomes in the top income quartile were studied.

**Results:** African Americans had a twofold greater preterm (<37 weeks) birth rate than Whites: 11.6% vs 5.2%, relative risk (95% confidence interval) equaled 2.2 (1.7–2.9). The adjusted (controlling for maternal birth weight, age, education, marital status, cigarette smoking, and prenatal care utilization) odds ratio of preterm birth for African Americans (compared to Whites) equaled 1.2 (.4–2.0). African Americans had a sixfold greater very low birth weight rate (<1500 g) than Whites: 3.3% vs .6%; relative risk (95% confidence interval) equaled 5.9 (3.1–11.2). The adjusted odds ratio of very low birth weight for African Americans (compared to Whites) equaled 2.4 (1.1–3.9).

**Conclusions:** A stark racial disparity in the unadjusted rates of preterm birth and very low birth weight exists among women with a lifelong residence in high-income urban neighborhoods; however, the disparity narrows when traditional, individual-level risk factors are mathematically controlled. (*Ethn Dis.* 2007;17:113–117)

**Key Words:** High Socioeconomic Status, Prematurity, Race, Very Low Birth Weight

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### INTRODUCTION

African American women have more than a twofold greater rate of preterm (<37 weeks) birth than White women.<sup>1</sup> Short gestation is tightly linked with very low birth weight (VLBW, <1500 g), which is a stronger proxy measure of mortality risk and more accurately measured.<sup>2,3</sup> During the past 50 years, the racial gap in VLBW rates has widened; African Americans now have a threefold greater VLBW rate than Whites.<sup>1,4</sup> Moreover, despite extensive published literature, the racial disparity in VLBW rates is an epidemiologic enigma; traditional socio-demographic and medical risk factors have a greater effect on the VLBW rates of Whites than of African Americans.<sup>5–9</sup> In recognition of the public health importance of this phenomenon, *Healthy People 2010* calls for the elimination of racial and ethnic group disparities in infant mortality rates among United States residents.<sup>10</sup>

Contextual factors are strongly associated with perinatal outcome.<sup>11–15</sup> Historically, African Americans and Whites have been exposed to extremes of residential environments, and a disproportionately high percentage of African Americans is directly exposed to urban poverty.<sup>12</sup> Although neighborhood poverty is a risk factor for preterm

birth and VLBW, the racial disparity in both outcomes persists as maternal residential environment improves.<sup>11–14</sup> Rauh et al found that individual-level variables had minimal effect on the VLBW rate of African American women who lived in high-income New York City neighborhoods.<sup>14</sup>

To our knowledge, all population-based studies on pregnancy outcome have used cross-sectional designs in which ecologic risk estimates were based on women's place of residence at or near the time of delivery. The limited available data show that women's pre-pregnancy (fetal, infant, and childhood) experiences are associated with adult reproductive health.<sup>16,17</sup> The risk of preterm birth among African American and White women with a lifelong residence in nonimpoverished neighborhoods is unknown.

We undertook an analysis of Illinois vital records and US Census income data to determine the extent to which the racial disparity in rates of preterm birth and VLBW exists among women with a lifelong residence in high-income Chicago neighborhoods.

### METHODS

#### Study Population

A detailed description of the Illinois transgenerational dataset has been previously published.<sup>4</sup> Briefly, the birth certificate data tapes for 1989–1991 from the Illinois Department of Public Health were linked to those of their mothers who were born in Illinois between 1956 and 1976. Approximately 328,000 potentially matchable infants

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