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Health Care System Insights and Approaches Regarding Racial Disparities in Maternal Mortality and Severe Morbidity

Rates of maternal mortality and severe morbidity are higher in the United States than in any other developed country (Callaghan, Creanga, & Kuklina, 2012; Creanga, Syverson, Seed, & Callaghan, 2017; Main & Menard, 2013). Defined as the death of a woman during or within one year of pregnancy from a complication or chain of events affected by pregnancy, maternal mortality occurs 600 times every year in the United States (Creanga et al., 2017). Approximately 52,000 women in this country experience severe morbidity during pregnancy, which is defined as being admitted to an intensive care unit or receiving ≥ 4 units of blood (Callaghan et al., 2012). It is estimated that roughly half of all cases of maternal mortality and severe maternal morbidity are preventable (Berg et al., 2005).

Significant racial disparity exists in rates of maternal mortality and severe morbidity in the United States: non-Hispanic Black women are 2.1 times more likely than White women to experience severe maternal morbidity and 3.4 times more likely to die around the time of pregnancy (Creanga, Bateman, Kuklina, & Callaghan, 2014; Creanga et al., 2017). Some investigators pointed to health risk factors, such as higher rates of comorbidities during pregnancy among Black women, to explain these racial differences (Metcalf, Wick, & Ronksley, 2017). However, in a recent health services research study performed in New York City, investigators found that after adjusting for patient characteristics, 47.7% of the difference between Black and White women related to severe maternal morbidity was explained by the hospital at which they gave birth

(Howell, Egorova, Balbierz, Zeitlin, & Hebert, 2016).

Health services research is a "multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately, our health and well-being" (Agency for Healthcare Research and Quality, 2014, paragraph 2). For the New York hospital study, discharge and birth certificate datasets from 2011 to 2013 were linked to analyze severe maternal morbidity events for 353,773 births in 40 different hospitals in the city (Howell et al., 2016). Among 8,825 women who had severe maternal morbidity (2.5% of the population), Black women outnumbered White women (4.2% vs. 1.5%, $p < .001$), and this disparity persisted after researchers controlled for the influence of maternal comorbidities and other personal risk factors. Investigators then used mixed-effects logistic regression analysis to calculate risk-standardized severe maternal morbidity rates for each of the hospitals and mapped individual cases of women who experienced maternal morbidity to the hospitals at which they gave birth. They discovered a 6-fold difference in maternal morbidity rates among the 40 hospitals that ranged from 0.8 to 5.7/100 births. While only 23.3% of Black women gave birth at hospitals with the lowest ranges of morbidity rates, 65.3% of White women received their care at these institutions. By contrast, 37.3% of Black women gave birth at hospitals that had the highest rates of severe maternal morbidity. Howell et al. (2016) also considered how hospital-level variables predicted severe maternal morbidity. They found that hospitals with level 3 or 4 nurseries, private ownership, teaching status, and very high birth volumes had lower risk of severe maternal morbidity events.

Following their analyses, these researchers recommended that all low-performing hospitals in

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the United States make changes that range from structural alterations (staff-to-patient ratios, time of day staffing, qualifications of staff) to organizational updates (audit and feedback on clinical practices of providers, use of quality improvement bundles, hospital culture improvements) to increase quality and thereby reduce racial disparities in maternal morbidity and mortality (Howell & Zeitlin, 2017). For example, patient safety bundles could be used to help reduce racial disparities in maternity outcomes by standardizing treatment for common emergencies such as shoulder dystocia and postpartum hemorrhage (Howell & Zeitlin, 2017). The Council on Patient Safety in Women's Health Care, a multidisciplinary team of health care providers, public health professionals, and cross-sector stakeholders, has published an assortment of maternity care bundles (2017) that are designed to reduce peripartum racial and ethnic disparities. In addition, education of all providers on shared decision-making skills, implicit bias, and teamwork were recommended (Howell & Zeitlin, 2017). These types of changes could lead to huge improvements. For example, Howell et al. (2016) estimated that if Black women gave birth at the same hospitals as White women, the city would see 940 fewer severe morbid events each year, which represents a nearly 50% reduction in the maternal morbidity rate for black women in that area.

Maternal mortality and severe morbidity are complex problems that require multifaceted action. The large racial disparities in these outcomes among U.S. women cannot be attributed primarily to individual risk factors. Health services research offers a unique view into the systems-level forces that contribute to these tragic outcomes and provides potential targets to reduce disparities and improve outcomes for all women.

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- What factors influence the delivery of care by skilled birth attendants in low-and middle-income countries?
- Routine antibiotic preventive treatment after normal vaginal birth for reducing maternal infections
- Combined diet and exercise in pregnancy for preventing gestational diabetes mellitus
- Accuracy of genomics-based non-invasive prenatal testing (gNIPT) for identifying genetic abnormalities in unborn babies
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