Date of Council: September 2023

Title of Initiative: Addressing the Impacts of Health Care System, Health Policy, and Clinician Factors on Disparities in Maternal Mortality and Morbidity

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Objective: This initiative will solicit research to examine and address understudied factors pertaining to the health care system, health policy, and the clinical setting and their impact on disparities in maternal mortality and morbidity.

Background: The maternal mortality rate (MMR) in the U.S. is an urgent public health problem, as it surpasses rates in similarly industrialized and high-income countries and elicits stark disparities for racial and ethnic minorities, underserved rural residents, and people with low socioeconomic status (SES). Every year, over 1200 women in the U.S. die of complications during pregnancy, childbirth, and the postpartum period, with Black and African American women and American Indian and Alaska Native women having three times and two times the MMRs of White women, respectively. Additionally, MMRs are 80% higher in small rural areas compared to large metro areas. Severe maternal morbidity also affects approximately 50,000 women in the U.S. each year and elicits similar racial and ethnic disparities.

Research gaps: According to Healthy People 2030, there are five domains of social determinants of health (SDOH). Our initiative focuses on the **health care access and quality domain** because it includes important understudied individual- and structural-level SDOH. Adverse SDOH, such as lack of access to quality and affordable care, may increase maternal mortality and morbidity (MMM) risk, especially among Black and African American and AI/AN women. According to the CDC, more than 80% of pregnancy-related deaths are preventable (e.g., 93% of such deaths in AI/AN women are preventable). In terms of discrepancies in **quality of care**, studies suggest women who give birth to babies in hospitals that serve predominantly Black and African American populations were more likely to experience severe maternal morbidity. However, this increased risk in majority Black and African American-serving hospitals was not fully accounted for after controlling for teaching hospital status, having an advanced nursery, hospital ownership, and delivery volume.

Research should examine whether other factors are implicated in these disparities, such as clinician factors, including failure to diagnose, delays in diagnosis, lack of appropriate referrals, and inadequate documentation and communication. Implicit bias among clinicians, which is reflected in the disrespect Black and African American women may

experience or dismissal of their concerns, has also been implicated in poor quality of care resulting in MMM. Some studies suggest combatting implicit bias requires diversifying the health care workforce to allow for racially concordant care and providing medical education to address SDOH.

Efforts to improve the quality of care for maternal outcomes, such as the Alliance for Innovation on Maternal Health patient safety bundles, have not been adequately evaluated. Moreover, specialists (e.g., obstetricians) and primary care clinicians must coordinate their efforts between the pregnancy and postpartum periods to effectively implement these bundles to, as these efforts may reduce MMM disparities by improving access to care and quality of perinatal care.

Research evidence also shows that developing collaborative partnerships between hospital-based clinicians and community-based service providers, such as doulas and midwives, could potentially improve maternal outcomes for racial and ethnic minorities through fewer birth complications and cesarean deliveries and improved access to care. Racial and ethnic minority women's **access to care** is often limited by factors like insurance coverage, SES, access to community resources, and site of care. A recent study revealed that Medicaid expansion under the Affordable Care Act was associated with a lower total MMR of 7.01 maternal deaths per 100,000 live births relative to non-expansion states. Moreover, when stratifying by race and ethnicity, Black and African American mothers had the highest decreases in total MMR (by 16.27), followed by Hispanic or Latina mothers (by 6.01). Thus, research should examine the mechanisms through which Medicaid expansions may contribute to decreases in MMRs and corresponding reductions in racial and ethnic disparities. In addition, depending on the geographic location (rural versus urban), pregnant women may experience differences in access and the quality of care they receive. Rural communities, composed of a higher percentage of Black and African American, Hispanic or Latino, and unemployed residents, have been shown to experience a higher likelihood of hospital closures and loss of hospital obstetric services. Thus, examining rural racial and ethnic disparities in MMM is essential.

Portfolio Analysis: A portfolio analysis of NIMHD-funded grants between 2013 and 2023 that focused on maternal mortality/morbidity and disparities revealed 22 funded R01s on the following topics:

- 6 grants on Medicaid insurance coverage
- 1 intervention on hypertension
- 1 intervention on integrating safety bundles and doulas
- 1 multi-level intervention (race-matched community workers and enhanced pre- and post-natal care that targets provider system bias)
- 2 interventions utilizing perinatal and antenatal care navigators to improve outcomes

- 1 pilot intervention to reduce emergency department visits and postpartum readmissions
- 1evaluation of quality care collaboratives
- 1 investigation of disparities in utilization and outcomes for anxiety and depression
- 1 on mechanisms driving disparities in hypertension
- 1 simulation model of severe maternal morbidity among African Americans
- 1 on structural racism and maternal health disparities
- 1 on measuring structural racism
- 1 on targeting risk factors for sever maternal morbidity
- 2 grants on quality of care and disparities.

There was also one funded R21 on Medicaid expansion and disparities in maternal outcomes and one R03 on disparities in postpartum hemorrhage. A more comprehensive portfolio analysis that included funded grants between 2013 and 2023 by NIH, AHRQ, HRSA, and CDC revealed only a few funded grants focused on MMM disparities by other NIH ICs: specifically, NICHD (10 grants), NINR (8 grants) NHLBI (5 grants), NIMH (2 grants).

Description of Initiative: This initiative aims to solicit R01 grant applications that would bridge the knowledge gap about understudied factors pertaining to health care systems and clinical settings during the full spectrum of perinatal care. Such factors include addressing clinicians' implicit bias, diversifying the health care workforce, developing collaborative partnerships between hospital-based providers and community-based service providers, addressing care coordination and continuity of care, and evaluating safety bundles. The proposed studies can include clinical trials, quasi-experimental studies, observational studies (primary/secondary data), or mixed-methods studies. The research projects proposed should examine the mechanisms/pathways through which these health care factors contribute to MMM disparities and/or interventions to address these disparities.

Potential Research Areas of Focus:

- Evaluation of strategies to improve the quality of perinatal health care for racial and ethnic minority women, including emerging innovative strategies, such as but not limited to evidence-based health care safety bundles, health improvement collaboratives, and innovative primary care models
- Investigation of the mechanisms through which health insurance coverage expansions impact racial and ethnic disparities in MMM, including private insurance coverage
- Investigation of care coordination challenges or breakdowns in the diagnostic or care pathways between primary care and specialists and during the transition from the pregnancy to post-partum periods, and impacts on access and quality of care

- Examination of clinician-level factors, such as implicit bias, patient–clinician communication, racial concordance between the clinician and patient, and strategies to improve cultural competence in relation to disparities in MMM
- Investigation of the contribution of differential access to and quality of obstetric and perinatal care (e.g., telehealth and workforce shortages) to rural and urban disparities in MMM, especially in terms of the interactions between race/ethnicity and rural/urban residential status