

**Maternal Mortality & Morbidities: Literature Review**

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Despite being a developed country, the United States has experienced a dangerous rise in maternal mortality rates over the past few years. "In 2021, 1,205 women died of maternal causes in the United States compared with 861 in 2020 and 754 in 2019" (Centers for Disease Control and Prevention [CDC], 2023). Within those maternal deaths, the maternal mortality rate for non-Hispanic Black women was 69.9 deaths per 100,000 live births, 2.6 times the rate for non-Hispanic White women (CDC, 2023). The maternal death rates have also increased due to several other components (CDC, 2023). The purpose of this literature review is to reveal the factors contributing to maternal mortality and morbidities, while examining current research and implemented interventions. It also enhances education awareness on combating preventable maternal death.

### **Maternal mortality in the United States: research gaps, opportunities, and priorities.**

This article explores the increase in maternal mortality in the United States despite perinatal care advancement. It emphasizes the racial and economic disparities in maternal mortality by exposing that black women experience much higher rates than white women (Bianchi et al., 2020). "In the United States, black women at all levels of income and education are more likely to experience a maternal death than white women (Bianchi et al., 2020)."

### **Key Points**

In 2019, The National Institute of Child Health and Human Development (NICHD) hosted two workshops to address these increased rates. The workshops included a diverse range of experts composed of community-based and healthcare provider groups (Bianchi et al., 2020).

Collaboratively, they reviewed current data and discussed research gaps focused on data measurement and reporting, obstetrical and health system factors, social determinants and disparities, and the community perspective and engagement (Bianchi et al., 2020). The data is based on Severe Maternal Morbidity records (SMM), populations affected, and their etiologies. SMM rates more than doubled from 1998 to 2011 (Bianchi et al., 2020). From 2011 to 2015, 31% of maternal deaths occurred during pregnancy, 36% at or within 1 week postpartum, and 33% from 1 week to 1 year postpartum (Bianchi et al., 2020). Results also concluded that racial disparities had a >3-fold higher mortality rate (Bianchi et al., 2020).

### **Assumptions**

Inadequate knowledge, services, equipment, facilities, and lack of coordinated care contribute to the increased risk (Bianchi et al., 2020). “Preexisting chronic conditions disproportionately affect black women, women in rural and low-income communities, and women with Medicaid insurance coverage for childbirth” (Bianchi et al., 2020). Studies also concluded that high insurance coverage (at the time of delivery) might shield the challenges of women who experience gaps and transitions in health insurance during the prenatal and postpartum periods (Bianchi et al., 2020).

### **Deficit/Conclusion**

The rise in pregnancy-related deaths is alarming and demands immediate action. By understanding the contributing factors presented in this article and implementing evidence-based practices, healthcare members can drastically improve maternal health outcomes. Addressing this complex issue requires healthcare system improvements, education, policy changes, and genuine efforts to eliminate racial disparities (Bianchi et al., 2020). The author’s reasoning is

undoubtedly accepted. However, further research is needed to evaluate these interventions' effectiveness and assess for change. Failure in nursing acknowledgment to address these factors will result in a continuous rise in these rates.

### **Quantitative blood loss in obstetric hemorrhage**

Obstetric hemorrhage is a significant contributor to maternal mortality in the United States. It is responsible for 11% of maternal deaths, making it the leading cause of death that occurs on the actual day of birth (Smith et al., 2019). According to studies, 54-93% of maternal deaths due to postpartum hemorrhage may be preventable (Smith et al., 2019). Several studies investigate factors associated with the identification and treatment of obstetric hemorrhage. A significant finding is that healthcare providers miscalculate the estimation of blood loss during birth and the immediate postpartum period (Smith et al., 2019). This imprecision leads to delayed hemorrhage treatment, resulting in adverse outcomes for the mother (Smith et al., 2019). This research aims to provide quantitative methods of measuring obstetric blood in hopes of improving hemorrhage-associated mortality (Smith et al., 2019).

#### **Key Points**

Quantitative measurement techniques were utilized in a cohort study of 150 women. The study compared visual estimation to a gravimetric measurement of blood loss to determine the difference in accuracy (Smith et al., 2019). The measurements were based on the weight of blood-soaked items and blood loss. (Smith et al., 2019) The study revealed that visual estimation by providers and nursing staff was 31% less accurate in estimating blood loss than gravimetric (Smith et al., 2019). A similar study of 2,781 women exposed the differences in estimated blood

loss with an artificial intelligence platform for real-time monitoring versus traditional visual estimation (Smith et al., 2019). The study discovered that blood loss greater than 1,000 mL was detected more by the artificial intelligence technology (14.1% vs. 3.5% respectively;  $P < .0001$ ) (Smith et al., 2019).

### **Assumptions**

The author wants to implement a proper quantitative assessment of blood loss in order to reduce maternal hemorrhage mortality. The author highlights that quantifying blood loss requires a team effort from all clinical team members at delivery, including nursing staff (Smith et al., 2019). The article provides tips for collecting and reporting a cumulative record of blood loss post-delivery. Although there is no specific recommended timeframe for blood loss assessment postpartum, it is suggested that the assessment should continue as long as active bleeding is present, or until stability is achieved after a blood loss of more than 1,000mL (Smith et al., 2019). The author also provides an equation staff can utilize to obtain a quantitative measurement of blood loss (Smith et al., 2019).

### **Deficit/Conclusion**

This article displays the importance of effective strategies for prevention, early diagnosis, and response to excessive blood loss (Smith et al., 2019). The study revealed that while not any one method of quantifying blood loss is superior to another, it shows that simple techniques, such as the utilization of “graduated drapes or weighing, provides a more accurate assessment of actual blood loss than visual estimation” (Smith et al., 2019). Simple quantification techniques can save a life; therefore, the author’s reasoning is acceptable. This study wants to improve

preventable deaths for women while giving birth. If nursing fails to accept this implication, the hemorrhaging mortality statistics remain the same or worsen. Nurses can make a significant change with obstetric hemorrhaging.

### **Monitoring healthcare improvement for mothers and newborns: A quantitative review of WHO/UNICEF/UNFPA standards using Every Mother Every Newborn assessment tools**

This article focuses on the critical need to improve the quality of care during childbirth. It highlights that providing high-quality healthcare during birth can significantly reduce maternal and newborn mortality rates by half (Siseho et al., 2022). This article presents WHO/UNICEF/UNFPA, a standardized tool composed of eight critical areas subdivided into 352 quality measures that monitor and evaluates quality and improvement efforts (Siseho et al., 2022). Then there is EMEN (Every Mother Every Newborn), an assessment tool that can capture the quality of care during childbirth that is not documented elsewhere (Siseho et al., 2022). This study wants to harmonize both assessment tools to identify gaps in previous studies and determine their capacity (Siseho et al., 2022).

### **Key Points**

Researchers conducted a detailed analysis of how EMEN assessment tools align with the WHO/UNICEF/UNFPA quality improvement standards for maternal and newborn care (Siseho et al., 2022). The analysis involved a cross-matching scoring system that could examine the eight quality standards subdivided into 352 quality measures (Siseho et al., 2022). EMEN tools demonstrated they could capture 97% (343 of 352) of the quality measures (Siseho et al., 2022). EMEN tools could also capture women's experiences of perceived care, whereas

WHO/UNICEF/UNFPA is limited (Siseho et al., 2022). The EMEN tool has proven to be a strategic invention for improved birth outcomes for women and newborns (Siseho et al., 2022).

### **Assumptions**

The author wants this study to contribute to the future revisions of EMEN assessment tools and WHO/UNICEF/UNFPA quality improvement standards (Siseho et al., 2022). Furthermore, this would ensure more documentation of gaps, strengths, and opportunities for maternal and newborn outcomes (Siseho et al., 2022). The author notes that the tool's usage is the responsibility of academia, researchers, programers, and policymakers (Siseho et al., 2022).

### **Deficit/Conclusion**

The author's line of reasoning is acceptable. While maternal mortality outcomes can be improved with a hands-on approach (ex. Addressing blood loss at birth), assessment tools that capture the voice of women and their experiences are also essential. Reviewing the capability of assessment tools is crucial because data and healthcare disparities vary over time. If nursing does not uphold the standards of their quantitative measurement tools, mass data and experiences will be unaccounted for. That would profoundly affect the pace of change regarding quality care.

### **Conclusion**

Maternal mortality remains a pressing concern in the United States. Persistent disparities based on race and socioeconomic status further exacerbate the issue. Troubling preventable factors, such as the delay of treatment for postpartum hemorrhaging by providers, also contribute to the problem. How can one measure these experiences if the assessment tools lack the capability? Awareness is the first step to improvement, followed by assessment and action to

enhance patient outcomes. Nursing evidence-based practice provides nurses with the tools to reduce complications and promote healthier pregnancies and births. Evidence-based practice invests in nursing education and training to ensure these practices are consistently applied. Healthcare, as a collaborative unit, can detect potential issues early with thorough assessment training and initiate appropriate interventions.

## References

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