

8-2023

## Effects of Hospital Interventions on Maternal Mortality Rates of African American Women: A literature Review

Oluwatosin A. Soyege  
*University of Nebraska Medical Center*

Tell us how you used this information in this [short survey](#).

Follow this and additional works at: [https://digitalcommons.unmc.edu/coph\\_slce](https://digitalcommons.unmc.edu/coph_slce)



Part of the [Public Health Commons](#)

---

### Recommended Citation

Soyege, Oluwatosin A., "Effects of Hospital Interventions on Maternal Mortality Rates of African American Women: A literature Review" (2023). *Capstone Experience*. 280.  
[https://digitalcommons.unmc.edu/coph\\_slce/280](https://digitalcommons.unmc.edu/coph_slce/280)

This Capstone Experience is brought to you for free and open access by the Master of Public Health at DigitalCommons@UNMC. It has been accepted for inclusion in Capstone Experience by an authorized administrator of DigitalCommons@UNMC. For more information, please contact [digitalcommons@unmc.edu](mailto:digitalcommons@unmc.edu).

**Effects of Hospital Interventions on Maternal Mortality Rates of African American  
Women: A literature Review**

Oluwatosin A. Soyegbe

Department: Maternal and Child Health

College of Public Health

University of Nebraska Medical Center

Committee Chair: Dr. Melissa Tibbits, PhD

Committee Member: Dr. Michelle Strong, PhD

Committee Member: Dr. Shireen Rajaram, PhD

## **Abstract**

Maternal mortality is a serious health concern and harms society's economic, physical, and psychological well-being. It is tragic for the woman's family and community when a woman passes away during pregnancy, at delivery, or shortly after delivery. Hospital interventions are needed to mitigate the social impact of maternal mortality. In the U.S., several initiatives have been enacted to reduce maternal mortality. Fighting racism would also help African American women's rates of maternal mortality as they are subject to stigma in everyday contexts, during pregnancy and obtaining healthcare, and when obtaining resources and services during pregnancy. This paper reviews the literature on hospital interventions' effects on African American women's maternal mortality rates.

# **Effects of Hospital Interventions on Maternal Mortality Rates of African American Women**

## **Introduction**

Maternal mortality is a significant health concern. According to the Centers for Disease Control and Prevention, the maternal mortality rate in the U.S. is about 32.9 per 100,000 births for White women and around 69.9 in 100,000 births for African American women (Hoyert, 2023). It has dire consequences on society's economic, health, and psychological aspects. Hospital initiatives are one potential strategy to lower the prevalence of maternal mortality. With an emphasis on African American women, this literature review seeks to determine how medical interventions affect maternal mortality rates.

### ***Aims***

1. To identify hospital interventions for African American women.
2. To identify the effects of these hospital interventions on African American women's mortality rates.
3. To recommend efficacious hospital interventions in mitigating African American women's maternal mortality.

## **Background and Literature Review**

### **Maternal Mortality Rates in African American Women**

There are significant disparities in health outcomes between African American women and White women regarding maternal mortality. According to the Centers for Disease Control and Prevention (CDC), African American women had 2.6 times higher maternal mortality than White women in 2021, with African American mothers experiencing 69.9 deaths per 100,000 live births as opposed to 26.6 deaths per 100,000 births among White mothers (CDC, 2021).

Several factors are known to contribute to the inequity in maternal mortality rates. First, comorbidities contribute to the higher maternal death rate among African American women. Cardiovascular problems afflict African Americans more than White people (MacDorman et al., 2021). Due to the prevalence of these illnesses in the African American population, African American women are most impacted. The genetic makeup of African Americans makes them susceptible to cardiovascular diseases, as evidenced by their high prevalence in the population (Maraboto & Ferdinand, 2020). Moreover, COVID-19 affects more African Americans than Whites, and they have worse outcomes due to poor access to healthcare (Tai et al., 2021).

Second, the social determinants of health prevent African American women from receiving high-quality treatment to manage their diseases, which raises mortality rates in the general population. According to O'Brien (2019), social determinants of health like poverty and illiteracy cause African American people to have poor health outcomes. Pregnant African American mothers, as a result, fail to access healthcare services that would be essential to reduce the chances of mortality. The poor socioeconomic conditions among them result in poor maternal health outcomes (Jones et al., 2022).

Third, institutional racism within healthcare institutions persists in modern times in the form of covert healthcare policies and practices, and it significantly contributes to inequities in maternal mortality (Hardeman et al., 2022). For example, hospitals and clinics that were designated to serve minority populations remain under-financed, leading to the inadequacy of resources and being understaffed.

Implicit bias also raises the maternal death rate for African American women (Lister et al., 2019). Decisions made in emergency rooms and labor and delivery rooms, where there is a firm reliance on unconscious or automatic processes during medical emergencies, are

significantly impacted by implicit bias in the hospital context (Saluja & Bryant, 2021). The prevalence of cesarean deliveries among African American and Latina women compared to White women, despite the procedures' worse health effects on the mother and the unborn child, is an example of unconscious bias (Howell & Ahmed, 2019). The healthcare providers automatically and unconsciously decide to perform these procedures on African American women.

### **Study Aims**

This study aims to review the literature on hospital interventions focused on reducing maternal mortality among African American women. Identifying effective interventions is essential in reducing the high maternal mortality rate in African American women. Reducing the mortality rate would consequently reduce the average maternal mortality rate in the U.S.

### **Methods**

#### ***Search Strategy***

I reviewed the literature to ascertain the impact of hospital treatments on maternal mortality among African American women. The search involved credible sources like MEDLINE, CINAHL, PubMed, and Google Scholar. The investigation utilized Boolean operators involving keywords like “hospital interventions” or “hospital activities” AND “maternal mortality” OR “maternal death” AND “African American” OR “African American” OR “Blacks.”

#### ***Inclusion and Exclusion Criteria***

The inclusion criteria for selecting articles were as follows: (1) The articles had undergone peer review and were published within the last five years, ensuring the inclusion of current research. (2) The title of the articles aligned with the study objectives to ensure relevance.

(3) The goals of the articles directly related to the research topic, explicitly focusing on hospital interventions and maternal mortality rates in African American women. (4) The articles were written in English to facilitate analysis. (5) Articles that explicitly outlined the limitations of their study and potential bias were included to ensure transparency and allow for a critical appraisal of the findings.

On the other hand, articles were excluded if they did not meet the following criteria: (1) They were not written in English. (2) Publications written more than five years ago were excluded to maintain relevance and utilize up-to-date data. (3) Articles that did not provide clear information on their constraints and potential bias were excluded to ensure the reliability of the evidence gathered.

### ***Data Extraction***

Data extraction involved meticulously reviewing the selected literature to obtain relevant information addressing the study's objectives. From each article, the following data points were systematically extracted: (1) Terms used in the study, including keywords and MeSH terms, to understand the context and scope of the research. (2) Description of study participants to gain insights into the target population. (3) Sample size and study design to assess the robustness of the research methodology. (4) Main findings related to hospital interventions and their impact on maternal mortality rates among African American women. (5) Recommendations and implications drawn from the study's results to inform potential strategies for mitigating maternal mortality.

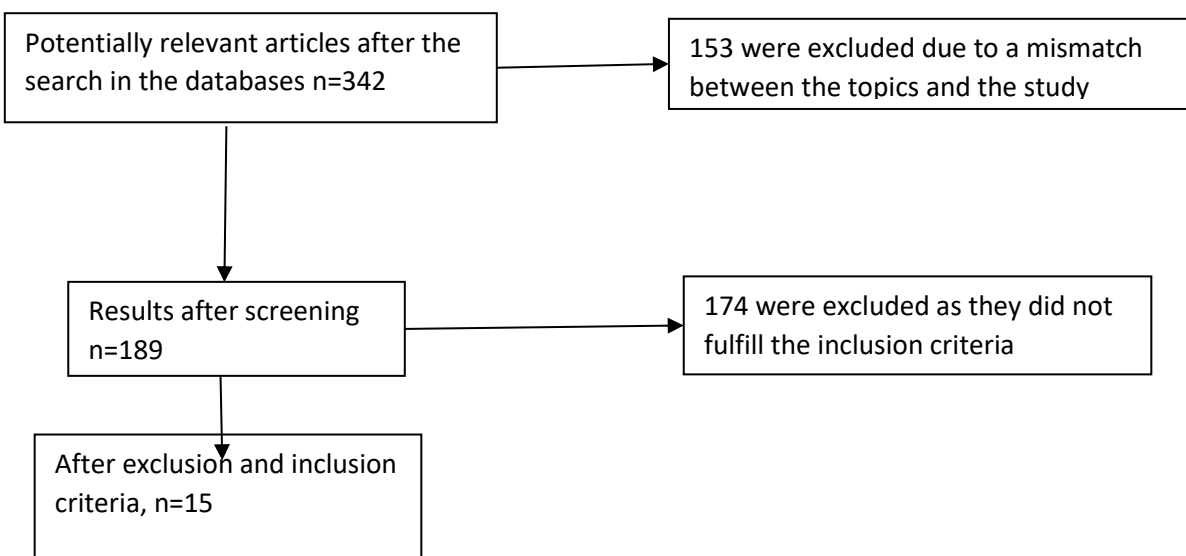
The extracted data were analyzed comprehensively to synthesize key findings, identify patterns, and draw meaningful conclusions regarding the efficacy of hospital interventions in

reducing maternal mortality rates among African American women. They were then listed and collectively stored using Microsoft Excel for analysis.

### Results

Three hundred forty-two articles in total were found after searching the three databases. The researcher then scrutinized the publications' titles and abstracts to determine which ones most closely matched the goals and topic of the study. The researcher found one hundred eighty-nine papers to suit the study's topic and objectives. Fifteen articles were included in the literature study after the inclusion and exclusion criteria were applied. Information about the studies is included in Table 1.

**Figure 1: Flow diagram showing the articles in the study**



In addressing the complex issue of maternal mortality disparities, hospitals have become a focal point for implementing effective strategies. This review examines various policies and procedures that have been employed to combat maternal mortality, including interventions targeting structural and interpersonal racism, comprehensive healthcare initiatives, the promotion of proper prenatal and postpartum care, the management of risky procedures, hospital-based health education and awareness efforts and measures to enhance the quality of care provided to



expectant mothers. These interventions aim to reduce the disparity in maternal mortality rates, especially within the African American population, and have shown promising results in contributing to improved maternal health outcomes.

### **Importance of Comprehensive Interventions**

The significance of comprehensive hospital interventions in reducing maternal mortality rates among African American women is a common theme observed across the studies. This theme underscores the crucial role that healthcare settings play in improving maternal outcomes and highlights the need for targeted interventions within these settings. The studies emphasize that addressing the complex factors contributing to maternal mortality requires a comprehensive approach involving various interventions implemented within hospitals and healthcare facilities. These interventions can encompass a range of strategies aimed at improving access to quality care, promoting effective communication between healthcare providers and patients, addressing implicit biases, and implementing evidence-based guidelines (Bond et al., 2021; Renwick et al., 2021). They may also involve multidisciplinary collaboration, training programs for healthcare professionals, and initiatives focusing on specific risk factors or medical conditions associated with maternal mortality.

The study conducted by Bond et al. (2021) emphasizes the significance of collaborative healthcare approaches as a means to address the issue of maternal mortality. The research highlights the positive impact of multidisciplinary teamwork and coordination among healthcare providers in improving outcomes for African American women. Collaborative healthcare approaches involve a concerted effort among healthcare professionals, such as obstetricians, midwives, nurses, and support staff, to work together and optimize the care provided to pregnant

women. This approach recognizes that addressing maternal mortality rates requires a holistic and comprehensive approach beyond individual healthcare providers' expertise.

Ahn et al. (2020) and Omeish and Kiernan's (2020) 's studies provide valuable insight into the specific causative factors underlying maternal mortality among African American women and underscore the significance of targeted initiatives to address them by addressing cardiovascular issues, reducing disparities, and employing clinical checklists as potential strategies to improve maternal health outcomes. Ahn et al. (2020) emphasize the significance of initiatives designed to prevent, detect, and manage cardiovascular issues. They include early screening, monitoring, and intervention to mitigate cardiovascular risk during gestation.

These studies also underscore the necessity of addressing racial disparities in maternal healthcare. African American women face higher rates of maternal mortality compared to other racial and ethnic groups, according to Omeish and Kiernan (2020), but targeted interventions could help address this gap. Such strategies include policies and practices ensuring equitable access to quality care, raising awareness about racial biases within healthcare, and advocating culturally sensitive approaches to care delivery. Overall, Ahn et al. (2020) and Omeish and Kiernan (2020) shed light on initiatives to address specific causes behind maternal deaths among African American women.

Furthermore, Main et al. (2020) and Ford et al. (2022) stress the importance of equitable access to quality care as part of efforts to lower maternal mortality rates. Both studies stress the significance of addressing disparities in healthcare access and delivery to enhance outcomes for pregnant individuals, especially African American women at greater maternal mortality risk. Studies emphasize the need for healthcare providers to offer impartial and evidence-based treatments. Healthcare providers should ensure that all patients receive equal and evidence-based

care regardless of race or ethnicity. Healthcare professionals can improve treatment plans, identify complications early, and intervene in time by eliminating implicit biases and discriminatory practices that arise in their practices. This is especially crucial for African American women, who frequently experience disparate healthcare treatment due to disparities within the system.

Additionally, Renwick et al. (2021) and Ford et al. (2022) highlight the effectiveness of training healthcare providers and raising awareness about the need for comprehensive hospital interventions through projects and educational initiatives. These studies reveal the importance of proper training, skill development, and knowledge dissemination among healthcare professionals in positively impacting maternal outcomes. According to Ford et al. (2022), proper training and skill development for healthcare providers is critical in ensuring they possess the necessary competencies to provide high-quality care to pregnant women, particularly African American women at a higher risk of maternal mortality. Furthermore, raising awareness through projects and educational initiatives can help disseminate evidence-based practices and guidelines to healthcare providers. This knowledge dissemination enables healthcare professionals to stay updated with the latest advancements in maternal healthcare and implement best practices in their clinical practice.

### **Addressing Structural and Interpersonal Racism through Training**

One type of intervention focuses on addressing structural racism within hospitals. One method for addressing structural racism is to implement clinical checklists. Two studies examined the role of clinical checklists in reducing maternal mortality. According to Omeish and Kiernan (2020), these checklists remind healthcare providers to follow evidence-based guidelines, conduct appropriate screenings, engage in surveillance, and initiate necessary

interventions promptly. By incorporating these checklists into clinical practice, healthcare providers are more likely to adhere to standardized protocols, reducing the potential for biases to influence their decision-making. The subsequent implementation of these checklists has successfully reduced healthcare disparities between women of African American heritage and White women in the hospital setting.

Moreover, anti-biased education and training have decreased problems and fatalities among African American mothers. According to Mehra et al. (2020), addressing the racism factor during the training and education of healthcare workers would lower the maternal death rate for African American women. African Americans face discrimination daily while seeking medical care and accessing resources and services. Their lives are drastically affected negatively by the racialized stigma, which also significantly lowers the standard of the healthcare they receive. Because structural racism is ingrained in society, some of the stigmatization that African American people experience is typically unintended. Educating and training healthcare professionals to treat African American patients without discrimination is crucial to improve care quality and lower maternal death rates in the African American community.

Cultural competency training plays a significant role, as it helps healthcare professionals understand and appreciate diverse cultural backgrounds, enabling them to provide equitable care and avoid perpetuating stereotypes or biases. Implicit bias training is also essential, as it raises awareness of unconscious biases and provides strategies to mitigate their impact on patient care (Brottman et al., 2022). By addressing systemic racism explicitly, healthcare education can equip professionals with the knowledge to recognize and challenge racial disparities in healthcare. Promoting diversity in the healthcare workforce is another critical aspect, ensuring that individuals from underrepresented backgrounds, including African American healthcare

providers, are recruited and retained, leading to more culturally competent care (Main et al., 2020). By implementing these interventions, healthcare systems can create an environment sensitive to the needs of African American women and other marginalized populations, thereby reducing the impact of bias and discrimination on their care.

According to Main et al. (2020), healthcare professionals must know that to reduce maternal mortality among African American women, structural determinants may affect how evidence-based interventions are implemented and health outcomes. They must implement the interventions as preventative measures. Once coupled with societal changes, hospital initiatives to lower maternal mortality would become more effective. To give them the knowledge and resources to reduce maternal mortality early on, doctors in the hospital environment should enquire about the patient's difficulties, such as employment, food insecurity, and prejudice. Maternal residency, household income, history of physical abuse, employment status, and medical insurance status must be known to lower maternal mortality.

According to Lutsey & Zakay (2023), several U.S. policies that address the social determinants of healthcare access have positively impacted the reduction of maternal death rates among the African American community. These policies include paid family leave, health insurance coverage, and providing respectful and culturally appropriate care. The paid family leaves reduce the amount of stress that the mother has after delivery, leading to positive health outcomes. The baby's health is also boosted by good breastfeeding. Health insurance coverage and scope provide affordability and access to healthcare, which are essential in mitigating mortality rates (Bullinger, 2019). Respectful and culturally appropriate care reduces the disparities between Whites and African Americans receiving healthcare and reduces the risky procedures that African Americans undergo.

## **Promoting Proper and Timely Prenatal Care and Strengthening Postpartum Care**

Promoting timely and sufficient prenatal care is essential in lowering maternal death rates among African American women. Early and consistent prenatal care visits are critical in detecting and addressing possible hazards or difficulties early on, resulting in better health outcomes for both the mother and the baby. Comprehensive prenatal tests, monitoring of maternal health concerns, appropriate nutrition advice, and education on pregnancy-related complications are all part of adequate prenatal care (Brottman et al., 2022). Additionally, Bullinger (2019) suggests that healthcare practitioners can address inequities in access to care and promote equitable healthcare practices by highlighting the need for early and sufficient prenatal care. This can be accomplished through community outreach projects, education campaigns, and ensuring pregnant women have inexpensive and accessible healthcare services. Promoting early and adequate prenatal care can aid in preventing and managing illnesses such as pre-eclampsia, gestational diabetes, and other pregnancy-related problems, hence lowering the risk of maternal death. It also enables early diagnosis and intervention in the event of growing health difficulties, enhancing overall maternal well-being and avoiding the need for dangerous operations.

Further developing postpartum care also is essential in decreasing mother death rates. After labor, the postpartum phase is urgent for a mother's physical and mental prosperity (Collier & Molina, 2019). Postpartum care has ordinarily gotten less consideration than pre-birth and antenatal care. Several essential components should be considered to work on postpartum care. Comprehensive postpartum check-ups are expected to screen the mother's physical recovery, diagnose any postpartum problems, and address any worries or symptoms she might have. Complete clinical examinations, emotional well-being assessments, and discussions about

contraception, breastfeeding, and family arranging should all be essential for these check-ups. Postpartum treatment must incorporate emotional well-being support.

During standard check-ups, healthcare practitioners should screen for postpartum psychological wellness disorders such as depression and tension and, if necessary, offer fitting help and treatment referrals (Collier & Molina, 2019). Contingent upon the severity of the issue, this might incorporate counseling, treatment, or medicine. Training and exhortation are basic in assisting new mothers in exploring the obstacles of the postpartum period. Giving moms extensive data on self-care, newborn childcare, breastfeeding, and nurturing skills will assist them with really focusing on themselves and their babies. Sustenance, exercise, sleep cleanliness, and strategies for managing typical postpartum symptoms should be emphasized.

### **Enhancing Health Education and Awareness as a Hospital-Based Intervention**

Improving maternal health education and awareness is another essential step toward lowering maternal mortality rates. Pregnant women can gain valuable information regarding pregnancy, labor, and postpartum care by learning about them through comprehensive yet culturally-sensitive health education, empowering them to make educated decisions about their well-being. Health education programs cover the topics of prenatal nutrition, good prenatal care, detecting warning signals of difficulties, the significance of regular check-ups, and the benefits of early intervention. For optimal effectiveness, these programs must adapt to target group needs and cultural backgrounds, including African American women.

In addition to direct education for pregnant women, raising awareness among their families, communities, and healthcare providers is critical (Collier & Molina, 2019).

Collaboration among community organizations, faith-based groups, and healthcare professionals

can also assist health education programs by creating supportive environments and promoting timely interventions for optimal maternal health. Moreover, workshops, seminars, instructional materials, and internet resources provide accurate and up-to-date information to pregnant women and healthcare providers (Collier & Molina, 2019).

### **Increasing the Quality of Health Care**

Interventions in hospitals are required to lower the number of maternal fatalities from avoidable causes. More focus has been given to raising the standard of care provided in hospitals, particularly before and after childbirth, due to maternal mortality and morbidity (Collier & Molina, 2019). Two healthcare issues that have received increased attention are pre-eclampsia and cardiovascular diseases (CVD). Though pre-eclampsia, which is high blood pressure during pregnancy, can be treated and controlled through antihypertensive medication, inadequate healthcare is a key contributor to the rise in maternal mortality rate and reduction of unfavorable maternal health outcomes in the hospital resulting from increasing safety and quality. Improving healthcare quality can be attained by concentrating on the team's training and communication and adopting evidence-based safety packages to address obstetric problems (Renwick et al., 2021). For instance, evidence shows magnesium sulfate to be effective in managing eclampsia in the hospital setting. Maternal mortality rates in the population have been reduced through hospital programs targeting the African American population.

Targeting CVD lowers maternal death rates significantly because they are the main comorbidities that increase mortality rates. CVD that increases the African American mortality rates includes severe bleeding, pre-eclampsia, and eclampsia. Collaboration between AHA and gynecologists to reduce CVD as a cause of increased death rates among women during delivery has proven effective (Bond et al., 2021). Hospital interventions that reduce the mortality rates



among African American women include screening for conditions that present a significant risk during pregnancy and collaboration between cadres to manage cardiovascular conditions and child delivery effectively (Ford et al., 2022). These interventions ensure that the risks of maternal mortality, like cardiovascular diseases, are mitigated.

Lutsey and Zakai (2023) also note that thromboembolism increases maternal mortality. Coupled with the inequalities that African Americans have, they increase the mortality rates of African American women. Reducing maternal mortalities caused by thromboembolism would reduce maternal mortality rates significantly. Qeadan et al. (2021) state that COVID-19 is a cause of maternal deaths, and health disparities cause an increase in deaths among African American women (Renwick et al., 2021). The author suggests that reducing this complication of COVID-19 would entail multidisciplinary care of pregnant mothers by various cadres of the health team.

### **Addressing Risky Procedures**

Another hospital-based approach to reducing maternal mortality is to reduce the use of risky procedures. The Preventing Maternal Death Act authorizes the Maternal Mortality Review Committees' (MMRCs') work, passed into law in December 2018. (Ahn et al., 2020). By conducting thorough analyses of maternal fatalities to guide preventative efforts at the community level, the MMRCs significantly contribute to lowering the high maternal mortality rates and severe maternal morbidity among the African American population. Cesarean births and blood transfusions have been linked to detrimental effects on maternal health, including high morbidity and mortality rates in mothers. Maternal mortality risk would decrease if the African American community needed fewer transfusions and cesarean sections (Khaimova, 2021). The

gaps in health outcomes between African Americans and Whites would be reduced, as well as the death rate among African American mothers.

**Table 1: Overview of Literature**

Author(s)	Title	Sample Size	Type of Study	Purpose/Key Findings
Ahn et al., 2020	Initiatives to Reduce Maternal Mortality and Severe Maternal Morbidity in the United States	N/A	Narrative Literature Review	Initiatives to lower the incidence and prevalence of death in African American women during delivery should focus on the causative factors. For instance, tackling cardiovascular issues in African American women may help reduce maternal mortality.
Bond et al., 2021	Working Agenda for African American Mothers	N/A	Qualitative study	Collaborative healthcare has successfully reduced maternal mortality in the U.S.

Brottman,et al., 2022	Toward cultural competency in health care: a scoping review of the diversity and inclusion education literature.	N/A	Scoping Literature Review	In order to advance the field in effectively supporting a culturally diverse patient population, it is crucial to prioritize several vital factors. These include comprehensive training programs for trainers, conducting longitudinal evaluations of interventions, and identifying and establishing best practices.
Bullinger, (2019).	The effect of paid family leave on infant and parental health in the United States.	38 studies	Experimental Qualitative Study	The expansion of California’s paid family leave policy, which extended the length of leave from six to twelve weeks and broadened eligibility, has positively impacted maternal employment outcomes and wages while imposing

				minimal to no financial burden on employers.
Collier & Molina, 2019	Maternal Mortality in the United States: Updates on Trends, Causes, and Solutions	N/A	Systematic Review	Hospital interventions that may help reduce maternal mortality among African American women include the implementation of safety bundles, team training, and improvements in communication.
Ford et al.; (2022)	Hypertensive Disorders in Pregnancy and Mortality at Delivery — Hospitalization — United States, 2017–2019	N/A	Retrospective observational study	Hospital interventions that may help address maternal mortality among African American women involve providing systems that provide awareness of high blood pressure during pregnancy for health providers to reduce the blood pressure.

Goldman-Mellor & Margerison (2019)	Maternal drug-related death and suicide are the leading causes of postpartum death in California	1,059,713 women	Retrospective cohort study	Effective ways of reducing maternal mortality include screening for depression and anxiety when mothers and pregnant women visit the hospital.
Khaimova (2021)	Strategies to Reduce Maternal Mortality in the U.S.	N/A	Systematic Review	Reducing unnecessary c-sections in African American pregnant women would help reduce maternal mortality.
Lutsey & Zakai (2023)	Epidemiology and prevention of venous thromboembolism	N/A	Systematic review	Anticoagulation therapy for pregnant mothers admitted to the hospital would help reduce thromboembolism and maternal mortality.
Main et al. (2020)	Reduction in racial disparities in severe maternal morbidity from hemorrhage in a large-scale quality	54,311 women	Quality Improvement Collaborative	Effective treatments, similar to those provided to Whites, provided to African Americans, and

	improvement collaborative			without bias, considerably reduce mortality.
Mehra et al. (2020)	African American pregnant women “get the most judgment”: A qualitative study of the experiences of African American women at the intersection of race, gender, and pregnancy.	Twenty-four women between 21-45 years.	Observational Qualitative	Racialized pregnancy stigma significantly impacts the access to and quality of healthcare, social services, resources, and social support for African American pregnant women.
Omeish & Kiernan (2020)	Targeting bias to improve maternal care and outcomes for African American women in the USA	17 studies	Systematic Review	Reducing racial disparities reduces the death rate. Providing clinical checklists helps improve healthcare for African Americans by prompting providers to act through screenings, surveillance, or interventions.
Qeadan et al. (2021)	The risk of clinical complications and death among pregnant women with COVID-	N/A	Retrospective analysis	The analysis focuses on pregnant women as a high-risk population during infectious disease

	19 in the Cerner COVID-19 cohort: a retrospective analysis			outbreaks, like COVID-19, due to their physiologic immune suppression during pregnancy.
Renwick et al. (2021)	PROMPT Wales project: National scaling of an evidence-based intervention to improve safety and training in maternity	19 health centers	Process Evaluation	PROMPT, a training program that trains healthcare providers on ways to reduce hemorrhage, manage blood pressure, and other complications during pregnancy, effectively reduces maternal mortality. Such training programs would help reduce maternal mortality of African American pregnant women.

## Discussion

This literature review examined the effects of hospital interventions on the maternal mortality rates of African American women. Several themes were identified in the literature, including addressing structural and interpersonal racism, implementing comprehensive interventions, promoting proper and timely prenatal care and strengthening postpartum care, addressing risky procedures, enhancing health education and awareness as a hospital-based intervention, and increasing the quality of care.

One of the critical interventions discussed is addressing structural and interpersonal racism in clinics. Structural racism contributes fundamentally to healthcare disparities among African American women (Mackey et al., 2022). According to Mackey et al. (2022), endeavors to handle structural bigotry include laying out an inviting society, advancing variety in the healthcare labor force, surveying and tending to disparities in strategic policies and protection, and looking at clinical practices to recognize regions with disparities and close the holes. The studies reviewed emphasize the importance of implementing safety bundles, team training, improving communication, and incorporating clinical checklists to mitigate bias and variations in care.

Education and training of healthcare professionals play a crucial role in reducing maternal mortality rates. Biased education and training contribute to discrimination and disparities in healthcare for African American women. By providing cultural competency training, healthcare professionals can better understand and appreciate diverse cultural backgrounds, leading to more equitable care. Implicit bias training raises awareness of unconscious biases and provides strategies to mitigate their impact on patient care. Advancing variety in the healthcare labor force, including selecting and holding African American



healthcare providers, is one more basic part of tending to racial disparities in healthcare (Chandra et al., 2022). The studies additionally discussed the significance of convenient and adequate pre-birth care in diminishing maternal mortality rates. Attending early and consistent prenatal care visits enables identifying and managing potential risks or challenges, leading to improved health outcomes for both the mother and the child. Health education and awareness programs for pregnant women and their families, networks, and healthcare suppliers are vital in advancing informed decision-making and establishing a healthy environment for maternal health (Collier & Molina, (2019).

Implementing comprehensive interventions is essential to address the disparity in mortality rates between African American women and white women. These interventions aim to improve access to quality prenatal and postpartum care, address structural racism, promote health education, and engage the community.

### **Public health implications**

Maternal mortality is a pressing general health concern that extensively impacts society and the healthcare system. It is imperative to address the health implications of maternal mortality with a specific focus on the racial disparity between African Americans and Whites. The alarmingly high maternal mortality rates among African American women in the U.S. urgently demand prompt consideration and targeted interventions. Efforts should be directed toward tending to the social causes of disparities and carrying out targeted systems to diminish maternal mortality rates, especially among African American women. It is essential to focus on this issue and designate assets to create and implement viable interventions.

Reducing racial disparities requires a comprehensive approach to address the structural and structural racism deeply embedded within healthcare systems. It is essential to dismantle biases and discrimination, enhance cultural competency among healthcare providers, and ensure equitable access to quality care for all women, regardless of their racial or ethnic background. This includes advocating for policies and practices that promote diversity, equity, and inclusion within healthcare settings. Hospitals play a critical role in mitigating the social causal factors of maternal mortality. Public health initiatives should prioritize improving hospital interventions, such as implementing safety bundles, providing comprehensive team training, and promoting effective communication within healthcare settings. Strengthening these interventions can lead to improved maternal outcomes and reduced mortality rates. Collaboration between healthcare providers, policymakers, and other stakeholders is vital to drive these improvements.

Public health efforts must address these underlying factors and achieve health equity for all women. This involves addressing socioeconomic inequalities, providing resources and support to disadvantaged communities, improving access to prenatal care and essential healthcare services, and implementing policies prioritizing maternal health in underserved areas. A comprehensive approach that tackles the social determinants of health is essential to reduce maternal mortality rates.

## **Strengths and limitations**

### **Strengths**

One of the principal strengths of this review is its clear research question and rationale. It clearly expresses the objective of the literature review, which is to distinguish the effect of specific hospital interventions on reducing maternal mortality rates among African American women. The rationale for conducting the review is also well established, stressing the critical need to address the high maternal mortality rates among this population, the significance of recognizing successful interventions, recognition of social determinants of health, and structural racism as significant elements adding to disparities in maternal mortality rates. It recognizes that resolving these complicated issues is urgent for understanding and further developing maternal health results. By examining the effect of hospital interventions in the setting of social determinants of health and structural racism, the review provides an exhaustive comprehension of the fundamental variables impacting maternal mortality rates among African American women.

The practical implications and relevance of the study are also highlighted as strengths. It emphasizes that the review findings will have significant implications for healthcare policymakers, practitioners, and researchers working towards reducing maternal mortality rates among African American women. Identifying effective hospital interventions can inform the development and implementation of targeted strategies to improve maternal care and promote equity. The use of multiple databases and clearly outlined inclusion criteria is another strength. By searching multiple databases and applying specific inclusion and exclusion criteria, the review aims to capture a wide range of relevant studies and ensure the validity and reliability of the findings. It also provides a comprehensive overview of the selected studies, summarizing

their findings and contributions to understanding hospital interventions' effects on maternal mortality rates among African American women. This overview allows readers to understand the existing evidence base in this area clearly.

### **Limitations**

One limitation is the potential for publication bias. The review exclusively considers published studies, which may introduce a bias towards studies with significant findings or positive results, potentially overlooking research with neutral or negative outcomes and, consequently, impacting the overall objectivity and comprehensiveness of the analysis. Additional efforts, such as searching for unpublished studies or gray literature, could mitigate this limitation. It also lacks a discussion on the generalizability of the findings. Since the review focuses on African American women in the United States, it is vital to acknowledge the potential limitations in generalizing the findings to other populations or settings. Another limitation is the absence of a meta-analysis. While the narrative review approach provides valuable insights, a meta-analysis could offer a more robust and statistically rigorous synthesis of the data from the selected studies. Incorporating a meta-analysis would strengthen the overall analysis and provide a more comprehensive understanding of the effectiveness of hospital interventions.

There is also limited focus on the barriers and facilitators to implementing effective interventions. Understanding the barriers and facilitators is crucial for informing practical recommendations and strategies. Including a more in-depth exploration of these factors would enhance the practical implications of the review.

## **Gaps in evidence**

Despite its strengths, the literature review reveals several notable gaps in the existing evidence base. One significant gap is the limited number of studies explicitly targeting hospital interventions and their impact on reducing maternal mortality rates among African American women. Hospital-based interventions are important because they have the potential to directly address the critical issue of maternal mortality rates among African American women. By focusing on these interventions, researchers and healthcare practitioners can identify and implement effective strategies within the hospital setting to improve outcomes and reduce disparities, ultimately leading to better maternal health and well-being for this vulnerable population.

This review acknowledges the lack of research in this area, pointing out the need for more studies to address this evidence base gap and fill it more thoroughly. Another gap is the lack of comprehensive studies examining the intersectionality of race, gender, and socioeconomic factors on maternal mortality rates. Moreover, while acknowledging social determinants as significant influences in maternal health outcomes for African American women.

Furthermore, this review emphasizes the need for long-term follow-up studies to evaluate the sustainability and durability of improvements resulting from hospital interventions. This knowledge gap prevents an accurate evaluation of the long-term impacts of maternal mortality interventions on maternal mortality rates and the identification of strategies to sustain positive results over time. The geographic focus of studies is also limited, primarily concentrated in the United States. Geographic restrictions limit the applicability of these findings to other regions with different healthcare systems, social settings, and demographic characteristics. Future research should encompass more diverse settings to increase the external validity of its findings.

This review also emphasizes the need for studies evaluating the cost-effectiveness of various hospital interventions to decrease maternal mortality among African American women.

Understanding their economic implications and potential cost savings is integral for informing healthcare policy decisions and resource allocation.

## **Conclusion**

The reviewed studies shed light on maternal mortality in the United States and propose potential solutions to tackle the underlying causes of inequities. Among the critical interventions discussed is the urgent need to address structural and structural racism within hospitals.

Structural racism contributes significantly to healthcare disparities, resulting in higher maternal death rates among African American women. Efforts to combat this issue involve fostering an inclusive culture, promoting diversity in the healthcare workforce, addressing disparities in business practices and insurance, and examining clinical protocols to identify and rectify areas with disparities. Education and training of healthcare professionals also play a vital role in reducing maternal mortality rates. Biased education and training perpetuate discrimination and healthcare disparities for African American women. By providing cultural competency and implicit bias training, healthcare professionals can better understand and respect diverse cultural backgrounds while mitigating the impact of unconscious biases on patient care. Additionally, promoting diversity in the healthcare workforce, including recruiting and retaining African American healthcare providers, is crucial to addressing racial healthcare disparities.

## **Application of Public Health Competencies**

*MPHF6 - Discuss how structural bias, social inequities, and racism undermine health and create challenges to achieving health equity at organizational, community, and societal levels*

The study made This fundamental skill clear because the literature analysis revealed how structural racism harmed African American pregnant women’s health, resulting in high maternal death rates in this community.

*MCHMPH1 Examine the historical development of MCH public policies and practices in the U.S. for federal, state, and local agencies and programs serving MCH populations and analyze the current gaps in MCH services and programs*

This competency is essential in the study as structural racism is evident in policies that govern healthcare provision to the public, causing reduced quality of care among African American women.

*MCHMPH5 Develop rigorous projects to improve health and to reduce inequalities and inequities of MCH populations.*

The research will be necessary to create and suggest measures to help close the healthcare gaps. Reduction of the gaps would have a resultant decrease in maternal mortality.

**HUMAN SUBJECTS:** This capstone project does not require IRB approval and review.

## Index

### CINAHL:

1. Ahn, R., Gonzalez, G. P., Anderson, B., Vladutiu, C. J., Fowler, E. R., & Manning, L. (2020). Initiatives to reduce maternal mortality and severe maternal morbidity in the United States: a narrative review. *Annals of Internal Medicine*, 173(11\_Supplement), S3-S10.  
<https://doi.org/10.7326/M19-3258>
2. Bullinger, L. R. (2019). The effect of paid family leave on infant and parental health in the United States. *Journal of health economics*, 66, 101-116.  
<https://doi.org/10.1016/j.jhealeco.2019.05.006>
3. Bridges, K. M. (2020). Racial disparities in maternal mortality. *NYUL Rev.*, 95, 1229.1-90  
[https://www.law.northwestern.edu/research-faculty/events/colloquium/law-gender/documents/2021\\_sp\\_bridges\\_racial\\_disparties.pdf](https://www.law.northwestern.edu/research-faculty/events/colloquium/law-gender/documents/2021_sp_bridges_racial_disparties.pdf)
4. Essien, U. R., Molina, R. L., & Lasser, K. E. (2019). Strengthening the postpartum transition of care to address racial disparities in maternal health. *Journal of the National Medical Association*, 111(4), 349-351.  
<https://www.sciencedirect.com/science/article/abs/pii/S0027968418302906>
5. Hardeman, R. R., Homan, P. A., Chantarat, T., Davis, B. A., & Brown, T. H. (2022). Improving the measurement of structural racism to achieve antiracist health policy: The study examines the measurement of structural racism to achieve antiracist health policy. *Health Affairs*, 41(2), 179-186. <https://doi.org/10.1377/hlthaff.2021.01489>



6. Hunt, J. (2021). Maternal mortality among African American women in the United States. *Ballard Brief*, 2021(2), 6. <https://scholarsarchive.byu.edu/ballardbrief/vol2021/iss2/6/>
7. Lister, R. L., Drake, W., Scott, B. H., & Graves, C. (2019). African American maternal mortality—the elephant in the room. *World Journal of Gynecology & Women's Health*, 3(1). <https://doi.org/10.33552%2Fwjgwh.2019.03.000555>
8. Mann, S., Hollier, L. M., McKay, K., & Brown, H. (2020). What we can do about maternal mortality—and how to do it quickly. *Obstetrical & Gynecological Survey*, 75(4), 217–218. <https://doi.org/10.1089/jwh.2020.8882>
9. Qeadan, F., Mensah, N. A., Tingey, B., & Stanford, J. B. (2021). The risk of clinical complications and death among pregnant women with COVID-19 in the Cerner COVID-19 cohort: a retrospective analysis. *BMC pregnancy and childbirth*, 21, 1-14. <https://doi.org/10.1186/s12884-021-03772-y>
10. Renwick, S., Hookes, S., Draycott, T., Dey, M., Hodge, F., Storey, J., & Benjamin, F. (2021). PROMPT Wales project: National scaling of an evidence-based intervention to improve safety and training in maternity. *BMJ Open Quality*, 10(4), e001280. <http://dx.doi.org/10.1136/bmjog-2020-001280>

#### **PUBMED:**

1. African American African American Epelboin, S., Labrosse, J., De Mouzon, J., Fauque, P., Gervoise-Boyer, M. J., Levy, R., Sermondade, N., Hesters, L., Bergère, M., Devienne, C. & Pessione, F. (2021). Obstetrical outcomes and maternal morbidities associated with COVID-19 in pregnant women in France: A national retrospective cohort study. *PLoS medicine*, 18(11), e1003857. <https://doi.org/10.1371/journal.pmed.1003857>

2. Brottman, M. R., Char, D. M., Hattori, R. A., Heeb, R., & Taff, S. D. (2020). Toward cultural competency in health care: a scoping review of the diversity and inclusion education literature. *Academic Medicine*, 95(5), 803-813. [https://www.researchgate.net/profile/Robin-Hattori/publication/336049059\\_Toward\\_Cultural\\_Competency\\_in\\_Health\\_Care\\_A\\_Scoping\\_Review\\_of\\_the\\_Diversity\\_and\\_Inclusion\\_Education\\_Literature/links/61f2e23ac5e3103375c4e40a/Toward-Cultural-Competency-in-Health-Care-A-Scoping-Review-of-the-Diversity-and-Inclusion-Education-Literature.pdf](https://www.researchgate.net/profile/Robin-Hattori/publication/336049059_Toward_Cultural_Competency_in_Health_Care_A_Scoping_Review_of_the_Diversity_and_Inclusion_Education_Literature/links/61f2e23ac5e3103375c4e40a/Toward-Cultural-Competency-in-Health-Care-A-Scoping-Review-of-the-Diversity-and-Inclusion-Education-Literature.pdf)
3. Chandra, A., Kakani, P., & Sacarny, A. (2022). Hospital allocation and racial disparities in health care. *Review of Economics and Statistics*, 1-39. [https://www.nber.org/system/files/working\\_papers/w28018/w28018.pdf](https://www.nber.org/system/files/working_papers/w28018/w28018.pdf)
4. Collier, A. R. Y., & Molina, R. L. (2019). Maternal mortality in the United States: updates on trends, causes, and solutions. *Neoreviews*, 20(10), e561-e574. <https://doi.org/10.1542/neo.20-10-e561>
5. Howell, D. E. A., & Ahmed, M. Z. N. (2019). Eight steps for narrowing the maternal health disparity gap: Step-by-step plan to reduce racial and ethnic disparities in care. *Contemporary ob/gyn*, 64(1), 30.
6. Kapur, A., & Hod, M. (2020). Maternal health and non-communicable disease prevention: An investment case for the post-COVID-19 world and need for better health economic data. *International Journal of Gynecology & Obstetrics*, 150(2), 151-158. <https://doi.org/10.1002/ijgo.13198>

7. Lutsey, P. L., & Zakai, N. A. (2023). Epidemiology and prevention of venous thromboembolism. *Nature Reviews Cardiology*, 20(4), 248-262.

<https://www.nature.com/articles/s41569-022-00787-6>

8. Mackey, E. R., Burton, E. T., Cadieux, A., Getzoff, E., Santos, M., Ward, W., & Beck, A. R. (2022). Addressing structural racism is critical for ameliorating the childhood obesity epidemic in African American youth. *Childhood Obesity*, 18(2), 75–

83.<https://www.liebertpub.com/doi/pdf/10.1089/chi.2021.0153>

9. Maraboto, C., & Ferdinand, K. C. (2020). Update on hypertension in African-Americans. *Progress in cardiovascular diseases*, 63(1), 33-39.

<https://doi.org/10.1016/j.pcad.2019.12.002>

10.

#### **MEDLINE:**

1. Ford, N. D., Cox, S., Ko, J. Y., Ouyang, L., Romero, L., Colarusso, T., & Barfield, W. D. (2022). Hypertensive disorders in pregnancy and mortality at delivery hospitalization—United States, 2017–2019. *Morbidity and Mortality Weekly Report*, 71(17), 585.

<https://doi.org/10.15585%2Fmmwr.mm7117a1>

2. Goldman-Mellor, S., & Margerison, C. E. (2019). Maternal drug-related death and suicide are the leading causes of postpartum death in California. *American journal of obstetrics and gynecology*, 221(5), 489-e1. <https://doi.org/10.1016/j.ajog.2019.05.045>

3. Hagle, H. N., Martin, M., Winograd, R., Merlin, J., Finnell, D. S., Bratberg, J. P., Gordon, A.J., Johnson, C., Levy, S., MacLane-Baeder, D. & Lum, P. J. (2021). Dismantling racism

against African American, Indigenous, and people of color across the substance use continuum: A position statement of the association for multidisciplinary education and research in substance use and addiction. *Substance abuse*, 42(1), 5-12.

<https://doi.org/10.1080/08897077.2020.1867288>

4. Hoyert DL. Maternal mortality rates in the United States, 2021. NCHS Health E-Stats. 2023.

5. DOI: <https://www.cdc.gov/nchs/data/hestat/maternal-mortality/2021/maternal-mortality-rates-2021.html>

6. Jones, G. L., Mitchell, C. A., Hirst, J. E., Anumba, D. O., & Royal College of Obstetricians and Gynaecologists. (2022). Understanding the relationship between social determinants of health and maternal mortality: Scientific Impact Paper No. 67. *BJOG: An International Journal of Obstetrics & Gynaecology*, 129(7), 1211–1228. <https://doi.org/10.1111/1471-0528.17044>

7. Khaimova, L. (2021). *Strategies to Reduce Maternal Mortality in the U.S.* (Doctoral dissertation, Ternopil). <https://repository.tdmu.edu.ua/handle/123456789/17599>

8. MacDorman, M. F., Thoma, M., Declercq, E., & Howell, E. A. (2021). Racial and ethnic disparities in maternal mortality in the United States using enhanced vital records, 2016–2017. *American journal of public health*, 111(9), 1673–1681.

<https://doi.org/10.2105/AJPH.2021.306375>

9. Main, E. K., Chang, S. C., Dhurjati, R., Cape, V., Profit, J., & Gould, J. B. (2020). Reduction in racial disparities in severe maternal morbidity from hemorrhage in a large-scale quality improvement collaborative. *American journal of obstetrics and gynecology*, 223(1), 123-e1.

<https://doi.org/10.1016/j.ajog.2020.01.026>

10. Omeish, Y., & Kiernan, S. (2020). Targeting bias to improve maternal care and outcomes for African American women in the USA. *EClinicalMedicine*, 27.

<https://doi.org/10.1016/j.eclinm.2020.100568>

### References

Ahn, R., Gonzalez, G. P., Anderson, B., Vladutiu, C. J., Fowler, E. R., & Manning, L. (2020).

Initiatives to reduce maternal mortality and severe maternal morbidity in the United

States: a narrative review. *Annals of Internal Medicine*, 173(11\_Supplement), S3-S10.

<https://doi.org/10.7326/M19-3258>

Epelboin, S., Labrosse, J., De Mouzon, J., Fauque, P., Gervoise-Boyer, M. J., Levy, R.,

Sermondade, N., Hesters, L., Bergère, M., Devienne, C. & Pessione, F. (2021).

Obstetrical outcomes and maternal morbidities associated with COVID-19 in pregnant women in France: A national retrospective cohort study. *PLoS medicine*, 18(11),

e1003857. <https://doi.org/10.1371/journal.pmed.1003857>

Bond, R. M., Gaither, K., Nasser, S. A., Albert, M. A., Ferdinand, K. C., Njoroge, J. N., J.N., P.,

B., Hayes, S.N., Pegus, C., Sogade, B., & Association of African American

Cardiologists. (2021). Working agenda for African American mothers: a position paper from the Association of African American Cardiologists on solutions to improving

African American maternal health. *Circulation: Cardiovascular Quality and*

*Outcomes*, 14(2), e007643. <https://doi.org/10.1161/CIRCOUTCOMES.120.007643>

- Bridges, K. M. (2020). Racial disparities in maternal mortality. *NYUL Rev.*, 95, 1229.1-90 [https://www.law.northwestern.edu/research-faculty/events/colloquium/law-gender/documents/2021\\_sp\\_bridges\\_racial\\_disparties.pdf](https://www.law.northwestern.edu/research-faculty/events/colloquium/law-gender/documents/2021_sp_bridges_racial_disparties.pdf)
- Brottman, M. R., Char, D. M., Hattori, R. A., Heeb, R., & Taff, S. D. (2020). Toward cultural competency in health care: a scoping review of the diversity and inclusion education literature. *Academic Medicine*, 95(5), 803-813. [https://www.researchgate.net/profile/Robin-Hattori/publication/336049059\\_Toward\\_Cultural\\_Competency\\_in\\_Health\\_Care\\_A\\_Scoping\\_Review\\_of\\_the\\_Diversity\\_and\\_Inclusion\\_Education\\_Literature/links/61f2e23ac5e3103375c4e40a/Toward-Cultural-Competency-in-Health-Care-A-Scoping-Review-of-the-Diversity-and-Inclusion-Education-Literature.pdf](https://www.researchgate.net/profile/Robin-Hattori/publication/336049059_Toward_Cultural_Competency_in_Health_Care_A_Scoping_Review_of_the_Diversity_and_Inclusion_Education_Literature/links/61f2e23ac5e3103375c4e40a/Toward-Cultural-Competency-in-Health-Care-A-Scoping-Review-of-the-Diversity-and-Inclusion-Education-Literature.pdf)
- Bullinger, L. R. (2019). The effect of paid family leave on infant and parental health in the United States. *Journal of health economics*, 66, 101-116. <https://doi.org/10.1016/j.jhealeco.2019.05.006>
- CDC (2021). *Maternal Mortality Rates in the United States, 2021*. <https://www.cdc.gov/nchs/data/hestat/maternal-mortality/2021/maternal-mortality-rates-2021.htm#:~:text=In%202021%2C%20the%20maternal%20mortality,for%20White%20and%20Hispanic%20women.>
- CDC Newsroom. (2016, January 1). CDC. [https://www.cdc.gov/media/releases/2022/p0919-pregnancy-related-deaths.html#:~:text=The%20leading%20underlying%20causes%20of,bleeding%20\(hemorrhage\)%20\(14%25\)](https://www.cdc.gov/media/releases/2022/p0919-pregnancy-related-deaths.html#:~:text=The%20leading%20underlying%20causes%20of,bleeding%20(hemorrhage)%20(14%25))

Centers for Disease Control and Prevention (CDC) (n.d.) *Maternal Mortality*.

<https://www.cdc.gov/nchs/maternal-mortality/evaluation.htm#:~:text=A%20maternal%20death%20is%20defined,physicians%20and%20reported%20to%20states>. Chakhtoura, N., Chinn, J. J., Grantz, K. L., Eisenberg, E., Dickerson, S. A., Lamar, C., & Bianchi, D. W. (2019). Importance of research in reducing maternal morbidity and mortality rates. *American Journal of Obstetrics & Gynecology*, 221(3), 179-182. <https://doi.org/10.1016/j.ajog.2019.05.050>

Chandra, A., Kakani, P., & Sacarny, A. (2022). Hospital allocation and racial disparities in health care. *Review of Economics and Statistics*, 1-39. [https://www.nber.org/system/files/working\\_papers/w28018/w28018.pdf](https://www.nber.org/system/files/working_papers/w28018/w28018.pdf)

Collier, A. R. Y., & Molina, R. L. (2019). Maternal mortality in the United States: updates on trends, causes, and solutions. *Neoreviews*, 20(10), e561-e574. <https://doi.org/10.1542/neo.20-10-e561>

Essien, U. R., Molina, R. L., & Lasser, K. E. (2019). Strengthening the postpartum transition of care to address racial disparities in maternal health. *Journal of the National Medical Association*, 111(4), 349-351. <https://www.sciencedirect.com/science/article/abs/pii/S0027968418302906>

Ford, N. D., Cox, S., Ko, J. Y., Ouyang, L., Romero, L., Colarusso, T., & Barfield, W. D. (2022). Hypertensive disorders in pregnancy and mortality at delivery hospitalization—United States, 2017–2019. *Morbidity and Mortality Weekly Report*, 71(17), 585. <https://doi.org/10.15585%2Fmmwr.mm7117a1>

- Galiatsatos, P., O’Conor, K. J., Wilson, C., Myers, C., Reeves, J., Thomas, W. J., & Golden, S. H. (2022). A Checklist to Address Implicit Bias in Healthcare Settings During the COVID-19 Pandemic: The PLACE Strategy. *Health security*, 20(3), 261–263. <https://doi.org/10.1089/hs.2022.0021>
- Goldman-Mellor, S., & Margerison, C. E. (2019). Maternal drug-related death and suicide are the leading causes of postpartum death in California. *American journal of obstetrics and gynecology*, 221(5), 489-e1. <https://doi.org/10.1016/j.ajog.2019.05.045>
- Hagle, H. N., Martin, M., Winograd, R., Merlin, J., Finnell, D. S., Bratberg, J. P., Gordon, A.J., Johnson, C., Levy, S., MacLane-Baeder, D. & Lum, P. J. (2021). Dismantling racism against African American, Indigenous, and people of color across the substance use continuum: A position statement of the association for multidisciplinary education and research in substance use and addiction. *Substance abuse*, 42(1), 5-12. <https://doi.org/10.1080/08897077.2020.1867288>
- Hardeman, R. R., Homan, P. A., Chantarat, T., Davis, B. A., & Brown, T. H. (2022). Improving the measurement of structural racism to achieve antiracist health policy: The study examines the measurement of structural racism to achieve antiracist health policy. *Health Affairs*, 41(2), 179-186. <https://doi.org/10.1377/hlthaff.2021.01489>
- Howell, D. E. A., & Ahmed, M. Z. N. (2019). Eight steps for narrowing the maternal health disparity gap: Step-by-step plan to reduce racial and ethnic disparities in care. *Contemporary ob/gyn*, 64(1), 30.
- Hoyert DL. Maternal mortality rates in the United States, 2021. NCHS Health E-Stats. 2023.



DOI: <https://www.cdc.gov/nchs/data/hestat/maternal-mortality/2021/maternal-mortality-rates-2021.html>

Hunt, J. (2021). Maternal mortality among African American women in the United States.

*Ballard Brief*, 2021(2), 6. <https://scholarsarchive.byu.edu/ballardbrief/vol2021/iss2/6/>

Jones, G. L., Mitchell, C. A., Hirst, J. E., Anumba, D. O., & Royal College of Obstetricians and Gynaecologists. (2022). Understanding the relationship between social determinants of health and maternal mortality: Scientific Impact Paper No. 67. *BJOG: An International Journal of Obstetrics & Gynaecology*, 129(7), 1211–1228. <https://doi.org/10.1111/1471-0528.17044>

Kapur, A., & Hod, M. (2020). Maternal health and non-communicable disease prevention: An investment case for the post-COVID-19 world and need for better health economic data. *International Journal of Gynecology & Obstetrics*, 150(2), 151-158.

<https://doi.org/10.1002/ijgo.13198>

Khaimova, L. (2021). *Strategies to Reduce Maternal Mortality in the U.S.* (Doctoral dissertation, Ternopil). <https://repository.tdmu.edu.ua/handle/123456789/17599>

Lister, R. L., Drake, W., Scott, B. H., & Graves, C. (2019). African American maternal mortality-the elephant in the room. *World Journal of Gynecology & womens health*, 3(1).

<https://doi.org/10.33552%2Fwjgwh.2019.03.000555>

Lutsey, P. L., & Zakai, N. A. (2023). Epidemiology and prevention of venous thromboembolism. *Nature Reviews Cardiology*, 20(4), 248-262.

<https://www.nature.com/articles/s41569-022-00787-6>

- MacDorman, M. F., Thoma, M., Declercq, E., & Howell, E. A. (2021). Racial and ethnic disparities in maternal mortality in the United States using enhanced vital records, 2016–2017. *American journal of public health, 111*(9), 1673–1681.  
<https://doi.org/10.2105/AJPH.2021.306375>
- Mackey, E. R., Burton, E. T., Cadieux, A., Getzoff, E., Santos, M., Ward, W., & Beck, A. R. (2022). Addressing structural racism is critical for ameliorating the childhood obesity epidemic in African American youth. *Childhood Obesity, 18*(2), 75–83.  
<https://www.liebertpub.com/doi/pdf/10.1089/chi.2021.0153>
- Main, E. K., Chang, S. C., Dhurjati, R., Cape, V., Profit, J., & Gould, J. B. (2020). Reduction in racial disparities in severe maternal morbidity from hemorrhage in a large-scale quality improvement collaborative. *American journal of obstetrics and gynecology, 223*(1), 123–e1. <https://doi.org/10.1016/j.ajog.2020.01.026>
- Mann, S., Hollier, L. M., McKay, K., & Brown, H. (2020). What we can do about maternal mortality—and how to do it quickly. *Obstetrical & Gynecological Survey, 75*(4), 217–218. <https://doi.org/10.1089/jwh.2020.8882>
- Maraboto, C., & Ferdinand, K. C. (2020). Update on hypertension in African-Americans. *Progress in cardiovascular diseases, 63*(1), 33–39.  
<https://doi.org/10.1016/j.pcad.2019.12.002>
- Mehra, R., Boyd, L. M., Magriples, U., Kershaw, T. S., Ickovics, J. R., & Keene, D. E. (2020). African American pregnant women “get the most judgment”: A qualitative study of the experiences of African American women at the intersection of race, gender, and

pregnancy. *Women's Health Issues*, 30(6), 484–492.

<https://doi.org/10.1016/j.whi.2020.08.001>

Njoku, A., Evans, M., Nimo-Sefah, L., & Bailey, J. (2023, February). Listen to the whispers before they become screams: addressing African American maternal morbidity and mortality in the United States. In *Healthcare* (Vol. 11, No. 3, p. 438). MDPI.

<https://doi.org/10.3390/healthcare11030438>

O'Brien, K. H. (2019). Social determinants of health: the how, who, and where screenings are occurring; a systematic review. *Social work in health care*, 58(8), 719–745.

<https://doi.org/10.1080/00981389.2019.1645795>

Omeish, Y., & Kiernan, S. (2020). Targeting bias to improve maternal care and outcomes for African American women in the USA. *EClinicalMedicine*, 27.

<https://doi.org/10.1016/j.eclinm.2020.100568>

Qeadan, F., Mensah, N. A., Tingey, B., & Stanford, J. B. (2021). The risk of clinical complications and death among pregnant women with COVID-19 in the Cerner COVID-19 cohort: a retrospective analysis. *BMC pregnancy and childbirth*, 21, 1-14.

<https://doi.org/10.1186/s12884-021-03772-y>

Renwick, S., Hookes, S., Draycott, T., Dey, M., Hodge, F., Storey, J., & Benjamin, F. (2021). PROMPT Wales project: National scaling of an evidence-based intervention to improve safety and training in maternity. *BMJ Open Quality*, 10(4), e001280.

<http://dx.doi.org/10.1136/bmjopen-2020-001280>

- Saluja, B., & Bryant, Z. (2021). How implicit bias contributes to racial disparities in maternal morbidity and mortality in the United States. *Journal of women's health, 30*(2), 270–273. <https://doi.org/10.1089/jwh.2020.8874>
- Tai, D. B. G., Shah, A., Doubeni, C. A., Sia, I. G., & Wieland, M. L. (2021). The disproportionate impact of COVID-19 on racial and ethnic minorities in the United States. *Clinical infectious diseases, 72*(4), 703-706. <https://doi.org/10.1093/cid/ciaa815>
- Taylor, J. K. (2020). Structural racism and maternal health among African American women. *Journal of Law, Medicine & Ethics, 48*(3), 506–517. <https://doi.org/10.1177/1073110520958875>
- Tikkanen, R., Gunja, M. Z., FitzGerald, M., & Zephyrin, L. (2020). Maternal mortality and maternity care in the United States compared to 10 other developed countries. *The Commonwealth Fund, p. 10*.
- United Nations Children's Fund (UNICEF), (2023), *Maternal mortality rates and statistics - UNICEF DATA*. (2023, February 27). UNICEF DATA. <https://data.unicef.org/topic/maternal-health/maternal-mortality/#:~:text=Maternal%20mortality%20refers%20to%20deaths,to%20UN%20inter%20agency%20estimates>.
- U.S. Census Bureau. (2022, March 1). *About the Topic of Race*. Census.gov. <https://www.census.gov/topics/population/race/about.html#:~:text=African American%20or%20African%20American%20%E2%80%93%20A,tribal%20affiliation%20or%20community%20attachment>.

Wang, E., Glazer, K. B., Howell, E. A., & Janevic, T. M. (2020). Social determinants of pregnancy-related mortality and morbidity in the United States: a systematic review. *Obstetrics and Gynecology*, *135*(4), 896.

<https://doi.org/10.1097%2FAOG.00000000000003762>

Wilbur, K., Snyder, C., Essary, A. C., Reddy, S., Will, K. K., & Saxon, M. (2020). Developing workforce diversity in the health professions: a social justice perspective. *Health Professions Education*, *6*(2), 222–229. <https://doi.org/10.1016/j.hpe.2020.01.002>

World Health Organization (WHO), (2021): *Indicator Metadata Registry Details*.

<https://www.who.int/data/gho/indicator-metadata-registry/imr-details/4622>

Zahroh, R. I., Hazfiarini, A., Eddy, K. E., Vogel, J. P., Tunçalp, Ö., Minckas, N., & Bohren, M. A. (2022). Factors influencing appropriate use of interventions for management of women experiencing preterm birth: A mixed-methods systematic review and narrative synthesis. *PLoS Medicine*, *19*(8), e1004074.

<https://doi.org/10.1371/journal.pmed.1004074>