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Evidence-Based Recommendations for Healthcare Providers to Reduce Black and African American Maternal Mortality in the U.S.

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University of Mary Washington
2019

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An abstract of
A thesis submitted to the Faculty of the
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**Abstract**

Evidence-Based Recommendations for Healthcare Providers to Reduce Black and African American Maternal Mortality in the U.S.

By Sophie J. Obert

Maternal mortality is a critical public health issue globally, especially in countries that are considered low-and middle- income. Despite the many resources available in the United States, maternal mortality is significantly high, especially for Black and African Americans. There has been considerable research, funding, and public outcry on improving this health outcome. However, despite efforts, interventions for medical professionals aimed at reducing maternal mortality in Black and African Americans have led to mixed results.

This review aims to delve into the background and significance of maternal mortality in this population. Next, there will be an overview of how U.S. medical institutions have been influenced by racism and bias in healthcare. Next, classification and common clinical causes for Black and African Americans will be reviewed. Finally, existing evidence-based interventions will be evaluated, and through these literature reviews, there will be both individual provider recommendations and an example curriculum.

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## Gratitudes

This thesis is dedicated to women and pregnant persons who have suffered from medical neglect, mistreatment, and oppression based on the color of their skin.

I would also like to dedicate this to my mother, Janet, who has been my biggest supporter throughout my entire life and whose support has enabled me to be on this academic journey.

I would like to thank Dr. Roger Rochat, who served as my thesis advisor. Dr. Rochat is duly appointed to Global Health and Epidemiology departments at Rollins School of Public Health at Emory. He has impacted public health in several ways, serving as an advocate, researcher, provider, teacher, and innumerable roles. Dr. Rochat has given me continuous support throughout this thesis development.

**Table of Contents**

*List of Abbreviations*

| | |
|---|---|
| ACOG | American College of Obstetricians and Gynecologists |
| ANC | Antenatal Care |
| BIPOC | Black, Indigenous, and People of Color |
| CBL | Computer-Based Learning |
| CBT | Computer-Based Training |
| CDC | Centers for Disease Control |
| CQI | Continuous Quality Improvement |
| CVA | Cerebrovascular Accident |
| CVD | Cardiovascular Disease |
| MDSR | Maternal Death Surveillance and Response |
| MMR | Maternal Mortality Ratio |
| MMRC | Maternal Mortality Review Committee |
| MMRIA | Maternal Mortality Review Information Application |
| NHOPI | Native Hawaiian and Other Pacific Islander |
| PCQI | Participatory Community Quality Improvement |
| PMSS | Pregnancy Maternal Mortality Surveillance System |
| SDOH | Social Determinants of Health |

# Chapter 1: Introduction

The United States has the highest maternal mortality rate of any developed nation (Ozimek & Kilpatrick, 2018; ). The United States ranks 47th out of 184 nations in pregnancy-related maternal mortality (Anderson & Roberts, 2019). Rates of maternal mortality in the U.S. are significantly higher than in most countries of similar economic standings that are also considered developed nations. The U.S. spends more than any other country on maternity care despite its high rates of maternal mortality (Anderson & Roberts, 2019). Maternal mortality disparities among Black and African Americans are capacious within the United States. Black women in the United States are nearly three to four times more likely to experience maternal mortality than their non-Hispanic white counterparts (Baker et al., 2021; Collier & Molina, 2019; Gillispie-Bell, 2021; Megibow et al., 2021). Maternal health disparities Black and

African-American individuals face are significant, reflected in the high rates of poor maternal health outcomes, specifically maternal death.

## *1. 1. Statement of the Problem*

Public health professionals, healthcare providers, data scientists, and policymakers in the United States are keenly aware that the burden of maternal mortality is a significant issue among Black and African Americans. Maternal mortality and morbidity are an issue globally, but given the U.S.'s access to resources, it is understandably egregious that deaths in this specific population are so high. Healthcare workers can use evidence-based interventions to help reduce these frequently preventable deaths.

## *1. 2. Statement of Purpose*

This review aims to synthesize existing research regarding maternal mortality of Black and African Americans in the United States and identify evidence-based recommendations to develop an example curriculum for healthcare providers to help mitigate the significant burden of maternal mortality. Identifying overlapping causes and potential root analyses of maternal mortality and examining racism will lead to potentially novel recommendations that empower providers on an individual level.

## *1. 3. Research Questions*

***Question 1:*** How do systemic racism and implicit bias contribute to poor maternal mortality outcomes for Black and African American individuals in the United States?

***Null Hypothesis:*** Systemic racism and implicit bias do not play a role in poor maternal mortality outcomes for Black and African American individuals in the United States.

***Question 2:*** How can evidence-based interventions utilized by healthcare providers help reduce Black and African American maternal mortality in the United States?

***Null Hypothesis:*** Evidence-based interventions used by healthcare providers do not contribute to a reduction in Black and African American maternal mortality in the United States.

***Question 3:*** How can continuing and departmental education geared towards clinical providers be used and developed to help reduce Black and African American maternal mortality in the United States?

***Null Hypothesis:*** Continuing and departmental education geared toward clinical providers will not help reduce Black and African American maternal mortality in the United States.

# Chapter 2: Racism, Biases, & Disparities

## *2. 1. Institutional Racism and Legacy of Chattel Slavery on Maternal Mortality*

### *2. 1. 1. Experimentation on Black Enslaved Women: A brief overview*

The unfortunate legacy that chattel slavery has on poor outcomes for Black maternal and child health needs to be acknowledged and addressed. Chattel slavery refers to the use of enslaved women's babies as property (Owens, 2017). Obstetrics and gynecology have a past that cannot be ignored if public health wants to reduce disparities across ethnicities and races. Enslaved women were both used and influential in the fundamental development of gynecological procedures by Dr. J. Sims (Owens, 2017). Experimentation occurred often with many onlookers and without anesthetic, despite this pain management mitigator being developed and part of regular clinical care (Owens, 2017).

### *2. 1. 2. Intergenerational Trauma: Effects on Health*

The many residual effects of slavery include Post Traumatic Slave Syndrome PTSS. (Halloran, 2019). PTSS can be defined as a significant contributing factor in poor health

outcomes in regards to all aspects of health (Burrowes, 2019; Halloran, 2019). Generational and cohort effects on health from traumatic experiences, from war to genocide have been well-studied but often neglected in Black and African Americans.

### *2. 1. 3. Lasting Misinformation*

The fundamental myth black people experience pain less frequently or differently has led to pervasive racism in healthcare (Owens & Fett, 2019). Not only is pain perceived as different, it is systemically underdiagnosed and undertreated in Black Americans (Mende-Siedlecki, 2019). White participants are less able to recognize or perceive pain on black faces, as repeated in several studies (Trawalter et al., 2014; Mende-Siedlecki et al, 2019).

## *2. 2. Bias in Provider Care*

Implicit bias is the "attitudes or stereotypes that unconsciously influence understanding, actions, and decisions" (Saluja & Bryant, 2021). Implicit bias is present in everyone and plays a key role in perpetuating racial disparities, specifically in health outcomes like maternal mortality and morbidity. A variety of studies investigated how implicit bias affects healthcare, and there is substantial evidence supporting that this concept contributes to health disparity among various racial groups. One of the most pervasive ways this manifests in healthcare is the denial or failure to recognize Black and African American patients' pain. This can influence providers' treatment delivery, patient care standards, and even what interventions are utilized (Saluja & Bryant, 2021).

## *2. 3. Disparities*

### *2. 3. 1. Systemic Racism in Healthcare*

Racial healthcare disparities are systemic, requiring multifaceted approaches (Omeish & Kiernan, 2020). Racial inequities were exacerbated in medical environments (Omeish & Kiernan, 2020). Even among wealthier, more educated, and proximity to services, maternal mortality is worse for Black women (Anderson & Roberts, 2019). Devices such as spirometers and pulse oximeters have been shown to not be as accurate in Black or African Americans, and this is further increased with the usage of Artificial Intelligence technology (Afshari et al, 2022; Vyas et al, 2021; Braun, 2015). Additionally, correction factors in laboratory tests also pose significant issues (Vyas et al, 2021).

Kalata et al. performed a qualitative study examining community perspectives of racial disparities within perinatal outcomes (2020). This voluntary study included women ages 18-80 who self-identified as African-American and had at least one pregnancy gestated over 20 weeks. Several significant barriers to antenatal access to care were noted by participants. Out of 27 participants, only two women indicated having a black medical professional on their prenatal or labor care team (Kalata et al., 2020). Many responses discussed the difficulties of balancing work and caregiver responsibilities with accessing appointments (Kalata et al., 2020). Transportation issues and access exacerbated the stress participants faced while juggling responsibilities (Kalata et al., 2020). Regardless of a participants insurance status, there was a general perception that those with Medicaid received lower quality prenatal care while those with private insurance received higher quality care (Kalata et al, 2020). The most commonly mentioned barrier was healthcare provider bias (Kalata et al, 2020). This bias was providers perception xfzdgsradtfgv of the woman's age, race, marital status, insurance status, and education level(Kalata et al, 2020).

Lack of autonomy, trust, and shared clinical decision-making was also mentioned. Participants felt providers were uncomfortable and unaware of their values as African American women (Kalata et al, 2020).

### *2. 3. 2. Medicalization of Birth: Erasure of Midwifery*

America and many other western developed countries have moved away from home birth and traditional midwifery practices (Suarez, 2020). Grand midwives played a pivotal role in the south (Clesse, 2018; Salt, 1996). Midwifery plays several key roles in reducing maternal mortality (Clesse, 2018; Liljestrand & Pathmanathan, 2004).

# Chapter 3: Defining & Classifying of Maternal Mortality

## *3. 1. Defining Maternal Mortality*

The World Health Organization (WHO) defines maternal mortality as. “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes" (World Health Organization, 2016). As with many criteria, organizations may have varying definitions of what constitutes criteria for maternal death, an implication that exacerbates the difficulty of properly identifying the incidence and prevalence of this public health issue (Mgawadere et al, 2017). Maternal death in lower-income countries is nearly 130 times more likely to die during pregnancy than occurs for those living in more developed, high-income countries (Mirghafourvand et al, 2021). The United States is an outlier in this capacity.

Inconsistencies in case definitions and measurements can exacerbate existing issues in data collection. Even during the search for concrete definitions, there were discrepancies and inconsistencies noted by both academic sources and providers. Any death due to

pregnancy-related causes is known as both maternal mortality and maternal death, and these terms will be used interchangeably throughout this paper (Mgawadere et al, 2017). The World Health Organization defines maternal mortality as “[T]he death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.”

### *3. 2. Classification*

Maternal deaths can further be classified as direct or indirect. Indirect obstetric deaths result from existing diseases or diseases that developed during pregnancy (WHO, 2017). Direct obstetric deaths result from obstetric complications “of the pregnant state (pregnancy, labor, and puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above” (WHO, 2017).

The National Vital Statistics System (NVSS) serves as the source of official maternal mortality statistics used for “both subnational and international comparisons" (WHO). In the United States, the CDC uses a national surveillance system known as the PMSS to assess risk factors and causes of any recorded pregnancy-related death. PMSS defines any pregnancy-related death as “the death of a woman while pregnant or within 1 year of the end of pregnancy from any cause related to or aggravated by the pregnancy”. Vital records and other available data are collected in all fifty states and analyzed by medical epidemiologists to calculate the pregnancy-related mortality ratio (per 100,000 live births). Even with PMSS, Maternal Mortality Review Committees (MMRCs) were only present in two-thirds of U.S. states, indicating a need to evaluate how the CDC and PMSS are codifying these deaths.

MMRCs will be discussed in depth later on, but there are endless webs of bureaucratic inconsistencies that need to be disentangled in order to properly document maternal deaths.

## *3. 3. Surveillance*

### *3. 3. 1. National Vital Statistic System (NVSS)*

The National Vital Statistics System (NVSS) serves as the source of official maternal mortality statistics used for “both subnational and international comparisons" (WHO, 2021).

In the United States, the CDC uses a national surveillance system known as the PMSS to assess risk factors and causes of any recorded pregnancy-related death.

CDC uses the following definition for pregnancy-related mortality ratio: the number of pregnancy-related deaths per 100,000 live births from the duration of the pregnancy through the 1st year postpartum (Joseph et al, 2021.

### *3. 3. 2. PMSS*

In the United States, the CDC uses a national surveillance system known as the PMSS to assess risk factors and causes of any recorded pregnancy-related death (Joseph et al, 2021).

### *3. 3. 3. Discrepancies*

Inconsistencies in case definitions and measurements can exacerbate existing issues in data collection. For example, many states in the U.S. just began having the option on death certificates to indicate pregnancy-related mortality. Even during the search for concrete definitions, there were discrepancies and inconsistencies noted by both academic sources and providers.

Studies conducted by the National Center for Health Statistics may or may not be exclusively related to surveillance changes and the implementation of the pregnancy check box

on death certificates (Joseph et al, 2021). Rigorous studies carried out by the National Center for Health Statistics show that previously reported increases in maternal mortality rates in the United States were an artifact of changes in surveillance. Statistical analysis of data trends shows that maternal death has declined when looking at aggregate data. However, the authors underscore the need to continue to address disparities that exist, specifically in race and ethnicity. Improved surveillance and more accurate identification of maternal deaths, better clinical care, and increased public health initiatives to address social determinants of health were noted as next steps.

Additionally, medical codings such as ICD-10 code accuracy and variation of statewide implementation of pregnancy checkboxes on death certificates contribute to discrepancies in maternal death reporting. Death certificate checkboxes for maternal death began in 2003 but weren't fully implemented across all 50 states until 2016. This is likely one reason for the significant increase in maternal mortality in the U.S. since there are more opportunities to properly report maternal death. However, changes in data collection have led to inaccurate reports as well. Specifically, maternal mortality appeared to have doubled from 2011 to 2014, but when medical records were reviewed, roughly half of obstetric-coded deaths were inaccurately labeled. Regardless, maternal mortality rates in the U.S. should be lowering over time, given maternal healthcare spending and a surplus of resources compared to developing countries.

#### *3. 3. 4. Maternal Mortality Review Committees*

Multidisciplinary teams like state-based maternal mortality review committees (MMRCs) aim to identify and review pregnancy-associated and pregnancy-related deaths. MMRCs comb through all available data, including prenatal and hospital records, autopsy reports, and any other pertinent medical records. This allows them to identify which deaths can be classified as

preventable and create recommendations based on this information. MMRCs exist and function in only two-thirds of states and use a standardized data collection system known as the Maternal Mortality Review Information Application (MMRIA). MMRCs use MMRIA to ensure each death reviewed investigates 6 key questions: "1) Was the death pregnancy-related? 2) What was the cause of death? 3) Was the death preventable? 4) What were the factors that contributed to this death? 5) What are the recommendations and actions that address those contributing factors? 6) What is the anticipated impact of those actions if implemented?" Collier and Molina neglect the additional questions MMRIA collects if applicable, including: "1) Did obesity contribute to the death? 2) Did discrimination contribute to the death? 3) Did mental health conditions contribute to the death? 4) Did substance use disorder contribute to the death? 5) Was the death a suicide? 6) Was the death a homicide? 7) If this death was a homicide, suicide, or accidental death, list the means of fatal injury. 8) If this death was a homicide, what was the relationship of the perpetrator to the decedent?" (Review to Action, 2021). MMRCs play a crucial role in using available evidence surrounding maternal deaths to determine solutions to improve care delivery and systems in order to reduce the incidence of preventable maternal deaths.

# Chapter 4: Clinical Causes of Maternal Mortality

## *4. 1. Background*

An estimated 50% of maternal deaths are preventable (Troiano & Witcher, 2018). Causes of maternal death vary greatly, but a 2019 report from the CDC found cardiovascular conditions including cardiomyopathy, myocardial infarction (MI), and cerebrovascular accidents are responsible for more than 33% of pregnancy-related deaths. A 2018 report looking at nine state MMRCs found that nearly half of pregnancy-related deaths were due to hemorrhage, cardiovascular/coronary conditions, cardiomyopathy, or infection (Collier & Molina, 2019).

Within this same report, non-Hispanic black women, preeclampsia, eclampsia, and embolism were the most frequent underlying causes of death, while non-Hispanic white women had "mental health conditions" as the leading cause of death. The authors do not expand on what constitutes mental health conditions in the context of this study, nor how it contributed (Collier & Molina, 2019). The following are brief overviews to provide context and insight to the clinical causes of maternal death with a focus on Black and African Americans. However, data was largely unavailable due to the aforementioned surveillance system and death certificate issues.

### *3. 5. 1. Cardiovascular Conditions*

Women with preexisting heart diseases entering pregnancy increased by roughly 25% between the period of 2003 to 2012 (Collier & Molina, 2019). Both pulmonary hypertension and cardiomyopathy contributed to the highest in-hospital mortality rates through "heart failure, arrhythmia, respiratory failure, shock, renal failure, and preeclampsia" (Collier & Molina, 2019).

Cardiomyopathy incidences may be increasing over the past few decades may be due to advanced maternal ages, improved diagnostic criteria/symptom recognition, or even multifetal pregnancies (Collier & Molina, 2019). Cardiogenic shock, too, increased nearly three times during a similar period (2002-2013), with a 19% mortality rate for pregnant women compared to those who did not experience cardiogenic shock (Collier & Molina, 2019). Peripartum cardiomyopathy was associated with cardiogenic shock in over 80% of both pregnant and postpartum women. Collier & Molina suggest that obesity, hypertension, and diabetes reduction within reproductive-aged women may contribute to a lower incidence of cardiovascular disease and, therefore, major adverse events surrounding pregnancy (2019). Multiple chronic comorbidities are associated with a 276% higher risk of SMM than pregnant people without chronic conditions. The reduction of modifiable chronic disease conditions should be utilized.

Additionally, a multi-care approach throughout pregnancy of those with CVD, including risk assessment and evaluation, is essential to combating preventable maternal death. Adequate risk assessment of pregnant persons with any chronic condition, but specifically cardiovascular issues, is an important aspect of reducing preventable maternal death.

### *3. 5. 2. Renal Conditions*

Conditions involving the kidney contribute to many maternal mortality deaths. Acute and chronic renal failure diagnoses were noted as increasing during the peripartum period, both significantly associated with mortality in those women with cardiogenic shock (Collier & Molina, 2019).

### *3. 5. 3. Preeclampsia & Eclampsia*

Preeclampsia presents as hypertension coupled with presence of protein in urine while eclampsia includes those symptoms and is marked by the occurrence of at least one seizure (Zhang et al, 2020). Black women exhibit signs of preeclampsia earlier than white women (Collier & Molina, 2019). One eight-year study in Washington found that preeclampsia prior to 34 weeks of gestation rose by 33% during that time frame (Collier & Molina, 2019). Additionally, this was associated with a ten times greater risk of death than pregnant individuals without preeclampsia.

### *3. 5. 4. Shock, Infection, and Sepsis*

Shock, infection, and sepsis contributes to many maternal deaths as they cause systemic metabolic failure and imbalance (Admon et al, 2018). Many maternal deaths attributed to these causes originated from other issues that were overlooked (Collier & Molina, 2019).

### *3. 5. 5. Hemorrhage*

Obstetric hemorrhage can typically be prevented depending on several factors. Nearly 11.5% of pregnancy-related deaths from 2011 to 2014 were due to hemorrhage (Collier & Molina, 2019). Blood transfusions in hospital deliveries have risen from 25 (per 10,000) in 1993 to roughly 122 (per 10,000) in 2014. SMM rates have increased 200% from 1993 to 2014 (Collier & Molina, 2019). When blood transfusions were removed from this data SMM rates only increased by 20%, suggesting an incredibly high proportion of SMM is because of the increases in blood transfusion to treat hemorrhaging (Collier & Molina, 2019). Cesarean sections may be a contributing factor in the dramatic increase of hemorrhaging. U.S. average cesarean sections have increased by 10% (from 1996 to 2011) but there has been an associated increase in maternal mortality or morbidity. Along with hemorrhage, infection and thromboembolism were more common in cesarean sections in comparison to vaginal births. ACOG has developed guidelines for safe prevention of the primary cesarean to reduce the number of unnecessary c-sections. This is important because it is often difficult, sometimes even dangerous, to give birth vaginally after having a primary cesarean. To mitigate hemorrhage caused morbidity and mortality hospitals need to implement safety bundles, improved training, and reporting systems. California is a successful example of this with their implementation of 99 state-wide bundles and hemorrhage dropping by a little over 20% (Collier & Molina, 2019).

### *3. 5. 5. Death from Unsafe Abortion*

Unsafe abortions can occur in a variety of ways. Hemorrhage and shock are the most common clinical presentations. Access to abortion care continues to be in flux in various states. Due to higher restrictions and increased barriers in many states, women have sought to engage in unsafe self-induced abortions. “Improved insurance coverage for abortion care through state

Medicaid has been associated with 16% fewer cases of SMM, suggesting that increased coverage for abortion care reduces complications associated with pregnancy" (Collier & Molina, 2019).

### *3. 5. 6. "Non Medical" Causes of Maternal Mortality*

Collier and Molina "caution against narrowing the focus of maternal mortality on medical causes because nonmedical causes, particularly unintentional overdose, are important contributors to pregnancy-associated mortality" (2019). Self-harm (suicide or accidental overdose) is also a contributing factor to preventable maternal death that needs to be examined. Approximately 30% of 211 maternal deaths in Colorado over a 9-year study period were associated with self-harm. The majority of these cases occurred postpartum and over half had a prior psychiatric history and psychopharmacotherapy use during pregnancy. Evidence for this is data collected in Philadelphia over a four-year span where 49% of maternal deaths had nonmedical causes. One could argue that overdose could be considered a medical death in certain circumstances because of the systemic bodily reactions caused by the excessive use of medication (whether intentional or otherwise). Regardless, overdose comprised 40% of those nonmedical maternal deaths. Risk factors of both maternal deaths related to medical and nonmedical causes were found to include mental illness, substance use disorder, and intimate partner violence (IPV). Both screening and provision of interdisciplinary perinatal management of substance use disorders and psychobehavioral interventions are necessary for helping reduce these deaths.

### *3. 5. 7. Contributing Factors & the Role of Chronic Health Issues*

Comorbidities such as chronic health conditions are increasingly affecting pregnant persons, which contribute to an increase in adverse maternal-fetal outcomes (Troiano & Witcher, 2018). Obesity before pregnancy is associated with SMM and mortality, according to one 9 year

study located in Washington (Collier & Molina, 2019). When looking at California births from 2007 to 2014, SMM increased by roughly 65% due to obesity (Collier & Molina, 2019). Prepregnancy obesity, comorbidities, and maternal age at or equal to 35 years old were only estimated to be 13% of increased morbidity (Collier & Molina, 2019). Additionally, this study stated 37% of SMM were related to cesarean sections (Collier & Molina, 2019). Additional contributing factors need to be addressed and identified. The upward trend in comorbidities correlates with both increased mortality and morbidity (Anderson & Roberts, 2019).

# Chapter 2: Methodology

## *2. 1. Literature Review*

My research questions are based on past coursework and an initial literature search that implied a crucial need for improved provider action and education. A systematic search was conducted to identify provider actions that can reduce maternal mortality for Black and African Americans. All literature used ranged from 2016 to 2022, with an effort to find the most up-to-date content. Inclusion criteria consisted of resources focusing on provider action in reducing Black and African maternal mortality in the United States. There was not a distinction made for legal status as evidence suggests if care is being sought in the U. S. there will be similar barriers and outcomes. Searches used a variety of databases including Google Scholar, Literature used was from then thematic analysis. Inclusion criteria studies focusing on maternal mortality, populations including Black or African-American participants, global or local study location, provider practices involved/mentioned, quantitative or qualitative methods utilized,, and results/outcomes noted. I will not be including a time range for the research publication year. However, I am mindful of choosing more current (within the past five years) publications, but refer to older sources when necessary or valuable. To provide historical context, sources that

gave insight into slavery's influence on healthcare and the lasting effects were included. Sources that included discussion on the specific clinical causes of maternal mortality were included. Sources providing insight into SDOHs and their role in maternal mortality for this population were included. United States safety bundles, frameworks, or clinical safety measures to reduce maternal mortality for Black and African Americans were included. Sources discussing the importance of and best practice for efficacious healthcare provider continuing education were included. Based on an initial literature search, provider education during professional school on the research questions (e.g. nursing, medical school) was less standardized therefore was not included. Sources explaining and critiquing the U. S. care for classification and data collection of maternal mortality were included.

### *2. 2. Commitment to Inclusivity*

The term pregnant person(s) will be utilized whenever possible throughout this paper. Despite most research stemming from studies focusing on cisgender women, trans and gender-nonconforming patients also give birth. Maternal mortality rates for gender non-conforming patients are difficult to even find.

The U. S. has been complicit in the erasure and silencing of marginalized populations and every researcher should make efforts to be more equitable.

Both ‘Black and African Americans’ will be used to provide terms that the population may identify with. The term ‘African American’ will not be abbreviated as AA to reduce othering. POC will not be used to avoid confusion and misrepresentation.

### *2. 3. Limitations*

While education about the various topics in this thesis may be more efficacious if included in the providers' professional school, this did not seem appropriate for me to evaluate given my lack of understanding of these institutions' curricula.

The initial literature review produced many institutional, policy, and approaches to reducing these deaths. However, in an effort to have a specific topic and empower providers. As someone who has sat through many new hire mandatory content on diversity and inclusion, I am intimately aware of how insufficient these trainings are in many cases. As such, I became curious about how continuing education and departmental trainings could be more efficacious in order to reduce maternal mortality outcomes in this population.

The results produced robust data referring to the problem at hand and various ways to improve this outcome via policy changes or increased hospital safety measures. However, very little research investigates the root cause of the problem and attempts to provide constructive or evidence-based solutions.

# Chapter 3: Results

### *3. 3. Existing Recommendations for Maternal Mortality Reduction*

Several established frameworks exist that attempt to address the outrageously high maternal health outcome. Several overlapping themes exist within these recommendations; however, all stress multifaceted approaches. Institutional, individual, and environmental factors need to be addressed to create a meaningful reduction in maternal mortality. The following are the most frequently occurring within the systematic literature review search. However,

#### *3. 3. 1. Addressing SDOHs*

Howell developed a framework calling for a manifold approach (2018). This module addresses a holistic approach to all aspects of care while recognizing various SDOHs. Like Howell, there have been several comprehensive trend analyses of evaluating trends and social inequities in maternal mortality within the United States. The most robust examples of these analyses is from Singh, who collected data and literature from 1969 to 2018 (2021). Highlights indicate the profound drop in maternal mortality overall, due to medical innovation and increased attention to public health (Singh, 2021). However, there are still a variety of disparities that exist in this health outcome. There needs to be consideration for the past and emphasis on current lessons for advancement in the future.

#### *3. 3. 2. Maternal Safety Bundles*

Specific clinical care guidelines applied equally based on clinical implications prevent providers from enacting care based on subjective perceptions.

#### *3. 3. 3. Implicit Bias Training*

Implicit bias training may aid healthcare professionals to become more aware of, and then correct, their own hidden biases. However, research on training quality is mixed. Omeish & Kiernan suggest a multifaceted approach that focuses on improving care surveillance for maternal health outcomes and improved bias assessment and education for clinicians (2020). Targeting racial biases, explicit or implicit, is integral to creating better outcomes for patients.

### *3. 3. 4. Community Engagement*

Community involvement and provider engagement cannot be stressed enough. Almost every piece of literature encountered in this research suggested the need for community involvement to produce sustainable change, improved equity, increased trust, and respect among

patients and providers. There are endless ways to develop partnerships from getting involved with local organizations, attending public meetings, or even meeting your neighbors.

## Chapter 4: Discussion, Recommendations, Example Curriculum, & Conclusions

### *4. 1. Discussion*

Many health professionals complete regulatory training and this is an integral aspect of their professional development (Mlambo et. al, 2021). How we train providers of all levels to recognize their personal biases and engage in evidence-based practices must include multilevel approaches.

### *4. 2. Individual Provider Recommendations*

#### Advocate for Establishment of State-based Maternal Mortality Review Committees

MMRCs are only implemented in roughly two-thirds of states in the U.S. despite their integral role in understanding circumstantial evidence surrounding maternal mortality cases (Collier, & Molina, 2019). Individual provider advocacy for the increased utilization of this tool will create an improved understanding of how maternal deaths are caused and which cases may have been prevented with certain interventions. Establishing MMRCs in every state is the first step in further identifying how maternal mortality can be prevented (Maykin & Tsai, 2020).

#### Improve Rates of Chronic Illness and Promote Chronic Care Maintenance

Many clinicians within all specialties are overwhelmed and pushed to provide patient care swiftly to meet target goals set by regulatory bodies (Kane, 2022; Anderson & Roberts, 2019). Despite the demand already placed on healthcare professionals, there is significant data

indicating rising chronic illnesses in the United States (Anderson & Roberts, 2019; Howell, 2018).

**Advocated for and Provide Quality Prenatal Care**

There is robust evidence that prenatal care and risk assessment play key roles in the prevention of maternal death (Collier & Molina, 2019). Risk assessment was noted throughout several pieces of literature as one of the key contributors to preventing maternal mortality (Baker et al, 2021; Collier & Molina, 2019;).

**Identify Personal Biases and Aim to Reduce Them**

Despite our education, background, values, and experiences, we all hold biases of various levels. To combat these from influencing care decisions and potentially negatively influencing patient care outcomes they first need to be addressed.

**Advocate for and Protect Abortion Access**

Time and time again the link between restrictive abortion legislation and worsening maternal health outcomes has been shown (Verma et al, 2020). Racial and economic disparities exacerbate poor maternal health outcomes when safe, quality abortion access is restricted (Stevenson, 2021; Verma et al, 2020; ). Pregnancy is riskier than abortion itself (Stevenson, 2021).

**Accept Medicaid Patients and Treat Them Equitably**

Expansion of Medicaid is a key driver in the reduction of maternal mortality in Black and African Americans (Eliason, 2022). Accepting Medicaid patients and treating them as you would

other patients with more favorable insurance is an actionable way providers can engage in reducing maternal mortality (Anderson & Roberts, 2019).

*4. 3. Example Curriculum*

Figure 1.

**Timeline:** Four 30 min. Computer-Based Learnings over a calendar year (should be taken in succession over a short period of time)

**Audience:** Clinical healthcare professionals working with ante, peri, and post-natal populations

Goals:

- Stimulate individual provider reflection on biases in care
- Encourage continuous education and commitment to serving historically marginalized patient populations
- Inform and educate clinicians about safety bundle components

**Materials:**

1. Computer or mobile device
2. Speakers or audio

**Evaluation of Learning:**

- Learning checks with questions
    - Consider fill in the blank options to stimulate reflection on key questions

**Incentives:**

Collaborate with various organizations to have this lesson established as CEU for various professions

**I. Introduction and Background**

- A. Maternal Mortality Burden in Black and African American Patients
    1. Provide local, institutional, state, or national data on Black MMR
    2. Consider including real patient or family stories about their experiences
- B. Explain the goals of the CBTs
- C. Reaffirm organizations' commitment to diversity and inclusivity in patient care

II. **Assessing Individual Bias and Gaps**

- A. What is implicit bias and how does it contribute to patient outcomes?
    1. Implicit bias test
        a) Reflection on score
- B. Therapeutic Communication
    1. Data on benefits
    2. Validation of pain can save lives
- C. Benefits of shared-clinical decision-making
    1. Empowering patients to be involved in their care
    2. Improved trust and patient interactions

**III. Methods to Improve Your Care**

- A. Share statistics on the importance of shared-clinical decision-making on health outcomes
    1. Discuss/reflect on the ways this method empowers patients
- B. Explain new updates and the implementation of patient safety bundles or safeguards (if implemented)
    1. Provide guidance on how to access these policies

**IV. Reflection, Debrief, and Conclusion**

- A. Provide an opportunity for individual reflection on how they feel after receiving these trainings.
- B. Encourage any feedback on the trainings.
- C. Explain new updates and the implementation of patient safety bundles or safeguards (if implemented)
    1. Provide guidance on how to access these policies

***Remember to always check with organizations about using their content in your institution's own education.

This curriculum was developed without the explicit approval or knowledge of the sources provided

*Who should adapt this curriculum?*

Institutional clinical learning department and diversity and inclusion departmental staff should develop this course in good faith as part of annual regulatory training for all clinical staff

Research indicates that cookie-cutter presentations lead to disengagement (Brown, 2022 ).

There is no right way to develop this type of curriculum. However, personalizing this to your community while using evidence-based resources will lead to the most effective outcomes.

### *4. 4. Conclusions*

The current disparity that exists in the United States regarding maternal mortality for Black and African Americans is both unacceptable and persistently evident in research. In order to address this health outcome, many aspects of care need to be addressed. Empowering provides to make changes and advocate for societal, institutional, and governmental changes to lessen the frequency of preventable maternal mortality in Black and African Americans. The literature this topic brought up was incredibly damning of the medical system in the United States. There must be a concerted, multidisciplinary effort to attack this problem. Further research must be done to expand on how best to undo implicit bias, improve praxis, and educate providers about anti-racist patient care for Black and African Americans seeking pre, peri, or post natal obstetric care (Franke, 2022; Birthing While Black Congressional Hearing, 2021; Crear-Perry, 2020).

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