Combatting Maternal Mortality in the United States

An STS Research Paper

presented to the faculty of the

School of Engineering and Applied Science

University of Virginia

by

Marissa Yee

May 11, 2023

On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

Combatting Maternal Mortality in the United States

The United States is a leader in state-of-the-art medical technology. Nevertheless, the U.S. healthcare is expensive, and access to care is inequitable. High-tech healthcare is inaccessible to 28 million Americans, or 13.9 percent of the population. African Americans and Latinos are much less likely to have such access than others (Cha & Cohen, 2022). Healthcare inequities in the U.S. leave millions with insufficient access.

For African Americans and Latinos, misperceptions and stereotypes, typically as implicit biases, exacerbate cost barriers to care. In physicians, such biases may present as disrespect, inaccurate diagnoses, and false assumptions that the patient is uninsured (Smedley et al., 2003). The burden of such biases are greatest for African American females. In 2020, the maternal mortality rate for African American women was 55.3 deaths per 100,000 births, 2.9 times higher than the rate for white women (Hoyert, 2022). The leading causes of maternal mortality are cardiomyopathy, pulmonary embolism, and hypertension; 60 percent of these deaths are preventable (Robeznieks, 2012). Contributing causes to preventable maternal death include access inequities and biases in healthcare.

In the U.S., mainstream health institutions and health justice advocacies agree that disparities in maternal health by race must be diminished, but their strategies vary widely. Mainstream groups generally favor incremental change while many advocacies demand more fundamental institutional transformation.

Review of Research

Medical researchers are subject to strict professional standards. Before such standards were developed, unethical and abusive medical research was common, especially in gynecology

and obstetrics. As Taylor (2020) has documented, female African American enslaved laborers were used as childbearing machines to supply more enslaved laborers. Experiments on enslaved laborers were repeated and nonconsensual. Gynecology and obstetrics emerged from experiments on and mutilation of female African American enslaved laborers, without anesthesia. After emancipation, structural and implicit racism perpetuated wide racial disparities in maternal mortality (Taylor, 2020).

In the U.S., healthcare access is inequitable; necessary care is often practically inaccessible to low-income Americans (Taylor, 2020). Access disparities are greatest in the South, where 58 percent of the African American population of the United States resides. Many southern states have forgone the Medicaid expansion provided under the Affordable Care Act (KFF, 2023). Healthcare provider shortages exacerbate disparities. Elsewhere, Medicaid expansion has improved health outcomes for African American mothers (Luhby, 2022). According to one estimate if the 12 states that refused Medicaid expansion implemented it, more than 3.5 million uninsured people, majority African American, would be eligible for Medicaid coverage (Coleman & Federman, 2022). Disparities in health, however, are not due exclusively to inequitable insurance coverage (OASPE, 2022).

The social determinants of health include housing conditions, transportation options, and neighborhood safety; the extent of racism, discrimination, and violence; access to education and job opportunities; income; access to foods; air and water quality; and language and literacy skills (OASH, 2020). In all categories, African Americans in the aggregate are disadvantaged. Gentrification can exacerbate this inequity. In gentrifying neighborhoods, rising costs often force long-term African American residents to move to more marginalized districts; under similar pressures, white residents are more likely to move to better-resourced suburbs (Feder, 2020).

Proximity to a healthcare provider does not ensure access (NASEM, 2018). Due to residential segregation, majority African American areas are more likely to lack hospitals and local healthcare providers tend to offer poorer care (Taylor, 2019). According to Zertuche (2019), obstetrical practices are overburdened or entirely absent in most counties in Georgia. Patients often travel over 50 miles to and from prenatal appointments, practically barring women who lack reliable transportation or cannot take off time from work. Georgia's Obstetric Care Crisis is worsening as many trainees in obstetrics move away from areas where providers are needed when they finish their training (Zertuche, 2019).

Incremental Risk Management: Combatting Implicit Bias in Healthcare Providers

Through education, healthcare professionals can develop cultural sensitivity and awareness of implicit bias. Implicit biases in healthcare professionals manifest as diagnostic uncertainty, poor communication, undertreatment of pain, and reduced focus on patients. Overwhelmingly, implicit bias disproportionately affects African American patients. Figueroa et al (2016) found that African American patients report better experiences than white patients, but African American negative experiences are due to stereotypes about race, whereas white negative experiences are due to interpretations of quality of care. In *Unequal Treatment*, a panel of experts document evidence of racial and ethnic disparities in healthcare and how this affects quality of care. One African American participant in the study reported a new diabetes diagnosis, but their primary care physician said, "I need to write this prescription for these pills, but you'll never take them and you'll come back and tell me you're still eating pig's feet and everything… Then why do I still need to write this prescription" (Smedley et al., 2003). The patient does not eat pig's feet. This was an implicit bias that influenced the physician's perception and interaction

with the African American patient. Physicians frequently hold perceptions of patients based on stereotypes, and in this situation negatively influenced the patient's healthcare experience and treatment.

Through a systematic review of 42 articles, Fitzgerald and Hurst (2017) established a quantifiable need for healthcare providers to address the role implicit biases play in disparities in healthcare. Hospitals and institutions are beginning to mandate implicit bias training as prerequisites for professional licensure (Ollove, 2022). The Blavatnik Family Women's Health Research Institute conducts research to fill knowledge gaps to improve patient care for racially and ethnically diverse women in Harlem (Mount Sinai, 2019). More longitudinal studies are required to establish concrete causes of high rates of African American maternal mortality. Dr. Elizabeth Howell, director of the Blavatnik Institute, suggests implicit bias training for medical personnel to combat poor maternal health while more evidence is collected (Bahadur, 2019). In 2020, Maryland passed the first law requiring implicit bias training every two years for healthcare professionals in perinatal units. Maryland state representative Joseline Pena-Melnyk pioneered the law because maternal mortality in Maryland among African American females is 4 times higher than white women. The is 10-fold higher than the national average, which Pena-Melnyk viewed as "simply not acceptable" (Ollove, 2022). Implicit bias training mandated by Maryland law is the first step in combatting maternal mortality.

Researchers at the Center for Health Workforce Studies at the University of Washington School of Medicine evaluated the effectiveness of brief online courses on implicit bias. The 40 minute course significantly increased bias awareness in healthcare professionals, regardless of the severity of their implicit race-based bias (Sabin et al., 2022). However, despite immediate results of increased awareness, there is no evidence to support permanent, long-term reductions

in implicit bias scores or sustained changes in behavior (Green & Hagiwara, 2020). Supporters of implicit bias training acknowledge that institutional change is critical to the success of the training. Current approaches to implicit bias training poorly utilize resources and can cause more damage. Quinn Capers, a cardiologist and associate dean at the University of Texas Southwestern Medical Center, has led implicit bias training at dozens of medical centers. During these courses, he reported medical providers "looking at their phones and checking their watches" (Agrawal & Enekwechi, 2020). There is risk of resentment when creating mandates for implicit bias training. This resentment could make healthcare professionals resistant to other efforts to mitigate health disparities.

While the solution to implicit bias appears to be implicit bias training, systemic change is necessary to support healthcare providers to enact change. Marginalized populations are more likely to be treated poorly due to implicit bias and failure of delivery systems. Systemic change is possible in hospitals by improving communication with patients by providing interpreters and translators. Patients are able to completely understand healthcare providers, and vice versa. These organizations can also appoint chief equity officers, who focus on prioritizing health equity in the delivery of healthcare (Agrawal & Enekwechi, 2020). The chief equity officer addresses how patients are treated, whereas chief diversity officers focus on internal recruiting and retention. Systemic changes with widespread implicit bias training can instill real, prolonged change in healthcare and the treatment of patients, including African American females.

Education for Change: Public Awareness and Patient Access to Resources

Education of the general public can increase awareness of maternal health inequities, and thereby contribute to public support for policies to combat them. In the documentary *Aftershock*

(2020), Omari Maynard and Bruce McIntyre have a strong bond through single fatherhood. Their wives died from preventable complications of childbirth. These men have become faces of an unofficial social group of advocates: people related to African American women who have died from pregnancy-related complications; friends, family, spouses, and children left in the aftermath. As activists, they utilize strategic visibility techniques to increase awareness about the African American maternal mortality crisis. Marches, interviews, artwork, and the documentary *Aftershock* advance their agenda of combatting systemic racism and improving the outcomes of African American pregnant women. The producers of the documentary had their own personal connections to the maternal mortality crisis that motivated the production. Lewis travelled the country increasing awareness about the "A Health Baby Begins With You" campaign, and was inspired to produce *Aftershock* after the she "heard first-hand from people across the nation about the preventable death of a loved one from childbirth complications." Eiselt was drawn to maternal health justice after her "own traumatic pregnancy and birth experiences." Both produced *Aftershock* to use their personal experiences to increase awareness about the maternal mortality crisis. They highlight the work of activists working on the ground and hold the medical institutions and government accountable.

Education of African American women can increase access to resources and communities for support. The Los Angeles County African American Infant and Maternal Mortality (AAIMM) Initiative creates community health initiatives to combat maternal mortality. Marquita Jones, the community outreach liaison, says the AAIMM initiatives "give women the support they need, and say 'You're not alone'" (Sarachan, 2022). The Black Maternal Health Center of Excellence in South Los Angeles is a community health center created from the AAIMM Initiative. The center provides a "dynamic, multitentacled intervention program" to "shift the

culture of care" for African American mothers and birthing people (Ross, 2022). Sista Midwife Productions is a birth advocacy group based in New Orleans. They work to improve pregnancy experiences and eliminate perinatal disparities by increasing the number of African American birth workers, providing education for families about their rights, and creating transparency and accountability with childbirth and obstetrics education (SMP, 2022). Sista Midwife Productions holds community events in churches, recreation centers for people to learn about pregnancy and birth. They also created an online, free database with a list of African American midwives, doulas, and lactation specialists by geographic location. African American females can use the database to find healthcare providers in their community that are trained and knowledgeable of the structural racism that African American females may face in a typical hospital setting.

MomsRising pushes for cultural and legislative change to make Medicaid cover nontraditional birthing partners. In the U.S., Medicaid covers half of the birthing payments; half of the U.S. population cannot afford the luxury of seeking out the birthing care of choice. They must give birth in a traditional hospital environment, where they are at risk of facing institutional racism. MomsRising is pushing for reimbursements through the government, so women can use midwives and doulas if they prefer (Searing et al, 2021). Latham Thomas of New York City, had a good birthing experience with a doula. She was inspired to become a doula, founded Mama Glow, and established a doula immersion program to help train new birth workers. Latham wanted other women to have the same positive experience with pregnancy and birth that she did. Mama Glow doula training prioritizes teaching doulas to collaborate with existing medical systems to help patients advocate for themselves, ask questions, and find support. Latham's approach with Mama Glow is to "lead with energy and be prepared for all outcomes, but don't get paralyzed in the fear of what we read every day" (Thomas, 2019).

Smaller, local advocacies have the capacity to make immediate impact in the community. Providing education to patients is more impactful than prenatal health brochures found at typical healthcare offices. Free clinics provide perinatal healthcare for African American females who would otherwise be ignored in typical healthcare settings. Widespread, unofficial advocacy groups composed of friends and families of victims of maternal mortality, have the capacity to establish public figures and public pressure. As activists, they increase visibility of the maternal mortality crisis while putting public pressure on the government to take action and address the crisis.

Self-Advocacy to Improve Patient Experience

Educated patients can be their own advocates. Self-advocacy is an essential part of patient experience. For cancer patients, self-advocacy is necessary to ensure their needs are met, their personal preferences are heard, and that they maintain a level of control when undergoing treatment for a difficult disease. Patient self-advocacy also causes healthcare providers to assume a level of competence in patients to manage and prevent health problems. These patients use patient education material to advocate for their needs according to their unique situations and preferences. Patients are not cookie-cutter replicates of each other. Each patient knows their own body and needs best and must learn to advocate for themselves. This same self-advocacy language and experience permeates to maternal health. Felicia Ellis, an African American mother, compared “a Black woman having a baby” to “a Black man at a traffic stop” (Eiselt & Lee, 2022). African American pregnant females and their partners have learned they are their own advocates. Ellis says she must “really pay attention to what’s going on every step of the way” to avoid being dismissed by medical professionals (Eiselt & Lee, 2022).

It may be obvious that celebrities and professional athletes can afford high quality healthcare. However, level of fame does not counteract systemic racism integrated in the U.S. healthcare system. An African American nurse believes African Americans receive a lower quality of care. This nurse emphasizes the need of self-advocacy, because "if somebody's not treating you right then you kind of push past some of the stuff" but for patients who don't advocate for themselves, it "makes it very hard for them to get the care they need" (Smedley et al., 2003). Serena Williams is a famous and successful professional athlete who nearly died from complications of childbirth because her healthcare team did not listen to her concerns. As a professional tennis player and winner of 23 Grand Slam titles, Williams was familiar with standing up for what she believed in, even if it made her unpopular. However, Williams said "giving birth to my baby, it turned out, was a test for how loud and how often I would have to call out before I was finally heard." Williams asked for blood thinners after an emergency C-section, because she knew she had a history of blood clots. She was dismissed multiple times, until she developed a clot in her lungs and underwent 3 more surgeries to save her life. Williams said she "might not be alive had she not advocated for her health" and the dismissal of her concerns was an experience that "Black people encounter far too often" (Coady, 2022).

Allyson Felix, the most decorate track and field Olympian in history, also had a traumatic and life-threatening birth experience. Felix was prepared for pregnancy and birth. She was an athlete, in great health, had a birthing plan, and at one of the best hospitals in the country. But she did not know that African American women are 60 percent more likely to develop preeclampsia, the high blood pressure complication that she developed. Felix's emergency C-section saved her life, and now she encourages mothers to advocate for and educate themselves and find a support system to advocate with them during pregnancy and child birth (Campoamor,

2020). Felix knows “how important it is to have a support team when you’re trying to juggle it all.” However, complications from childbirth are not isolated to only during and immediately after childbirth. Chronic conditions, like heart disease, can develop from the complications, which can affect patients for the rest of their lives. Dr. Rachel Bond, a board-certified cardiologist, says, “the misogyny and racism coupled together” makes African American females “more susceptible to a lot of chronic medical conditions” (Williams, 2021). Reagan D., of Chicago, is a 911 dispatcher who almost died after coming home from giving birth to her son because EMTs believed Reagan was having a panic attack instead of a heart attack. Reagan listened to the EMTs, who told her not to go to the hospital, and followed up with her primary care physician, who also said she was completely fine. After 2 more episodes of intense chest pain, Reagan drove herself to the hospital and finally received an EKG, which showed that she had had 3 heart attacks and was undergoing a spontaneous coronary artery dissection (Williams, 2021). Reagan’s experience is part of the pattern of African American female concerns being brushed off and not taken seriously. Reagan would have died if she did not advocate for herself and make sure she got the medical attention she needed.

Self-advocacy has limitations. Jolissa E., of Chicago, developed preeclampsia while pregnant with twins, but was not taken seriously. Jolissa had constant communication with her doctor about her concerns and had advocacy from family who were medical professionals. As a single-mother on Medicaid, Jolissa said “I still felt like I was not hear, I was not listened to, I was not seen.” Dr. Bond recommended in these situations, where self-advocacy is not effective, that a new healthcare provider is found (Williams, 2021). This is a luxury that not all patients can afford or have access to. In states like Georgia, where patients travel over 50 miles to see an obstetrician, patients do not have access to the option of changing their healthcare provider.

Conclusion

Incremental, local change and institutional, nationwide change is necessary to combat disparities in maternal health. Individual strategies are weak standing alone, but combined have the capacity to cause change. Self-advocacy is critical to positive patient experiences for African American women but its effectiveness is limited. When coupled with healthcare provider implicit bias training and institutional changes in hospitals, outcomes for African American women can improve. Adding education of the general public and patients establishes public pressure to enact systemic legislative changes. Each strategy has strengths and limitations. The limitations of one strategy are addressed by the strengths of others. Change is attainable, but requires collaboration to be the most effective and to improve outcomes for the most patients.

References

Agrawal, Shantanu and Enekwechi, Adaeze. (2020, January 15). It's Time To Address The Role of Implicit Bias Within Healthcare Delivery. HealthAffairs. 10.1377/forefront.20200108.34515

Bahadur, Nina. (2019, October 22). 9 Organizations Working to Save Black Mothers. United States House of Representatives Black Maternal Health Caucus. https://blackmaternalhealthcaucus-underwood.house.gov/media/in-the-news/9-organizations-working-save-black-mothers

Campoamor, Danielle. (2020, August 4). Olympic Star Allyson Felix Speaks Out About her Traumatic Birth Experience. Today. https://www.today.com/parents/allyson-felix-olympic-star-traumatic-birth-experience-t188436

Cha, Amy and Cohen, Robin. (2022). National Health Statistics Reports, Number 169, February 11, 2022. 169, 15.

Coady, Serena. (2022, April 7). Serena Williams Says Her 'Life or Death' Childbirth Experience Required 4 Surgeries. SELF. https://www.self.com/story/serena-williams-childbirth-experience

Coleman, Akeiisa and Federman, Sara. (2022, October 27). Where Do the States Stand on Medicaid Expansion? The Commonwealth Fund. https://www.commonwealthfund.org/blog/2022/where-do-states-stand-medicaid-expansion

Eiselt, Paula. Lee, Tonya Lewis. (2022). Aftershock, (Documentary). Hulu.

Feder, Sandra. (2020, December 1). Stanford Professor's Study Finds Gentrification Disproportionately Affects Minorities. https://news.stanford.edu/2020/12/01/gentrification-disproportionately-affects-minorities/

Figueroa, JF.; Zheng, J; Orav, EJ; and Jha, AK. (2016). Across US Hospitals, Black Patients Report Comparable Or Better Experiences Than White Patients. HealthAffairs. https://doi.org/10.1377/hlthaff.2015.1426

Fitzgerald, Chloe and Hurst, Samia. (2017, March 1). Implicit bias in healthcare professionals: a systematic review. BMC Medical Ethics. https://doi.org/10.1186/s12910-017-0179-8

Green, Tiffany L. (2020, August 28). The Problem with Implicit Bias Training. *Scientific American*. https://www.scientificamerican.com/article/the-problem-with-implicit-bias-training/

Hoyert, D. (2022, Feb. 22). Maternal Mortality Rates in the United States, 2020. www.cdc.gov/nchs/data/hestat/maternal-mortality/2020/maternal-mortality-rates-2020.htm

KFF. (2023, February 7). Kaiser Family Foundation. Status of State Medicaid Expansion Decisions: Interactive Map. https://www.kff.org/medicaid/issue-brief/status-of-state-medicaid-expansion-decisions-interactive-map/

Luhby, Tami. (2022, June 13). Some GOP states extend Medicaid coverage for new moms amid abortion debate. *CNN*. https://www.cnn.com/2022/06/13/politics/states-new-moms-medicaid-abortion/index.html

Mount Sinai. (2019). Specialty Report from Department of Obstetrics, Gynecology, and Reproductive Science. Mount Sinai.

NASEM. (2018, March 1). National Academies of Science, Engineering, and Medicine. Health-Care Utilization as a Proxy in Disability Determination. (Chapter 2, Factors That Affect Health-Care Utilization)

OASH. (2020). Office of Disease Prevention and Health Promotion. Social Determinants of Health. https://health.gov/healthypeople/priority-areas/social-determinants-health

OASPE. (2022, February 22). Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services. Health Insurance Coverage and Access to Care Among Black Americans: Recent Trends and Key Challenges (Issue Brief No. HP 2022-07)

Ollove, Michael. (2022, April 21). With Implicit Bias Hurting Patients, Some States Train Doctors. *Pew*. https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2022/04/21/with-implicit-bias-hurting-patients-some-states-train-doctors

Robeznieks, Andis. (2021, May 24). Examining the Black U.S. maternal mortality rate and how to cut it. American Medical Association. www.ama-assn.org/delivering-care/population-care/examining-black-us-maternal-mortality-rate-and-how-cut-it

Ross, Dan. (2022, October 14). New Solutions Unveiled to Curtail L.A. County's Black Infant and Maternal Death Rates. *The American Prospect*. https://prospect.org/health/new-solutions-unveiled-to-curtail-los-angeles-countys-black-infant-maternal-death-rates/

Sabin, J., Guenther, G., Ornelas, I. J., Patterson, D. G., Andrilla, C. H. A., Morales, L., Gurjal, K., & Frogner, B. K. (2022). Brief online implicit bias education increases bias awareness among clinical teaching faculty. Medical education online, 27(1), 2025307. https://doi.org/10.1080/10872981.2021.2025307

Sarachan, Risa. (2022, July 20). 'Aftershock' Documentary Aims to Stop the Black Maternal Health Crisis and Shift Birthing Culture. *Forbes*. https://www.forbes.com/sites/risasarachan/2022/07/20/aftershock-documentary-aims-to-stop-the-black-maternal-health-crisis-and-shift-birthing-culture/?sh=2eb12d216009

Searing, A; Corcoran, A; and Alker, J. (2021, February 17). Report Finds Medicaid Expansion Associated with Lower Child Uninsured Rates. Georgetown University Health Policy Institute. https://ccf.georgetown.edu/2021/02/17/report-finds-medicaid-expansion-associated-with-lower-child-uninsured-rates/

Smedley, BD; Stith, AY; and Nelson, AR. (2003) Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Institute of Medicine (US) Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. Appendix D.

SMP (2022). Sista Midwife Productions. Impact Report 2022.

Taylor, Jamila. (2019, December 19). Racism, Inequality, and Health Care for African Americans. *The Century Foundation*. https://tcf.org/content/report/racism-inequality-health-care-african-americans/

Taylor, J. K. (2020). Structural Racism and Maternal Health Among Black Women. *Journal of Law, Medicine & Ethics*, *48*(3), 506–517.

Thomas, Latham. (2019, August 1). Doula World: A Chat with Mama Glow Founder, Latham Thomas. Mama Glow. https://mamaglow.com/mama-glow-founder-latham-thomas-talks-doula-world/

Williams, Nikesha Elise. (2021, March 10). The Crucial Role of Heart Health in Black Maternal Mortality. SELF. https://www.self.com/story/heart-health-black-maternal-mortality

Zertuche, Adrienne D. (2019, October 30). Georgia's Obstetric Care Crisis. South Carolina Birth Outcomes Initiatives Symposium.