Eliminating Black Maternal and Infant Mortality:
A Case Study of an Innovative Community-Based Public Health Equity Intervention Model in Columbus, Ohio, 2018–2021

A case study presented to the faculty of the Graduate School of Western Carolina University in partial fulfillment of the requirements for the degree of Educational Leadership.

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Accountability is essential to any form of liberation. I dedicate this to all who have come before me, who have stood with me and against me, and to all who will come after me.

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ABSTRACT

ELIMINATING BLACK MATERNAL AND INFANT MORTALITY: A CASE STUDY OF AN INNOVATIVE COMMUNITY-BASED PUBLIC HEALTH EQUITY INTERVENTION MODEL IN COLUMBUS, OHIO, 2018–2021

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Columbus, Ohio, has been documented as having one of the highest Black maternal and infant mortality rates in the United States. A survey of data of the past three decades shows that Black families in Columbus, Ohio, have fared exponentially worse than White families with respect to maternal mortality, maternal comorbidity, maternal surgical delivery and induction, infant mortality, infant neonatal intensive care unit assignment, infant preterm birth, and low birth weight. While the reasons for the disparities vary by source and period of inquiry, the consistent fact is that the disproportionate impact of maternal and infant mortality in Black communities has severely impacted our families in the U.S. for generations. This history is directly linked to the chattel industry of enslavement specific to the U.S., where the industrialization, commoditization, moral validation, and transactional nature of the Black birthing process guided by obstetric racism were perfected. I conducted a case study of Restoring Our Own Through Transformation (ROOTT) and its community-based intervention and outcomes in Columbus, Ohio, from 2018 to 2021. The case study focused directly on the elimination of Black maternal mortality, Black infant mortality, and significant reductions in postpartum events. The case study details the failure of the City of Columbus's efforts to address this epidemic, contrasted against the effectiveness of ROOT's perinatal support doula model of

care, which has produced very different outcomes. ROOTT has achieved and maintained a 0% Black maternal and infant mortality rate since 2017. I offer recommendations for improvement in terms of what types of interventions should be considered when responding to public health crises related to perinatal care and how such interventions should be applied to address the identified problem of practice.

Keywords: Black maternal health, Black infant health, Black maternal mortality, Black infant mortality

INTRODUCTION AND PROBLEM STATEMENT

Black Maternal and Infant Mortality in Columbus, Ohio

Ohio has long been documented as having one of the highest Black maternal and infant mortality rates in the United States (Greater Columbus Infant Mortality Task Force, 2014). A survey of relevant data over the past three decades shows that Black families in Columbus, Ohio, have consistently fared worse than White families. Areas of failure include maternal mortality, maternal comorbidity, maternal surgical birth, induction procedures, infant mortality, infant neonatal intensive care unit (NICU) assignment, infant preterm birth, and low birth weight (Crear-Perry et al., 2021. The reasons for the disparities vary by data source and period of inquiry. The consistent fact is that the disproportionate impact of maternal and infant mortality in Black communities has severely impacted these communities for generations (Crear-Perry et al., 2021). This tragic reality has a historical context that can be directly linked to the U.S. industry of chattel enslavement, where the industrialization, commoditization, moral validation, and transactional nature of the Black birthing process within the construct of obstetric racism were perfected (Washington, 2008).

In *Post Traumatic Slave Syndrome: America's Legacy of Enduring Injury and Healing* (2005), Dr. Joy DeGruy noted that the first groups of enslaved Africans were brought to Portugal in 1444, with the first enslaved Africans arriving in North America in 1619. DeGruy (2005) further explained that "although slavery has long been a part of human history, (North) American chattel slavery represents a case of human trauma incomparable in scope, duration, and consequence to any other incidence of human enslavement". At the foundation of DeGruy's work is the very idea of the ownership of human beings (Black men, women, and children)

within the context of enslavement in the United States, which "assigned an unchecked liberty" to those that owned enslaved Africans.

These liberties allowed enslavers to develop ways to grow their new human commodities and ensure their perpetuation and economy. This need became even more critical after the U.S. Congress restricted the importation of African-born enslaved people in 1808 (Cooper Owens, 2017). These actions led U.S. enslavers to focus more on increasing the number of live births of enslaved people in the United States. Enslavers needed to be in control of and open to pioneering innovative ways to reproduce and care for their enslaved humans to succeed. The enslaved industrial-medical complex, along with researchers in academia, worked together to ensure the reproductive health of enslaved Black women and men (Cooper Owens, 2017). It is in this history that we begin to see the origins of reproductive injustice, obstetric racism, and the resulting current epidemic of Black maternal and infant mortality.

Restoring Our Own Through Transformation (ROOTT) is an innovative community-based public health organization that addresses health inequities impacting Black families, specifically Black maternal and infant mortality in Columbus, Ohio. ROOTT was intentionally designed to succeed, where government-led task forces in Columbus, Ohio, failed. ROOTT currently has a 0% Black maternal and infant mortality rate, which has been maintained since its inception in 2017. ROOTT has achieved vastly different positive outcomes in terms of Black maternal comorbidity, maternal surgical birth and induction procedures, Black infant NICU assignment, infant preterm birth and low birth weight, and adverse postpartum events. This is a case study of ROOTT and its community-based intervention, model, services, and outcomes in Columbus, Ohio, between 2018 and 2021. This case study focused directly on ROOTT's outcomes related to Black maternal mortality, Black infant mortality, and postpartum events.

In this case study, I share details regarding the effectiveness of the perinatal support doula model of care created by ROOTT, which has produced the outcomes other entities have tried to achieve in Columbus, Ohio. I then offer recommendations for improvements as to what interventions are effective and how such interventions should be applied in addressing the identified problem of practice (PoP): *the epidemic of Black maternal and infant mortality in Columbus, Ohio*.

LITERATURE REVIEW

The Antiquity of Black Birth Work

Birth work originated in African cultures and societies, where it has been practiced for millennia and has a rich and civilized history from which many have adopted their version of birth work (Owens & Fett, 2019). In many African cultures, birth work is integrated into all aspects of culture, as the family is an integral part of tradition and community (Owens & Fett, 2019). It stands to reason, then, that African communities gave rise to the concept, idea, and nobility of the midwife (Washington, 2008).

Midwives were and are known by various names across Africa (Mate, 2023). In Swahili, midwives are called *Mkunga*; in Zulu, they are called *Umbelethisi*; in Yoruba, they are called *Agbẹbi*; and in Somali, midwives are called *Umuliso* (Mate, 2023). Midwives typically play the role of facilitator or guide, aligning the birth process with the spiritual beliefs and rituals essential to childbirth (Goode & Katz Rothman, 2017). Midwives were the custodians of knowledge regarding herbology, physical massage or physical birth coercion techniques, emotional support, and understanding when and how to apply such techniques and support (Goode & Katz Rothman, 2017). They also created a trusted and safe space for natural childbirth to align with community and cultural expectations (Goode & Katz Rothman, 2017).

In many African communities, the process of childbirth is sacred and communal. This place in the community made the midwife essential, positioning her as a leader, healer of women, and protector of the maternal bloodlines of families and ethnic hierarchies (Davis, 2019). This included attending to the physical and emotional needs of the birthing mother throughout the prenatal and postpartum periods. Unfortunately, European enslavers openly viewed many African customs and traditional midwifery practices as threatening, thus diminishing their value and leading to their suppression (Davis, 2019).

What Black Birth Work Brought to the United States. Despite enslavers' attempts to minimize the value of African expertise within birth work practice, African culture significantly influenced birth work in the United States through its sheer efficacy. Modern childbirth practices have incorporated its beliefs, traditions, and both clinical and non-clinical knowledge. Specific contributions of African or Black midwifery include the following:

- Midwifery traditions: African cultures have rich traditions of midwifery, where experienced women provide holistic care and support during pregnancy, childbirth, and postpartum.
- Oral traditions and storytelling: African societies pass down knowledge and wisdom through storytelling, emphasizing the importance of shared experiences, family, paternity, and maternity to protect traditional practices.
- Rituals and ceremonies: African cultures value and prioritize rituals and ceremonies surrounding the family, its importance, and how the family is perpetuated and grown. Emphasis is placed on community participation, spiritual connection, and honoring the transformative journey of familial growth.

- Traditional healing practices: African midwives recognized the importance of traditional healing practices before, during, and after childbirth. These practices, such as herbal remedies, massage, and spiritual ceremonies, have found their way into modern obstetrics and gynecology through specialized approaches and services as alternative modalities.

U.S. Chattel Enslavement, Black Birth Work, and the Destabilization of Black Families. African birth work changed acutely after the start of transatlantic human trafficking, organized enslavement, and the commoditization of enslaved people. Enslaved African families and communities were systematically broken up and restricted from their known cultural practices. As mentioned above, DeGruy's (2005) book's context for chattel enslavement is as illuminating as it is polarizing. She noted that the enslavement of Africans in the United States represented and created a persistent human trauma incomparable in scope, duration, and consequence to any other incidence of human enslavement in the world.

The control of enslaved men, women, and children was essential to the success of the enslavement-industrial complex and to the success of false notions of White supremacy and early versions of institutional and systemic racism (Washington, 2008). Within the structure of the complex, enslaved families were forced to procreate or "breed" by, or sometimes with, their enslavers (Washington, 2008). Enslaved African women and men were prohibited from choosing their birth attendants. Enslaved families bore children primarily to support the institution of chattel slavery, experimentation, fetishism, and other inhumane treatment of Black families (Washington, 2008). Ultimately, enslavers began to employ White male doctors or inexperienced White birth workers (Davis, 2019). These laypersons lacked cultural sensitivity and imposed their beliefs and methods on the birthing process, resulting in inconsistent birth outcomes

(Washington, 2008). As a result, many Black midwives covertly became primary healthcare practitioners within enslaved communities (Washington, 2008).

This violent system of chattel enslavement erased community, familial, and personal human agency. Such agency is directly related to what is referred to as "reproductive autonomy," or the ability to decide when, where, if, and how family, childbirth, intimacy, motherhood, fatherhood, and parenting are defined and provided (Crear-Perry et al., 2021). In many, if not all, cases, Black family resistance to the demands of chattel enslavement was met with deadly, dehumanizing, or debilitating punishments. Despite these oppressive circumstances and while still attempting to support one another in secret, enslaved African families did their best to preserve the knowledge and traditions surrounding childbirth (Goode & Katz Rothman, 2017).

Today, the powerful etiology of African birth work continues to influence birth workers across generations despite attempts to marginalize and eradicate it. The Black reproductive justice movement has amplified how vital and effective these traditions and practices are in addressing the epidemic of Black infant and maternal mortality. However, despite collective efforts, barriers to establishing the expectations that Black families should have when engaging with predominantly White institutions and systems alleged to support healthy and safe childbirth outcomes for all include policies and processes that were designed without concern for Black families (Scott et al., 2019).

U.S. Public Policy and its Impact on Black Birth Work

In the early 1900s, Black family life struggled to recover from the presumed end of chattel enslavement, as marked by President Lincoln's Emancipation Proclamation in the 1860s and the subsequent passage of the 13th Amendment to the U.S. Constitution, which codified the end of certain forms of enslavement (Washington, 2008). The post-Civil War reconstruction of

southern and some northern states by majority White male leadership posed significant challenges to the progress of the Black nuclear family. Many, if not most, Black families were left disrupted and fractured, with many questions of basic survival left unanswered. This social confusion meant that access to domestic basics, such as housing, food, clothing, currency, education, and health care, was uncertain at best and unavailable at worst (Washington, 2008).

Despite these challenging realities, childbirth continued, and birth work and birth worker support remained essential, which proved to be even more challenging for Black families entering the 20th century (Washington, 2008). It also became more apparent that the *negro question*, or rather how a country recovering from civil war could and would receive and support millions of newly freed Black families, would have to be answered. Such an answer would require national resources and public policy interventions (Washington, 2008). Moreover, such interventions would need to examine the larger question of how to address and reduce overall infant and maternal mortality in the United States.

U.S. federal public policy continues to play a significant role in addressing the epidemic of Black maternal and infant mortality (Crear-Perry et al., 2021). Historically, the disparities in maternal and infant health outcomes between Black and White mothers and Black and White infants in the United States have been driven by a variety of factors. They included socioeconomics, systemic and institutional racism, health care disparities, and *obstetric racism* (Crear-Perry et al., 2021).

Obstetric racism is defined as systemic and structural racism within the healthcare system, particularly during pregnancy and childbirth (Scott et al., 2019). It involves the discrimination, inequity, and inequality regarding services and treatment that Black families experience during pregnancy, labor, and postpartum care. Systemic and institutional racism, and

their offspring of obstetric racism, were ultimately woven into the framework of the federal public policy solutions that were developed to address this overall issue, and still remain to this day. (Owens, 2017).

The Children's Bureau, the Sheppard-Towner Act, and Their Impact on Black Birth Work

The Children's Bureau. In the 1900s, the United States was experiencing a period of transition that raised several questions regarding how the country could move forward after its recent Civil War. During this progressive era, challenges related to the management of adult and child labor, interactions with newly freed Black families, women's suffrage, and resource management were of primary concern (Lemons, 1969). Specifically, conditions for children in the United States were unsuitable for where the country was headed, with one in 10 infants dying within their first year of life (Lewis, 2020). In other instances, children were introduced into the labor market at an early age, bypassing schooling and often working in dangerous and unsuitable conditions, with orphaned children not receiving essential care or resources (Lewis, 2020).

Lillian D. Wald and her colleague Florence Kelley are credited with developing the concept for the establishment of the U.S. Children's Bureau in the Department of Labor as early as 1903 (Lewis, 2020). Wald, the founder of the Henry Street Settlement House movement in New York City, and Kelly, a pioneer of the settlement movement, pursued this concept for several years before it became a reality (Lewis, 2020). After a nationwide campaign and several failed bills, President Roosevelt brought together the first White House Conference on Children in 1909 (Hutchins, 1994). This meeting brought together key stakeholders, including educators, social workers, labor experts, and juvenile justice representatives, who ultimately supported the creation of a newly formed federal department, the Children's Bureau, to be housed within the Department of Labor (Hutchins, 1994).

In 1912, Congress passed an act signed by President Taft that established the Federal Children's Bureau. The bureau's mission was to investigate, through research and reports, "all matters pertaining to the welfare of children and child life among all classes of our people" (Hutchins, 1994). The new bureau was headed by White male staff with experience in human and social services and medicine. Its first step and challenge was to find a way to determine the number of children born each year in the U.S. This information would serve as the foundation for planned efforts to address the issue of maternal and infant mortality (Hutchins, 1994).

When the bureau was formed, no adequate method of determining the number of children born each year existed (Lemons, 1969). To address infant mortality, access to accurate birth records was required. The bureau enlisted grassroots stakeholder groups, such as the General Federation of Women's Clubs, to assist in a door-to-door campaign in 1915. This due diligence resulted in the establishment of birth registration areas in select states, ultimately expanding to all states.

By expanding the birth registration areas, 23,000 infants and mothers could be documented and examined (Lemons, 1969). It was found that the overall infant mortality rate was 111.2 deaths per 1,000 live births, resulting in an infant mortality rate of 10%, a rate higher than what was observed in most industrialized nations at the time (Lewis, 2020). In conjunction with this high mortality rate, it was found that mothers did not receive prenatal care, and the resulting data showed that a critical mass of infant deaths were preventable (Lewis, 2020). In addition, there were also stark differences between the resources families in rural communities had access to compared to larger cities.

Black infant mortality rates during this time were more difficult to determine accurately (Ewbank, 1987). After enslavement and during Reconstruction, the Black Codes and Jim Crow

cultural and legal restrictions were born from racism and its false notions of White supremacy. Consequently, systems of institutional and systemic racism represented by the bureau posed unique and sometimes mortal challenges for Black families (Washington, 2008). Many Black families may not have wanted to or felt safe enough to consent to the new Federal Children's Bureau examinations, which may have been due to fears of assault, lynching, rape, or other inhumane treatment in recent memory (Washington, 2008).

In "History of Black Mortality Before 1940," Douglass Ewbank (1987) reported that an estimated range of 280 to 320 Black children for every 1,000 born died before their fifth birthday from 1850 to 1860. Given the inaccuracy of birth records at the time and other business dynamics impacting Black families that were formerly enslaved, it is estimated that the mortality of Black families was significantly higher than that of White counterparts of all ages. Specifically, Black child (infant) mortality was asserted to be more than 50% above the rate for rural Whites (Ewbank, 1987).

Between 1880 and 1900, an estimated 264 out of every 1,000 Black children born died by the age of 5 (Ewbank, 1987). Ewbanks's (1987) additional analysis used data from the 1900 census and the 1910 census and concluded that in the southern states, the estimated mortality range for children (infants) was 240 to 270 deaths per 1,000 births. In the northern states, the figures were closer to 300 deaths per 1,000 births. Ewbank (1987) noted that the figures were higher in northern states because Black families in urban centers were exposed to greater health risks. These figures highlight (a) the importance of tracking infant and child mortality rates, (b) the challenges associated with ensuring accurate data, (c) the disproportionate reality of infant and child mortality between Black and White families, and (d) the need for more federal intervention to protect infants and children.

The Sheppard-Towner Act of 1921

Legislative Overview of the Bill. The Progressive Era of the early 20th century invited social and political reform, which precipitated accelerated economic growth (Savage, 2020). Such progressive growth paved the way for the Industrial Revolution to establish a foothold within the former U.S. rural economy, which required different labor (human) resources. It was through the expansion of the Industrial Revolution that social ills were illuminated, particularly around adult and child labor and health conditions. These new social concerns created a need for the U.S. government to respond through strategy and policy (Savage, 2020).

The Children's Bureau of 1912 was initially designed to protect children from dangerous labor conditions and other forms of exploitation (Lemons, 1969). An unintended consequence of the work of the Children's Bureau was the discovery of significant social and health system deficits contributing to high infant and maternal mortality across the board (Savage, 2020). The primary purpose of the Children's Bureau was to address infant and maternal mortality while protecting children (Lemons, 1969). Regardless, the need for increased engagement and additional strategies to support the labor demands of the growing industrial economy has become a competing priority (Savage, 2020).

The Sheppard-Towner Act, also referred to as the Welfare and Hygiene of Maternity and Infancy Act or the Sheppard-Towner Maternity and Infancy Protection Act of 1921, was the U.S. government's response to the competing priorities of maternal and infant mortality and health and safety at the time (Warren & Kavanagh, 2023). The Sheppard-Towner Act was a comprehensive piece of legislation and the first that led the U.S. government to maintain a federal social security policy for U.S. citizens (Lewis, 2020). It was also the first piece of

legislation demonstrating the power of the women's lobby after the passage of the 19th Amendment to the U.S. Constitution, which granted women the right to vote (Lemons, 1969).

Jeannette Rankin, the first woman to serve in the U.S. Congress, introduced the precursor legislation to the Sheppard-Towner Act in the 65th session of Congress in 1918 (Lewis, 2020). The bill she proposed protected maternal and infant care, although it failed to gain traction. Senator Morris Sheppard, a Democrat from Texas, and Congressman Horace Towner, a Republican from Iowa, supported the previous bill proposed by Congresswoman Rankin and reintroduced the bill in the 66th U.S. Congress (Lewis, 2020).

The proposed bill gained traction and support from the growing federal women's lobby, including the League of Women Voters, the Women's Joint Congressional Committee, the National Consumers League, and the American Academy of Pediatrics. During this process, the American Academy of Pediatrics broke away from the American Medical Association due to the association's opposition to the bill, which was ultimately passed by the 67th Congress in the fall of 1921. Despite opposition from the National Society of the Daughters of the American Revolution, the *Journal of the American Medical Association*, the National Association Opposed to Woman Suffrage, the Woman Patriots, the Catholic Church, and the American Medical Association, President Harding signed the bill into law in November 1921 (Lemons, 1969).

The Medicalization of Black Birth Work. The Sheppard-Towner Maternity and Infancy Protection Act of 1921 facilitated the assignment of Black birth work to the medical profession (Lemons, 1969). The act sought to reduce infant and maternal mortality rates, and leaders in the field believed that this goal could best be achieved by fully medicalizing the perinatal process. This perspective was a major driving force behind the expansion of federal welfare policy in the 20th century (Lemons, 1969).

After the act was passed, its implementation was the next step in the medicalization process. The bill explicitly laid out provisions for how resources would be allocated, to whom they would be distributed, and how states would be compensated if they chose to incorporate the act's policies into their state-administered programs. Among the provisions were the following:

- The Children's Bureau would remain the lead agency.
- Federal programs would be designed to educate women about prenatal health, childbirth education, postpartum care, and proper infant care.
- State participation would be voluntary.
- A matching grant system would be developed to manage federal resources.
- Procedures were to be developed to reimburse states for implementing the act's provisions.

The act further defined, developed, and established a core group of functions that would assist the Children's Bureau in improving maternal and infant health conditions in the United States. Among the act's early accomplishments was a plan to provide instructional materials supporting maternal hygiene and infant care during the prenatal, antepartum, and postpartum phases of childbirth. This included (a) the distribution of educational materials on prenatal care, (b) the development of consultation centers, (c) convening conferences on childcare for professionals, (d) increasing the number of public health nurses and visiting nurses, and (e) the licensing and regulation of midwives. These functions were coupled with regulatory recommendations that would change the context and set the stage for the Black infant and maternal mortality epidemic for decades to come.

Public Health Nurses and Black Midwifery. A consortium of women suffragists and reformers, public health professionals, and laypersons (including mothers) primarily supported

the Sheppard-Towner Act, advocating for federal interventions and support (Lemons, 1969). Heralded as the first formal regulatory action passed after the success of the 19th Amendment to the U.S. Constitution, which granted women the right to vote, the Act was the nation's inaugural social welfare law (Lewis, 2020). The Children's Bureau was charged with directly providing federal matching financial support for its voluntary program to states. This funding was meant to pay for the Act's requirements and to ensure its implementation and efficacy (Lemons, 1969).

The primary deliverables for the Children's Bureau were creating educational materials and convening conferences for current professionals and those entering the maternal and infant health workforce (Lemons, 1969). The act called for the creation of maternal health centers to serve as community-based sources for maternal health education, perinatal education, and government support (Lewis, 2020). It was believed that these resources would help change the national narrative regarding maternal and infant care for families in the United States. While helpful, the actual purpose and driver was the deployment of public health nurses nationwide and the regulation of traditional Black midwifery, a key component in the medicalization of perinatal care (Goode & Katz Rothman, 2017).

A vital component of the Sheppard-Towner Act was the deployment of public health nurses to communities across the United States. Per data gathered by the Children's Bureau, 80% of expecting mothers reported that they did not receive prenatal care (Savage, 2020). This resulted in extraordinary overall rates of infant and maternal mortality, with exponentially higher rates of the same within Black communities. Through the Sheppard-Towner Act, the Children's Bureau attacked this issue by strategically deploying public health nurses in major metropolitan and rural areas (Savage, 2020).

During this time, Black midwives continued to manage many births (Washington, 2008). Between 1910 and 1930, it is estimated that overall, the official national percentage of births delivered by Black midwives dropped from an estimated 50% to 15%, with further declines occurring after the passage and implementation of the act (Goode & Katz Rothman, 2017). As late as 1950, nearly half of the infants born to Black families in southern regions of the U.S. were still being delivered by Black midwives (Goode & Katz Rothman, 2017). Despite this reality, the presumption made by the Children's Bureau was that public health nurses possessed the professionalism and expertise that traditional Black midwives lacked (Lemons, 1969). Even the Children's Bureau Chief Julia Lathrop was not shy about sharing her position on the importance of Black midwives, as she stated that the attention of a poor physician is more dangerous than that of a good midwife (Lemons, 1969).

Impact of Public Health Nurses. In the early 20th century, the U.S. government, with the support of the medical profession, sought to medicalize childbirth (Lewis, 2020). This urgent need stemmed from the changing economy and the demand for a more robust labor force to support such acute industry growth (Lewis, 2020). This medicalization resulted in the need to eliminate home births and firmly establish hospitals as the primary setting for childbirth (Goode & Katz Rothman, 2017). It also designated medical doctors and public health nurses as the primary contact points for expecting families (Lemons, 1969). As a result, public health nurses became government agents who marginalized home births and the Black midwives who attended them (Goode & Katz Rothman, 2017).

Public health nurses received training in a variety of roles in the 1920s. After discoveries by the Children's Health Bureau regarding extraordinary maternal and infant mortality rates, public health nurse training changed to respond to what was perceived as a public health deficit

(Lewis, 2020). The changes included additions specific to life cycle care, from pregnancy through adulthood, disease prevention and management, hygiene and sanitation, and sexual health (Lewis, 2020). Specifically, changes included the following:

- Disease prevention and control: Public health nurses received training on infectious disease protection, vaccination techniques, sanitation practices, and quarantine protocol.
- Maternal and child health: Public health nurses were trained in prenatal and postnatal care, health care services for infants and children, healthy pregnancies, lactation support, and child growth and development.
- Hygiene and sanitation: Public health nurses received training on proper hygiene practices, food safety, and waste management.
- Health education and promotion: Public health nurses were trained in delivering community health education programs, nutrition, sexual health, and mental health.
- Community outreach and advocacy: Public health nurses received training on community organizing, advocacy, and collaborating with local organizations and government agencies.

Once trained, public health nurses were deployed to address overall maternal and infant mortality reductions (Drake, 2023). They were also active in pushing the need for awareness of the importance of public health as a social construct (Lemons, 1969). This attempt at reform included delivering essential disease prevention and control protocols, food safety, and vaccination to rural communities to care for sick and pregnant patients (Drake, 2023).

These newly defined public health professionals were deployed to rural and metropolitan regions, as designated by the Sheppard-Towner Act. According to the act, each state played a

role in selecting the areas in most need (Savage, 2020). The dynamics of inequity and inequality played a primary role in how these decisions were made, with prioritization given to non-Black communities (Savage, 2020). Despite the bias in the deployment of public health nurses, the medical community at large disapproved of their involvement in obstetrics, as they were not medical doctors and not considered qualified to provide labor and deliver medical care, even though they were part of an established medical system (Lemons, 1969).

Impact of Public Health Nurses on Black Midwifery. The Sheppard-Towner Act sought to reduce maternal and infant mortality rates by improving access to perinatal care and public health nurses (Lemons, 1969). While the intent was progressive and noble, the act consolidated authority within the medical-industrial complex. This centralized model changed the narrative of perinatal care from one that was localized to one that was standardized and medicalized by the state (Goode & Katz Rothman, 2017).

Before the act, Black midwifery was a large part of health care in many communities, especially Black communities (Washington, 2008). Black midwives played significant roles in managing the mother's labor and the delivery of the infant(s). They provided dignified and compassionate care and worked to preserve cultural traditions and practices related to the sanctity of birth work (Washington, 2008). At the time of the act's passage, nearly half of all births in the United States were managed by Black midwives or other lay caretakers, with a higher rate of the same occurring in the southern states (Goode & Katz Rothman, 2017). The other half were attended by general surgeons or gynecologists who were not obstetricians (Goode & Katz Rothman, 2017).

The act provided new training and licensure requirements for Black midwives to medicalize and standardize childbirth (Lewis, 2020). The act required Black midwives to be

supervised, trained, and formally evaluated by public health nurses managed by the Children's Bureau. Black midwifery training requires competence in hygiene and sanitation, disease prevention, mitigation and control, maternal, infant, and child health, community engagement, and health education (Lewis, 2020).

An additional layer of scrutiny was added to ensure that Black midwives receiving training were of good moral character (Drake, 2023). Agents charged with implementing the act promoted the idea that a necessary measure of good character was religious practice and indoctrination. Protestantism, or Black Protestantism in particular, was used to determine whether a Black midwife had the moral capacity to legally practice midwifery in the new progressive era (Drake, 2023).

The use of religion as a standardized means of action also led to the recruitment of Black male pastors, who were used as paternal intermediaries to recruit and regulate Black women who worked as midwives (Drake, 2023). The Children's Bureau printed religious propaganda in the form of prayers, Bible verses, and hymns in approved midwifery manuals. These messages were intended to affirm midwifery as an honorable profession. Unfortunately, the U.S. government's focus on the moral fitness of Black midwives thwarted efforts to address the racial injustice and inequality that contributed to the high mortality rates in Black families. The decline and near elimination of Black midwifery progressed rapidly under the law (Drake, 2023). As a result, maternal and infant mortality rates remained high and even increased during this time.

Black Midwifery and Systemic and Institutional Racism

The medicalization of Black birth work was directly responsible for the eradication of Black midwives and birth attendants (Drake, 2023). The Sheppard-Towner Act led to a consolidation of the authority of the medical profession. As a result of this medicalization,

physicians and administrators gained more authority and influence as they worked to standardize childbirth practices (Ladd-Taylor, 1988). This led to the marginalization and exclusion of traditional Black midwives and other lay people who advocated for maternal and child health (Goode & Katz Rothman, 2017).

During this time, race-based discrimination was pervasive in federal and local public policy and practice, particularly in health care (Goode & Katz Rothman, 2017). The Sheppard-Towner Act stipulated that its funding would go to states to develop maternal and infant health programs (Lemons, 1969). Most, if not all, of these programs were administered by White medical professionals, who often ignored the knowledge and experience of Black midwives who had been assisting Black families in childbirth for generations (Goode & Katz Rothman, 2017).

The disregard for the expertise of Black midwives due to segregation and systemic and institutional racism was pervasive. Despite the supposed integrity of the act, Black midwives were denied access to organizational resources and educational opportunities. Over time, Black midwives were marginalized and undermined, decreasing their numbers and participation in Black birth work (Goode & Katz Rothman, 2017). For example, there was a perception that Black midwives were incompetent, unskilled, unhygienic, and heathen compared to their White counterparts (Goode & Katz Rothman, 2017). This prejudiced and biased perception was fueled by systemic and institutional racism and served to delegitimize the expertise of Black midwives and their place in the reproductive activities of Black families (Goode & Katz Rothman, 2017). In turn, such bias and prejudice prevented Black midwives from being recognized as qualified medical professionals who could serve Black families unhindered (Lemons, 1969).

The deployment of public health nurses was a dual-edged sword for Black midwives. Public health nurses pioneered perinatal care and outreach for needy families (Lewis, 2020).

They brought attention to the need for medical care in communities, particularly in rural areas where midwifery or another form of perinatal care may not have been available. Public health nursing pioneered community education, which was directly related to some decreases in infant and maternal mortality (Lewis, 2020).

Reviewing the work under Sheppard-Towner, the Children's Bureau conducted 183,252 health conferences and established 2,978 permanent prenatal care centers. Public health nurses made an estimated 3,131,996 home visits. The bureau also distributed 22,020,489 pieces of literature (Lemons, 1969). In the final years of the act, approximately 700,000 expectant mothers were reached, and 4,000,000 babies were born (Lemons, 1969).

The infant mortality rate in 1921 was 75 per 1,000 live births. The act reduced the infant mortality rate to 64 per 1,000 (Lemons, 1969). The maternal mortality rate was reduced from 67.3 per 1,000 in 1921 to 62.3 in 1927. While these accomplishments are noteworthy, they do not change the systemic and institutional racist practices that ultimately led to the decimation of the Black midwifery workforce and thus the current epidemic of Black infant and maternal mortality in Columbus, Ohio and elsewhere.

Empirical Contributions

Experiences of Black Women During Pregnancy: The Meaning of Perinatal Support. Birthing Beautiful Communities (BBC) of Cleveland, Ohio, founded by Christin Farmer, was created to provide comprehensive, holistic support to pregnant Black women to decrease Black maternal and infant mortality (Collins et al., 2021). BBC accomplished its mission through individualized and group-based engagement, focusing on providing services in underserved Black communities within Cleveland. In the study “Experiences of Black Women During Pregnancy: The Meaning of Perinatal Support,” BBC’s approach to providing perinatal

services to Black women was evaluated for its efficacy and impact on reducing Black maternal and infant mortality and corresponding comorbidities (Collins et al., 2021).

The phenomenological study targeted Black women's lived experiences as they received community-based perinatal support services from the BBC (Collins et al., 2021). The study took a deeper dive into what perinatal support meant to the Black mothers who participated and how that support helped reduce poor birth outcomes. Twenty-five Black women participated in the study, consenting to postpartum interviews, for which they were compensated modestly (Collins et al., 2021).

The guiding question during the interviews focused on how perinatal support professionals culturally supported them during their pregnancies. All 25 participants were Black women, with one exception, and all participated in the interviews from October 2017 through January 2018 (Collins et al., 2021). Only mothers over the age of 18 who used BBC perinatal support services and remained in contact with their allocated perinatal support professionals were eligible to participate (Collins et al., 2021).

Participating mothers ranged in age from 18 to 41 (Collins et al., 2021). On average, they were in their mid to late 20s and had given birth to at least one child, with a maximum of six children. At least 2/3 of the participating mothers had less than a high school education, and 1/6 of the cohort reported being legally married.

The phenomenological study by Collins et al. (2021) focused on the impact of the specific and culturally relevant support Black women received during pregnancy. The interview guide was developed in collaboration between the executive director of the BBC, the funders of the program, and the research team. The questions were also developed in collaboration with BBC staff so that they could comment on the mothers' experiences at initial referral and intake,

meetings with their assigned perinatal support specialist, pregnancy, classes, prenatal visits, delivery, and postpartum care.

The results of the interviews revealed three themes that directly impacted the perinatal experiences of the mothers interviewed (Collins et al., 2021). Participating mothers responded that they understood perinatal support to be the kind of support that is helpful in (a) easing the transition from pregnancy to motherhood, (b) reducing social isolation and other stressors associated with family growth, and (c) navigating the postpartum experience (Collins et al., 2021).

The mothers interviewed reported that they felt that the perinatal care professionals helped them to model important aspects of social support (Collins et al., 2021). Mothers shared that having a safe space to show their love and work through difficult relationship issues helped them emotionally. Other mothers noted that their assigned perinatal support professionals provided them with practical help and support, giving them information on how to obtain the things they needed for their newborns and how to navigate the sometimes complex social support system for Black families (Collins et al., 2021).

Collins et al. (2021) reported that their findings revealed the same or similar factors that other qualitative studies had produced by showing positive relationships between Black birth outcomes and culturally relative perinatal support. While this phenomenological study is essential and reflects the positive integrity of culturally appropriate engagements, it does not address other variables of concern. The study's limitations went beyond the small sample size, including other areas, such as actual mortality rate reductions for mothers and infants and the exclusion of input from fathers (for those mothers who were married or unmarried but coupled). Other limitations included a lack of information on comorbidities, NICU stays, preterm birth

data, and surgical birthing data. Even though these variables were not within the scope of this phenomenological study, they remain central to eliminating Black infant and maternal mortality.

Randomized Controlled Trial of Doula-Home-Visiting Services: Impact on Maternal and Infant Health. In 2010, legislative action provided federal funding for home visiting (HV) programs in the United States (Hans et al., 2018). The revised funding levels significantly increased in prior years. The new legislation established a set of expectations for the Maternal Infant Early Childhood Home-Visiting (MIECHV) program, mandating that HV programs demonstrate impact across multiple domains (Hans et al., 2018). The latest charge was rooted in newer findings showing that HV programs focused on socially and economically vulnerable families can positively impact maternal and infant health, parenting, child milestone development, and family self-sufficiency. Hans et al. (2018) completed the study "Randomized Controlled Trial of Doula-Home-Visiting Services: Impact on Maternal and Infant Health" to examine young socioeconomically challenged families receiving HV services compared to families receiving fewer intensive services. The goal was to determine if HV services improve maternal and infant health outcomes from birth to 3 months (Hans et al., 2018).

Recruitment for the study occurred between 2011 and 2015, and four facilities offering maternal doula HV programs in underserved communities in Illinois were selected for participation (Hans et al., 2018). Two programs were located in large metropolitan areas, the remainder in smaller urban centers (Hans et al., 2018). One program targeted Black families, another targeted Latinx families, and the other two targeted mixed-ethnic populations (Hans et al., 2018). The programs that served Latinx families eligible for the study did so in English and Spanish (Hans et al., 2018). Each agency actively utilizes an evidence-based model for home visits (Hans et al., 2018). The models used included Healthy Families America (HFA) or Parents

as Teachers (PAT). Both models were reportedly data-driven, fully funded by the state, and are not pilot programs with limited experience. The programs came from a network of federally funded HV programs, not demonstration programs (Hans et al., 2018).

To participate in the study, women had to be under 26 years old, less than 34 weeks pregnant, and live in a specific service area (Hans et al., 2018). Participants had to live in a predetermined service area and indicate whether they intended to continue living in that area. They also had to belong to a specific socioeconomic group, reflecting the specific risk factors for families living in poverty (Hans et al., 2018). Pregnant women under the age of 14 were excluded from the study for ethical reasons, but they were offered HV services instead (Hans et al., 2018). The research team arranged a baseline session with all eligible mothers. The session included a structured 2-hour interview, preceded by an introduction to informed consent. During the orientation, the researchers explained the ethical obligations and gave the mothers an overview of the clinical process, after which they completed an informed consent form. This orientation was conducted according to the guidelines of Hans et al. (2018). In the next phase, randomization tables were created separately for each area of the community. Families were compensated for participation and received a baby book and toy at each postpartum session. The Institutional Review Board approved all study procedures at the University of Chicago, and the study is registered at clinicaltrials.gov (Hans et al., 2018).

The study interviewed 256 mothers at 37 weeks of gestation, 283 mother at 3 weeks, and 278 mothers at three months (Hans et al., 2018). The sample attrition rate was unrelated to the program site, race/ethnicity, age, education, co-residence, or prenatal depressive symptoms (Hans et al., 2018). Additionally, there were no differences in sample attrition between the intervention and control groups.

Most participants in the baseline interview were young and low-income, with nearly half identifying as Black/African American (45%, *n* = 140) and just over a third identifying as Latina/Hispanic (38%, *n* = 117). A total of 11% of Latinx mothers who participated in the study preferred to be interviewed in Spanish (Hans et al., 2018). Most mothers were in their second trimester of pregnancy and were expecting their first child. More than two-thirds were partnered (coupled, engaged, or married) with the father of the baby (71%, *n* = 220; Hans et al., 2018). Co-residence with a parental figure was a control variable in all analyses (Hans et al., 2018).

Almost all mothers (99%, *n* = 153) in the doula HV group received at least one home visit (Hans et al., 2018). Of the mothers surveyed at 37 weeks, the mean number of doula visits they received before 37 weeks was 8.9 (with a standard deviation of 6.9), and the mean number of home visits they received was not reported (Hans et al., 2018). The results of logistic regression analyses with one-sided hypothesis tests (Table 2) show that mothers in the intervention group were more likely to attend a childbirth preparation class during pregnancy (OR 9.82, 95% CI 4.84–19.89) and less likely to use an epidural or other pain medication during labor compared to mothers in the control group (OR 0.47, 95% CI 0.25–0.88; Hans et al., 2018). The intervention was not associated with cesarean deliveries, maternal re-hospitalizations, or maternal postpartum depressive symptoms (Hans et al., 2018). The intervention was not associated with preterm births (GA < 37 weeks; Hans et al., 2018). The intervention also did not affect low birth weight, NICU admission, length of newborns' hospitalization, or infants' re-hospitalization. Almost all families in both groups reported having a pediatrician for their child (98%), and all mothers reported bringing their child for at least one check-up by 3 months of age (Hans et al., 2018).

Hans et al.'s (2018) study has many methodological strengths and limitations. The study used a limited sample size of only four programs in a single state. Because the data used in the study was collected through maternal reports and not administrative records, important information about medical procedures and outcomes during childbirth, such as health care provider qualifications and Apgar scores, was not available. The researchers also did not explore the individual contributions of the doula and home visitor teams, as each mother in the intervention group received care from both. The researchers also made assumptions about ethnicity, excluded fathers, and offered few intervention visits (Hans et al., 2018).

Alternative Prenatal Care Interventions to Alleviate Black-White Maternal/Infant Health Disparities. Adams and Thomas (2018) conducted a study on alternative prenatal care interventions to reduce Black-White maternal/infant health disparities. According to their findings, the United States ranks 26th out of 35 Organization for Economic Cooperation and Development (OECD) countries for overall infant mortality. It has the highest overall maternal mortality rate among developed nations (Adams & Thomas, 2018). As evidence, women generally report long waiting times, hurried appointments, and impersonal care. Hispanic women are specifically at a higher risk, with maternal and infant mortality rates twice and four times higher than non-Hispanic women, respectively (Adams & Thomas, 2018).

According to Adams and Thomas (2018), non-Hispanic Black women have consistently worse pregnancy and maternal outcomes than both non-Hispanic White women and other racial/ethnic minorities. This finding was supported by a 2010 study by Bryant and colleagues that examined racial/ethnic disparities in obstetric outcomes (Adams & Thomas, 2018). Researchers found that Black women had higher rates of fetal death, preterm birth, maternal

mortality, and maternal morbidity. The authors concluded that prenatal care and social circumstances were the most substantial contributors to maternal mortality.

A 2007 study conducted by Tucker et al. additionally determined that although there were no differences between Black and White women in the prevalence of five specific pregnancy complications, Blacks were two to three times more likely than Whites to die from them (Adams & Thomas, 2018). McDormand's overview of trends in infant mortality, fetal mortality, and preterm birth also found that non-Hispanic Black women are at the highest risk for these adverse birth outcomes (Adams & Thomas, 2018).

Researchers in this study used sociological theories to argue that the perinatal care structure in the United States disadvantages pregnant women, particularly African Americans (Adams & Thomas, 2018). It contends that alternative prenatal care interventions are of greater value to Black pregnant women than the standard prenatal care model. In this case study, I drew on intersectionality, medicalization, and fundamental causation theories to identify gaps in the literature critical of standard biomedical maternal health approaches.

THEORETICAL FRAMEWORK

Critical Race Theory as Applied to Black Maternal and Infant Mortality

Critical Race Theory (CRT) originated in the 1970s (Magdaleno & Bell, 2021). CRT is an academic framework that centers on the notion that racism is systemic and not just exhibited by individuals with prejudices. Born out of the activism of a "number of lawyers, activists, and legal scholars across the country" who believed that the progress of the 1960 Civil Rights era was being threatened, CRT became a way to interpret and challenge persistent racist or biased sociopolitical issues (Delgado & Stefancic, 2017). CRT's key originators include Derek Bell, Richard Delgado, Charles Lawrence, Mari Matsuda, and Patricia Williams (Magdaleno & Bell,

2021). CRT has become the polarizing lens through which various topics are observed, evaluated, discussed, validated, or invalidated. It is also the theoretical framework through which social challenges and epidemics, such as Black infant and maternal mortality, should be viewed. CRT posits that racial inequality is seamlessly integrated into U.S. systems, institutions, and structures without diversity and inequity (Magdaleno & Bell, 2021).

Although "diversity" is a commonly used term, it has been overused and cannot effectively motivate or compel institutional change. In some spaces, diversity refers to differences in race, culture, ethnicity, religion, socioeconomic status, sexual orientation, and ability. It can also include a diversity of thought and opinion, typically born from characteristics (Weinland, 2017). Using a CRT lens to analyze the PoP helps to uncover the marginalized standard of care that is consistently imposed upon Black families in obstetrics and gynecology.

In the context of addressing Black infant and maternal mortality and the use of community-based solutions as interventions, much of this has been demonstrated. This demonstration also applies to the way public policy is designed at every level and how its rules are promulgated. State-level racial inequities that exist within societal conditions are associated with specific racial inequities in Black maternal and infant mortality at the state level (Wallace et al., 2017). In terms of social injustice and this PoP, the lack of appreciation of diversity principles directly impacts the PoP. The inequity among staffing in relation to Black health care professionals demonstrates the lack of such diversity. This disparity can be seen in obstetrics and gynecology among physicians, nurses (registered and advanced registered nurses), and other healthcare professionals (doulas, perinatal support doulas, midwives, etc.). Diversity deficits lead to social injustice that amounts to systemic obstetric racism in perinatal care.

In “Separate and Unequal: Structural Racism and Infant Mortality in the US,” Wallace and colleagues (2017) highlighted that “socioeconomic indicators of structural racism – racial inequity in educational attainment and employment – were negatively associated with Black infant and maternal mortality, and that these relationships persisted above and beyond levels of poverty, education, and unemployment within the state's population” (2017). While the Wallace study emphasized the condition of individual U.S. states and infant and maternal mortality, one can extrapolate the same and similar findings for Columbus, Ohio, based upon Ohio’s recognition of the same disparities.

CRT as a framework is not a single solution to be applied generally when attempting to understand the issues surrounding Black infant and maternal mortality. In some cases, the use of CRT can be counterintuitive if used in a manner that includes groups other than Black’s in the U.S. Americans (Britannica, 2024). An example is the notion of intersectionality or antiessentialism, wherein no individual can be restricted to a single group or to a single characteristic identified by membership in a single group because doing so changes the spirit of the CRT paradigm (Britannica, 2024). Within the current national landscape, a Black person in the U.S. can choose to identify their gender, orientation, religion, or other designation that then changes the integrity of CRT and its application to race-based social matters.

Furthermore, some CRT scholars call it *interest convergence* or *material determinism* when identifying how so-called positive movements related to racial progress as applied to Black Americans still tend to serve the interests of the dominant white groups (Britannica, 2024). However, according to Chandra Ford and Collins Airhihenbuwa, “the application of critical race theory and racial equity models could move the field toward an antiracist praxis” (as cited in Owens & Fett, 2019). An application of CRT to this problem of practice— *the epidemic of Black*

maternal and infant mortality in Columbus, Ohio — supports the assertion that obstetric racism is a real problem and that, in many instances, it can be reduced or eliminated.

Deficit Ideology Applied to Black Maternal and Infant Mortality

Deficit ideology, as a construct, holds individuals from historically marginalized groups responsible for their current realities (Davis & Museus, 2019). This victim-blaming perspective exists despite the canons of history pointing to the contrary. In his 2016 article "Poverty and the Ideological Imperative: A Call to Unhook from Deficit and Grit Ideology and to Strive for Structural Ideology in Teacher Education," Paul Gorski challenged this inaccurate position. For example, Gorski (2019) focused on the detrimental impact of the deficit perspectives of (Black) students on teaching and learning outcomes. Gorski (2019) stated that when it comes to matters regarding social injustice, socioeconomics, and poverty, especially criminal justice, "the preparation of teachers must be first and foremost an ideological endeavor, focused on adjusting fundamental understandings not only about educational outcome disparities but also about poverty itself" (Gorski, 2019).

Language ideology is a factor in communication between systems, institutions, and individuals (Gorski, 2019). Regardless of their positive or negative effects, these ideologies remain permanent because they have become normalized (Johnson & Johnson, 2021). This normalization occurs through the repetition of the use and saturation of this language in interpersonal dynamics, in the jargon of institutions and systems, and in culture. When a language ideology is adversely affected by a dominant culture and gradually normalized socially and politically, its characteristics can be transferred into any discipline susceptible to its oppressive use (Johnson & Johnson, 2021).

Language ideology and deficit ideology have a natural synergy with and a role in an analysis of obstetric racism and its impact on Black maternal and infant mortality disparities. Just as educators need to be grounded in teaching strategies that promote optimal learning opportunities for students, medical professionals must also be free of bias and provide the best health care to families (Crear-Perry et al., 2014). It is the absence of such respect for patients that breeds opportunities for obstetric racism, low prioritization of obstetric care, or responses to acute needs during obstetric care, and the disproportionate rate of Black maternal and infant mortality (Scott et al., 2019).

LOCAL CONTEXT

Nationally, in 2021, Black infant mortality was 2.3 times the infant mortality rate of non-Hispanic Whites, with a maternal mortality rate that is three times that of their White counterparts (Columbus Public Health, 2022). In the state of Ohio in 2021, Black families had 3.4 times the infant mortality rate and a maternal mortality rate that was 3.5 times that of White families (Columbus Public Health, 2022). Columbus, Ohio's Black families had infant deaths at a rate that was 3.7 times the infant mortality rate of non-Hispanic Whites, with maternal mortality rates mirroring the state of Ohio rates (Columbus Public Health, 2022). These facts were the primary reason for the decision to address the local version of this epidemic in Columbus, Ohio.

Black Maternal and Infant Mortality in Ohio

In 1985, the U.S. Department of Health and Human Services issued the Secretary's Task Force Report on Black and Minority Health (Nickens, 1986). The report was direct in its analysis of the state of minority health in the United States. Disparities in health status, primarily between

citizens defined as Black and White, were highlighted as significant variables in health inequity. Nickens (1986) shared some findings from the report:

> "Infant mortality in the United States has dropped dramatically since the turn of the century, from about 10 percent then to about 1 percent today. Unfortunately, the black infant mortality rate has remained about twice that of the white rate: 20 per 1,000 for blacks, 10.5 for whites in 1982… Subdivision of infant mortality into neonatal (less than 28 days) and postneonatal (28 days to 1 year) shows a similar unfavorable black ratio." (Nickens, 1986, p. 578).

In 1986, in response to the disparities documented in the federal report, Ohio's Democratic Governor, Richard F. Celeste, created the Governor's Task Force on Black and Minority Health as a unique project within the Ohio Department of Health, empowered through Executive Order 85-69 (Ohio Commission on Minority Health, 2022). The Governor's Executive Order charged the Task Force with (a) examining the conditions under which gaps in health care services existed for Black and minority families, (b) developing methods for communicating health information and other outreach materials specific to minority communities, (c) creating strategies to improve access to health and wellness services, (d) developing strategies to improve health care availability, and a few other pro forma tasks legally required by the Executive Order (Ohio Commission on Minority Health, 2022).

The report produced a total of nine recommendations, all presumably targeted at addressing and eliminating disparities between the health quality of Blacks and Whites. In addition to the nine recommendations, the report gave birth to the new Ohio Commission on Minority Health. The new Commission was designated as the autonomous state governance vehicle through which task force recommendations were to be executed, implemented, and

operationalized. Such an implementation was intended to be in support of eradicating disparities between the health quality of Blacks and Whites, particularly the elimination of Black health inequity (Ohio Commission on Minority Health, 2022). Central to the task force's recommendations was a call to address Black infant mortality. For example, Recommendation 2 proposed the following:

> "[To] reduce infant mortality by expanding Medicaid eligibility for pregnant women to the federal poverty level as provided by federal program standards and implementing programs that will ensure reduction in infant mortality through outreach, public education and case management of high-risk minority women" (Ohio Commission on Minority Health, 2022, p.2).

Two decades later, in 2014, Linda Martz of the Gannet publication *Telegraph* reported, "Ohio ranks 47th among the 50 states for its high rate of infant mortality." In 2017, the study "Improving Maternal and Infant Child Health Outcomes With Community-Based Pregnancy Support Groups": Outcomes from Moms2B Ohio noted "in Ohio, infant mortality among African Americans ranked 50th in the nation, at 16/1000 (Gabbe et al., 2017). An article published by the *Columbus Dispatch* in 2018 also reported on the infant mortality epidemic for Black families. The article "Ohio near bottom in Black infant mortality: Rate more than double that of white babies" stated, "Ohio ranked next to last among the 50 states and the District of Columbia with 13.46 deaths for every 1,000 live births to black mothers from 2013 to 2015" (Candisky, 2018). The overarching understanding in the state of Ohio is that it has significant challenges related to Black maternal and infant mortality, with very little expertise or intent to truly impact it positively.

Black Maternal and Infant Mortality in Columbus, Ohio. In 2009, the World Health Organization initiated a commission to evaluate the social determinants of health (Crear-Perry et al., 2021). The idea was to ignite and drive a global movement to address the ecosystems into which people are born, grow, live, work, and age (Crear-Perry et al., 2021). In their 2021 study, "Black Women's Perspectives on Structural Racism across the Reproductive Lifespan: A Conceptual Framework for Measurement Development," Chambers and colleagues found that repeated exposure to institutional and systemic racism was one of the leading risk factors for maternal and infant mortality among health outcomes among Black women. Furthermore, they highlight the "interplay among structural racism and social and structural determinants of health that has a negative impact on Black women's sexual and reproductive health" (Chambers et al., 2021).

In "The Ethics of Perinatal Care for Black Women: Dismantling the Structural Racism in 'Mother Blame' Narratives," Karen Scott, MD, and colleagues (2019) observed that the American College of Obstetricians and Gynecologists, the American College of Nurse-Midwives, and the American Academy of Nursing all acknowledged that there were unacceptable health disparities in maternal and infant health (Scott et al., 2019). Consistent with the findings from the application of CRT, Scott et al. (2019) determined that "new models of care" were needed to reverse the current disproportionate trend of mortality among Black families. Furthermore, in order to address this issue directly, contemporary models of care and intervention "must be structured on appropriate ethical principles for serving Black families" (Scott et al., 2019).

Black maternal and infant mortality in Columbus, Ohio, has persisted as a significant public health disparity for decades (Columbus Public Health, 2022). A study published in the

Journal of the American Medical Association by Laura G. Fleszar, MPH, and colleagues (2023) highlighted the significant disparity in mortality rates when Black families were compared to their White counterparts. "Trends in State-Level Maternal Mortality by Racial and Ethnic Group in the United States" noted that over the past few decades, maternal and infant mortality in other comparable industrialized countries has decreased, while concurrently in the United States, it has increased, despite spending more per person on health care (Fleszar et al., 2023).

Fleszar et al. (2023) highlighted the stark difference between the increase in mortality rates of Blacks and Whites, noting that for every year from 1999 to 2019, the Black population had the highest median mortality rate in the state every year from 1999 to 2019. In Ohio, Black women were 2.2 times more likely to die from a pregnancy-related cause of death between 2008 and 2017, and the maternal mortality rate was 1.85 times higher than that of White women (Columbus Public Health, 2022). These numbers are consistent in Columbus, Ohio.

Disparities in access to health care and living conditions such as housing, transportation, and income, as well as the cumulative effects of toxic stress and discrimination, all contribute to stark disparities in mortality outcomes across the state from 2018–2021 due to the pervasive structure of obstetric racism (Scott et al., 2019). Obstetric racism refers to systemic and structural racism within the healthcare system in relation to pregnancy and childbirth (Scott et al., 2019). It refers to the discrimination, bias, applied deficit ideology, inequity and unequal treatment of Black families during pregnancy, childbirth, and postpartum care.

The use of CRT to analyze Black maternal and infant mortality in Columbus, Ohio, demonstrates the need for more of the same type of analysis in other areas. Leaders in Columbus, Ohio, acknowledge that "Columbus has one of the highest infant mortality rates of America's 50 largest cities" (Columbus Public Health, 2022). Each year in Franklin County, "…approximately

150 babies—enough children to fill five kindergarten classes – die before reaching the age of one" (Greater Columbus Infant Mortality Task Force, 2014). This fact is supported by recent reports published by the Central Ohio Public Health Authority, showing that the disparity between Black infant births and White infant births has increased from a ratio of 3:1 to a ratio of 4:1 (Columbus Public Health, 2022).

A comprehensive understanding of how racial inequities in health have evolved with respect to Black reproductive health requires a historically accurate and contextualized framework and an identification of the United States as an unequal and inequitable society (Wallace et al., 2017). A review of the chronology of Blacks in the U.S. in the United States reveals that overall infant death rates have declined since the 19th century (Owens & Fett, 2019). Despite this fact, Owens and Fett (2019) observed in their article "Black Maternal and Infant Health: Historical Legacies of Slavery" that the mortality gap between Black and White infant (and maternal) deaths is higher today than it was during antebellum enslavement. The authors also mention that, according to the estimates of historical demographers, "in 1850, enslaved infants died before one year of age at a rate 1.6 times higher than that of White infants (340 vs. 217 deaths per 1000 live births)" (Owens & Fett, 2019). Owens and Fett (2019) further offered as a comparison that the Centers for Disease Control and Prevention's figures from 2016 supported this position by showing current statistics that reported "non-Hispanic Black infant mortality as 2.3 times higher than mortality among non-Hispanic White babies, 11.4 deaths and 4.9 deaths, respectively" (Owens & Fett, 2019).

Black birth work is a fundamental part of the domestic context of Black families in the United States. It has an origin that predates the enslavement of Africans (Davis, 2019). It is easy to delve into the complexity of enslaved Africans in the United States through capture,

enslavement, trafficking, murder, rape, sexual exploitation, pedophilia, and commoditization, among others, for centuries (Washington, 2008). While doing so has merit and may be relevant, this case study focused on what occurred in Columbus, Ohio, from 2018 to 2021. The reason for choosing this time frame is related to the period in which ROOTT began services in Columbus, Ohio, as well as the timeline for the release of report data from the city, county, and state health departments.

Greater Columbus Infant Mortality Task Force Final Report and Implementation Plan

In 2014, the mayor of Columbus, Ohio, Michael B. Coleman, was officially the longest-serving Black mayor in Columbus' history. His political opponent, City Council President Andrew J. Ginther, a White man, was a former school board member and an ambitious political figure preparing to run for mayor (to succeed Mayor Coleman). Building on the foundation laid by his predecessor, Mayor Ginther convened the Greater Columbus Infant Mortality Task Force Final Report and Implementation Plan (2014).

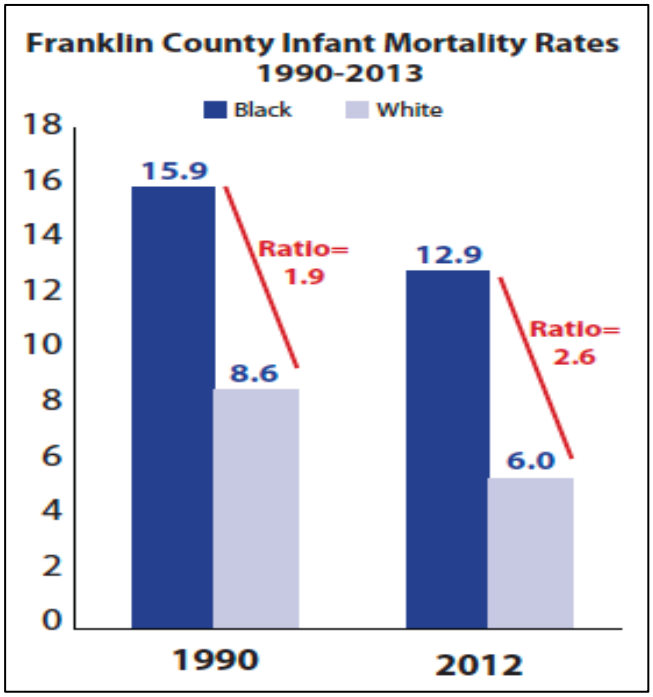
The task force co-chairs were influential Columbus business and public health community members. The effort was funded by Columbus Public Health, Nationwide Children's Hospital, Franklin County Commissioners, and the Columbus Foundation. The task force met for 6 months and was charged with reducing infant mortality by 40% and cutting racial disparities in half by 2020 (Greater Columbus Infant Mortality Task Force, 2014). Efforts to improve maternal health were limited to improving prenatal care.

It is important to remember that the primary motivation for the creation of the task force was to respond to the epidemic of infant mortality among Black families (Greater Columbus Infant Mortality Task Force, 2014). After the task force was formed, the goal was dichotomized by changing the original approach from reducing Black infant mortality to reducing overall

infant mortality. To mitigate the impact of this change, the organizers added the goal of addressing the racial disparity between Black and White infant mortality rates as a secondary goal. This decision was counterintuitive to the data the task force publicized to validate their existence and actions (see Figure 1; Greater Columbus Infant Mortality Task Force, 2014). Task

Figure 1

Franklin County Infant Mortality Rates, 1990–2023



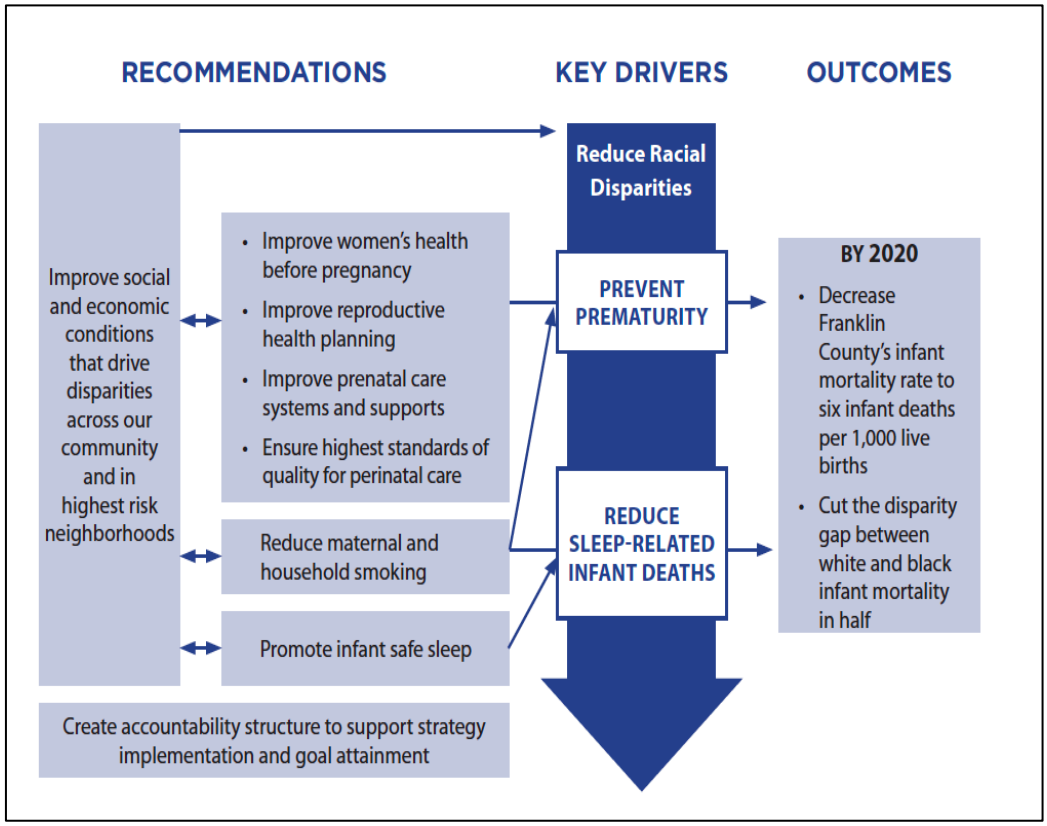
force statements supporting this assertion include the following data points for Black residents of Columbus, Ohio:

- 32% live in poverty, compared to 13% of White residents.
- 14% receive food stamps, compared to 11% of White residents.
- 16% are unemployed, versus 6.6% of White residents.
- Nearly 14% do not have a high school education, compared to 9% of White residents.
- 71% are among the homeless population served by the shelter system. (Greater Columbus Infant Mortality Task Force, 2014)

Task Force Recommendations. The mayor's task force was structured to integrate selected community stakeholder input. Stakeholders included representatives of the health care system as well as municipal and private service providers and departments. The task force also engaged the "Franklin County Community Health Coordination Infant Mortality Committee, home health care providers, educators, social service agencies, Black faith leaders, neighborhood leaders from high-risk areas, and expectant and new mothers" (Greater Columbus Infant Mortality Task Force, 2014). The recommendations from the task force (Figure 2) were to accomplish the following objectives:

Figure 2

Recommendations, Key Drivers, Outcomes



1. Improve the social and economic conditions that drive disparities across our community and in the highest-risk neighborhoods. This recommendation included engaging and mobilizing neighborhood-level initiatives and aligning strategies and resources to improve social and economic conditions.
2. Improve women's health before pregnancy by increasing enrollment in private and public health insurance and focusing on preventive care, starting with adolescents.
3. Improve reproductive health by emphasizing reproductive health planning in prenatal/postpartum care and increasing access to and use of long-acting reversible contraception.
4. Improve prenatal care services and support by increasing women's early entry into prenatal care and by ensuring prenatal care access and capacity, especially for high-risk women.
5. Ensure the highest quality standard for perinatal care by increasing access to progesterone, decreasing early elective deliveries, and ensuring neonatal intensive care quality.
6. Reduce maternal and household smoking by helping women quit smoking while pregnant and after giving birth. This recommendation also included a call for smoke-free policies in multiunit housing facilities.
7. Promote infant safe sleep through education and awareness, emphasizing safe sleep, breastfeeding during prenatal care, and access to cribs for low-income families.
8. Create a collective impact and accountability (Figure 3) structure to support strategy implementation and goal attainment. (Greater Columbus Infant Mortality Task Force, 2014).

Figure 3

Strategies, Key Activities, Lead Entity, Year 1

Strategies	Key Activities	Lead Entity	Year 1
Key elements of the plan to accomplish the recommendation	Specific action steps that should be taken to implement the strategy	Entity responsible for convening appropriate partners; ensuring work plan development and progress monitoring for a particular strategy	A YES in this box indicates this strategy is prioritized to begin in the first year of plan implementation

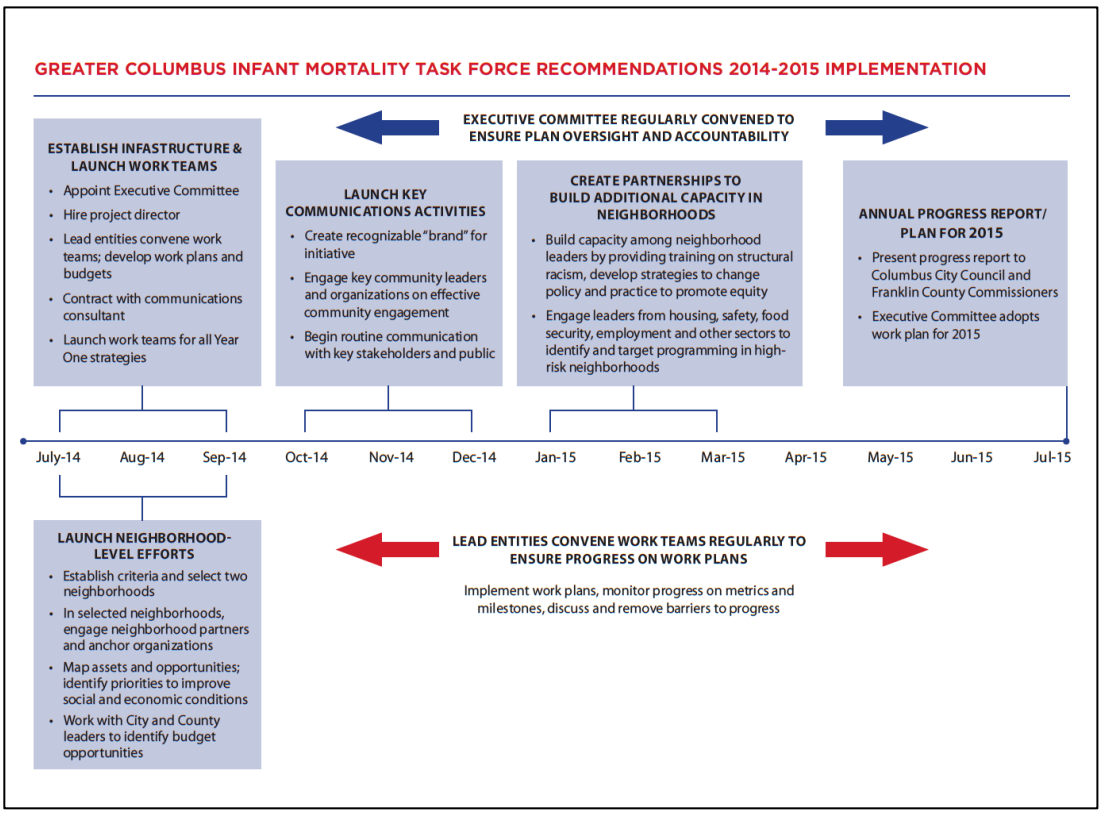
Implementation and Financing of Recommendations. Recommendation 8 led directly to the creation of the lead entity responsible for the comprehensive implementation of the recommendations. CelebrateOne, the lead entity, guided the first year's strategies and established itself as the umbrella organization that, in theory, would galvanize cross-disciplinary resources and oversee implementation. Specifically, CelebrateOne would "create a recognizable "brand" for Columbus' infant mortality reduction initiative" and "routinely communicate with the community about (its) initiatives and progress" (Greater Columbus Infant Mortality Task Force, 2014).

CelebrateOne's administrative and fiscal structure was intentionally created as a public and private hybrid structure, making access to public records challenging. The Greater Columbus Infant Mortality Task Force (2014) explicitly stated that their work would require "new partnerships, realignment of community resources and (the) creation of a community accountability structure to ensure that the task force's recommendations are successfully implemented" (Figure 4). Moreover, the Greater Columbus Infant Mortality Task Force (2014) expressed an understanding that in order to achieve its outcomes, it "must pursue a collective

approach by which we set clear goals and a common agenda for achieving those goals," thereby making it clear that "performance metrics and measurement systems" should be created to support "communication and coordination" throughout the project.

Figure 4

Greater Columbus Infant Mortality Task Force Recommendations 2014–2015

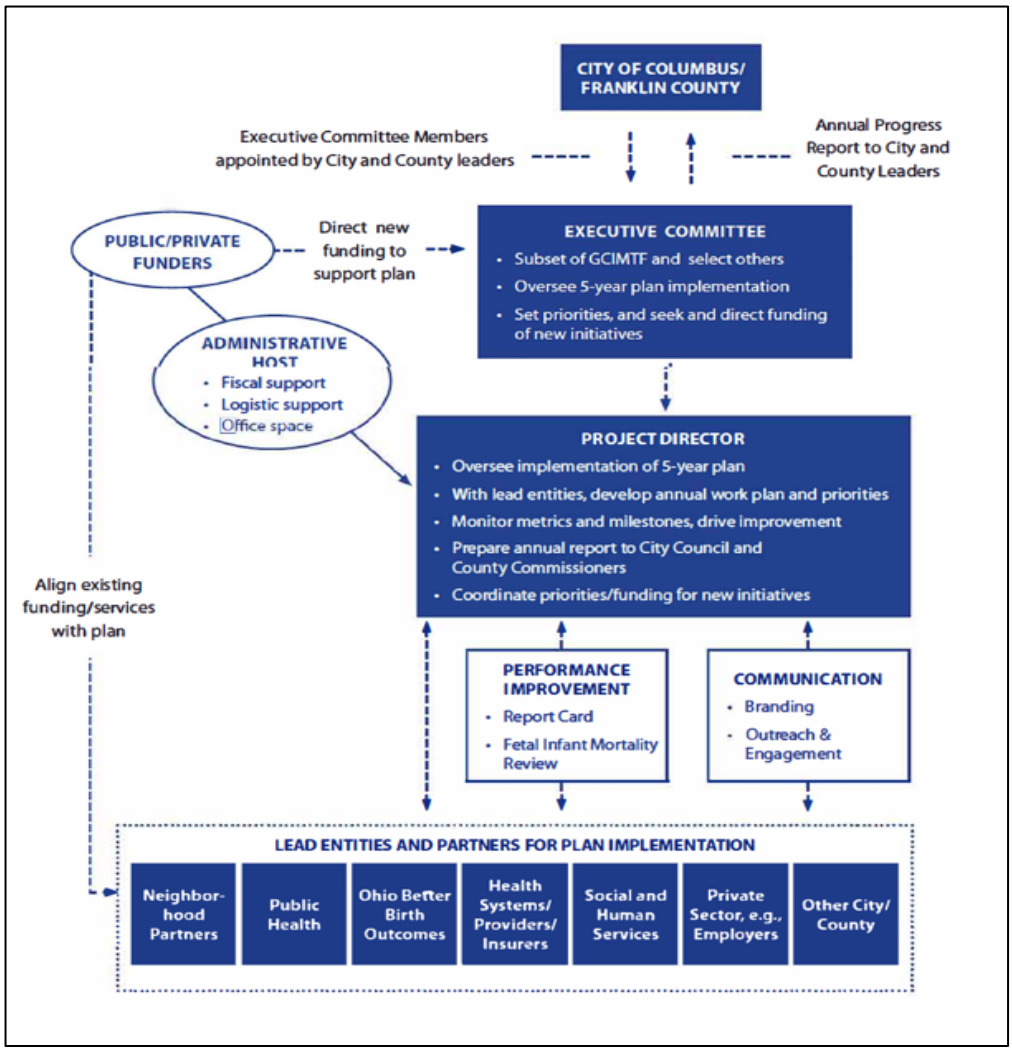


The Greater Columbus Infant Mortality Task Force (2014), which recommended the CelebrateOne initiative, has been active since 2016. It has produced many reports and provided several updates at regular intervals. Despite their efforts and government oversight (Figure 5), they have yet to make significant progress in reducing or eliminating Black maternal and infant

mortality (CelebrateOne, 2022). Their success lies in reducing the infant mortality rate among White infants (CelebrateOne, 2016).

Figure 5

Executive Committee Members



This case study focused on the results of ROOTT's PSD model, an effective community-based alternative to the failed Greater Columbus Infant Mortality Task Force recommendations. The ROOTT model had been successful but was practically and politically ignored by CelebrateOne or any other city-supported and funded organizations in Columbus, Ohio, during the same period.

Case Study Analysis

This case study examined the extent to which the ROOTT intervention was able to eliminate Black maternal and infant mortality in Columbus, Ohio. While the goal of complete elimination is bold to some, it is not unrealistic or impossible to eliminate unnecessary losses or even some mislabeled catastrophes that occur due to obstetric racism (Scott et al., 2019). Despite the ambition to eliminate Black maternal and infant mortality or the fact that some poor outcomes are mislabeled as catastrophes, this does not mean that catastrophic birth outcomes do not occur. However, the point is that what is preventable can and should be prevented, and one way to mitigate such disasters is to conduct the necessary analysis that leads to viable solutions, including new models of care (Scott et al., 2019).

The problem of practice—*the epidemic of Black maternal and infant mortality in Columbus, Ohio*—and the proposed theory of improvement—*the use of ROOTT as an innovative and effective community-based solution to eliminate Black maternal and infant mortality in Columbus, Ohio*—produced the following research questions (RQs):

1. Did the ROOTT perinatal support doula (PSD) model eliminate maternal mortality events among families served between 2018 and 2021?
2. Did the ROOTT PSD model eliminate infant mortality events among families served between 2018 and 2021?
3. Did the ROOTT PSD model decrease incidents of postpartum events among families served?

These questions are direct and designed to address the primary intent of competent, safe, informed, and culturally concordant obstetric and gynecological care.

RESTORING OUR OWN THROUGH TRANSFORMATION (ROOTT)

Founded in 2017, ROOTT is a community-based organization responding directly to the epidemic of Black maternal and infant mortality in Columbus, Ohio. ROOTT was intentionally created to succeed, while the Greater Columbus Infant Mortality Task Force and its recommendations to create and implement CelebrateOne failed. ROOTT is a public health organization comprised of a collective of concerned Black families, community members, advocates, and interdisciplinary professionals who are committed to significantly reducing maternal and infant mortality, its comorbidities, and corresponding disparity rates. ROOTT currently has a Black maternal and infant mortality rate of 0%, which has been maintained since its inception in 2017 (ROOTT, 2022). This exceeds the targets set by the federal Healthy People 2030 initiative for reducing child and maternal mortality overall, and in particular for reducing Black maternal and infant mortality (ROOTT, 2022).

ROOTT obtained several outcomes in the areas of maternal comorbidity, maternal surgical births and labor inductions, NICU admissions, preterm births, low birth weight, and adverse postpartum events. ROOTT has achieved these results with the help of its own PSD model of care. The PSD model of care explicitly addresses the health disparities and obstetric racism that exist in current medical perinatal systems of care and that disproportionately affect Black families (ROOTT, 2022). A doula, by definition, is a woman who is trained to counsel, inform, and provide emotional and physical comfort to a mother before, during, and after the birth of her child. The word *doula* comes from the Greek word *doulē*, which means female helper or maidservant (ROOTT, 2022). However, ROOTT PSDs differ in scope and training. While ROOTT's PSDs are not certified midwives, they are clinically trained in perinatal education, clinical and non-clinical interventions, African and Black American historical

birthwork31, medical terminology, lactation and breastfeeding education and support, medical ethics, human anatomy and physiology, and more.

Mission and Values

ROOTT's mission is to "comprehensively restore our collective well-being through collaboration, resource allocation, research, and re-empowerment to meet the needs of Black families within communities" (ROOTT, 2022). ROOTT positively impacts Black families in the following ways:

- Delivering an equitable PSD model of care services exclusively to Black families, targeting health inequities.
- Advocating for federal, state, and local public policy changes related to health and wellness and Black maternal and infant mortality and vitality.
- Providing professional development opportunities for perinatal medical personnel and critical local and national stakeholders.
- Going beyond surface-level risk factors related to marginalized mothers, fathers, infants, and communities in addressing the core causes of Black maternal and infant mortality and vitality.
- Directly addressing the structural and systemic determinants of health, including the institutional racism that creates and perpetuates the social determinants of health and obstetric racism.
- Collaboratively building quality relationships with families, caregivers, professionals, and paraprofessionals in alignment with their mission (ROOTT, 2017).

By adhering to its core values and by serving as a counterbalance to Black health inequity, the goal of eliminating Black maternal and infant mortality can be achieved. ROOTT's values (Figure 6) that aid its PSD model of care include:

Figure 6

ROOTT Core Values

ROOTT core values	
Perinatal services	✓ ROOTT provides full-spectrum, family-centered perinatal support doula (PSD) services. ✓ Services are anchored in the traditions of Black birth work and include: o perinatal education o clinical advocacy and support o nutrition counseling o health information advocacy o lactation and breastfeeding education and support o postpartum services
Family engagement	✓ ROOTT engages families, not just pregnant mothers. ✓ ROOTT assumes that families have the necessary agency and empowerment to support their healthy birth outcomes.
Resource allocation	✓ ROOTT prioritizes its resources to support life domains that, if left unaddressed, may contribute to adverse birth outcomes: o housing stability o access to nutritional food options. o employment and educational resources o transportation o social injustice support and advocacy
Personnel and professionalism	✓ ROOTT's Black PSDs are clinically trained in the following fields: o perinatal education o clinical and non-clinical interventions o African and Black American historical birth work history o medical terminology o human anatomy and physiology o mitigation of comorbidities o family advocacy o medical ethics o lab interpretation o lactation and breastfeeding education and support o communication and de-escalation techniques o community resource allocation o financial planning and assistance o technology integration
Data integrity	✓ ROOTT collects and tracks its data independently, making it available at regular intervals. ✓ ROOTT uses internal and external epidemiologists for data evaluation.

This level of focus supports ROOTT's community-based intervention that has eliminated Black maternal and infant mortality and related disparities in Columbus, Ohio.

Perinatal Support Doula Model of Care

ROOTT is a collaborative of interdisciplinary professionals and community members dedicated to uplifting the Black family from a social justice perspective using the lens of CRT. ROOTT understands that structural and institutional barriers of racism make worse the outcomes Black families experience when social determinants of optimal health are unmet. ROOTT's innovative and practical approach integrates its culturally and historically informed model of care into the current healthcare context by addressing racism as the primary health risk factor rather than race, which consequently supports the re-empowerment of Black families and communities.

The integration of ROOTT's strategies for perinatal support services throughout the health care system has directly impacted the perspective of birth equity in Central Ohio. ROOTT's model applies a holistic approach to creating a safe birth ecosystem by addressing the physical, psychosocial, economic, and environmental needs of Black families. The ROOTT philosophy focuses on the health of Black families from a health equity perspective wherein in is believed that by pooling resources, empowerment, and community action, we can address our health disparities for ourselves and by ourselves. Integrating ROOTT's perinatal support services into existing health services and systems as an evidence-based intervention impacts maternal health, infant health, birth outcomes, family (patient) satisfaction, health care experiences, costs, and breastfeeding outcomes by developing relationships from planning and preconception or early pregnancy, through postpartum care. PSDs are equipped to take on the following diverse roles:

- Establish and provide nutritional evaluation and support.
- Evaluate psychosocial needs, connect families to culturally relevant and respectful services (mental health, housing, employment, early childhood intervention, etc.), and provide advocacy and support for family validation and re-empowerment.
- Identify early signs, symptoms, and risk factors for maternal health through clinical assessment and documentation.
- Establish frequent and direct lines of communication with primary care providers to provide recommendations and support between prenatal appointments.
- Be certified lactation consultants.

ROOTT Model Data Collection and Efficacy

ROOTT collects data directly from the families it serves. This process includes the collection of interview data from families to support their work and measure critical outcomes (e.g., prenatal, postpartum, intrapartum, and breastfeeding support), as well as collecting clinical data specific to each family engagement. The effectiveness of ROOTT's PSD model has significantly reduced maternal and infant morbidity and mortality rates:

- Create a sustainable capacity to provide direct services to Black mothers, fathers, and children to create health equity and enable health care providers to engage families through a patient-centered perspective.
- Focusing on Black mothers and families, specifically in Columbus, Ohio, re-empowering families through guided individual health literacy instruction, education, and modeling that supports informed decision-making. Families then develop a personalized understanding of their rights, responsibilities, and options that support their informed decision-making.

ROOTT has also integrated the Patient Reported Experienced Measure of Obstetric Racism Scale (PREM-OB Scale™). The PREM-OB Scale™ is the first and only patient-centered quality improvement (QI) measure developed in 2019 for, by, and with Black-led community-based organizations (Scott et al., 2019). The PREM-OB Scale™ allows Black families to share information about their unique patient experiences in the hospital and clinic during labor, delivery, and the pre- and postpartum period. The information gleaned from the PREM-OB Scale™ helps hospitals, health plans, researchers, funders, and the public better understand how obstetric racism and other forms of neglect and mistreatment impact the way hospitals care for, serve, and support Black families (Scott et al., 2019). Finally, ROOTT uses its TreEHR™ technology to support the clinical integrity of its work. TreEHR™ is a customized electronic health record developed by ROOTT to increase efficiency. TreEHR™ platform is seamless and supports clinical and non-clinical PSD care and communication with perinatal care teams in Central Ohio hospitals (ROOTT, 2022).

POSITIONALITY

My position is that community-based organizations that are competent and proven to be effective should be included in solutions that address public health inequities. As an early advocate and current employee of ROOTT, the epidemic of Black infant and maternal mortality is unquestionably something I consider a priority. My decision to conduct this case study is situated in my personal value proposition that obligates me to utilize my talents and skills in support of Black communities and families. Furthermore, the intentional social injustice of this epidemic, supported by the results of my literature review, has shown that Black families *enjoyed* a greater percentage of live births and sustained live births during enslavement than we do

currently in a presumptive-free state. This point alone was heavy enough for me ring the alarm of inhumanity as it relates to obstetrics and gynecological care for Black families.

Unfortunately, the alarm has not been ringing loud enough, and community-based organizations that are effective are being excluded from actually providing services to the families they know how to serve. As a Black man who is a father of two and grandfather of five, with a heterosexual orientation, my investment in this case study is weighted heavily. In my professional experiences working as a public health policy advocate and administrator, I've found that Black family reproductive freedom, agency, and autonomy are my biases in this case study and at the same time my strengths. These strengths are essential when navigating, battling, and attempting to reform racism in various systems, institutions, and processes.

Regardless, when combating racism by addressing race-based health inequities, it must be understood that race-neutral solutions do not effectively address intentionally race-specific (anti-Black) racism. Consequently, true health equity will certainly change the lives of the oppressed and the oppressor in ways that may lead to the deconstruction of American inhumanity. It is my position that such deconstruction must occur, and this case study is yet another step in the direction of such deconstruction, as it supports a real, tangible solution to Black infant and maternal mortality that must be taken seriously.

METHODOLOGY

A case study of families served by ROOTT between 2018 and 2021 was conducted to provide evidence of the effectiveness of this community-based intervention (ROOTT, 2018). The case study was conducted using CRT and deficit ideology constructs as the primary framework for analysis and data interpretation. Data analyses did not use complex methodologies (e.g., regression, etc.), but instead used simple counts to find numerators and denominators for each

indicator of interest. The majority of indicators required a percentage (num/denom*100); only the infant and maternal mortality rate required a different type of calculation (i.e., infant=num/denom*1,000; maternal=num/denom*100,000). Voluntary interviews were also used to represent the experiences of the families. The RQs were specific to maternal and infant mortality and postpartum events only:

1. Did the ROOTT PSD model eliminate maternal mortality events among families served between 2018 and 2021?
2. Did the ROOTT PSD model eliminate infant mortality events among families served between 2018 and 2021?
3. Did the ROOTT PSD model decrease incidents of postpartum events among families served?

Specifically, the ROOTT data collected and analyzed included:

- Black family maternal and infant mortality rates, 2018–2021
- Black family maternal induction rates, 2018–2021
- Black family maternal surgical birth rates, 2018–2021
- Black family maternal high prevalence comorbidity rates, 2018–2021
- Black family maternal postpartum events, 2018–2021
- Black family infant preterm birth rates, 2018–2021
- Black family infant low-birthweight rates, 2018–2021
- Black infant NICU rates, 2018–2021
- Black family infant postpartum events, 2018–2021

Columbus Public Health/CelebrateOne (CPH-C1) is the official reporting body of maternal and infant health data for Franklin County, Ohio. The comparative analysis for this case

study used ROOTT data and CPH-C1 data for Franklin County, Ohio, specifically for the non-Hispanic Black population. A disaggregation of the Hispanic population, as reported by CPH-C1, between Hispanic Black and Hispanic White was conducted and analyzed. However, it was not included in this case study due to inconsistencies in data reporting. The way it is reported by the CPH-C1 aggregates ethnicities, suggesting the need for further analysis of the health disparities in this population among those who self-report Black or White race, in addition to ethnicity.

DATA ANALYSIS

This case study used a mixed-methods research approach to increase the likelihood that the findings were reliable, valid, and able to support my conclusions and recommendations. With the assistance of a public health epidemiologist, I completed the analysis of the 2018–2021 ROOTT data in May 2023. In June 2023, I completed a secondary analysis with a separate public health epidemiologist to verify and control for potential bias (ROOTT, 2018).

The data analyzed included the total number of families served by ROOTT from 2018–2021. Of the 346 families studied, 236 represented the number of live births, referred to as n=346 and n=236, respectively. While Black families are the focus of the community-based intervention and are enrolled as a family unit, the total number of (n) families in this analysis referred to the birthing mother (maternal outcome), not the total number of family members. Conversely, the total (n) births represent the number of infants born, not the actual birth incidence. For example, in the case of twins, each infant is counted as a single live birth. A birth incidence, or birth event, is counted as a singular birth.

Data analysis specifically included analyzing data covering Black maternal and infant mortality rates, preterm and low birth rates, maternal comorbidities (prenatal preeclampsia and postpartum hemorrhage, respectively), mode of delivery, NICU admissions, and fetal death.

RESULTS

The following RQs for this case study specifically addressed Black maternal and infant mortality and postpartum activity:

RQ1. Did the ROOTT PSD model eliminate maternal mortality events among the families served between 2018 and 2021?

RQ2. Did the ROOTT PSD model eliminate infant mortality events among the families served between 2018 and 2021?

RQ3. Did the ROOTT PSD model decrease incidents of postpartum events among families served?

The results from my data analyses are explicit about the mortality variable. However, they also provide some additional information necessary to paint a clearer picture of ROOTT's efficacy as a community-based intervention.

RQ1: Did the ROOTT PSD model eliminate maternal mortality events among the families served between 2018 and 2021?

RQ1 was answered in the affirmative. To answer RQ1, I analyzed statistical data to understand whether the ROOTT program eliminated maternal mortality. Maternal mortality happens either during pregnancy or within 42 days post the end of a pregnancy (March of Dimes, 2024). This rule applies regardless of the length of the pregnancy and can be caused by any factor related to the pregnancy, excluding accidents. The maternal mortality *rate* is calculated by

the number of maternal deaths in a time period divided by the number of live births for the same period, multiplied by 100,000 (maternal=num/denom*100,000, March of Dimes, 2024).

The numerator and denominator are determined using maternal mortality data from ROOTT, Columbus Public Health, and CelebrateOne. The final data analyses for this indicator used simple counts to determine proper numerators (numerator m=0) and denominators (denominator n=236) for the relative indicator of mortality (m/n*100,000). From 2018 to 2021, ROOTT maintained the Black maternal mortality rate among all birthing families at 0%. Given the sample size, complex methodologies (e.g., regression, etc.) were not used.

ROOTT data for Black maternal comorbidities were disaggregated by phase of the perinatal event (prenatal or postpartum) and type of comorbidity. The comorbidities presenting with the highest or most severe incidence (preeclampsia and hemorrhage, respectively) are used for this analysis. Again, CPH/C1 did not report maternal comorbidities. Therefore, a comparison was not represented. The ROOTT family incidence of prenatal preeclampsia, confirmed by medical diagnosis, represented 7.2% of the client population from 2018–2021. According to a report published by Johns Hopkins Medical Center, "Black women had the highest age-adjusted prevalence of preeclampsia (12.4%) compared with Hispanic (8.2%) and White women (7.1%)" (www.hopkinsmedicine.org, 2022).

RQ2: Did the ROOTT PSD model eliminate infant mortality events among families served between 2018 and 2021?

RQ2 was answered in the affirmative. To answer RQ2, I analyzed statistical data to understand whether the program eliminated infant mortality. Infant mortality rates are defined as the number of deaths in the first year of life divided by the number of live births multiplied by 1000 (infant mortality=num/denom*1000, March of Dimes, 2024). The numerator and

denominator are determined by using live birth data and mortality data from ROOTT, Columbus Public Health, and CelebrateOne. The final data analyses for this indicator used simple counts to determine proper numerators (numerator i=0) and denominators (denominator n=236) for the relative indicator of mortality (i/n*1000). From 2018 to 2021, ROOTT maintained a Black infant mortality among all birthing families at 0%. Given the sample size, complex methodologies (e.g., regression, etc.) were not used.

Based the national and international rates of infant mortality, where the mortality rate of Black children is four to five times that of their White counterparts, this is a critical achievement. During the same period, CPH-C1 recorded a Black infant mortality rate of 12.54% of live births. The lowest year for Black infant mortality reported by CPH-C1 was 2019. In 2019, CPH-C1 reported a Black infant mortality rate of 11.4% of live births, with a percentage change of +3.1% through 2021, equating to a peak rate of 14.5% for the time period examined in this case study.

Furthermore, preterm births accounted for 10.6% of all births in ROOTT (n = 236), with 7.6% of these births classified as late preterm births. A late preterm birth means that the birth occurred closer to the estimated due date or after 34 weeks of gestation and that the birth did not require admission to the intensive care unit. This figure also includes cases of multiple pregnancies (two or more fetuses). Preterm births accounted for 13.2% of the total population in CPH-C1. The CPH-C1 does not disaggregate the data on preterm births. Consequently, there are no data on late preterm births to report. The proportion of low-birth-weight births (approximately 2,500 grams) was 5.5% of total births in ROOTT and 12.5% in CPH/C1.

ROOTT's NICU admission rate after birth and before discharge was 14.8% of the total number of infants born. CPH/C1 does not report NICU admissions as part of their public data. In

addition, of the 14.8% of ICU admissions recorded, most (68.2%) were in the ICU for less than 72 hours to observe minor problems due to prematurity, hypoglycemia, and hyperbilirubinemia.

From 2018 to 2020, ROOTT had to mourn the loss of two children in families who were cared for before birth. These losses are considered fetal deaths by definition and are not counted in the number of births (*n*=236) but are included in the total number of families assisted (*n*=346). Both births were vaginal; one was attended by the ROOTT clinical director, the lead perinatal support doula (PSD), and a PSD trainee. The other was assisted by a ROOTT PSD via telemedicine, as the hospital did not allow access to attendants during the COVID-19 pandemic.

The latter experience is likely an unintended consequence of the COVID-19 pandemic hospital policy, as the family reported decreased fetal movements but refused to report to the hospital. This family was informed by hospital staff that their husband, who was traveling home by car from out of state due to flight restrictions, would not be allowed into the hospital if he did not arrive with his wife. A ROOTT PSD was called in due to an exception in hospital policy that did not allow assistance to the family until the hospital staff had confirmed fetal death.

RQ3: Did the ROOTT PSD model decrease incidents of postpartum events among families served?

RQ3 was answered in the affirmative. To answer RQ3, I analyzed statistical data to understand whether the ROOTT reduced postpartum events. The postpartum period begins after childbirth and lasts approximately six to eight weeks. It ends when the mother's body has almost returned to its pre-perinatal state. The postpartum period is vital for both the short-term and long-term health and well-being of a woman, her newborn, and her family (Lopez-Gonzalez, 2022).

The familial incidence of postpartum hemorrhage in ROOTT corresponded to a rate of 3.8% of the total service population (*n*=233 birthing mothers) during the reporting period.

Postpartum hemorrhage is defined by a total blood loss of >500 ml for vaginal deliveries and >1000 ml for cesarean deliveries. These data were not disaggregated by mode of delivery; however, it can be reported anecdotally that three of the events required clinical intervention. One case involved a previously unknown neoplasm with necrotizing features that was discovered during an emergency cesarean section. It had been misdiagnosed as a consequence of a previous diagnosis of myometrial fibroid disease.

ROOTT's cesarean section rate represented 19.9% of its total Black family births (*n*=236), while CPH/C1's cesarean section rate represented 31.9% of its births to Black families. From 2018 to 2020, ROOTT reported an induction rate of 27.5%. This is another instance in which CPH/C1 does not disaggregate induced or spontaneous births, leading to the use of ROOTT's disaggregated analysis (Table 1).

Table 1

Mode of Delivery

Mode of delivery	2018	2019	2020*	2021*
ROOTT induction	11.1%	16.2%	34.4%*	31.5%*
ROOTT surgical	18.5%	16.2%	24.6%*	18.9%*

While ROOTT's induction rate remained relatively constant, the cesarean section rate dropped dramatically from 2020 to 2021. This period appears to correlate strongly with the central Ohio hospital systems denying in-person birth support and allowing it again during and after the COVID-19 pandemic restrictions (Table 2).

Table 2

Cesarean Sections

Cesarean section table	Δ 2018–2019	Δ 2019–2020	Δ 2020–2021
ROOTT	– 12.4%	+ 51.6%	– 23.1%
Franklin County Non-Hispanic Black	+ 6.4%	+ 2.8%	+ 4.2%

Other data collected in response to RQ3 included personal interviews with families receiving PSD services from ROOTT. Individual interviews were conducted with randomly selected families to obtain their perspectives on their interactions with ROOTT's PSDs, as well as their opinions on their birth experiences and outcomes. Family files were blindly selected from a group case with names and other personal identifiers removed. A total of two families (n=2) were interviewed, and both were asked identical interview questions designed for this case study. The interviews covered the three phases of perinatal engagement: prenatal, labor and delivery, and postpartum.

Interview questions were designed to elicit responses regarding mortality, comorbidities, mode of delivery (vaginal or operative), lactation experience, postpartum hemorrhage, NICU status, and preterm and low birth weight outcomes. Both Family A and Family B reported live birth outcomes. Family A reported a natural vaginal birth, and Family B reported having a vaginal birth after a previous cesarean delivery. Both families reported initiating breastfeeding immediately after the birth of their infants. Family A and Family B denied having any postpartum complications and reported continued breastfeeding after childbirth.

LIMITATIONS

Data limitations were evident early, with CPH/C1 intentionally excluding key data points for Columbus, Ohio. Excluded data included the failed capture of maternal mortality, maternal comorbidities, NICU admissions and reasons for admission, mode of delivery (spontaneous or

operative), and fetal losses. Limitations also extend to how race and ethnicity are aggregated regarding those who self-report Black or White race in addition to Hispanic ethnicity.

Other limitations include the size of the sample used for the case study. Small sample sizes can lead to bias and potential ethical concerns. In addition, limited sample size may lead to overgeneralization, which presents challenges when applying findings to broader populations. Although the sample size for this study was small, its size was determined by the time frame the case study covered. Overall, the ROOTT intervention has served over 1,000 Black families through 2023 and has still been able to maintain its outcomes as presented in this case study: 0% Black infant and maternal mortality rates, a low percentage of postpartum events, NICU stays less than 1/3 of the national average, with preterm and low birth weight births being at low numbers as well. While the sample size is a little over 300 for this case study, the small number shouldn't be used as a reason to dismiss the impact of the community-based intervention this case study covers. Limitation concerns also include the challenges posed by variability, which can lead to less reliable conclusions and external factors that can affect smaller groups and impact the reliability of the data.

Finally, the lack of depth of the interviews is also a limitation of this case study. For this case study, the interviews were designed to gather information from families regarding their perceptions of their perinatal experience, which included prenatal, antepartum, labor and delivery, and postpartum experiences. While the information gathered was relevant and true, future case studies or other types of studies can benefit from a deeper and wider personal interview process that allows for a larger narrative. Experiential data, both quantitative and qualitative, is essential to support the elimination of black infant and maternal mortality and the unnecessary losses that we experience.

IMPLICATIONS

ROOTT's perinatal support doula model of care as a community-based intervention has demonstrated its effectiveness and ability to eliminate unnecessary maternal and infant deaths. ROOTT's sustained 0% Black maternal and infant mortality rate has eliminated maternal and infant mortality for the Black families served. This fact alone has significant implications for a public health environment that promotes any such mortality as normal for Black communities, reinforcing stereotypes and poor perceptions of Black families as reproductively incompetent.

The demonstration of the effectiveness of community-based interventions has significant clinical implications, indicating that the underlying factors contributing to these disparities can be managed and not used as an excuse or justification for marginalized and poor-quality perinatal care. Through the lens of CRT, the elimination of the Black maternal and infant mortality epidemic is a win against social injustice. It directly correlates with a reduction in health care inequalities and inequities; it confronts inaccurate health information; it illuminates the over and under-diagnosis of Black families when using biased stereotypical medical guidelines; and it contributes to the improvement of public health outcomes. It also creates an environment in which Black families' lack of confidence and trust in the healthcare system can be rebuilt where needed, leading to better healthcare utilization and engagement.

Additionally, ROOTT's position as a community-based public health equity organization has pioneered a different way of viewing Black family reproductive injustice, justice and health. ROOTT's successes are attributed to the quality of the relationships it builds with families, which are anchored in self-empowerment and re-empowerment, community engagement, a sense of family, commitment to history and heritage, and unapologetic advocacy for the reproductive autonomy that every family should enjoy. ROOTT currently does not advertise its services to

families but yet relies on community-based marketing that includes personal testimonials from families, personal testimonials from extended family, and recommendations and support from medical staff at select hospitals and clinics.

ROOTT is also responsible for the creation of a new workforce of perinatal support doulas. As a community-based nonprofit organization, ROOTT currently boasts a staff of 15 members, comprised of perinatal support doulas, a clinical social worker, a registered nurse, and a clinical director. In terms of staffing, ROOTT is responsible for the recruitment, training, placement and retention of all of its staff members. ROOTT has created a welcoming workplace environment that includes a benefits package that includes immediate paid health, vision, and dental care; paid life insurance; a four-day, 32-hour work week; health and wellness activities; workplace fitness, continuing education benefits; mileage reimbursement, and other life domain stabilization needs staff may require. Not only is this revolutionizing the way obstetrics and gynecology should be practiced among Black families, but we also are creating a new workforce of qualified professionals that can continue to support Black families in the way they require to be supported. The implications of this approach to addressing health inequities are monumental and pivotal. Ultimately, ROOTT's ability to solve the mortality variable for the Black families receiving perinatal services is historic in central Ohio and deserves such recognition.

Fiscal Impact

The fiscal impact of eliminating Black maternal and infant mortality must be considered in terms of healthcare costs. In the long run, healthcare costs will be reduced as the costs of treating comorbidities, NICU stays, and surgical interventions decrease as adverse birth outcomes decrease. The cost of treating perinatal complications alone is significantly reduced with the ROOTT model. It is imperative to point out that a detailed cost-benefit analysis must

include consideration of the sustainability of the community-based organizations performing this work, the frequency with which families can access clinical and non-clinical perinatal support, and how resources have been and will be allocated.

Implications for Policy

Federal, state, and local public policy implications for a successful community-based intervention to eliminate Black infant and maternal mortality are multifaceted. Implications include impacts on life domains such as health care, social services, educational attainment, and economic support. The results of the ROOTT PSD model require some policymakers to rethink the deficit perspective typically applied to Black families, which asserts that being Black causes poor birth outcomes, as opposed to racism (institutional and systemic) being the source of high mortality rates for Black families. Such a shift in perspective will have significant implications for resource allocation, regulatory oversight of hospital systems, and how we, as a country, redefine perinatal care and clinical teams.

Federal Level. Implications at the federal level range from influencing health care reform to establishing health equity as a central pillar of obstetric health and wellness. Policy improvements include health care and wellness service expansion through Medicaid or other federal subsidies, with an extension of insurance coverage for pregnant families. Effective community-based intervention strategies impact and influence data collection, related research and analysis, and research methodologies.

Specifically, federal policy reforms should include increased funding for community-based health programs that support competent, Black-led community health initiatives and the promotion of specialized doula and midwifery services. All doula services are the same or created equal. Doula training necessitates extensive certification and training, coupled with

specialized clinical supervision that is culturally specific to the population being served. Policies that expand access to general and maternal health care that provide solutions to unmet social determinants of optimal health, accurate data collection and research, Black-specific antiracism training, awareness campaigns, and policies that facilitate access to mental health care are critical to improving outcomes.

State Level. The primary option for states is to expand Medicaid services and service offerings. Expanding Medicaid coverage influences other state-level policies specific to maternal and infant health programs. If developed, these programs can meet maternal healthcare workforce development needs. ROOTT's model of care requires specialized training and mentoring that are unavailable in the current clinical landscape. States can also mirror federal policy activities that address maternal and general healthcare access and increase their investment in competent, Black-led, community-based interventions. This case study further illustrates the need for a robust state-level investment in recruitment sourcing and training that increases the number of perinatal support professionals able to serve Black families.

Local Level. Policies at the local level can have a meaningful impact. The cornerstones of local policy reform are expanding services provided by community health centers, changing how maternal and infant health education and outreach are delivered, and addressing unmet social determinants of health.

Directions for Future Research

Future research must include the use of relevant data essential to develop a comprehensive picture of the effectiveness of each intervention used. Timely data must be collected on maternal mortality, maternal comorbidities, NICU admissions, and mode of delivery (spontaneous or surgical birth). Future research must also increase the disaggregation of the

demographics of the evaluated group. Future research should also include queries that focus on medical providers and their institutions, as they are currently central to how outcomes are determined. Given the efficacy of the community-based intervention central to this analysis, it is now more critical that providers be integrated into research that evaluates their effectiveness. This, combined with other recommendations, is a significant step toward eliminating unnecessary Black maternal and infant mortality.

CONCLUSION

The idea of eliminating Black infant and maternal mortality seemed impossible to many and distant to others a few years ago. The data are appalling, and the disproportionate impact of this epidemic on Black communities and Black families is historic in Columbus, Ohio. Ranking in the top tier of major cities and states in this country that have this same epidemic, an intervention was needed. The City of Columbus, Ohio, attempted to address the issue by gathering stakeholders who initially supported the idea of creating an intervention that would help decrease the disproportionate numbers of Black infant and maternal mortality. These stakeholders included elected officials, the Columbus Public Health Commissioner, and members of the corporate business community, which included representation by major hospital systems in Columbus, Ohio. Stakeholders also included members of the non-profit community, the faith-based community, and academia, represented by participants from The Ohio State University.

The political nature of the approach, meaning allocating major public resources to support a Black community problem, led conveners to change their objective. Racial politics required shifting *from* the initial position of addressing maternal mortality or infant mortality for Black families specifically *to* addressing maternal and infant mortality for all families in central

Ohio. This change was made despite the fact that Black infant and maternal mortality was three to four times that of white infant and maternal mortality.

The resulting entity, CelebrateOne, was created to execute the recommendations made by the task force in 2015. Fast forward nearly a decade, while having hired and replaced a total of three executive directors and with an aggregate investment of almost $20 million in public tax, private foundation, and corporate dollars, CelebrateOne and the city of Columbus has yet to make any meaningful or even reasonable progress toward addressing the epidemic. For all intent and purpose, the City of Columbus and CelebrateOne have failed Black families. In fact, the overall numbers for the central Ohio region have gotten worse since the city and its stakeholders put CelebrateOne in place.

These points of fact are widely known, and what led to the need for this case study. The case study allowed for the formal exploration of how a community-based public health equity organization like ROOTT can help Black families realize safe and healthy birth outcomes and support them in the reclamation of their reproductive agency. Agency that says simply that Black families can decide when, where, how, and if they want to have a family. The results of the case study revealed that ROOTT, as a community-based intervention, was able to eliminate Black infant and maternal mortality amongst the families it served; and it is clear that there is room for alternative approaches to addressing public health inequities.

It is my hope that the findings within this case study will motivate others to conduct their own studies into the viability and efficacy of community-based organizations that can address public health inequities. It is also my hope that public officials, elected officials, and other key stakeholders will begin to broaden their perspectives about what type of professionals, service models, or interventions should be adequately funded with public tax dollars, and which should

be defunded. Moreover, that they are invested in by private stakeholders who would like to see the communities they operate in and profit from be healthier, better and live longer.

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