BIRTH EQUITY MISSOURI

INTRODUCTION

Decades of research on the persistence of racial inequities in maternal, child and birthing people health have largely centered on individual-level determinants such as health behaviors, utilization of health care, and socioeconomic circumstances that differ between Black and white women. Increasingly, however, efforts to advance health equity have begun to focus on macro-level conditions and societal contexts as explanations behind the persistent disparities in the distribution of health and well-being at the population level. These so-called root causes of health inequities are structural racism, class oppression, gender discrimination and exploitation, and their intersecting impacts.

This report examines indicators across the domains of root causes and social determinants of health and their relation to racial inequity in infant mortality in counties across Missouri from 2015-2019. Together, the root causes and social determinants indices were combined to create a Birth Equity Index, to assess all conditions impacting birth outcomes more fully.

BIRTH EQUITY is the assurance of the conditions of optimal births for all people with a willingness to address racial and social inequalities in a sustained effort.

INFANT MORTALITY IN MISSOURI

Infant mortality is the death of an infant any time before 1 year of age. Below, we see infant mortality per county and per zip code. There were 42 counties with at least 10 infant deaths from 2015-2019. Of those, there were 5 counties with at least 10 Black and 10 white infant deaths.

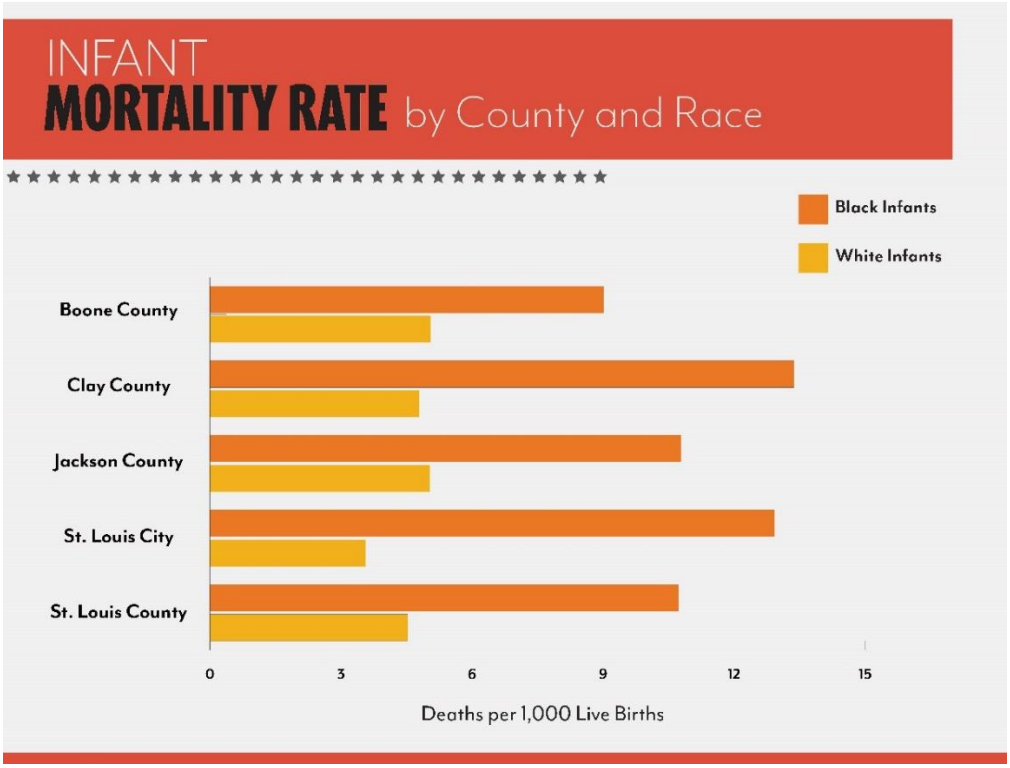

Figure 1 shows the 5-year infant mortality rate (IMR) in each county estimated separately among non-Hispanic Black and non-Hispanic white women and birthing people in these counties. Infant Mortality Rate was calculated as the number of deaths per 1,000 live births in each county. The Black IMR exceeded the White IMR in every county and was on average two and a half times higher.

SOCIAL DETERMINANTS, ROOT CAUSES, AND BIRTH EQUITY INDEX

Each domain index (**Root Causes Index** and **Social Determinants Index**) includes indicators combined into a single metric. The two-domain metrics were then combined into an overall **Birth Equity Index**. Indicators included have been chosen based on empirical evidence of their relevance to infant mortality, and conceptual frameworks that suggest their influence on maternal and child health. The Root Causes Index combines criminal justice, education, earnings, gender inequality in earnings, housing, and income inequality. The Social Determinants Index combines access to healthy foods, quality education, employment security, violence, political power, social associations, and transportation. The Birth Equity Index is the average of each of the indicators in both indices. Indicator inclusion was limited to those with data available at a county- or lower geographic level.

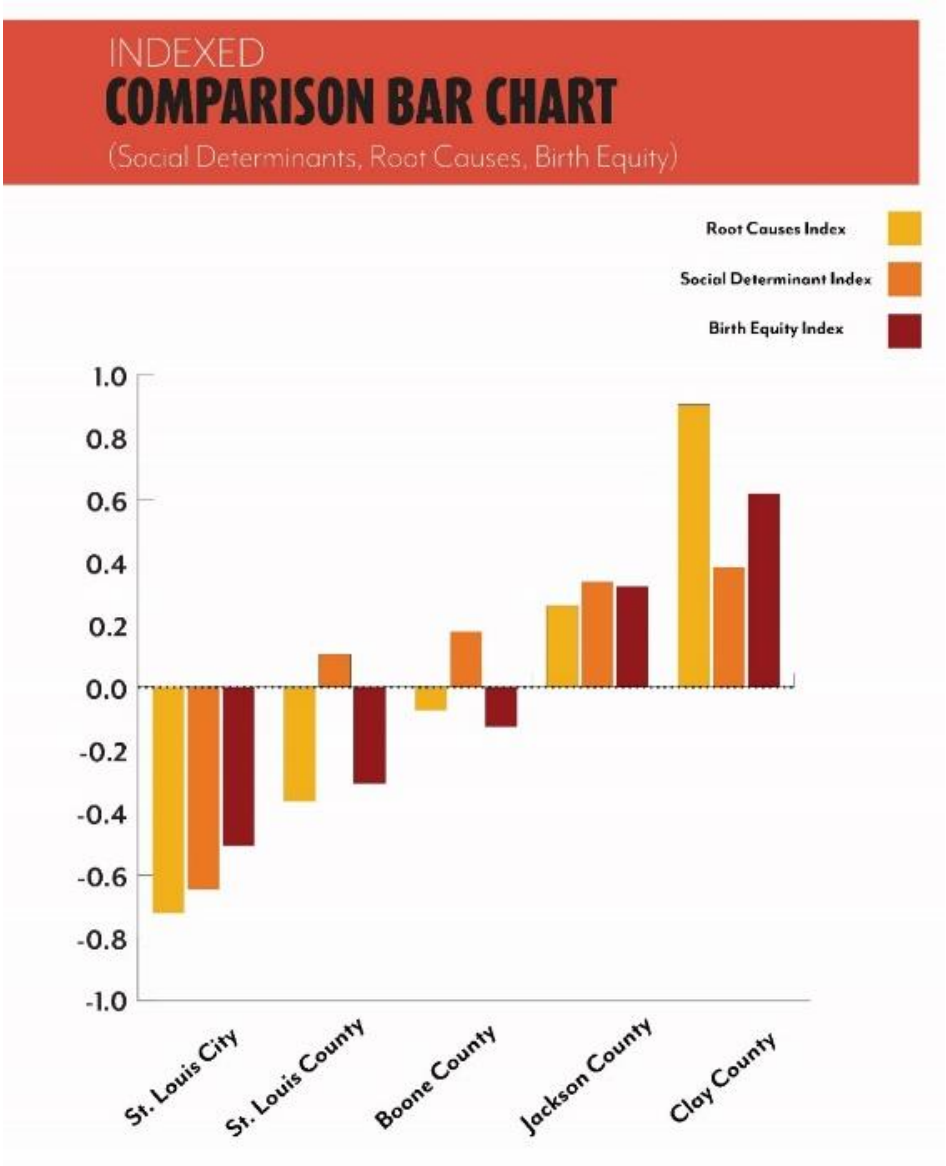

Figure 3 displays the Root Causes Index, Social Determinant Index, and the combined index of Birth Equity across 5 Counties in Missouri: St. Louis City, St. Louis County, Boone County, Jackson County, and Clay County. Higher numbers indicate greater equity across populations, while lower values indicate greater inequities. St. Louis City is shown to have the greatest inequities across all 3 indices, while Clay County has the highest equity across all 3.

Methodology

Each domain index (Root Causes Index and Social Determinants Index) includes indicators combined into a single metric. The Birth Equity Index is the averages of each of the indicators in both indices.

The two domain indices, the Root Causes Index and the Social Determinants Index, were calculated by averaging z-scores across component indicators. The Birth Equity Index is the averages of each of the indicators in both indices. The relationship between the Birth Equity Index and Black infant mortality by fitting Poisson models to compare the Black infant mortality rates in counties with the lowest values of the index (least equity) to counties with the highest values of the index (highest equity). Models were controlled for poverty level (the proportion of the population living below the federal poverty level) which differs between counties and may influence infant mortality rates. We explored the relationship between the index and racial inequity in infant mortality rates on the relative and absolute scales (Black-to-White rate ratios and Black-to-White rate differences, respectively) by fitting linear regression models with rate ratio or rate difference as the outcome and controlling for poverty. Racial inequity was estimated in counties that had at least 10 deaths of both non-Hispanic white and non-Hispanic Black infants.

To account for differing measurement scales across the indicators, indicators were standardized using z-scores, a statistical measure that quantifies the distance in standard deviations of a given zip codes data point from the average values across counties in the data set. Directionality of the indicators differed: for example, higher values of the food insecurity indicator reflected worse conditions while higher values of the social associations indicator reflected better conditions. To address this, the z-score was multiplied by -1 where necessary in order to ensure consistent directionality across indicators (higher values indicating better conditions) such that when combined higher values of the individual domain indices and overall combined index reflect greater birth equity.

Community Voice

The question guide was developed and adapted from the National Birth Equity Collaborative Campaign for Black Babies qualitative study. The questions were grouped into the following categories:

- demographic information,
- preconception,
- prenatal,
- social determinants of health,
- labor and delivery,
- postnatal period,
- infant death and grief

The interviews were held by Skype video call, then recorded and transcribed. Video calling was preferred because it allowed a level of comfort and familiarity as the women shared their stories, and scheduling flexibility for the sponsoring and contracting parties. Interviewees are usually connected with services, including counseling, holistic wellness and support groups. The St. Louis Integrated Health Network provided those options for the interviewees, as their program support staff was on site with them.

Lived Experiences

- Participants experienced fear, loneliness and isolation in situations where they had to manage parts of their pregnancy and infant death experience, alone.
- Personal support system seemed to be most important in the women's experiences.
- Participants mentioned feeling like "numbers" instead of patients.
- Women did not feel respected as autonomous in their childbirth experience. Participants reported feeling like information was being told to them, rather than being asked of them as active decision-makers in their healthcare.

"Honestly, it's okay to be afraid, because like I say, you just don't know what's going to happen. It [infant death] could happen whether you're pregnant or after you have the child. It's just ... I guess it's the basis of having a support system. If you have a better support system, you'll have a healthy mind."

Health System Discrimination

- Women were largely pleased by interactions with clinicians and care staff, which reflected well on their overall prenatal and birth experience.
- Women relied on the health system to inform them about all aspects (positive and negative) of pregnancy, delivery and postpartum period.

"It was always a long wait even if you have an appointment, and it's never really to me ... prioritized, maybe that's the word I want to use, until you really form a relationship with the people."

Social Determinants of Health

- Mothers were concerned about housing adequacy and neighborhood safety.
- Participants wanted more general education on maternal and infant health in the preconception and prenatal period.
- Transportation infrastructure is a factor in accessing high quality care, healthy food, education and other needs.

"I wanted to know how they knew. Because I hadn't got a death certificate back, and they said SIDS. I'm like, "What is SIDS?" And I didn't know nothing about it."

BIRTH EQUITY AND INFANT MORTALITY

Birth Equity is the belief that all people are valued, have fundamental human rights, and should be supported by their governments and health systems to achieve the best possible health outcomes across the reproductive lifespan. Applying these basic frameworks not only ensures positive outcomes for Black birthing people and other marginalized groups but can also improve health outcomes for all birthing people, babies, and their villages. Infant mortality is an important marker of the health of overall society. Birth equity cannot be examined without an in-depth evaluation of infant mortality, maternal mortality and morbidity, and their causes.

We cannot separate maternal and infant mortality from the inequitable systems from which they arise. The indices evaluated in this report (root causes, social determinants, and birth equity) further contextualize the many indicators impacting birth outcomes. In Missouri specifically, we see a consistent trend of low equity across all 3 indices, especially within St. Louis City and the zip codes within. We must explore both county-level and zip code-level interventions addressing birth equity as well as the root causes and social determinants.

CONCLUSION

As indicated by the data in this report overall, there are a multitude of barriers to equitable maternal and infant health outcomes in Missouri. These barriers range from social determinants including, but not limited to, access to healthy foods, employment security, and transportation, to root causes such as housing, education, and income inequality.

Black and white populations continue to show vast inequities across multiple social determinants and birth equity metrics. Black infant mortality continues to be significantly higher than White infant mortality across multiple counties in Missouri, highlighting the importance of implementing interventions within healthcare systems to promote better maternal and infant health outcomes for birthing people, children, and families across the lifespan. Prioritizing solutions based on the themes and trends in the Birth Equity Index can increase access to and delivery of high-quality care while addressing key areas of action for the social determinants of health.