

MAINE PRAMS Data Brief

Pregnancy Risk Assessment Monitoring System - May 2023



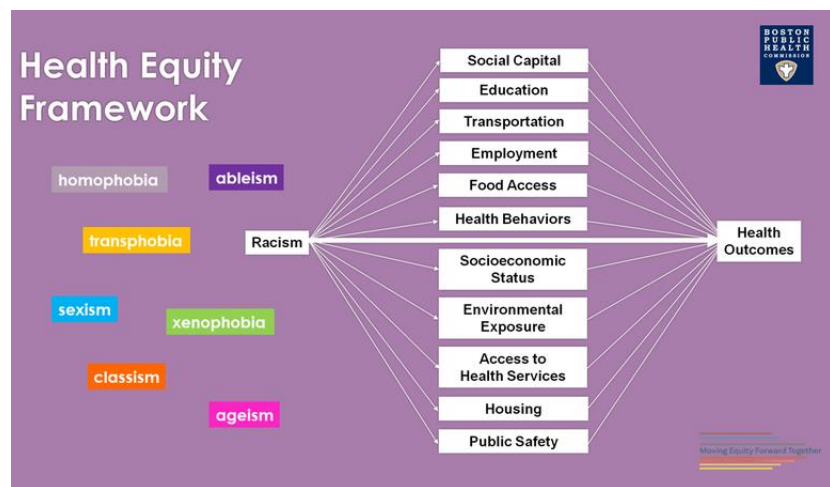
Measuring Social Determinants of Health of Perinatal and Infant Health in Maine

The Issue

The drivers of health are complex and multidimensional. Systemic factors, such as racism and classism, are primarily responsible for determining health outcomes and are the root cause of health inequities. The discriminatory practices and policies resulting from these systems determine the social and environmental conditions that we live in and that expose certain communities, such as lower income and BIPOC (Black, Indigenous, and People of Color) communities, to more health risks than others, such as higher income and white communities. These social and environmental conditions that drive health and put people “at risk of risksⁱ” are called Social Determinants of Health (SDOH). Examples of SDOH include access to education, social capital, living wages, healthy food, transportation, and quality health care, among others. Additionally, systemic discrimination leads to interpersonal discrimination, trauma, and feelings of powerlessness, which also impact health outcomes.

Systemic discrimination and Social Determinants of Health affect perinatal and infant health in many ways. Maternal exposure to stress and depression in the prenatal period increases the chance of preterm birth and the cumulative effect of stress experienced across the lifespan, also called weatheringⁱⁱ, increases the risk of developing health conditions that cause preterm birthⁱⁱⁱ. Additionally, birthing parents who intend to return to work within a year after giving birth are less likely to initiate breastfeeding and hourly wage employees face additional barriers to breastfeeding compared to salaried employees due to having less control over their schedules, fear of job insecurity, and having to take reduced pay for breastfeeding breaks^{iv}.

As understanding the drivers of perinatal and infant health moves away from looking at individual characteristics to the social and environmental conditions, it is critical to identify the root cause of health inequities and fully understand the impact of Social Determinants of Health to make meaningful progress through policies, programs, and resource allocation to advance health equity and wellbeing for all of Maine’s parents and infants.



Source: Boston Public Health Commission’s Racial Justice and Health Equity Initiative, www.boston.gov/government/cabinets/boston-public-health-commission/racial-justice-and-health-equity#framework

Why It's Important

“Maternal mortality is a marker of national health and well-being”^v. Since the Pregnancy Mortality Surveillance System was implemented in 1987, the pregnancy-related mortality rate in the U.S. has been steadily increasing from 7.2 pregnancy related deaths per 100,000 live births in 1987 to 23.8 in 2020^{vi}. Today, the U.S. pregnancy-related mortality rate is higher than other high-income countries^{vii} and there are stark and concerning disparities for Black (41.4 per 100,000 live births) and American Indian/Alaskan Native (26.5) birthing parents compared to white birthing parents (11.2)^{viii}. Similarly, maternal morbidity (a condition that can have negative outcomes to the pregnant person or infant) has also been increasing. In Maine, the severe maternal morbidity rate in 2019 was 68 per 10,000 deliveries compared to 43.7 in 2008^{ix} and the U.S. the maternal morbidity is over two times higher for Black birthing parents compared to white (226 per 10,000 births vs. 105)^x.

Premature birth is the leading cause of infant morbidity and mortality^{xi}. Premature births in the U.S. have slowly been increasing and concerning disparities exist. In 2020, 10.1% of infants were born premature and over 1.5 times as many infants born to Black birthing parents were born premature compared to white parents (14.4%^{xii} vs. 9.1%). In Maine, premature and low birth weight births have also slowly been increasing^{xiii}. While Maine has one of the lowest premature birth rates in the U.S.^{xiv} and in 2017-2019 the percentage of premature births born to white (8.7%) and Black (8.9%) birthing parents was similar, there was a higher percentage of low birth weight infants born to Black birthing parents compared to white parents (9.0% vs. 7.1%)^{xv}.

Social Determinants of Health of perinatal and infant health, such as breastfeeding initiation and continuation; perinatal exposure to stress; postpartum anxiety and depression; and access to health care are representative of how well the social and environmental conditions are supporting the health and needs of birthing parents and infants and have implications for perinatal and infant health outcomes.

PRAMS and the Measurement of Social Determinants of Health

This data brief explains the findings of examining Pregnancy Risk Assessment Monitoring System (PRAMS) data (2016-2020) to demonstrate the use and limitations of PRAMS in measuring the Social Determinants of Health of perinatal health in Maine. Since 1987 PRAMS has been the primary population level survey of perinatal and infant health in the U.S. Almost all states implement PRAMS and it covers approximately 81% of all U.S. births. The goal of PRAMS is to improve the health of birthing parents and infants by reducing adverse health outcomes^{xvi} and PRAMS data are used to inform programs and policies supporting the health and well-being of birthing parents and infants. Therefore, to make meaningful progress towards improving perinatal and infant health and reducing health disparities, it is important to be able to assess how well PRAMS measures Social Determinants of Health (SDOH).

Figure 1. Proxies for Social Determinants of Health in this Analysis

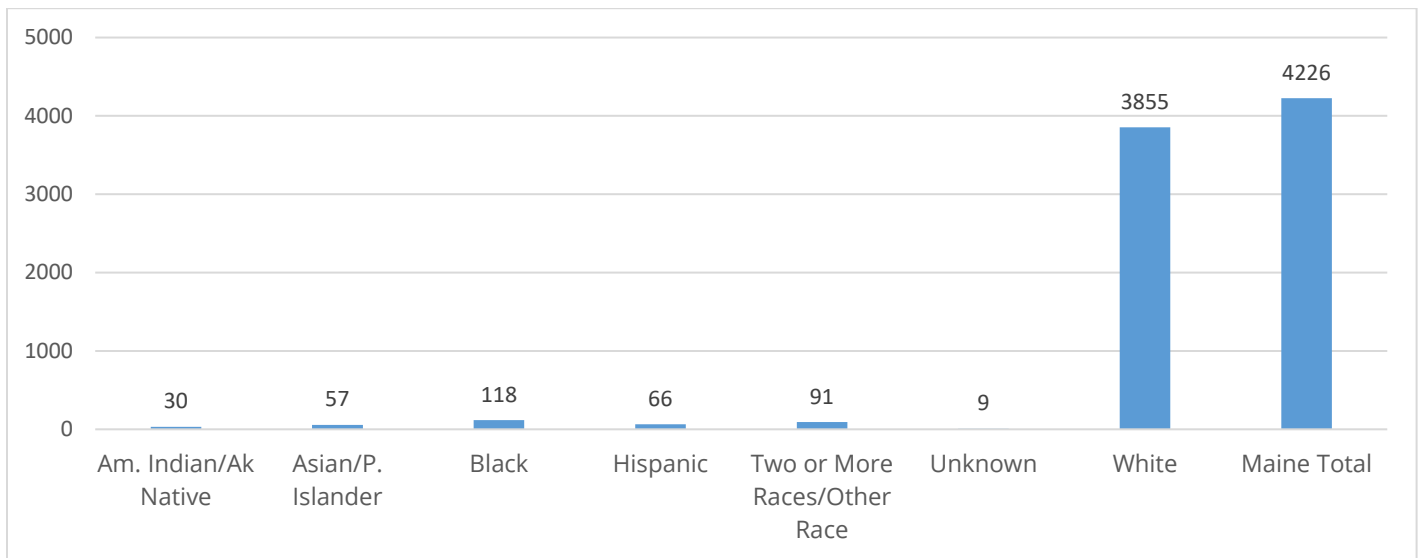
Race* (Proxy for Racism)	Income (Proxy for Classism)
American Indian/Alaskan Native	Less than or equal to 185% FPL*
Asian/Pacific Islander	More than 185% FPL*
Black	
Hispanic	
Two or More Races or Other Race	
White	
*Race is self-reported and is as defined by the Office of Management and Budget (OMB).	*Federal Poverty Level (FPL) is an annual calculation of household income to household size. 100% FPL is considered poverty. 185% FPL is the income threshold for SNAP and WIC benefits.

Challenges

Small Sample Size

PRAMS surveys approximately 10% of Maine's birthing population. In 2020, PRAMS sampled 1,625 parents who recently gave birth. Because 91% of Maine's birthing population identifies as white (PRAMS 2016-2020), reporting data by race for BIPOC birthing parents often leads to unreliable data and or data suppression due to small numbers.

Figure 2. Total Number of Respondents by Race/Ethnicity 2016-2020



Data Suppression and Unreliable Data

When deciding to suppress data, there is a need to balance both the importance of providing needed data while also reporting data that is representative of the population and can be used for accurate and meaningful analysis. In this analysis, data were not reported when there were fewer than 6 respondents or 50 sampled cases. Data were considered unreliable when the confidence intervals exceeded 20 percentage points. In these instances, the confidence interval is provided in place of the point estimate so as not to overrepresent the estimate.

Data Equity

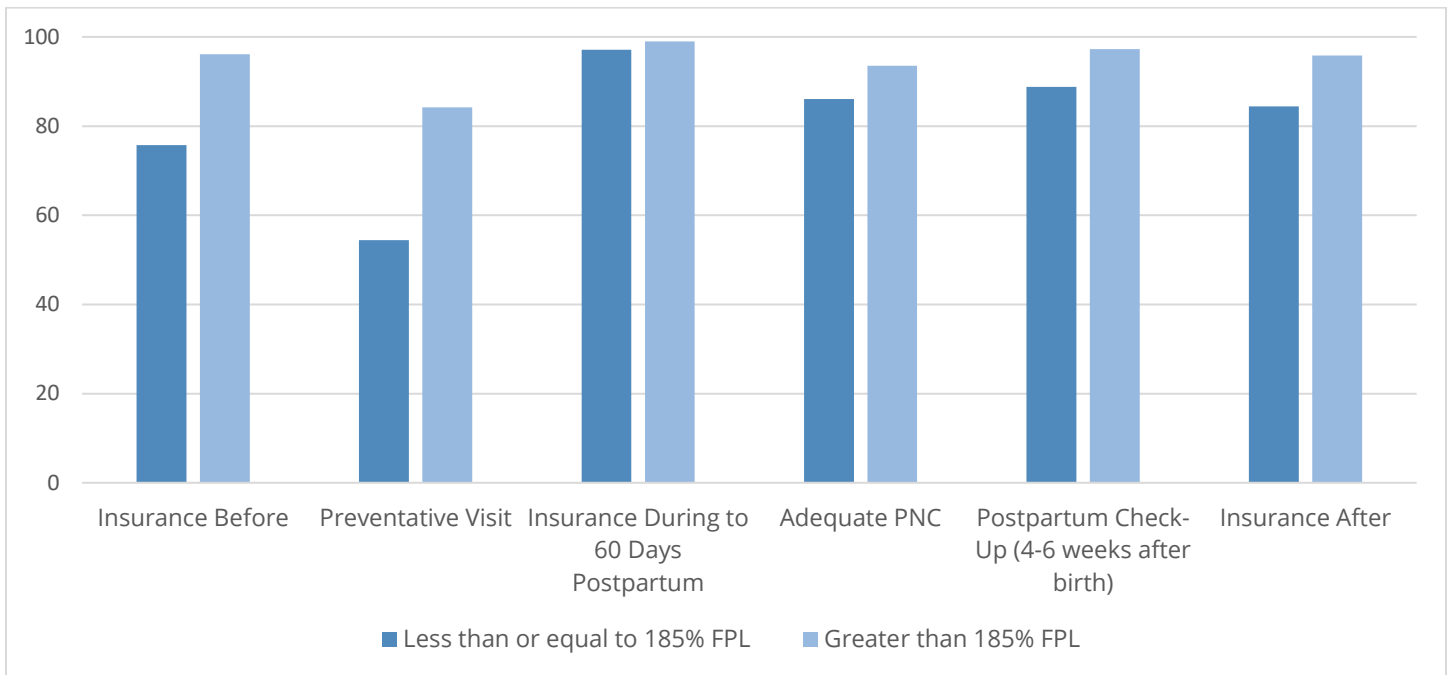
Due to small population numbers for BIPOC communities in Maine, PRAMS data could not reliably analyze outcomes for American Indian/Alaska Native, Asian/Pacific Islander, or Hispanic birthing parents. Findings for parents who identify as “Two or More Races or Other Race” were not reported as combining parents who identify as biracial into this “catch all” group was not a meaningful way to fully assess SDOH for the purpose of this analysis. Future analysis should disaggregate the “Two or More Race” group by using race in combination to more meaningfully include parents identifying as two or more races. While Black birthing parents had sufficient population numbers to analyze, there were still outcomes that could not be reliably analyzed, even when combining five years of data. This problem was not present when analyzing data for white parents, or when analyzing data by income. Additionally, the survey is only available in English, which may disproportionately impact communities of color and leaves gaps in the data for birthing parents whose primary language is not English.

Health Care Access

Having adequate and affordable health care coverage is a basic human need that facilitates access to health care, such as preventative visits, prenatal care, and postpartum check-ups. However, access to health care also requires access to transportation, time off to attend appointments, and receiving quality and medically necessary care. Additionally, health care access means not experiencing stigma or bias in the health care setting as well as being listened to and understood by health care providers. For example, people who report perceived discrimination, such as based on race or income, are more likely to avoid health care visits and report lower satisfaction with care^{xvii}. Additionally, a national survey found that Black parents compared to white parents were more likely to report their birth preferences and concerns were disregarded and birthing parents with Medicaid were more likely to report being treated unfairly by providers^{xviii}. All these factors combined, in addition to others, can result in disparate access to health care. For example, in 2020 in the U.S., 82.8% of white birthing parents began prenatal care in the first trimester compared to 68.4% of Black parents^{xix}.

Birthing parents with lower incomes were less likely to have health care coverage and less likely to have health care visits before, during, and after pregnancy compared to parents with higher incomes.

Figure 3. Percent with Health Care Coverage and Health Care Visits by Income Before, During, and After Pregnancy



- In the year before becoming pregnant, 54% of parents with lower incomes had a preventative visit compared to 84% of parents with higher incomes.
- Even with almost universal health care coverage during the prenatal period to 60 days postpartum, parents with lower incomes were less likely to have adequate prenatal care (86% vs. 93%) and a postpartum check-up (89% vs. 97%) compared to parents with higher incomes.
- The postpartum period is a vulnerable time for new parents where access to health care helps address complications that can develop in the postpartum period, such as depression and anxiety, breastfeeding challenges, and hypertension; as well as provides an opportunity to assess basic needs such as food, clothing, and diapers. Effective August 1, 2022, under the American Rescue Plan, Maine extended pregnancy-related MaineCare coverage to cover the birthing parent for the first year after giving birth. Prior to this, coverage ended 60 days after giving birth. These data were collected prior to August 1, 2022 and under these former MaineCare rules, a larger percentage of parents with lower incomes were uninsured within 9 months after giving birth compared to parents with higher incomes (16% vs 4%).

Black birthing parents were less likely to have a preventative visit in the year before pregnancy and more likely to lose health care coverage in the postpartum period compared to white parents.

- While approximately 14% of Black and white birthing parents were uninsured before becoming pregnant, Black parents were less likely than white parents to have a preventative visit within this same time period (38-59% vs. 69%).
- Among birthing parents with MaineCare coverage during pregnancy, 86% of white parents still had MaineCare coverage in the postpartum period (at the time the survey was completed, 2-9 months after

birth) compared to 56-85% of Black parents. The loss of MaineCare coverage resulted in 18-37% of Black parents without health care coverage in the postpartum period compared to 10% of white parents.

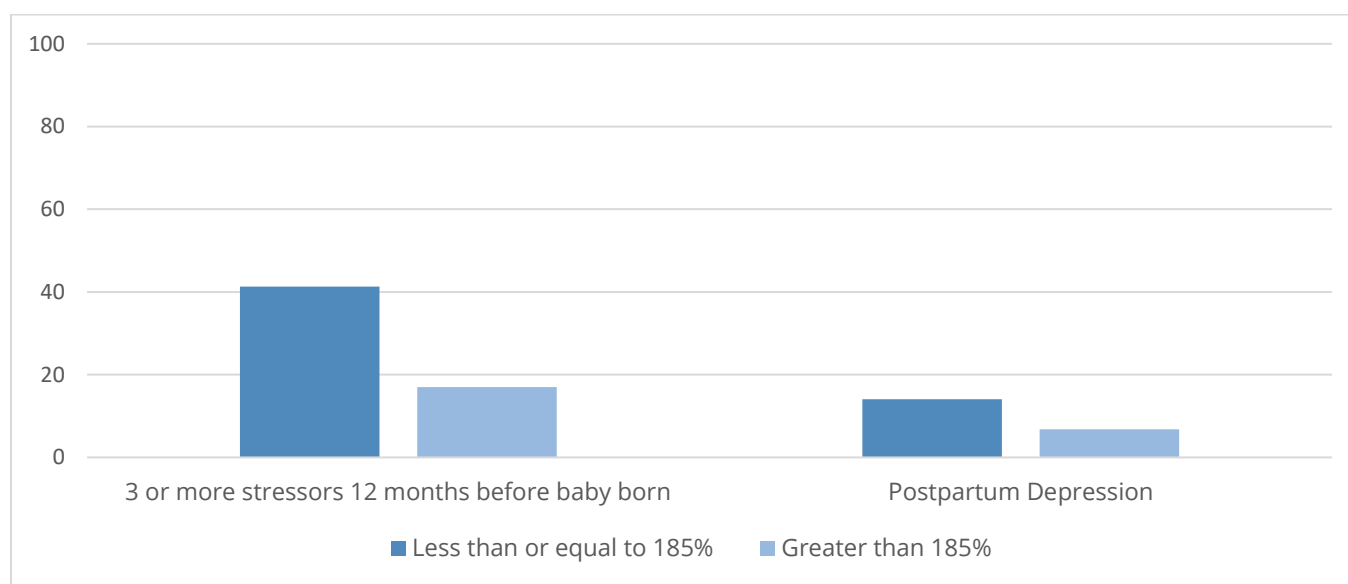
- Within 6 weeks after giving birth (during the period where pregnancy-related MaineCare coverage is still active), 71-89% of Black birthing parents had a postpartum check-up compared to 93% of white parents.
- Black parents may also be less likely to have adequate prenatal care compared to white parents, but the results were not significant due to wide confidence intervals.

Mental Health and Stress

Researchers have found that there is a social gradient to health and that one's position in the social hierarchy affects health. While socioeconomic status can impact access to basic needs, such as healthy food, stable housing, and health care, it also affects other drivers of health, such as opportunity, security, access to social supports, feelings of empowerment, control over life's circumstances, and exposure to stress, all of which increase health risks^{xx}. Similarly, "weathering," or the chronic and repeated stress caused by racism, increases health vulnerability and chances of pregnancy complications, such as preterm delivery and postpartum depression^{xxi}.

Birthing parents with lower incomes were twice as likely to report stressful events within the year before giving birth and twice as likely to report postpartum depression symptoms compared to parents with higher incomes.

Figure 4. Percent Experiencing Stress and Postpartum Depression by Income



- Over twice as many birthing parents with lower incomes reported experiencing three or more stressful events in the year before giving birth compared to parents with higher incomes (41% vs. 17%). Examples of the types of stressful events asked about in PRAMS are: moving to a new address, having an ill family member, someone close dying, difficulty paying bills, and loss of income.
- Birthing parents with lower incomes were also twice as likely to report postpartum depression symptoms compared to parents with higher incomes (14% vs. 7%). While the survey also asks about depression before and during pregnancy, postpartum depression results are reported because this question screens for symptoms of depression (loss of interest, hopelessness) instead of just using the term depression and may be a more accurate indication of active depression symptoms.
- Screening for depression by a health care worker during and after pregnancy occurred at a similar rate regardless of income.

Black birthing parents were two to four times as likely to report postpartum depression symptoms compared to white parents.

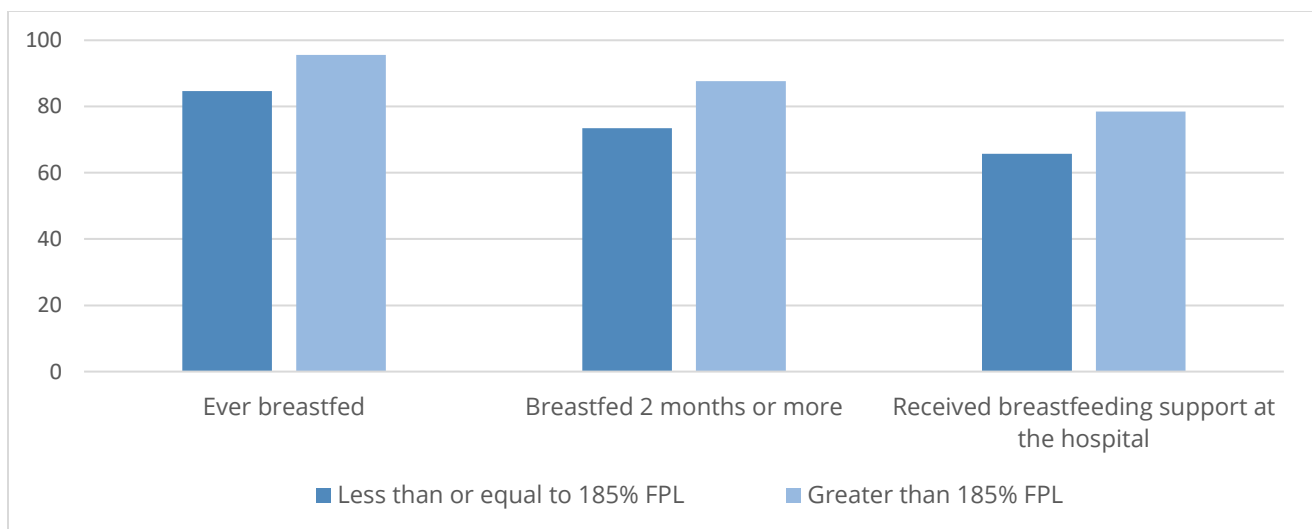
- 20-40% of Black parents reported postpartum depression symptoms compared to 11% of white parents.
- 24% of Black parents reported 3 or more stressful events 12 months before pregnancy compared to 30% of white parents, however, these results were not significant. While this may be an indication of protective factors for certain types of stressful events asked about in the survey, the survey does not ask about the stress and trauma of experiencing racism or discrimination, so this type of stress could not be measured.
- Screening for depression by a health care worker during and after pregnancy appear to have occurred at a similar rate for white and Black birthing parents, but this could not be reliably assessed due to wide confidence intervals for Black birthing parents.

Breastfeeding

Breastfeeding is a personal choice that only the birthing parent can make in terms of what feels right to them and works within their life and individual circumstances. Sometimes birthing parents are not physically able to breastfeed. However, birthing parents who choose to breastfeed may encounter social and environmental conditions that contribute to premature weaning, such as bias in the health care system, lack of hospital support, insufficient resources at discharge, inadequate parental leave, and lack of social support after discharge. For example, researchers found that health care providers may be more likely to encourage parents with lower incomes to use free formula through social service programs instead of offering assistance and support with breastfeeding and anti-Black discrimination practices and interpersonal biases may prevent Black parents from receiving needed breastfeeding support at the hospital^{xxii}. Additionally, providing breastfeeding support after discharge and receiving breastfeeding support from the non-birthing parent is associated with a decreased risk of premature weaning^{xxiii}.

Birthing parents with lower incomes were less likely to report receiving breastfeeding support at the hospital and to initiate and maintain breastfeeding.

Figure 5. Percent Reporting Breastfeeding and Hospital Support by Income



- 66% of birthing parents with lower incomes reported receiving breastfeeding support at the hospital (received help with breastfeeding, information on breastfeeding, and a number to call for breastfeeding support) while 79% of parents with higher incomes reported receiving this type of support.

- 85% of birthing parents with lower incomes ever breastfed compared to 96% of parents with higher incomes and among parents who ever breastfed, 74% with lower incomes were still breastfeeding at two months compared to 89% with higher incomes.
- 30% of parents not breastfeeding at two months reported stopping breastfeeding due to lack of social support, which included returning to work or school or too many household duties. There was no difference by income in the proportion of parents who reported stopping breastfeeding due to lack of social support.

Breastfeeding outcomes could not be reliably assessed for Black birthing parents due to small population numbers and insignificant findings.

- Overall, no significant differences were seen between white and Black rates of breastfeeding, receipt of breastfeeding support at the hospital, and reason for stopping breastfeeding. This may be due to the small sample of Black parents, which yielded wide confidence intervals. For example, 77-93% of Black parents reported ever breastfeeding compared to 89-91% of white parents and 76-92% of Black parents were still breastfeeding at two months compared to 78-82% of white parents. Protective factors may exist for Black parents for breastfeeding continuation; however, this could not be reliably assessed.

Conclusions

Health Inequities Based on Income and Race

This analysis found that population level disparities in perinatal health exist based on income and race. Compared to birthing parents with higher incomes, parents with lower incomes were less likely to have health care coverage and have health care visits, were more likely to report stressful events and postpartum depression symptoms, and were less likely to breastfeed and report receiving breastfeeding support at the hospital. Black birthing parents were less likely to have a preventative visit in the year before pregnancy and a postpartum check-up, were more likely to be uninsured in the postpartum period, and were more likely to report postpartum depression symptoms compared to white birthing parents.

Inequities in Data Collection Methods and Sampling Design

Health inequities based on income could be reliably assessed using PRAMS as confidence intervals for all indicators were within 20 percentage points and rarely exceeded 10 percentage points. However, health inequities based on race could not be as reliably assessed due to small population numbers and wide confidence intervals for many indicators for BIPOC birthing parents, while all indicators for white parents could be reliably assessed.

This lack of data for BIPOC birthing parents is representative of inequities in the data collection methods and sampling design and further contributes to inequities by rendering certain groups invisible in the data.

Limitations to Measuring the Impact of Social and Environmental Conditions

While the impact of classism and racism could be assessed on some Social Determinates of Health, such as health care coverage, health care visits, postpartum depression, exposure to stress, breastfeeding outcomes, breastfeeding support at the hospital, and certain barriers to initiating and maintaining breastfeeding; other social and environmental conditions impacting perinatal and infant health could not be fully assessed or understood, for example:

Other than lack of health care coverage, what other factors are contributing to the disparities in health care access for lower income and Black birthing parents?

What other stressful life events, such as exposure to racism and discrimination, are affecting the health of birthing parents?

How comfortable with and supported by health care providers do birthing parents feel and how might this impact the quality of care and support provided, or the perception of quality of care and support received?

How might the difference in support provided or received at the hospital or by providers be indicative of institutional biases?

What community assets, such as beliefs and value systems, may serve as protective factors for perinatal and infant health?

Recommendations

Increase PRAMS Funding to Make Changes to Data Collection Methods

Offering the survey in more languages and adjusting the PRAMS sampling design to oversample by race is a method that could increase the chance of collecting more reliable data for BIPOC communities. However, under the current funding structure for PRAMS, Maine may not have the capacity to implement this sampling design in a way that would produce representative data and does not have the capacity to make the survey available in additional languages. Additional funding for PRAMS through State resources may provide the needed resources to make these changes, however, unless additional resources are allocated at the Federal level, lack of resources will continue to pose a barrier since the U.S CDC allocates significant resources to assist states with data collection, cleaning, and weighting. Additionally, regardless of these changes, the historical and continued harms caused by mainstream data systems may still pose barriers to data collection as communities who have been harmed by these systems may be less likely to participate.

Fund Alternative Data Collection Methods to Measure Perinatal Health

Since increasing PRAMS funding to make needed changes to the data collection methods may not result in producing meaningful data for BIPOC birthing parents, alternative data collection methods are needed. In January 2022, the Permanent Commission on Racial, Indigenous, and Maine Tribal Populations, in accordance with LD 1113, submitted a report to the Maine State Legislature titled “Racial Disparities in Prenatal Access in Maine^{xxiv}.” This report detailed current health inequities as well as made recommendations for changes to data collection systems to better assess perinatal health. Due to the limitations of mainstream data collection techniques that “prioritize white citizens and deprioritize racial and ethnic subgroups,” the Commission recommended supporting community-led data gathering and investing in mutually beneficial data sharing between community-led data initiatives and mainstream public health systems. Additionally, the Commission also recommended investing in qualitative data gathering by engaging communities in a meaningful way to share their lived experiences.

Prioritize Questions that Assess Structural Causes of Health Disparities

Prioritizing questions that contextualize risk factors and expose structural inequities will allow for the collection of more robust data to better understand and measure Social Determinants of Health. Beginning with 2023 births, Maine added questions to PRAMS to better assess the structural causes of health disparities. However, due to limitations on survey length, out of the following types of recommended questions, only those with an asterisk were added:

- Feelings of comfort with health care providers during delivery*
- Feelings of comfort with health care providers during prenatal care appointments
- Quality of health care providers’ communication*
- Experiences of racism and discrimination in lifetime*
- Experiences of racism and discrimination at health care visits*
- Adverse Childhood Experiences (ACES)*
- Neighborhood safety
- Barriers to accessing health care and mental health care

- Reason(s) for no health insurance coverage
- Access to healthy food, adequate housing*, and transportation*
- Available social support in lifetime, during pregnancy*, and after pregnancy
- Access to and quality of parental leave*

Ensure Policies, Systems, and Programs Center Equity

Centering equity in policies, systems, and programs can reduce health inequities. Maine has made recent policy changes that may help to reduce perinatal health inequities, such as expanding pregnancy-related MaineCare coverage to one year postpartum and adding more dental benefits to MaineCare, such as preventative services. A further policy change under consideration, but that has not yet been implemented, is the establishment of the Maine Paid Family Leave Insurance Program that mandates employers with more than 49 employees to provide paid parental leave.

Additionally, centering health equity in data systems is imperative to help identify root causes of health disparities and drive needed changes to advance health equity. Using a Social Determinants of Health framework contextualizes health within the larger social environment so that needed changes to reduce health disparities are not only confined to looking at a single cause or system, but rather can be seen across many different systems. For example, historical and discriminatory practices in zoning regulations, tax policies, school funding policies, banking systems, criminal justice codes and enforcement, and neighborhood segregation all impact health and well-being across generations. There is an urgent need to take steps to ensure that policies, systems, and programs across all levels of influence center equity as equity in these systems is health equity and will and result in better health and well-being for everyone.

Thank you to the Maine birthing parents who generously agreed to share their story and whom without PRAMS data would not be possible.

End Notes

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