Background and Significance
The importance of breastfeeding for maternal and child health is well established. Breastfeeding protects a child from infections, increases intelligence, and provides protection against obesity and diabetes. Breastfeeding also improves maternal outcomes by reducing breast cancer, ovarian cancer, and type 2 diabetes. The American Academy of Pediatrics (AAP) and the American College of Obstetrics and Gynecology (ACOG) recommend exclusive breastfeeding for the first six months of an infant’s life and partial breastfeeding until at least 12 months of age. This data brief seeks to communicate the prevalence of breastfeeding initiation among women who delivered a live infant in Rhode Island from 2012-2015 and to describe the population of mothers who are at higher risk for low breastfeeding prevalence.

Healthy People 2020 Target
Maternal, Infant, and Child Health MICH-21.1: Increase the proportion of infants who are ever breastfed to 81.9%.

Methods
The goal of the Pregnancy Risk Assessment Monitoring System (PRAMS) survey is to improve the health of mothers and infants by providing accurate data to a wide audience. The Rhode Island PRAMS program is conducted through a collaboration between the Rhode Island Department of Health (RIDOH) and the Centers for Disease Control and Prevention (CDC) and surveys about 1,900 recent mothers per year. Responses are weighted to be representative of women who delivered a live infant in Rhode Island from 2012-2015. More information is available on the PRAMS website.

Provider Recommendations
- Provide patient-centered counseling, including benefits of breastfeeding for mothers and infants, recommended exclusivity and duration rates, and information about support resources (lactation consultants and support groups) to all pregnant and postpartum women during office visits.
- Begin breastfeeding counseling with a key question, (What have you heard about breastfeeding?) to clarify breastfeeding intention, perceptions, and prior experiences among multiparous patients. Let the patient’s response guide breastfeeding counseling.
- Encourage patients who are smoking or using tobacco products to breastfeed even if they have not quit. Research shows the benefits of breastfeeding outweigh the risks of nicotine exposure. Provide targeted breastfeeding information and counseling for women who are using tobacco during prenatal or postpartum visits.
- Hire lactation consultants in provider offices to work with postpartum women (including pediatrician offices) and provide breastfeeding support.
- Provide targeted support for breastfeeding continuation among African-American and Hispanic women and links to appropriate support programs like lactation consultants or home visiting services.
- Integrate breastfeeding counseling into comprehensive service delivery, including routine prenatal visits, acute-care visits, and well-child visits.
- Maintain a referral list for breastfeeding resources that are not provided on site.
Assessing Breastfeeding Prevalence Using PRAMS Data

Using data from Rhode Island PRAMS respondents from 2012-2015, the proportion of women who ever breastfed their babies was assessed based on responses to the questions *Did you ever breastfeed or pump breast milk to feed your new baby after delivery, even for a short period of time?* and *Are you currently breastfeeding or feeding pumped milk to your baby?* Respondents who answered yes to the first question were considered as having breastfeeding initiation. Respondents who answered yes to both questions were considered to be currently breastfeeding. Statistical analysis using a cross tabulation determined the prevalence of breastfeeding among our study population (a total of 4,687 respondents) and identified groups of mothers that are at higher risk for not breastfeeding. Weighted proportions are reported to represent women who delivered a live infant in Rhode Island from 2012-2015.


**Figure 1: Breastfeeding Initiation by Year, Rhode Island, PRAMS, 2004-2015**

![Breastfeeding Initiation by Year](image)

Demographic Characteristics: Breastfeeding Initiation, 2012-2015

The overall prevalence of Rhode Island mothers who ever breastfed or pumped breast milk to feed their baby was 87.2%. Demographic characteristics that were significantly (p-value less than 0.05) associated with lower breastfeeding initiation included the following, as compared to their counterparts:

- Younger than age 20 (82.1%)
- White, Non-Hispanic (84.8%)
- Fewer than 12 years of education (79.4%)
- Unmarried (81.8%)
- Public health insurance (83.7%)
- Participated in WIC (83.4%) or
- Had a self-reported disability (79.4%).
Risk Factors and Outcomes by Breastfeeding Status, 2012-2015

Mothers who never breastfed their baby were significantly more likely (p-value less than 0.05) to report unintended pregnancy, no daily multivitamin use, no annual flu vaccination, and tobacco use compared to their counterparts. There was no effect of prenatal breastfeeding counseling on breastfeeding initiation.

Figure 3: Risk Factors and Outcomes by Breastfeeding Status, Rhode Island, PRAMS, 2012-2015
Current Breastfeeding, 2012-2015

The proportion of Rhode Island mothers who were currently breastfeeding at the time of the survey (two to six months postpartum) increased significantly from 37.3% in 2004 to 46.4% in 2015 (p-value for linear trend is <0.001). Although this data cannot be compared directly to the MICH-21.2 goal to increase the proportion of infants who are breastfed at six months to 60.6%\(^4\), some trends emerged. Although Black Non-Hispanic and Hispanic mothers are more likely to ever breastfeed as compared to White Non-Hispanic mothers, the proportion of these mothers who were currently breastfeeding at the time of the survey is significantly lower than White Non-Hispanic mothers (p-value <0.01). Current breastfeeding was significantly associated with receiving prenatal breastfeeding counseling (p-value <0.01), while there is no association between prenatal breastfeeding counseling and ever breastfeeding.

Limitations

PRAMS data are based on self-report by the survey respondent and are not verified, so they may be subject to recall bias or bias towards the socially-desirable answer. This may lead to over-reporting of breastfeeding initiation. Certain high-risk populations may be under-represented due to non-response or non-coverage bias.

Discussion and Conclusions

These findings have the potential to inform public health practice. By identifying existing disparities in breastfeeding initiation and continuation, healthcare providers can work to improve patient-centered counseling, linkages with appropriate community resources (such as lactation consultants), and support in identifying and overcoming barriers to breastfeeding. Since breastfeeding counseling did not improve breastfeeding initiation, there is evidence to evaluate prenatal counseling practices among healthcare providers. ACOG provides a breastfeeding toolkit for healthcare providers that may support these conversations.\(^3\) Additional supports are indicated for populations who have lower breastfeeding initiation (less than 12 years of education, a self-reported disability, or unmarried), as well as for those women who have high breastfeeding initiation, but low continuation (Black Non-Hispanic and Hispanic women). Although breastfeeding initiation rates are high in Rhode Island, there are a variety of recommended actions for healthcare practitioners identified. Healthcare providers play a key role in improving outcomes for all mothers in Rhode Island.

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