



Preterm Delivery Factsheet (November 2022)

Pregnancy Risk Assessment Monitoring System

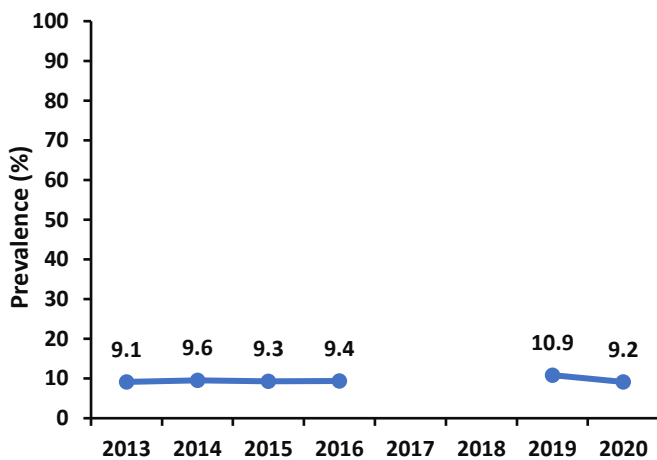
Background

Preterm delivery, or the delivery of an infant before 37 weeks of pregnancy, is the leading cause of infant deaths in the first month of life and is associated with birth defects and long-term health problems. In 2016, preterm delivery occurred in 1 of every 10 births in the United States.¹ Common risk factors for preterm delivery include a prior preterm birth; inadequate weight gain during pregnancy; maternal conditions including high blood pressure and diabetes; and use of alcohol, tobacco, or other drugs during pregnancy. The Healthy People 2030 objective is to reduce total preterm births to 9.4% nationally. Strategies to reduce preterm delivery include promoting adequate birth spacing, helping women quit smoking, and providing high-quality medical care for women during pregnancy.

Trends over Time

In 2020, 9.2% of mothers in the State of Hawaii reported delivering prematurely. There was no data collection in 2017 and 2018. Only half a year of 2019 data was available. Although there is some variation over time, there has been little change in preterm delivery in 2020 (9.2%) compared to 2013 (9.1%).

Preterm Delivery Over Time, 2013-2020



Data Source

Data from a total of 1,851 respondents were analyzed from the 2019-2020 Hawaii Pregnancy Risk Assessment Monitoring System (PRAMS), a population-based surveillance system for maternal behaviors before, during, and just after pregnancy. The 2019-2020 aggregated data were used in this analysis as there was no Hawaii PRAMS data collection for 2017-2018. Only half a 2019 year of data was available.

Data Highlights

- In 2019-2020 data, approximately 9.8% of mothers in Hawaii had a preterm delivery.
- Women who were more likely to report a preterm delivery included Native Hawaiian, Filipino, and Japanese; those under 20 years old; those who resided in Hawaii County; those who were on Medicaid/Quest before pregnancy; those who were obese before pregnancy; those who smoked before pregnancy; and those who had a previous preterm delivery.
- Women with high blood pressure or gestational diabetes were more likely to have a preterm delivery.
- Infants delivered prematurely were more likely to be delivered by cesarean, have low birthweight, be admitted to NICU, and have a longer hospital stay. Mothers who had a preterm delivery were slightly more likely to have postpartum depression symptoms.

Based on 2019-2020 data, approximately 9.8% of mothers in Hawaii had a preterm delivery. Of these preterm deliveries, 1.2% were early preterm (31 weeks or less), 1.0% were moderately preterm (32-33 weeks), and 7.6% were late preterm deliveries (34-36 weeks).

Maternal Characteristics Related to Preterm Delivery

In Hawaii, estimates of preterm delivery appeared to be higher in Native Hawaiian, Filipino, and Japanese; those under 20 years old; those who resided in Hawaii County; those who were on Medicaid/Quest before pregnancy; those who were obese before pregnancy; those who smoked before pregnancy; and those who had a previous preterm delivery (Table 1). However, due to small samples, most of these comparisons were non-significant.

Perinatal Risks and Outcomes Associated with Preterm Delivery

Women with high blood pressure as reported on the birth certificate may be associated with an increased rate of preterm delivery. Those with gestational diabetes as reported on the PRAMS survey were more likely to have a preterm delivery (Figure 1).

In Hawaii, mothers who had a preterm delivery (39.8%) were significantly more likely to have a cesarean delivery compared to those who had a term delivery (27.1%).

The rate of low birthweight infants was significantly higher for preterm birth (52.7%), compared to only 2.3% for a term birth. The rate of infants admitted to the newborn intensive care unit (NICU) was significantly higher after a preterm delivery (38.8%), compared to a term delivery (1.8%). Moreover, infants were significantly more likely to have a longer hospital stay (6 or more days; 48.4%) after a preterm delivery, compared to a term delivery (3.7%). The rate of postpartum depression symptoms was slightly higher for those who had a preterm delivery (46.4%), compared to those with a term delivery (42.0%).

Table 1. Bivariate associations of preterm delivery with selected maternal characteristics, Hawaii PRAMS 2019 to 2020

	Prevalence (%)	95% CI ¹
Maternal Race		
White	7.1	4.2-10.0
Native Hawaiian	10.9	7.8-13.9
Filipino	11.7	8.2-15.3
Japanese	10.8	4.7-16.9
Other/Unknown	9.4	6.6-12.2
Maternal Age (years)		
Under 20	16.1	4.2-27.9
20-34	9.1	6.9-11.4
35-52	9.9	8.0-11.9
County of Residence		
Honolulu	10.9	7.2-14.7
Hawaii	13.0	7.3-18.7
Maui	9.6	4.1-15.2
Kauai	NR ²	NR
Health Insurance Prior to Pregnancy		
None	6.3	2.6-10.0
Medicaid/Quest	11.7	8.4-14.9
Military	9.5	5.4-13.6
Private Insurance	9.1	7.2-10.9
Pre-pregnancy Weight Status		
Underweight (BMI < 18.5)	NR	NR
Normal (BMI 18.5-24.9)	9.5	7.2-11.9
Overweight (BMI 25-29.9)	8.3	5.8-10.8
Obese (BMI ≥ 30)	11.5	8.3-14.7
Smoking Before Pregnancy		
No	9.0	7.2-10.7
Yes	10.7	5.6-15.8
Previous Preterm Delivery		
No Previous Preterm Delivery	8.9	7.5-10.4
Previous Preterm Delivery	39.4	24.3-54.4

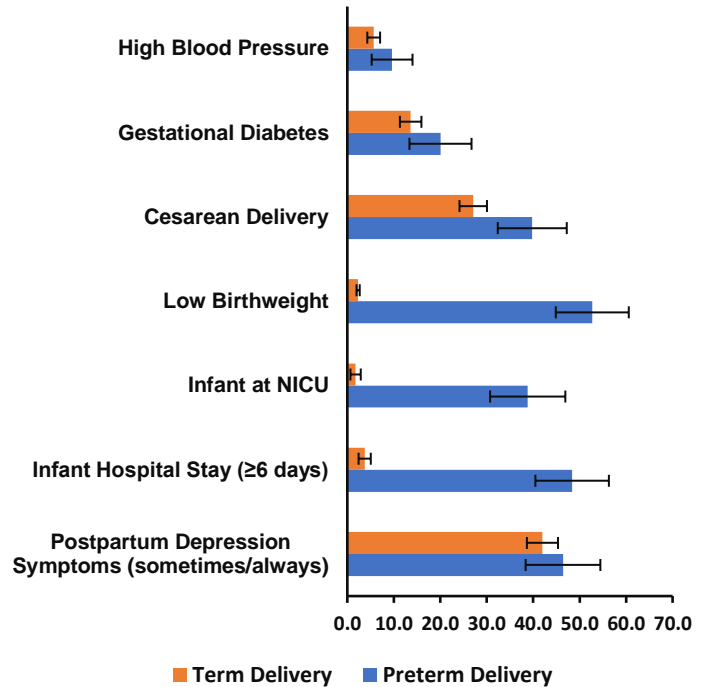
¹95% CI refers to the 95% confidence interval around estimate.

²NR: Not reportable

Discussion

About 1 in 10 women in Hawaii with a recent live birth had a preterm delivery. There has been little change since 2013 in the estimates of preterm delivery. The 2019-2020 PRAMS data showed that maternal race and age, county of residence, insurance status, pre-pregnancy weight status, and smoking during pregnancy were associated with preterm delivery, with the strongest characteristic being a mother having had a previous preterm delivery. A preterm delivery was also associated with high blood pressure, gestational diabetes, cesarean delivery, low birthweight, infant at NICU, longer hospital stay for infants, and postpartum depressive symptoms. However, since only half a year of 2019 sample was available, it was difficult to obtain significant differences for a lot of the comparisons.

Figure 1: Perinatal Risks and Outcomes by Preterm Delivery, Hawaii PRAMS 2019-2020



Preterm deliveries are associated with adverse outcomes for the mother and the infant. The data have been critical in raising awareness in the importance of reducing preterm deliveries. To reduce preterm delivery in Hawaii, it is important work with collaborators to identify ways to address prematurity at the population level such as promoting health throughout the life course to decrease risks in the preconception period to optimize the health of a women as she enters pregnancy. Population level efforts and targeted interventions towards groups at risk, particularly those with a prior preterm delivery, will help decrease the burden of prematurity.

About the PRAMS Data

The Hawaii Pregnancy Risk Assessment Monitoring System (PRAMS) is a self-reported survey of recent mothers conducted by mail with telephone follow-up. It is designed to monitor the health and experiences of women before, during, and just after pregnancy. Every year in Hawaii, about 2,400 women who deliver an infant are randomly selected to participate. **Race** is singly coded based on the mother's self-report from the birth certificate.

Suggested Citation:

Fok, CCT; Awakuni, J.; Shim, M. "Preterm Delivery Factsheet" Honolulu, HI: Hawaii State Department of Health, Family Health Services Division; November 2022.

References

- Centers for Disease Control and Prevention, "Preterm Birth," <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pretermbirth.htm> (accessed September 6, 2022).