



Department of Health and Social Services
Valerie J. Davidson, Commissioner

Division of Public Health
Jay C. Butler, MD, MPH, Chief Medical
Officer and Director

Editors:
Joe McLaughlin, MD, MPH
Louisa Castrodale, DVM, MPH

3601 C Street, Suite 540
Anchorage, Alaska 99503 <http://dhss.alaska.gov/dph/Epi>

Local (907) 269-8000
24 Hour Emergency (800) 478-0084

Bulletin No. 2 January 26, 2016

Preterm Birth Update — Alaska, 2007–2014

Background

Preterm birth (<37 weeks gestation) is a major contributor to infant morbidity and mortality.¹ Beginning in 2014, the National Center for Health Statistics (NCHS) transitioned from estimating gestational ages of newborns based on the date of the last normal menstrual period (LMP) to an obstetric estimate (OE) because the OE is a more accurate measure of both gestational age and the risks associated with preterm birth than the LMP.² The LMP is measured as the interval between the first day of the mother's LMP and the infant's birth date; the OE is the clinical estimate of gestational age at delivery. The purpose of this analysis is to compare the differential estimates of preterm birth rates in Alaska based on the OE and LMP measures, and to share recent preterm birth trends in Alaska using the OE.

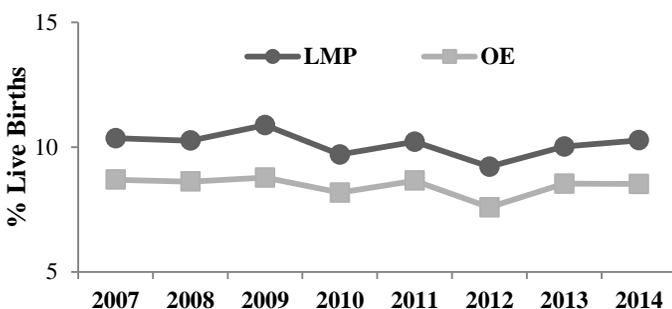
Methods

We used a dataset of linked Alaska birth and death certificates for 2007–2014 to obtain both the OE and LMP measures. We followed NCHS methodology for imputing missing or correcting out-of-range values.² We presented OE measures, unless otherwise stated. We evaluated trends using negative binomial regression and compared ratio measures using Chi-squared tests ($\alpha=0.05$).

Results

Among the 11,403 births to Alaska residents in 2014, 10.3% were estimated as preterm by LMP and 8.5% were estimated as preterm by OE. After increasing during 1989–2006,³ the proportion of infants born preterm has remained relatively stable in Alaska since 2007 (Figure).

Figure. Percent of Preterm Births by Year and Preterm Estimation Measure, Alaska, 2007–2014



Preterm birth trends remained unchanged during 2007–2014 for all maternal races; however, there were significant differences in the prevalence of preterm births by maternal race (Table). Relative to infants born to White women, the occurrence of preterm birth was 26% higher among infants born to non-White women ($p<0.01$).

Table. Average Preterm Birth Rate by Maternal Race* and Preterm Birth Classification, Alaska 2007–2014

| Maternal Race | Births n | Extremely PT n (%) | Very PT n (%) | Late PT n (%) |
|------------------------|----------|--------------------|---------------|---------------|
| White | 49201 | 181 (0.4) | 290 (0.6) | 3234 (6.6) |
| Alaska Native | 19714 | 89 (0.5) | 190 (1.0) | 1757 (8.9) |
| Asian/Pacific Islander | 6955 | 42 (0.6) | 45 (0.7) | 586 (8.4) |
| Black | 3360 | 40 (1.2) | 30 (0.9) | 303 (9.0) |

*Starting in 2013, Alaska birth certificates began allowing for characterization of multiple races.

Among all 7,541 preterm births that occurred during 2007–2014, 398 (5%) were estimated to be <28 weeks gestation (i.e., “Extremely PT”), 642 (9%) were 28–31 weeks gestation (i.e., “Very PT”), and 6501 (86%) were 32–36 weeks gestation (i.e.,

“Late PT”). Compared to LMP-classified births, 11.4% fewer OE-classified births were classified as Extremely PT, 23% fewer were classified as Very PT, and 17% fewer were classified as Late PT.

Women with a preterm birth were equally likely to start prenatal care in the first trimester compared to those with a term birth (78.7% vs. 78.9%, respectively; $p=0.81$). During 2007–2014, 71% of all preterm births were delivered in Anchorage, while only 43% of the preterm births occurred among Anchorage residents.

Preterm infant mortality rates associated with the OE were consistently higher than those with the LMP throughout the study period. On average, 28.0 infant deaths occurred annually for every 1,000 births estimated as preterm by the OE, compared to 22.6 infant deaths per year for every 1,000 births estimated as preterm by the LMP ($p<0.05$).

Discussion

By reducing misclassification of gestational age, the OE improves the accuracy of preterm birth prevalence estimates.² Consistent with national trends, compared to the LMP method, the OE method of estimating gestational ages of newborns in Alaska resulted in fewer births classified as preterm. Thus, with a smaller number of births classified as preterm (i.e., a smaller denominator), the OE preterm infant mortality rate was consistently higher than the LMP preterm infant mortality rate.

Nationally, the preterm birth rate decreased from 10.4% in 2007 to 9.6% in 2014 (OE).^{2,3} This decrease occurred among all races, and has been attributed to changing demographics and medical standards.⁴ While a decline in preterm births has not been observed in Alaska, statewide rates are consistently below the national average for both White and Black women. However, in 2014, Alaska ranked above the national average for preterm birth disparities among racial and ethnic groups.⁵

Access to care is critical for assuring prenatal and postpartum infant health. Anchorage has the only hospitals with level II or III Neonatal Intensive Care Units in Alaska, which are best equipped to handle complications that may arise from preterm birth.⁶ The comparatively high prevalence of first trimester prenatal care and the centralization of preterm deliveries imply that high-risk births are being well monitored in Alaska.⁷

Recommendations

1. Health care professionals who care for pregnant women and newborns should be familiar with the OE estimate of gestational age and understand the impact of the transition on preterm birth and mortality rates.²
2. Providers should offer comprehensive first trimester prenatal care to identify preterm risk factors and to provide education and support to help women address known modifiable risks such as weight gain, stress, and tobacco use.

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