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Preterm Birth Trends — Alaska, 2000–2019

Background

Preterm birth (<37 weeks gestation) is a major contributor to infant mortality and morbidity.¹ Preterm birth in Alaska increased during 1989–2006 and had no significant trend during 2007–2014.² The purpose of this analysis is to describe the most recent preterm birth trends in Alaska.

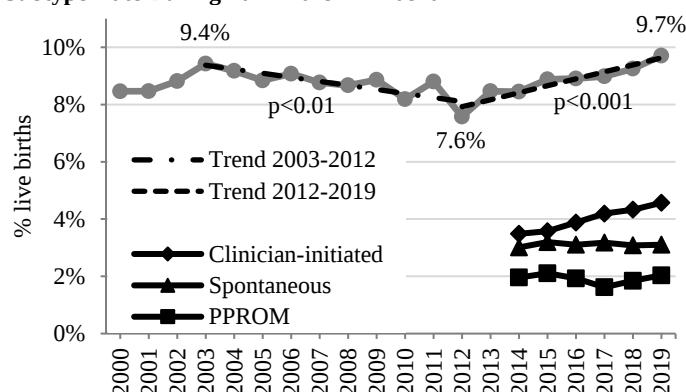
Methods

We analyzed birth record data of Alaska-resident infants born during 2000–2019. Birth characteristics and available data on risk factors for preterm birth were examined only for infants born during 2014–2019 due to changes in birth record variables that occurred in 2013. Preterm birth sub-types were determined by three mutually exclusive categories: spontaneous preterm births following PPRM (Preterm Premature Rupture of Membranes, prolonged ≥ 12 hours), clinician-initiated preterm births following labor induction or cesarean delivery without labor attempt, and spontaneous preterm births following labor onset with intact membranes. Joinpoint regression was conducted in R 4.0.2 to detect significant points of change in the slope of linear trends over time (joinpoints) and test the significance of trends within any identified segments.

Results

The preterm birth rate in Alaska decreased by 19.1% during 2003–2012 and increased by 27.6% during 2012–2019 (Figure). The highest annual rate in the 20-year study period occurred in 2019.

Figure. Preterm Birth Rate During 2000–2019 and Preterm Subtype Rate During 2014–2019 — Alaska



During 2014–2019, clinician-initiated preterm births, which are related to maternal or neonatal complications, increased from 3.5% to 4.6% of all births ($p<0.001$). Spontaneous preterm births, as well as those with PPRM, had no significant trends. Late preterm births (32–36 weeks gestation) increased from 7.4% to 8.7% of all births during 2014–2019 ($p<0.05$). Very (28–31 weeks gestation) and extreme (<28 weeks gestation) preterm births had no significant trends.

Risk factors were present among many preterm births during 2014–2019, including maternal obesity (29.7%), hypertensive disorders (26.3%), diabetes (17.2%), and cigarette use (21.7%). Nearly one fifth (19.6%) involved no prenatal care in the first trimester. Among second or higher order singleton preterm births, 8.8% had an interpregnancy interval of <6 months. Obesity (BMI ≥ 30) increased among all births from 24.9% to 27.8% during 2014–2019 ($p<0.001$). Hypertensive disorders (including gestational hypertension, chronic hypertension and eclampsia) increased among all births from 10.6% to 15.3% during 2014–2019 ($p<0.001$). Diabetes, including gestational and chronic diabetes, increased among all births from 9.1% to 12.6% during 2014–2019 ($p<0.001$).

The preterm birth rate among Alaska Native people increased during 2012–2019 from 9.5% to 13.5% of all births ($p<0.01$). No statistically significant trends were identified among Asian ($p=0.14$), Black ($p=0.24$), Pacific Islander ($p=0.60$), or White births ($p=0.09$). An increase in preterm birth was observed during 2012–2019 among residents of the Anchorage ($p<0.001$), Gulf Coast ($p<0.05$), and Mat-Su ($p<0.05$) regions.

During 2014–2019, hypertensive disorders and diabetes increased among Alaska Native, Asian, and White births ($p<0.05$), but did not increase among Black and Pacific Islander births. Obesity increased only among White births ($p<0.05$).

Discussion

The preterm birth rate in Alaska declined during 2003–2012 and subsequently increased during 2012–2019, reaching a 20-year high of 9.7% in 2019. This mirrors national trends, where the preterm birth rate increased from the early 1980s to 2006, declined from 2007–2014, and rose again during 2014–2019.^{1,3}

The recent rising preterm birth rate in Alaska occurred primarily among late preterm and clinician-initiated preterm births. Rates of obesity, hypertensive disorders, and diabetes rose among birthing people in Alaska during 2012–2019, which may be contributing to the statewide increase in preterm birth. During the study period, Alaska also experienced an increase in Neonatal Abstinence Syndrome related to substance use during pregnancy, which also may have contributed to the increase in preterm birth.⁴ The percent of preterm births associated with substance use could not be described due to inconsistency of related data available on birth certificates.

The preterm birth rate has increased among Alaska Native people but not among other racial groups suggesting that racial disparities may be worsening as has occurred nationally.³ Small numbers of events among some groups in Alaska make it difficult to compare all trends. The factors driving increasing disparities are unknown, but racial disparities are likely due in part to cumulative social and physical exposures that stem from long-standing inequities.⁵

Recommendations

1. Pre- and inter-conception services should be provided to all people of childbearing age to allow them to optimally time pregnancies and prevent or manage chronic conditions, such as hypertension, diabetes, obesity, and substance misuse.
2. Healthcare systems and providers should seek to identify and reduce barriers that impede access to early prenatal care.
3. Providers should universally screen pregnant people for substances and offer appropriate interventions. Healthcare facilities can join Alaska's Substance Exposed Newborns Initiative by contacting seni@alaska.gov to screen pregnant people with 4P's Plus®, the only screening tool specifically validated for use during pregnancy.

References

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