

Oregon Birth Data

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Summary

Research question: *Is there health disparities in birth outcomes among American Indian/Alaskan Native populations vs othe racial groups in the state of Oregon.*

This analysis examines birth outcomes across different racial groups in Oregon, focusing on low birth weight rates and prenatal care utilization. Using population-level health data, we identified significant disparities in birth outcomes and explored the relationship between prenatal care timing and birth weight.

Key Findings

Summary stats: People who identify as White are the majority of total births (85%) while American Indian/Alaskan Native accounted for 1.7%

Table 1: Birth Distribution by Race

| Race | Total Births | Records | % of Total |
|---|--------------|---------|------------|
| White | 229474 | 918 | 84.9 |
| Asian | 14798 | 204 | 5.5 |
| More than one race | 12376 | 216 | 4.6 |
| Black or African American | 7545 | 204 | 2.8 |
| American Indian or Alaska Native | 4464 | 143 | 1.7 |
| Native Hawaiian or Other Pacific Islander | 1477 | 87 | 0.5 |

Statistical Analysis: A chi-square test of independence revealed a statistically significant association between race and low birth weight status ($p < 0.001$), indicating that birth weight outcomes vary significantly across racial groups.

Chi square

Table 2: Contingency Table: Race by Low Birth Weight Status

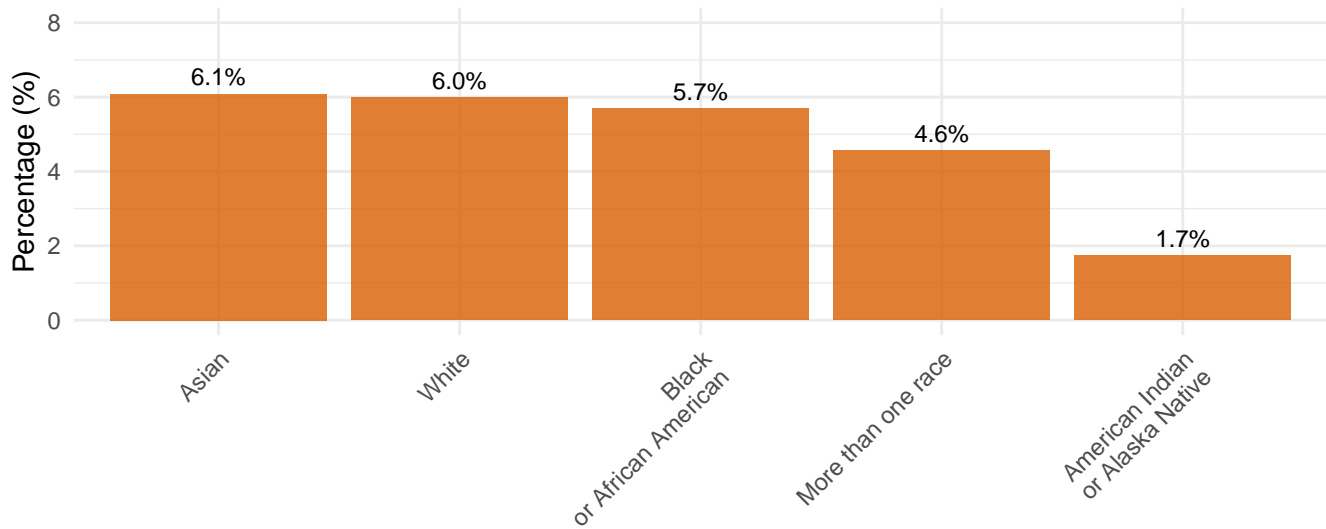
| | Low birth weight | Normal birth weight |
|---|------------------|---------------------|
| American Indian or Alaska Native | 78 | 4386 |
| Asian | 900 | 13898 |
| Black or African American | 430 | 7115 |
| More than one race | 564 | 11812 |
| Native Hawaiian or Other Pacific Islander | 0 | 1477 |
| White | 13751 | 215723 |

Table 3: Chi-Square Test Results

| | Test Statistic | Value |
|-----------|--------------------|---------|
| X-squared | Chi-square | 276.84 |
| df | Degrees of Freedom | 5 |
| | P-value | < 0.001 |

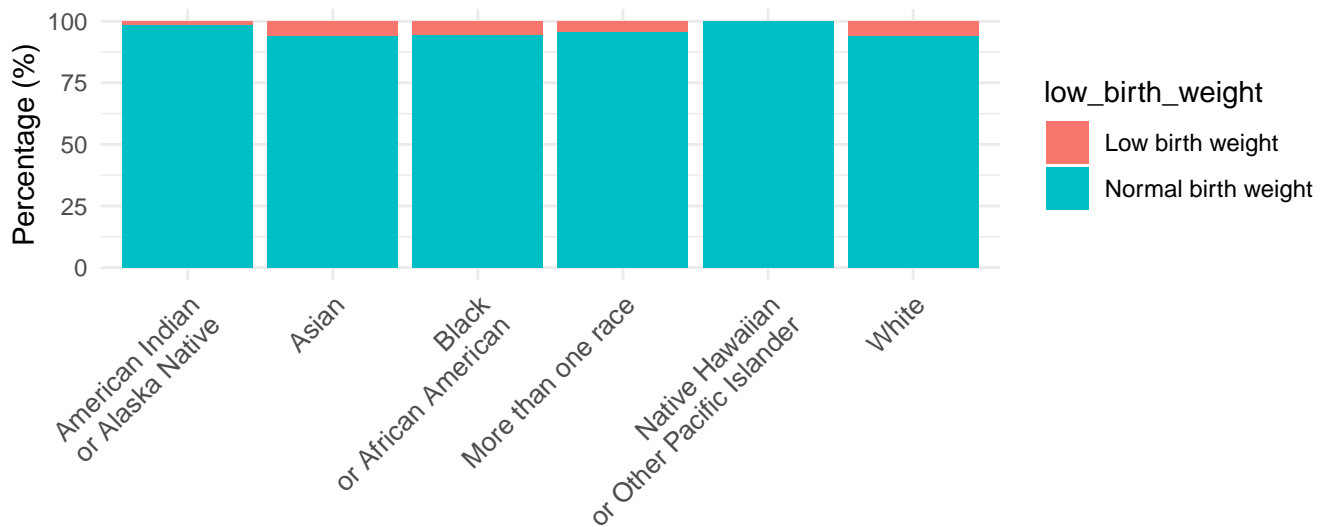
Analysis

Low Birth Weight Rates by Race in Oregon, 2018–2022



Source: CDC Wonder

Birth Weight Distribution by Race in Oregon, 2018–2022



Source: CDC Wonder

Limitations

This analysis has several important limitations:

1. **Geographic Scope:** Data were originally requested for Klamath County; however, due to CDC WONDER's data suppression rules for small populations, this analysis utilized statewide Oregon data. This geographic aggregation may mask important county-level variations and limits the applicability of findings to Klamath County specifically.
2. **Ecological Fallacy:** Population-level associations cannot be used to infer individual-level relationships. Observed disparities do not account for individual confounders.
3. **Unmeasured Confounding:** Important factors such as maternal education, income, insurance status, health-care access, maternal age, and pre-existing conditions are not included in this analysis.
4. **Data Suppression:** CDC WONDER suppresses data for privacy protection, potentially resulting in incomplete representation of smaller racial/ethnic populations, particularly affecting American Indian/Alaska Native populations.
5. **Prenatal Care Measurement:** Analysis captures only timing of care initiation, not quality, frequency, or content of prenatal services received.
6. **Race/Ethnicity Classification:** Self-reported categories may not capture the full complexity of identity and within-group heterogeneity. For Native American populations specifically, this classification does not account for tribal affiliation, urban versus reservation residence, or degree of connection to traditional healthcare systems.

Conclusions

This statewide analysis of Oregon birth outcomes reveals significant racial disparities in birth outcomes. The findings suggest that:

1. Low birth weight rates vary significantly across racial groups ($p < 0.001$)
2. Birth weight distributions differ substantially across populations

While statewide data provide important insights into population-level health disparities, the inability to access county-specific data limits conclusions about Klamath County specifically. The geographic aggregation is particularly problematic for understanding American Indian/Alaska Native birth outcomes, as these populations may have unique health service utilization patterns and risk factors that vary by tribal affiliation and geographic location.

Recommendations for Future Research:

To better understand birth outcome disparities, particularly for Native American populations, future studies should: (1) partner with Tribal Health Organizations and Tribal Epidemiology Centers for more detailed community-specific data; (2) incorporate cultural factors and assess specific healthcare access barriers including geographic isolation, transportation, and culturally competent care availability; (3) examine differences between urban and reservation populations; and (4) employ Community-Based Participatory Research approaches that center Native voices and ensure findings benefit the communities studied. These approaches would provide more nuanced understanding and inform targeted, culturally appropriate interventions.

Methods: Data were analyzed using R (version 4.2.1). Statistical significance was assessed using chi-square tests. All visualizations created using ggplot2.

Code: Full code can be found at this link: https://github.com/tonioceniceros/birth_data/blob/main/births_data.Rmd