

Association between Prenatal and Long-Term Visit History and Birth Outcomes Among Black Women: A Linked EMR/Claims Analysis

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BACKGROUND

In the United States, Black women experience the significantly higher rates of preterm birth and maternal morbidity and mortality compared to White women.^{1,2} While the reasons for these disparities are complex, a lack of access to or trust in the healthcare system are suspected to contribute to poor infant and maternal outcomes among Black women in the US.³

OBJECTIVE

This retrospective study examined preterm births and adverse maternal outcomes among Black women stratified by historical healthcare use in a linked claims/EMR network

METHODS

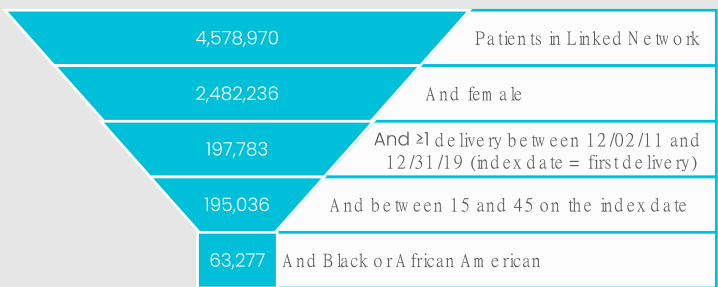
Data source: TriNetX Linked Network

- A Network comprised of electronic medical records from 4.5+ million unique de-identified patients linked via tokens to closed claims data

Patient Selection

- We identified Black women, 15 and 45 years old, with ≥ 1 delivery between 12/02/2011 and 12/31/2019 (Figure 1)
- There was no requirement for continuous enrollment

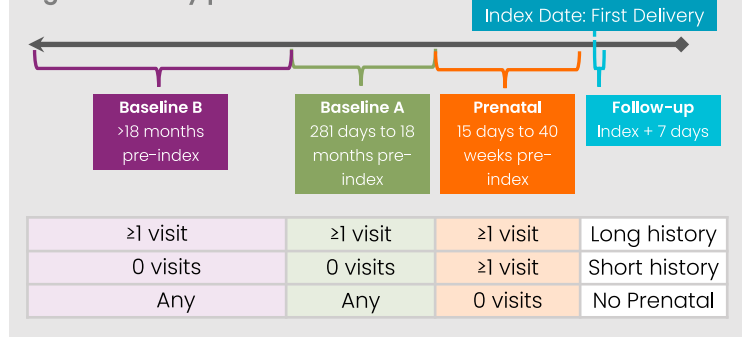
Figure 1: Patient Selection



Patient Stratification

- Women were stratified into three categories (long history, short history, or no prenatal) based on their history of care (Figure 2)
- Women with visit histories that did not fit into these three categories were excluded

Figure 2: Study periods



Outcome Measures

- Captured on the index date or in the 7 days following
- Preterm delivery: ICD-10-CM O60.1
- Poor maternal outcomes:
 - Hemorrhage: ICD-10-CM O67, O72
 - Transfusion: ICD-10-PCS 30230H1, 30230N1, 30230P1, 30233H1, 30233N1, 30233P1, 30240H1, 30240N1, 30240P1, 30243H1, 30243N1, 30243P1
 - Severe (3rd or 4th degree) perineal laceration: ICD-10-CM O70.2, O70.3
 - Placental abruption: O45.009
 - Uterine rupture: ICD-10-CM O71.0, O71.1
 - Uterine inversion: ICD-10-CM O71.2

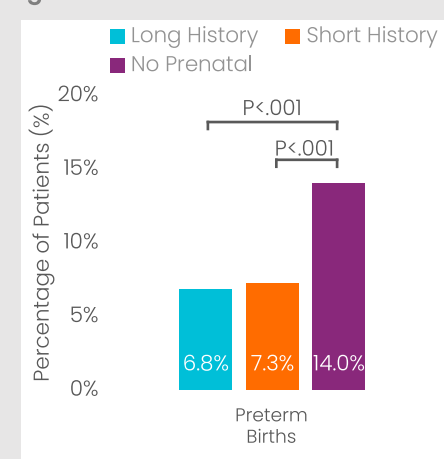
Statistics

- All study analyses were conducted on the TriNetX Platform using the built-in querying and analytics functions
- Statistical comparisons between groups were conducted using the Chi-Squared Test for Independence.
 - For post-hoc analyses, we applied a family-wise Bonferroni correction to the p-values.

RESULTS

- Among 63,277 Black women with a recorded delivery, 55.2% (34,923) had a long history, 11.8% (7,460) had a short history, and 3.6% (2,293) had no prenatal record.
- 29.4% (18,601) women with a recorded delivery were excluded because they had a visit in the prenatal period (40 weeks pre-index) and a visit in either Baseline A or Baseline B but not both

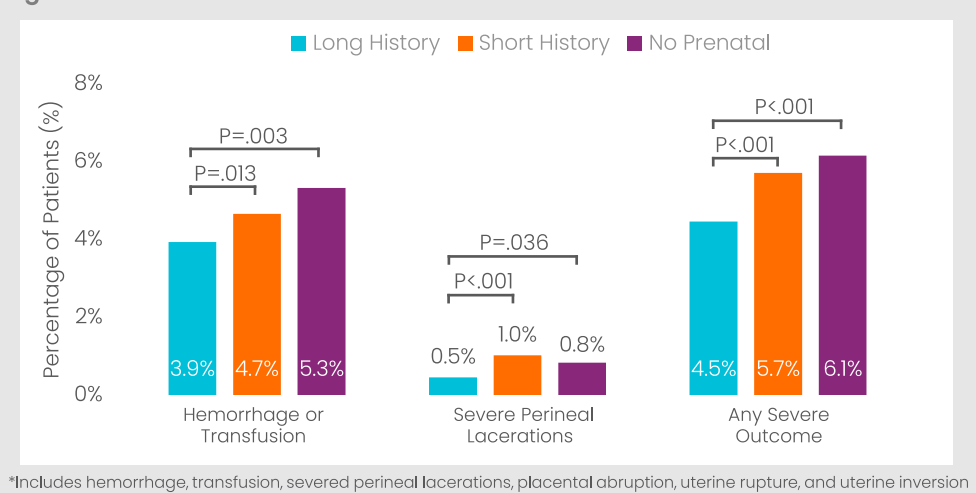
Figure 3: Incidence of Preterm births



RESULTS, Cont.

- Mean patient age, in all cohorts, was 26 years old
- Preterm births were more common among women with no record of care during the prenatal period (14.0%), than among women with a short history of care (7.3%, $p < .001$) or a long history of care (6.8%, $p < .001$) (Figure 3)
 - There was no significant difference in the incidence of preterm birth between women with a short history or long history of care
- While severe maternal outcomes were more common among women with no record of care during the prenatal period (6.1%) compared with a long history of care (4.5%, $p < .001$), they were not significantly different when compared to women with a short history of care (5.7%) (Figure 4)
 - Severe maternal outcomes were more common among women with a short history of care compared to those with a long history of care ($p < .001$)
 - Hemorrhage or transfusions were the most common severe maternal outcome in all cohorts, occurring in 3.9% of patients with a long history, 4.7% of patients with a short history, and 5.3% of patients with no visits in the prenatal period.

Figure 4: Incidence of Poor Maternal Outcomes



*Includes hemorrhage, transfusion, severed perineal lacerations, placental abruption, uterine rupture, and uterine inversion

CONCLUSIONS

- This analysis suggests that both prenatal and historical care contribute to birth outcomes among Black women.
- These findings suggest that interventions tailored to improving overall access and use of healthcare among Black women may be effective in addressing racial disparities in maternal health.

REFERENCES

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DISCLOSURES

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