

Reduction in birth rates and preterm births following the emergence of COVID-19 pandemic in Michigan

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Abstract

PURPOSE: The COVID-19 pandemic led to more than 190 million confirmed cases and 4 million deaths worldwide. Strategies of containment and mitigation have been employed throughout history during environmental disasters and health pandemics and have impacted birth rates and perinatal outcomes. The goal of this study was to examine the impact of the COVID-19 pandemic on birth rates and birth outcomes in the state of Michigan during the first year of the pandemic.

METHODS: A population-based retrospective cohort study was performed using the state of Michigan's birth registry data. The timeline of interest was after the emergence of the pandemic in Michigan from March 2020 until December 2020. The 'unexposed' pre-pandemic group was defined as data from the birth registry from March 2019 until December 2019. Groups were further compared by race. Singleton gestations were included for preterm birth outcomes.

RESULTS: A total of 91,068 births took place between March and December 2019 compared to 83,240 births between March and December 2020. Overall, the percentage of women who received adequate prenatal care dropped from 68.4% to 41.9% ($p < 0.001$). The pre-pandemic cohort included 65,420 women (71.8%) who identified as White, compared to 16,997 (18.7%) who identified as Black. The post-pandemic cohort included 83,240 women with 57,836 (69.5%) identifying as White, compared to 16,160 (19.4%) identifying as Black. Overall birth rates decreased from 9.1 to 8.3 per 1,000 with Detroit, Wayne County having the highest drop in birth rate from 11.7 to 10.4 per 1,000. Preterm birth rates decreased from 10.4% in 2019 to 9.9% in 2020 ($p < 0.001$). Detroit, Wayne County, in specific, had a decrease in preterm birth rates from 16.4% in 2019 to 14.3% in 2020 ($p < 0.001$). Comparing racial distribution, in the pre-pandemic cohort, the preterm birth rate was 9.0% for White women compared to 16.3% for Black women. The difference was not statistically significant per race in the post-pandemic cohort, where the preterm birth rate was 8.6% for White women compared to 15.1% for Black women.

CONCLUSION: During its first year, the COVID-19 pandemic was associated with statistically significant reduction in birth rates and adequate prenatal care. Despite inadequate care, and in-line with other studies, preterm birth rates also decreased in Michigan and regions of highest pandemic impact as Detroit, Wayne County. Although disparities continue to persist in preterm birth rates between White vs Black women, we found no increased racial disparities in changes in preterm birth rates between both races in the pre vs post-pandemic periods. Overall, the reduction in birth rate findings raise the need to further explore how lifestyle changes and cessation of outside the home activities during pandemics play an impact on a complex worldwide public health priority as preterm birth.