

Study finds no change in preterm birth or stillbirth in Philadelphia during pandemic

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Despite early reports suggesting a decline in preterm births during the COVID-19 pandemic period, an analysis by researchers at Children's Hospital of Philadelphia (CHOP) and the Perelman School of Medicine

at the University of Pennsylvania has found no change in preterm births or stillbirths at two Philadelphia hospitals in the first four months of the pandemic. The findings, published today in *JAMA*, resulted from the examination of an ongoing, racially-diverse pregnancy cohort that assesses both spontaneous and medically-indicated preterm birth.

"Preterm [birth](#) is highly complex, with a diverse set of presentations and unknown causes," said Heather H. Burris, MD, MPH, an attending physician in CHOP's Division of Neonatology and senior author of the study. "Because we have two independent reviewers assessing every preterm birth at two Penn Medicine hospitals, we were able to complete a rigorous analysis of multiple types of preterm birth for the first four months of the pandemic and compare that data to the same period in previous years."

The cohort, known as GeoBirth, includes more than 100,000 births at two Penn Medicine hospitals in Philadelphia since 2008. Each preterm birth, characterized as any birth occurring before 37 weeks' gestation, is manually classified by two independent, blinded reviewers as either a spontaneous preterm birth or a medically-indicated preterm birth. The former includes preterm labor or early rupture of the membranes, and the latter includes conditions that necessitate an early delivery for the health of the mother or baby, such as preeclampsia or [intrauterine growth restriction](#).

The researchers analyzed 2,992 live births from March through the end of June 2020 and compared those births to 5,875 over the same four-month period in 2018 and 2019. Making use of the robust GeoBirth data set, the research team compared rates of overall preterm birth, spontaneous preterm birth, medically-indicated preterm birth, and stillbirth, defined as intrauterine demise after 20 weeks.

The data did not show any significant change in preterm or stillbirth

rates during the COVID-19 pandemic. Even when breaking down the preterm birth data by spontaneous and medically-indicated preterm births, the researchers still did not detect differences between the pre-pandemic and pandemic period. These findings differ from European studies that have reported a decrease in preterm birth and increase in stillbirth during the first few months of the pandemic.

"While particular mechanisms that lead to preterm birth remain elusive, we know that various individual and environmental factors are linked to poor birth outcomes, and that those factors vary by demographic groups. Our years of work in this field led us to question other reports that suggested preterm births and stillbirths had decreased across the board over this extremely stressful and uncertain pandemic period," said Michal Elovitz, MD, director of the Maternal and Child Research Center and the Hilarie L. Morgan and Mitchell L Morgan President's Distinguished Professor in Women's Health at Penn. "The power of the GeoBirth cohort will allow us with the opportunity to query how individual, societal and [environmental factors](#) affect pregnant women and how those factors may be heightened by all the varying effects of a pandemic. It is imperative that we have rigorous tools to study how these different factors may harm pregnant people and how the pandemic may exacerbate those factors so we can target appropriate strategies to improve the lives of women and their babies."

Handley et al. "Changes in [preterm birth](#) phenotypes and stillbirth at two Philadelphia hospitals during the SARS-CoV-2 [pandemic](#) from March-June 2020," *JAMA*, online December 7, 2020, [DOI: 10.1001/jama.2020.20991](#)

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