

Nationwide study shows rise in pregnancy-related complications during COVID-19 pandemic

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The COVID-19 pandemic caused unprecedented stressors on the U.S. health care system and resulted in decreased access to routine, in-person

prenatal care and reproductive health services, less monitoring of potential pregnancy-related complications, and avoidance of care by patients and clinicians trying to limit COVID-19 exposure. How the pandemic affected pregnancy outcomes—particularly among people with low incomes and people of minoritized racial and ethnic groups—is unknown, and few empirical studies examine the impact of the COVID-19 pandemic on obstetric outcomes at the national level.

In a paper published in *JAMA Network Open*, physician-scientists at Beth Israel Deaconess Medical Center (BIDMC) and the Harvard T.H. Chan School of Public Health assessed how pregnancy-related complications and obstetric outcomes changed during the COVID-19 pandemic compared to pre-pandemic. Looking at the relative changes in mode of delivery, rates of premature births and mortality outcomes before compared to during the pandemic, the team found increased odds of maternal death during delivery hospitalization, cardiovascular disorders and obstetric hemorrhage during the pandemic.

"We found a small but statistically significant increase in maternal death during hospitalization for childbirth and pregnancy-related complications during the pandemic, which is alarming," said first author Rose L. Molina, MD, MPH, an obstetrician-gynecologist and director of the OBGYN Diversity, Inclusion, and Advocacy Committee at BIDMC. "Our work demonstrates how the overall disruptions of the COVID-19 pandemic impact the health of pregnant people." Molina and colleagues analyzed data from more than 1.6 million pregnant patients who gave birth in 463 U.S. hospitals in the 14 months prior to the advent of COVID-19 and during the first 14 months of the pandemic. There were no statistically significant differences in the two groups' demographic characteristics, including age, race and ethnicity, insurance types and comorbidities.

Consistent with reports from the U.S. Census Bureau, the team saw a

5.2% reduction in total live births during the pandemic period. Their analysis also revealed maternal death during delivery hospitalization increased from 5.17 deaths per 100,000 pregnant patients prior to the pandemic to 8.69 deaths per 100,000 pregnant patients during the pandemic, a small but statistically significant increase. They also saw increases in the odds of developing hypertensive disorders and hemorrhage. Molina and colleagues suggest the concerning increase in poor outcomes demonstrates that the COVID-19 pandemic negatively affected obstetric care and pregnancy-related outcomes.

"While hospital-based obstetric care remained an essential service during the COVID-19 pandemic, outpatient [prenatal care](#) experienced substantial disruptions, and much routine prenatal care was done virtually," said Molina, who is also an assistant professor of obstetrics, gynecology and reproductive biology at Harvard Medical School. "It is possible that these disruptions and limitations in monitoring via telehealth may have contributed to the slight worsening of pregnancy-related hypertension. Additionally, increased rates of hypertensive disorders may be due to heightened stress provoked by the pandemic."

The research team also saw shortened stays in the hospital, particularly after cesarean births during the pandemic as obstetric teams and patients attempted to minimize the spread of infection. The team also saw a decline in sepsis rates during the pandemic, likely the result of enhanced hand hygiene and masking due to COVID-19. Molina and colleagues further observed that rates of preterm (or premature) births and modes of delivery (vaginal, cesarean or forceps/vacuum assisted) remained stable. The well-documented racial and ethnic disparities in obstetric outcomes persisted but did not worsen during the pandemic in this dataset.

"While obstetric operations mobilized to adapt to rapidly changing clinical guidance and maintain essential services, the experience of care

was dramatically different—especially with respect to restrictive visitation policies which limited [social support](#) during a particularly anxiety-provoking hospitalization," Molina said. "As the nation continues to face ongoing surges, it will be important to mitigate further [pandemic](#)-related disruptions on obstetric care and pregnancy outcomes."

More information: *JAMA Network Open* (2022).
[jamanetwork.com/journals/jamanetworkopen.2022.26531](https://jamanetwork.com/journals/jamanetworkopen/article/2022.26531)

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