

Pregnancy-related deaths spiked for second consecutive year during COVID-19

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Following the emergence of the highly contagious Delta and Omicron COVID-19 variants pregnancy-related mortality rates, in the United States rose faster in 2021, compared to the previous year, according to a

new study by Boston University School of Public Health (BUSPH) and the University of Maryland School of Public Health (UMD).

The staggering data captures the worsening burden of pregnancy related [mortality](#), which include deaths during pregnancy through 1 year postpartum, in the US during the pandemic. Mortality rates particularly increased among racial and ethnic minorities, and the study provides COVID-related context to a [new report](#) by the National Center for Health Statistics that indicates that US maternal mortality rates increased by 38 percent in 2021, compared to 2020 rates.

[Published in the journal *Obstetrics & Gynecology*](#), the findings on pregnancy-related mortality are consistent with rising COVID-19–related [death](#) rates among reproductive-age women, and the results follow the team's [previously published research](#) that also revealed alarming spikes in [maternal mortality rates](#) during the first year of the pandemic in 2020.

The new study found that pregnancy-related deaths ratios rose to 45.5 deaths per 100,000 live births overall in 2021—and as high as 56.9 deaths per 100,000 live births during the third quarter of 2021—compared to 36.7 deaths per 100,000 live births in 2020, and 30.3 deaths per 100,000 live births pre-COVID. The Delta variant began ripping through the country in June 2021, before the even-more-contagious Omicron variant took hold in late fall.

Notably, the study found that the largest relative increases in pregnancy-related deaths between 2020 and 2021 were among Hispanic people (at 34 percent) and especially American Indian/Alaska Native (AIAN) people (at 104 percent). Pregnancy-related mortality ratios in 2021 were highest for AIAN (161 deaths per 100,000 live births) and Black (98 deaths per 100,000 [live births](#)) pregnant people. The proportion of pregnancy-related deaths with a COVID diagnosis was highest among

Hispanic (at 43 percent) and AIAN (at 36 percent) people.

"The pandemic exacerbated what were already poor maternal outcomes in the US by deepening disparities by race/ethnicity and place of residence resulting in maternal death rates not seen since 1964," says study senior author Dr. [Eugene Declercq](#), professor of community health sciences at BUSPH. "In particular, the extraordinary increases among American Indian and Alaska Natives in 2021 deserves greater attention."

For the analysis, Dr. Declercq and study lead author Dr. Marie Thoma, associate professor of family science at UMD, utilized national birth and mortality data from January 2019 to March 2020 (pre-pandemic) compared to April 2020-December 2021 (during the pandemic). They estimated pregnancy-related mortality increases per quarter-year for deaths that occurred during pregnancy or within one year after the end of a pregnancy, and compared these rates to [mortality rates](#) among people ages 15 to 44 years old, for which COVID-19 was listed as a contributing cause of death.

In addition to mortality spikes among racial/ethnic pregnant people, the study also captured increases in pregnancy-related mortality in rural areas and smaller cities between 2020-2021, with rates rising by 21 percent and 39 percent, respectively.

These increases closely mirrored overall shifts in COVID-related death patterns among all women ages 15-44.

"This is concerning as we also saw [the shuttering](#) of many obstetric facilities and services during the pandemic, particularly in [rural areas](#)," says Dr. Thoma.

The researchers [were hopeful](#) that vaccination rates among pregnant

people would increase and provide greater protection against COVID-related deaths for this population in 2021, when vaccines became widely available to the public. But the latest federal data suggests that [up to 45 percent](#) of pregnant people in the US are still not fully vaccinated against COVID-19.

"Our maternal mortality statistics are the 'tip of the iceberg' when we think about the underlying impact on the health of mothers in this country and how this devastates families," Dr. Thoma says. "We need to turn our attention toward [improving systems and policies](#) that can address our country's maternal health."

More information: Marie E. Thoma et al, Changes in Pregnancy-Related Mortality Associated With the Coronavirus Disease 2019 (COVID-19) Pandemic in the United States, *Obstetrics & Gynecology* (2023). [DOI: 10.1097/AOG.0000000000005182](https://doi.org/10.1097/AOG.0000000000005182)

Provided by Boston University

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