

Predicting postpartum hospitalizations among high-risk populations

November 6 2023



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Racial inequities in maternal morbidity and mortality persist into the postpartum period, leading to a higher rate of postpartum hospital use among Black and Hispanic people but until now little was understood

how to best identify people at high risk.

As the first study to incorporate social and structural determinants of health into the screening process researchers at Columbia University Mailman School of Public Health and Icahn School of Medicine at Mount Sinai, were able to identify people at high risk to prevent adverse postpartum outcomes effectively target interventions and ultimately reduce inequities. The findings are published in the [*American Journal of Obstetrics and Gynecology*](#).

In some regions of the country, including New York City, Black people are three to four times more likely to die a pregnancy-related death than White people, and Hispanic people are also at increased risk. More than half of pregnancy-related deaths occur within one day to one year after delivery and readmissions and emergency department visits among Black and Hispanic birthing people are heightened to a greater degree.

"We knew that racial inequities in [maternal morbidity](#) and mortality persist into the postpartum period, often leading to a higher rate of postpartum hospitalizations among Black and Hispanic people, and delivery hospitalizations provided an opportunity to focus attention on the [postpartum period](#) as important to prevent [maternal mortality](#)," said Teresa Janevic, Ph.D., associate professor of Epidemiology at Columbia Mailman School.

"The model we developed had excellent predictive ability and proved to be an effective means to identify people who are likely to have complications postpartum."

Using 2016-2018 birth certificate and [hospital discharge data](#) for liveborn infants in New York City, the researchers defined postpartum hospital use (PHU) as at least one readmission or emergency department visit within 30 days of the delivery discharge date. They further

categorized diagnosis at first hospital use into 14 high risk categories including hypertensive disorders, diabetes, and mental health disorders.

"However, we realized that models looking at specific postpartum complications such as hypertension were less useful for identifying an at-risk population that might benefit from more holistic supportive interventions such as patient home visits," noted Janevic. "Additionally, including these disorders at face value lacked an equity approach often inappropriately including race as a predictor of social and structural determinants of health."

The overall incidence of postpartum hospitalizations (PHU) was 6 percent, and the incidence among Black, Hispanic and White people was 9 percent, 7 percent, and 3 percent, respectively. Most common diagnoses for hospital use were general perinatal reasons (17.5 percent), hypertension/eclampsia (12 percent, non-gynecologic infections (11 percent), and wound infections (8 percent).

"The U.S. is facing a maternal health crisis. Effective interventions exist to improve the health of mothers after giving birth. Our [prediction model](#) helps identify who we should target for extra support, with the ultimate goal of achieving maternal health equity," said Janevic.

More information: Teresa Janevic et al, Development of a prediction model of postpartum hospital use using an equity-focused approach, *American Journal of Obstetrics and Gynecology* (2023). [DOI: 10.1016/j.ajog.2023.10.033](https://doi.org/10.1016/j.ajog.2023.10.033)

Provided by Columbia University's Mailman School of Public Health

Citation: Predicting postpartum hospitalizations among high-risk populations (2023, November

6) retrieved 28 April 2024 from

<https://medicalxpress.com/news/2023-11-postpartum-hospitalizations-high-risk-populations.html>

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