

Study provides clearer view of newborns with opioid withdrawal

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Keith Dookeran, associate visiting professor of public health, led a study of the characteristics that may explain the racial disparity in newborns suffering from opioid withdrawal symptoms. This condition is claiming an increasing share of resources dedicated to neonatal intensive care units nationwide. Credit: UWM Photo/Elora Hennessey

A new study into the race and socio-demographics of newborns with symptoms of opioid withdrawal shows that it is disproportionately higher among white newborns whose mothers are Medicaid enrollees and have the lowest income, compared with Black and Hispanic infants. The withdrawal condition is called neonatal abstinence syndrome, or NAS.

The study team, led by Keith A. Dookeran in UWM's Zilber College of Public Health, confirms similar racial variance found in previous studies of NAS data in the U.S. But Dookeran's research team dug deeper into more recent data, examining trends across factors that may influence [racial differences](#), such as insurance payer type (private vs. Medicaid), income level, sex of the infant, and [hospital](#) size, type and region.

NAS is most often caused when a woman takes opioids during pregnancy, according to the March of Dimes. Symptoms include tremors and seizures, excessive crying, slow weight gain, breathing problems, fever and sweating, diarrhea, yawning, sneezing and trouble sleeping. The [CDC reports](#) that the average stay in the hospital for infants with NAS was nine days in 2020.

Rising as opioid addiction increases

NAS has increased throughout the U.S. in the past two decades, coinciding with a rise in [opioid addiction](#), and it is thought to be responsible for a substantial and growing portion of resources dedicated to neonatal intensive care units nationwide.

This warranted a closer look at characteristics that may explain the racial disparity, Dookeran said.

The researchers used data from the 2016 and 2019 Kids' Inpatient Database (KID), distributed by the Agency for Health care Research and Quality, Health care Cost and Utilization Project. It is the largest

population-based database of pediatric hospital discharges in the U.S., and results were recently published in the journal *PLOS ONE*.

"Although Blacks and Hispanics in our study were overall more likely than whites to be in the lowest income quartile and on Medicaid," Dookeran said, "within those specific factors, the data shows that NAS prevalence was highest among whites."

Disparity by location

In addition, NAS among whites on Medicaid was higher than Blacks or Hispanics regardless of payer-type.

The study further revealed that while higher NAS prevalence overall was observed for rural locations, when further examined by race and hospital location and designation, the highest NAS prevalence was seen in white infants born in hospitals in the Northeastern U.S. with an urban-teaching rather than a rural designation.

In fact, NAS was greater for whites across all factors except for the rural hospital type, where there was no difference between whites and Hispanics, he said.

"It should be noted that racial disparity in [pain management](#) is a well-recognized phenomenon in U.S. health care and previous research has reported that Black Americans are systematically undertreated for pain relative to white Americans," he said. "It's possible that this phenomenon might contribute to the observed white disparity in our study."

Collaborators on the study included Dr. Janine Y. Khan and Dr. Chariya A. Christmon from the Ann & Robert H. Lurie Children's Hospital of Chicago, part of Northwestern University.

Their findings more precisely identify the groups most vulnerable to NAS, Dookeran said. Those groups should be targeted for additional interventions beyond current measures by the U.S. Department of Health and Human Services for prevention and treatment of babies with NAS.

More information: Keith A. Dookeran et al, Disparity in neonatal abstinence syndrome by race/ethnicity, socioeconomic status, and geography, in neonates \geq 35 weeks gestational age, *PLOS ONE* (2023). [DOI: 10.1371/journal.pone.0284040](https://doi.org/10.1371/journal.pone.0284040)

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