

# Infants' race influences quality of hospital care in California, study finds

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Infants' racial and ethnic identities influence the quality of medical care they receive in California's neonatal intensive care units, a study from the Stanford University School of Medicine has found.

The study, which examined [medical care](#) of more than 18,000 of the state's smallest babies at 134 California hospitals, will be published Aug. 28 in *Pediatrics*.

The disparities were not uniform: At some California hospitals, infants from vulnerable populations received worse care than white infants, while at others, they received better care than whites. In general, however, the hospitals with the best outcomes for their patients also delivered better care to white infants. In addition, the study found that black and Hispanic infants were more likely than white infants to receive care in poor-quality NICUs.

"There's a long history of disparity in health care delivery, and our study shows that the NICU is really no different," said the study's senior author, Jochen Profit, MD, associate professor of pediatrics.

"Unconscious social biases that we all have can make their way into the NICU. We would like to encourage NICU caregivers to think about how these disparities play out in their own units and how they can be reduced."

## The smallest babies

The study used data from the California Perinatal Quality Care Collaborative, which has collected information on 95 percent of premature births in the state. The study included 18,616 babies whose birth weights were less than 3.3 pounds, a category known as very [low birth weight](#), and who were born between the beginning of 2010 and the end 2014. The research excluded infants born extremely premature (before 24 weeks of pregnancy), those who died before 12 hours of age and those with severe congenital abnormalities.

Profit and his colleagues used an index they had previously developed and validated to measure NICU care. To use the index, called Baby-MONITOR, each infant's medical records are evaluated and scored on nine yes-or-no questions, all of which have been shown in prior research to reflect the quality of medical care. Some questions assess whether patients received aspects of NICU care that are in keeping with standard medical practices for premature babies, such as being examined for an eye disease called retinopathy of prematurity, or receiving steroids before birth to help mature their lungs. Other questions assess specific medical outcomes, such as experiencing a hospital-acquired infection or growing at a healthy rate. All questions are worded such that better outcomes produce higher scores.

The analysis then adjusts scores to account for the length of the mother's pregnancy, whether the mother received prenatal care, whether the baby was from a single or multiple birth, the baby's 5-minute Apgar score (a quick assessment of the infant's physical health at birth) and whether delivery was by cesarean section.

Scores were also statistically adjusted to reflect the fact that some hospitals cared for sicker babies, on average, than others. The final score for each hospital, and for each group of patients within a hospital, reflects whether the hospital did the same, better or worse than would be expected in addressing their patients' medical problems. Scores were

calculated separately for white, black, Hispanic, Asian and "other" infants and referenced for each subgroup against whites.

When researchers analyzed the population of very low birth weight infants in their study, Hispanic infants and those with "other" ethnicity had lower Baby-MONITOR scores than white infants, while black and Asian infants did not have significantly different scores than whites. However, across the state, white infants scored higher on measures of whether standard medical practices were being followed. For instance, 89 percent of white infants and 88 percent of Asian infants in the study received steroids before birth to mature their lungs, while 87 percent of Hispanic infants and 85 percent of black infants got the same treatment. The difference remained statistically significant after adjusting for possible confounding factors.

Black infants had higher levels than whites of chronic lung disease and collapsed lung, as well as lower rates of receiving any human milk at discharge—all indicators of worse outcomes—although they also grew more quickly than white babies (a faster growth rate is associated with better outcomes). Hispanic infants scored significantly lower than whites on all components of the score except collapsed-lung rates.

Across NICUs, those that provided the poorest quality of care tended to have the smallest disparities between ethnicities; in some, blacks fared better than white infants. As quality scores rose across hospitals, white infants tended to do better.

The researchers also found that although racial and ethnic differences in NICU care were fairly small when examined across California as a whole, some individual hospitals had large gaps in how they cared for infants from different racial and ethnic backgrounds.

## **Individualizing care**

Addressing the disparities will require a nuanced approach, Profit said. "It's really important for NICUs to individualize care to the patient population they see," he said.

For instance, Hispanic families who are primarily Spanish-speaking may be experiencing language barriers that make it harder for parents to ask questions and act as advocates for their infants. "For them, having access to translation and personnel who speak Spanish is really critical," he said.

Hospitals serving a larger proportion of African-American infants may have different issues they need to address.

The next step, Profit said, is to help California's NICUs identify ways in which they can each make progress in treating all infants more equitably. "Our goal is to develop a dashboard of disparity measures for NICUs throughout California so that each can see how they're performing for infants of different races and ethnicities in comparison to their peers," he said. The feedback will become part of the work of the California Perinatal Quality Care Collaborative, which has organized successful quality-improvement initiatives to help NICUs across the state improve the medical care they deliver. The researchers are also working with the Vermont Oxford Network, a sister organization that monitors NICUs across the country to provide similar feedback to hospitals nationwide.

"We need to continue to identify vulnerable populations, make sure they get their needs met and find better ways to engage all families in our care," Profit said.

Hospital care during the newborn period is not the largest contributor to health disparities that minority infants experience, Profit noted, estimating that socioeconomic and biological differences likely make a larger contribution. Nevertheless, that does not mean disparities in medical care should be ignored, he added.

"For many of these [infants](#), their time in the NICU sets them on track for their entire life," Profit said. "If we can get things right early on, that could have a huge long-term effect."

Provided by Stanford University Medical Center

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