

News From the JAMA Network

Amid Decreasing Infant Mortality, Sleep-Related Infant Deaths Are on the Rise

Linda Rodgers

Scroll through the 1.4 million posts on Instagram with the hashtag #sleepingbaby, and up pop images of snoozing infants in positions and places that go against the safe sleep guidelines of the American Academy of Pediatrics (AAP)—sleeping on their stomachs or sides or surrounded by stuffed animals, bumpers, pillows, or fuzzy blankets.

Since 1992, and most recently in 2022, the AAP has been issuing recommendations designed to reduce the number of infants who die each year from sudden unexpected infant deaths (SUID)—roughly 3500 in the US. SUID is the umbrella term that includes sudden infant death syndrome (SIDS), whose cause is still unknown, as well as other accidental bed-related deaths by suffocation, strangulation, or other ill-defined reasons.

SUID rates declined in the 1990s and then plateaued in the first 2 decades of the 2000s. But they increased between 2020 and 2022 in children younger than 1 year, according to a recent cross-sectional study published in *JAMA Pediatrics*. The SUID mortality rate rose about 12% during those years, from nearly 90 deaths per 100 000 live births to slightly more than 100 deaths.

The risks aren't evenly distributed. In 2018 through 2022, the SUID rate per 100 000 births ranged from a low of 22 among Asian infants to a high of 238 for Black infants. Even more alarming, infant mortality data show that SUID rates remained high in 2023, said lead author Elizabeth R. Wolf, MD, MPH, associate professor of pediatrics at Virginia Commonwealth University School of Medicine.

"Potentially Preventable Deaths"

The prevailing theory behind SUID is a triple-risk model: a vulnerable infant during the critical developmental window between 2 and 4 months of age is exposed to an environmental stressor, explained Rebecca F. Carlin, MD, a pediatrician at New York Presbyterian and a member of the AAP's Council on Injury, Violence and Poison Prevention (COIVPP)



Subcommittee on SUID (formerly known as the Task Force on SIDS).

Infants can be vulnerable for a host of reasons, including prematurity, being exposed to tobacco in utero, or genetic factors like brain abnormalities or heart arrhythmias. "We can work on some of those vulnerabilities by trying to, say, decrease tobacco exposure in utero. But a lot of those vulnerabilities are built in," she said.

Being exposed to environmental stressors, though, is a modifiable risk factor, according to Carlin, who is also an assistant professor of pediatrics at Columbia University Medical Center. These stressors include putting an infant to sleep on their belly or in a crib with soft bedding (say, blankets and bumpers). These modifiable risks are what Michael H. Goodstein, MD, the director of newborn medicine at WellSpan Health in York, Pennsylvania, and another member of the AAP's COIVPP Subcommittee on SUID, calls *potentially preventable deaths*. "We don't have any way to identify those babies at higher risk," he said. "So that's why all babies need to be put in a safe sleep environment."

It's also the reason why there's a need for more uniform standards investigating and certifying deaths in possible SUID cases, Carlin said. For the most part, the infant who dies while sleeping on their stomach, or with a blanket over their head, or in their room alone is categorized the same way, making the datasets less dependable, she explained.

"The more we can accurately define each death so that we can create a dataset that's more reliable, the more potential causality we would be able to assign. And that would help with trying to discover who is more at risk, at least genetically," she said.

Stark Disparities

Surprisingly, the recent analysis found that the increase in SUIDs took place amid a 24% decrease in the overall infant mortality rate between 1999 and 2022, a decline that Wolf attributed to multifactorial reasons. "A lot of the health of the infant has to do with the health of the mother. So screening for maternal diseases like diabetes and preeclampsia as well as maternal infections and then also the care of the newborn have



really improved things in infant mortality overall."

Wolf and her coauthors looked at the US Centers for Disease Control and Prevention's WONDER public health data, including multiple-race and single-race—or **bridged-race**—data from 1999 to 2017 and single-race data from 2018 to 2022, to search for trends in infant deaths. Researchers used the bridged-race data to look at long-term trends and the single-race file to look at recent differences by race and ethnicity, Wolf explained. But because estimates for a racial and ethnic group might vary by 10% or more between the bridged-race and single-race data, the researchers used pooled mortality rates from the single-race data for racial and ethnic comparisons.

They uncovered "pretty stark" disparities, Wolf said. In 2018 through 2022, the SUID rate was about 10 times higher among American Indian and Alaska Native, Black, Native Hawai'ian and other Pacific Islander infants than Asian infants, about 4 times higher than Hispanic infants, and about 3 times higher than White infants.

"Some people think [this gap] might be due to underlying socioeconomic differences and that they're appearing as racial and ethnic disparities," Wolf said. "However, we know that there are also disparities in sleeping environments, sleep positioning, tobacco exposure, and prematurity, all of which we know are established risk

factors for sleep-related deaths. But we do not know to what degree these individual factors are playing a role in the disparities of SUID."

The COVID-19 pandemic could have helped fuel these differences because it affected Black and low-income communities disproportionately. "We know that there was limited health care access," Goodstein said. That could have affected a pregnant person's ability to get good prenatal care and increased their risk of having a premature infant, who would have a 2- to 3-fold higher risk of SUID than a full-term healthy infant, he explained.

Limited interaction with health care professionals also may have meant that soon-to-be and new parents didn't get the **information they needed about safe sleep** and also breastfeeding, which has been associated with a lower risk of SIDS, according to Goodstein.

"The pandemic also led to a terrible erosion of trust in public health," he added. "And a big part of safe sleep is public health messaging as well as messaging at the individual level." That may have increased the role of social media as a source of information, he suggested.

"One of the things that we know about sleep practices is that parents tend to follow social norms in their communities," Carlin said. "So if all of your friends put their babies on their stomach to sleep,

you are more likely to put your baby on their stomach to sleep." Social media acts in a similar way. If parents are exposed to unsafe sleep practices in ways that make it look as if everyone else is doing the same, it makes it acceptable, she said.

The postpandemic economic strains could also be contributing to the rise in SUID rates, particularly with housing and child-care shortages. "It's often a story of resources," Carlin said. "Certainly, if you're homeless and not sleeping in the same location every night, it's hard to carry around a Pack 'n Play even if you're given one. And with the shortage of daycare providers, you could imagine scenarios where people were leaving children with untrained providers and that would be a higher risk."

All of these are conjectures, though. "It's really hard to know without more subanalysis of risk factors and demographics of the increased deaths. It's all by association," Carlin said.

Modern Messaging

Wolf said that although the AAP and individual pediatricians and family physicians are doing a good job getting the message out, there may be a need for new ways to communicate, especially to counter the effects of social media.

Researchers from the University of Virginia, Boston University, and other institutions, for example, launched **Today'sBaby**, a video-and-text-messaging initiative aimed at high-risk groups. The text messages direct parents to short videos that focus on aspects of safe sleep, from the risks of co-sleeping to the importance of breastfeeding and putting infants to sleep in a bare crib.

Federal policies can also help. Wolf pointed to the **Safe Sleep for Babies Act of 2021** that prohibits the sale of bumpers and inclined sleepers like Fisher-Price's Rock 'n Play, which was **recalled** in 2019 **after several infants died**. And Goodstein favors advocating for paid family leave to "level the playing field" for working parents to do the best for their infants. Not having to go back to work right after giving birth could help boost breastfeeding success and make it less tempting for exhausted parents to resort to unsafe sleep practices just to get a good night's sleep, he said.

Physicians could also put a finer point on the risk for parents, who may be unaware of how many infants experience sleep-related

deaths. One way is to focus on the deaths that occur in their community. "People may not be willing to listen to national numbers because they'll say, well, that happens to others, but it doesn't happen to me," Goodstein explained. "So when I tell them that last year in York, Pennsylvania, we had 5 deaths related to unsafe sleep, and 2 of them occurred when the baby got wedged in the couch, then they look up and say, 'Oh my God, how did that happen?'"

Despite clinicians' best efforts, the infant mortality rate in the US remains "inexcusably high," as Carlin notes. "SUID is a huge part of that—and it's probably the most preventable part," she added.

It's also tragic.

"These deaths are traumatizing for the whole family, and sometimes multigenerationally," Wolf said. "I hope that we'll learn more both about how to reduce SUID deaths in general as well as what's causing these disparities and how to reduce them." ■

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Published Online: March 14, 2025.
doi:[10.1001/jama.2025.1345](https://doi.org/10.1001/jama.2025.1345)

Conflict of Interest Disclosures: Dr Carlin reported being an unpaid member of the AAP Subcommittee on Sudden Unexpected Infant Death; receiving research funding from the National Institutes of Health and the American SIDS Institute (through

Columbia University); receiving an honorarium for a talk to the US Navy New Parent Support Training Program; and being a member of the AAP, the American Academy of SIDS Prevention Physicians, and the International Society for the Study and Prevention of Perinatal and Infant Death. Dr Goodstein reported volunteering on boards and committees for promotion of safe infant sleep and SUID prevention; receiving a stipend for being the medical director for the AAP National Collaborative for Safe Infant Sleep; providing expert testimony regarding the AAP recommendations for reducing infant deaths in the sleep environment for multiple plaintiff cases against Fisher-Price, Mattel, for its Rock 'n Play product; and receiving fees for lectures to educate medical professionals about SUID and infant safe sleep. No other disclosures were reported.

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