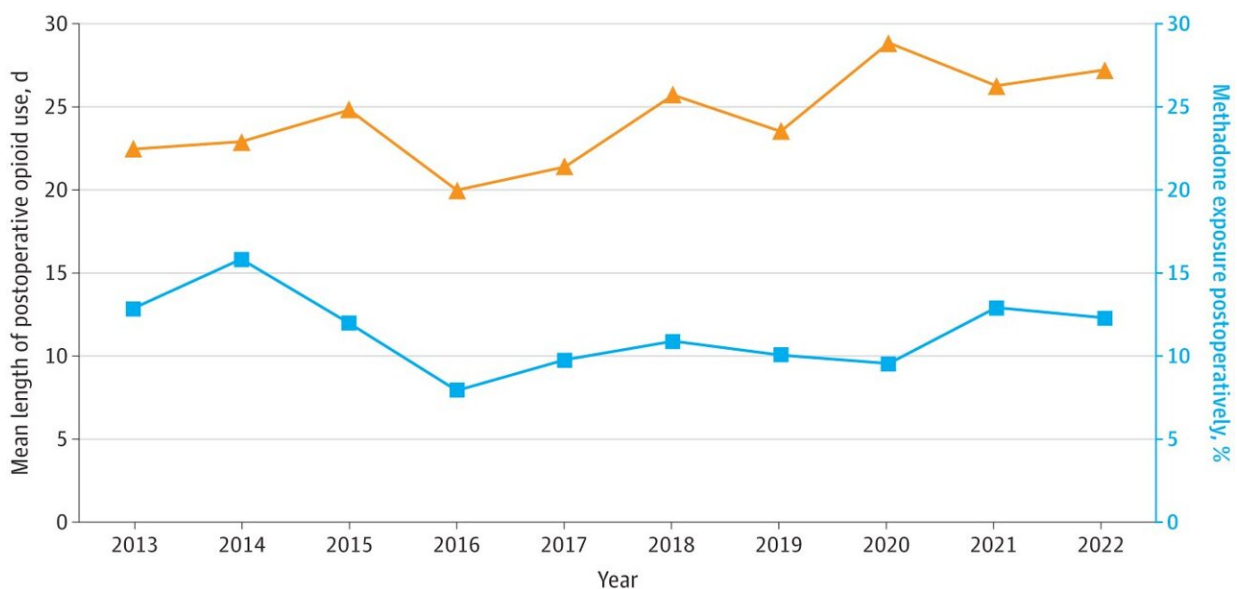


Methadone use after infant surgery can prolong recovery, increase dependence on ventilators and IV nutrition

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Mean days of postoperative opioid use and incidence of methadone use. Credit: *JAMA Network Open* (2023). DOI: 10.1001/jamanetworkopen.2023.18910

Whatever the opioid crisis calls to mind, it likely isn't pacifiers and diapers. But when 1 out of every 5 hospitalized infants receives opioids, and when some infants require methadone treatment, it's time to widen the scope. A new study led by pediatric surgeons at Children's Hospital Los Angeles shows that methadone use after surgery can prolong a

baby's recovery and increase an infant's dependence on ventilators and intravenous (IV) nutrition.

The findings are published in the journal *JAMA Network Open*.

To call the [opioid](#) problem in the United States a crisis is not hyperbole. The rate of death due to [opioid overdose](#) has risen exponentially in the last 10 years, reaching 80,000 in 2021 alone. But the dangers of opioids are not limited to overdose.

Opioids are highly addictive—and withdrawal can be severe. "It seems unbelievable, but the same thing happens to babies," says Lorraine Kelley-Quon, MD, MSHS, a pediatric surgeon at CHLA. "If you abruptly stop opioids in babies, they can show signs of withdrawal—irritability, intestinal problems or even seizures." For this reason, babies receiving a prolonged course of opioids may need to be weaned off of them with methadone, a longer-acting, weaker opioid.

In her latest study, Dr. Kelley-Quon examined how methadone use impacted recovery in infants. The study included over 2,000 babies from 48 children's hospitals who were surgically treated for necrotizing enterocolitis (NEC), a life-threatening inflammatory condition that can develop in premature newborns. While rare, NEC is the most common reason for emergency surgery in newborn babies.

The findings: Babies who required methadone needed to stay in the hospital an average of 21 days longer after surgery. They also required more days on the ventilator and longer reliance on IV nutrition.

"It ends up being a snowball effect," she says. "The longer a baby is on opioids, the more likely the need for methadone, which is still an opioid." Side effects of opioids are respiratory depression and decreased intestinal motility.

So why are opioids given to babies in the first place? The answer is simple: babies in the [hospital](#) may need surgery or painful interventions, and opioids are effective at treating their [pain](#). However, [babies](#) can't take nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen for pain, like older children can.

"Nobody wants a baby to be in pain," says Dr. Kelley-Quon. "We don't want to stop using opioids, especially when a baby is undergoing an operation. What we do want is to understand the impact of opioids and use them more judiciously."

More judicious use of opioids doesn't just mean limiting prescriptions. It also means standardizing opioid use. "We found such a wide range in what hospitals were doing," she says. "In some hospitals, over 40% of infants received methadone. In other hospitals, methadone isn't used at all." This wide variability points to the need to standardize opioid and methadone use among hospitals.

Dr. Kelley-Quon has spent the last several years uncovering how widespread the impact of the opioid epidemic fallout has become for children. A few years ago, she established the first evidence-based guidelines for safer pain management in children and adolescents. Her work continues to uncover the need for what she calls "opioid stewardship."

Other authors on the study include first author Olivia A. Keane, MD; Abigail K. Zamora, MD; Shadassa Ourshalimian, MPH; Elaa M. Mahdi, MD, MPH; Ashley Y. Song, MPH, Ph.D.; Eugene Kim, MD and Ashwini Lakshmanan, MD, MPH.

More information: Olivia A. Keane et al, Opioid and Methadone Use for Infants With Surgically Treated Necrotizing Enterocolitis, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.18910](https://doi.org/10.1001/jamanetworkopen.2023.18910)

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