# Non-pharmacologic approaches improve outcomes for infants with neonatal abstinence syndrome

4 June 2018

A quality improvement (QI) initiative at Boston Medical Center that focused on using non-pharmacologic approaches to care for infants with neonatal abstinence syndrome (NAS) yielded positive short-term outcomes for both the mothers and infants. The results, published in the *Journal of Perinatology*, showed a decrease in medication use, length of stay, and health care costs.

As the rates of adults with opioid use disorder rise across the country, the rate of infants born exposed to opioids who develop NAS symptoms has also increased. These infants have an average hospital length of stay of 23 days, and account for $1.2 billion in annual Medicaid costs. Providers have long used the Finnegan Scale to evaluate NAS symptoms, and the score is then used by providers to determine when to treat with medication, which is often in the form of morphine. However, recent research has shown non-pharmacologic treatment approaches, like skin-to-skin contact and breastfeeding, can improve NAS symptoms, and assessment tools that prioritize certain behaviors, such as how well an infant is eating and sleeping, have been shown to reduce the number of infants who receive medication treatment compared to the Finnegan Scale.

In 2016, BMC implemented these new approaches in the hospital. Non-pharmacologic treatment approaches included parental presence at the infant's bedside, skin to skin contact, and breastfeeding as first-line treatment. Parents were educated about the importance of their presence and contact with their infants, and infants were cared for in a pediatrics inpatient room with a bed for parents once mothers were discharged for their immediate postpartum care. A cuddling volunteer program supplemented parents' presence and allowed infants to be held when parents were not able to be in the hospital. Additionally, methadone was given instead of morphine to infants who required medication.

These efforts resulted in significant improvements in patient outcomes. The need to treat infants with medication decreased from 87 to 40 percent; the average length of hospital stay decreased from an average of 17 days to 11 days; and average hospital charges per infant decreased to approximately $21,000, down from $32,000.

"Our efforts, which yielded positive results for our patients and our health system, suggests a need to re-evaluate the standard NAS assessment and care both here at BMC and nationally," said Elisha Wachman, MD, lead author of the study and neonatologist who led the initiative at BMC. "Our ability to make significant, impactful changes in our care practices across several departments in a relatively quick amount of time indicates that these practices can be successfully replicated at other hospitals to improve outcomes for both the mother and the baby, as well as reduce healthcare costs."

BMC has a history of excellence in treating patients with substance use disorders, and between April 2015 and December 2017 treated 275 infants exposed to opioids in utero. During the intervention and directly after its implementation, 139 infants with NAS were treated according to the new care protocols. The results of the initiative were sustained over the 12 month post-intervention period and represented a significant culture shift at the hospital.

**More information:** Elisha M. Wachman et al, Quality improvement initiative to improve inpatient outcomes for Neonatal Abstinence Syndrome, *Journal of Perinatology* (2018). DOI: 10.1038/s41372-018-0109-8

Provided by Boston Medical Center