Title: Beyond discharge: outcomes for infants with neonatal abstinence syndrome treated using the eat, sleep, console approach
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Background
Previous research demonstrates improvements in short-term inpatient metrics for infants with Neonatal Abstinence Syndrome (NAS) treated in a model of care based on the Eat, Sleep, Console (ESC) approach. To date, there remains limited information on the effect of this model of care on longer-term outcomes, including neurodevelopmental status.

Methods
We performed a retrospective review of 170 infants with NAS treated at Yale-New Haven Children’s Hospital using the ESC approach from January 2016-December 2018. Outcome measures included the Bayley Scales of Infant Development, 3rd edition (BSID III) scores, referrals to and utilization of infant and family support services including visiting nurse agencies (VNA) and Birth to Three (early intervention program), and follow-up rates at our high-risk infant follow-up program.

Results
The average length of stay and rates of pharmacologic treatment for all infants was 5.3 days and 1.2%, respectively. Though only 10% of all infants completed neurodevelopmental testing by 16 months, cognitive, language and motor scores for these infants were similar to general population norms. Despite a center-specific discharge process for this at-risk infant population, only 40% of infants were referred to Birth to Three, while 78% were referred for VNA. Additionally, only 62% of infants treated under ESC were referred or scheduled for high-risk infant follow-up at the time of discharge. Infants born to mothers with a polypharmacy history were more likely to receive such referrals, to attend initial follow-up visits, to utilize support services, and to complete neurodevelopmental testing at 8-16 months of age.

Conclusions
Infants with NAS treated in our center using the ESC approach showed no significant delays in cognition, language or motor development at 8-16 months on the BSID III. Despite discharge practices to support these infants in their transition to home, referral rates, utilization of support services, and neurodevelopmental follow-up rates were low and varied based on maternal polypharmacy history. Further studies are needed to determine causes for poor utilization of support services as well as quality improvement efforts to improve overall referral and follow-up rates.