Eat|Sleep|Console: A holistic and value-driven care model for Neonatal Opioid Withdrawal Syndrome (NOWS).

CHS-Northeast Jeff Gordon’s Children’s Center

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BACKGROUND: Incidence of NOWS has increased significantly nationwide over the last decade. These infants often exhibit disturbances in neurologic, autonomic, gastrointestinal, and musculoskeletal systems related to withdrawal from opioids and require prolonged hospital stays, pharmacologic interventions, and increased healthcare costs. At our institution, the ALOS for infants born with NOWS was 11 days with an estimated cost of $43,547.81 per hospitalization. Recent evidence suggests a more functional approach to care with a focus on non-pharmacologic treatment is beneficial for infants with NOWS. In 2018, a new model of care—the Eat, Sleep, Console (ESC) assessment—was developed and has been utilized successfully at various institutions.

GOAL: We aimed to improve the care of infants with NOWS by transitioning from the Finnegan Neonatal Abstinence Scoring System to the ESC model of care. Our proxy measures to improve care for this population are reduced ALOS from 11 days to 5.4 days and less than 10% of patients who met requirements for intervention either readmitted or transferred to a higher level of care.

Other measures are: average variable cost per stay, breast feeding rate, skin to skin time, and percentage of use of new assessment tool.

RESULTS: The team has exceeded the goal of 5.4 days ALOS for 10 consecutive months. The comparison of the baseline median of 11 days ALOS (January 2017 to March 2018) to the median during the implementation period of 5.2 days ALOS (April 2018 to February 2019) represents a 53% decrease in the number of days these babies are hospitalized.

According to the National Institute on Drug Abuse (Patrick et al., JAMA 2012 and Patrick et al., J of Perinatology 2015) the average length of stay for this population is 16.9 days with an average hospital stay costing $66,700. To assess cost reduction, the team used average variable cost as our measure. Within Atrium Health, this metric gives a more readily available measure of cost. By using the ESC model of care the average variable cost per patient was reduced by 48% from April 2018 to February 2019.

The cumulative amount of morphine used per stay (total amount of morphine given during the hospital stay divided by birth weight) decreased from 2.25 to 0.45 mg/kg, a 79% reduction.

CONCLUSIONS: The ESC model of care was successfully implemented at our institution in our treatment cohort with resultant cost savings, decreased length of stay, and decreased medication use. Our work further supports the adoption of this new model of care for infants with NOWS.