

Integrating Responsive Bassinets to Improve Neonatal Abstinence Syndrome Outcomes and Nurse Experiences

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Background: Neonatal abstinence syndrome (NAS) can develop in neonates who are exposed to opioids in-utero. NAS manifests as opioid withdrawal symptoms that require additional care such as interrupted sleep, fussiness, and feeding difficulties (Grisham et al., 2019; Shannon et al., 2021). Due to the COVID-19 pandemic, the Eat, Sleep, Console (ESC) model that the University of Vermont Medical Center (UVMMC) utilized in care of infants with NAS (Grossman et al., 2017) was affected by policy changes, and care of NAS was transitioned from an outpatient setting to inpatient methadone weaning in the NICU. To address the resultant increase in average length of stay (ALOS) and increase in nurse workload, the UVMMC NICU implemented a quality improvement project integrating the SNOO responsive bassinet, which has previously been shown to support ESC (Gellasch et al., 2023), in the care of infants with NAS.

Methods: A retrospective chart review was conducted for infants with NAS admitted to the NICU between December 2020 and September 2022 (N=109). Inclusion criteria were birth gestational age of ≥ 35 weeks, NAS primary diagnosis, and no other co-morbidities. SNOO was integrated into NAS care in November 2021. Neonates were categorized into Before SNOO (December 2020 – November 2021) or After SNOO (November 2021 – September 2022) groups. 6 months after implementation, an online survey was sent to 76 NICU nurses. Study outcome measures included number of sleep-related “yes” scores in ESC (indicative of poor sleep), ALOS, nurse-reported time savings, and nurse experience.

Results: 13 infants (11.9%) met inclusion criteria (Before SNOO: N=6; After SNOO: N=7). ALOS decreased by 17.38% (P=.57) and “yes” poor sleep scores declined by 41.72% (P=.52). On average, nurses reported 2.43 hours saved per 12-hour shift and a net promoter score (NPS) of 74.

Conclusion: Implementing technologies such as a responsive bassinet to support ESC in care of neonates with NAS may improve infant sleep, decrease ALOS, and enhance nurses’ work experience.

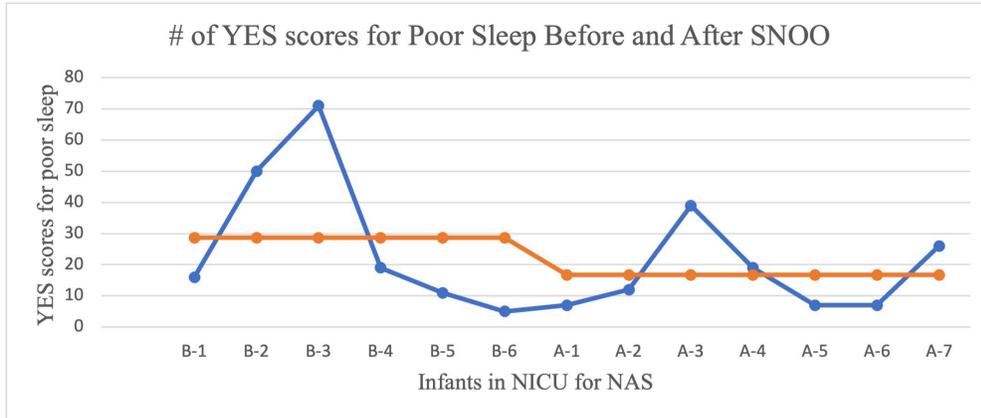


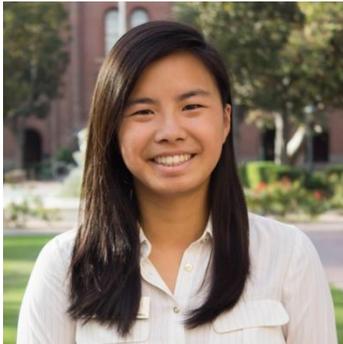
Figure 1: Number of poor sleep “YES” scores in neonates with NAS before (B) and after (A) responsive bassinet implementation. Each blue data point represents an infant in the study. Orange data points represent the average number of “YES” scores in the before and after cohorts, respectively. The number of “YES” scores decreased by 41.72%.

Survey Statement	Agreement	
	# agree	N (of 21), % agree
Patient Care Experience		
Enhances the quality of infant care	21	21 (100%)
Keeps babies safely on back	20	20 (100%)
Reduces fussing	21	21 (100%)
Staff Experience		
Gives staff extra time to focus on tasks	21	21 (100%)
Helps reduce staff stress	21	21 (100%)
Offers staff support in lieu of hospital volunteers (ie: Cuddlers)	16	18 (89%)
Reduces strain for clinicians who are coping with staffing shortages	15	18 (83%)
Assists staff during times of higher patient volumes	16	19 (84%)
Helps staff care for higher acuity patients	13	19 (68%)
Parental Experience		
Improves the hospital experience for parents	19	21 (90%)
Supports parents receiving care during COVID-19 pandemic	12	18 (67%)
Hospital Innovation Experience		
Shows the hospital is committed to trialing innovative technologies	21	21 (100%)

Table 1. Proportion of nurses agreeing with survey statements on patient care, work, parental involvement, and hospital innovation. N = number of applicable (i.e., respondent did not select “N/A”) and complete (i.e., question was answered) responses. A total of 21 survey responses were submitted.

References:

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