

**Organization:** Meritus Medical Center

**Solution Title:** Mothers as Medicine: An Innovative Approach to Care for Neonatal Abstinence Syndrome Across the Care Continuum

**Authors:** Carol Grove, MSN, RN, NEA-BC, Lori Sprecher, MSN, RN-LRN, Lisa Ambrose, RN-LRN

**Program/Project Description, including Goals:**

In recent years, a Special Care Nursery (SCN) in a community hospital experienced increasing numbers of neonates with neonatal abstinence syndrome (NAS) often comprising up to 50% of the unit census. Neonates with NAS have unique care needs requiring additional monitoring and care. Newborns that have been exposed to substances in utero may experience a variety of different signs and symptoms depending on the types of exposure. It is not uncommon for the infants to be jittery, difficult to console, have difficulty with feeding, and other signs of agitation. These infants need measures to soothe them, such as swaddling, decreasing stimulation, and feeding.

The SCN has an open concept design comprised of three pod areas with up to six bassinets in each pod. The open concept design does not provide a therapeutic environment for infants with NAS. It does not provide privacy for nursing mothers and family visitation. The environment also created challenges for the nurses to accurately perform NAS scoring based on the infant's behavior. It was often unclear if changes in the infant's NAS score were related to the environment or the withdrawal. The SCN unit design made it challenging for nurses to create trusting relationships with the mothers and families of NAS infants. The clinical nurses and managers shared the mothers of neonates with neonatal abstinence syndrome in the SCN would talk and were overheard saying that they felt that the hospital just wanted to take their babies away. At times, the environment in the Special Care Nursery became very tense. The organization identified a need to improve care delivery for NAS neonates in the inpatient and community setting.

In fiscal year (FY) 2017, the average length of stay (LOS) for NAS neonates in the SCN was 26.9 days. The organization's goal was to implement an innovative approach of community partnership and redesign of inpatient care delivery to reduce inpatient length of stay and foster a positive relationship to support NAS infants and families.

**Process:**

The Iowa Model of Evidence-Based Practice to Promote Quality Care was used as a framework to develop the innovative care solution. In early 2017, a team including nurse managers from the Labor and Delivery, Recovery and Postpartum (LDRP), Pediatric and Special Care Nursery (SCN) Units, nurse administrator and physician leader reviewed the literature for evidence to guide care delivery for NAS neonates. The group also networked with other organizations and participated in the state NAS collaborative programs. Previous research revealed neonates being treated for NAS are usually treated in the neonatal intensive care units (NICU's). Most NICU's

have a standardized protocol regarding the scoring of the neonate using the modified Finnegan system and pharmacologic treatment is adjusted based on the Finnegan score. Evidence was surfacing that NAS babies who are cohorted with their mothers had improved outcomes including 1) increased likelihood of successful breastfeeding with support from lactation consultants, 2) increased time for parental bonding and learning infant care and 3) decreased length of stay and reduced treatment time. The team discussed alternative care options and developed a proposal to cohort NAS mothers and neonates utilizing beds in the pediatric unit. The proposal was approved by the Chief Nursing Officer and the group developed a plan to pilot the inpatient care delivery change.

The team also explored opportunities to partner with the community to provide education about the neonatal abstinence syndrome. The nurse administrator and physician leader met with local methadone treatment centers in the community to discuss outreach opportunities. The goal was to connect with the treatment centers in the community where the mothers of NAS neonates received treatment to provide added support. The treatment centers were receptive to the partnership and a plan for implementation was developed.

### **Solution:**

The solution involved a multi-faceted approach to improving care to NAS neonates and mothers across the continuum of care. A comprehensive implementation plan including communication to key stakeholders, education of pediatric nurses and development of a parent contract was developed during 2017. Pediatric nurses received an orientation plan including online learning modules and clinical orientation in the SCN caring for NAS neonates. The administrative director and managers developed a standard communication plan to discuss the care delivery change at monthly unit staff meetings. The meetings provided an opportunity for staff questions and the identification of potential obstacles. The managers and clinical educator for the SCN and Pediatrics Units worked closely to ensure all pediatric nurses were competent to care for NAS babies. A process was developed for the SCN nurse manager and neonatologist to meet prior to delivery with all mothers who will participate in the cohort model to review expectations and provide education.

The cohort model was implemented in February 2018. It allowed NAS neonates and mothers/parents meeting criteria to receive care in a private room on the pediatric unit. The mothers/parents are expected to room-in and be the primary caregivers for the neonate. If the mother/parent is not able to stay, a plan is made for another family member or staff to care for the neonate. The parents receive individual coaching and education on soothing techniques, comfort measures, feeding and infant care. Lactation consultants provide breastfeeding support and breast pumps to support successful breastfeeding in NAS neonates.

While the inpatient care delivery model was being redesigned, additional work and partnerships were being implemented at community methadone clinics. Leaders at the methadone clinics welcomed the opportunity for nurses and physician to provide monthly education sessions. The clinic provided a list of suggested education topics based from clinic patients. The SCN nurse manager, clinical nurses and physician leader presented monthly educational sessions beginning

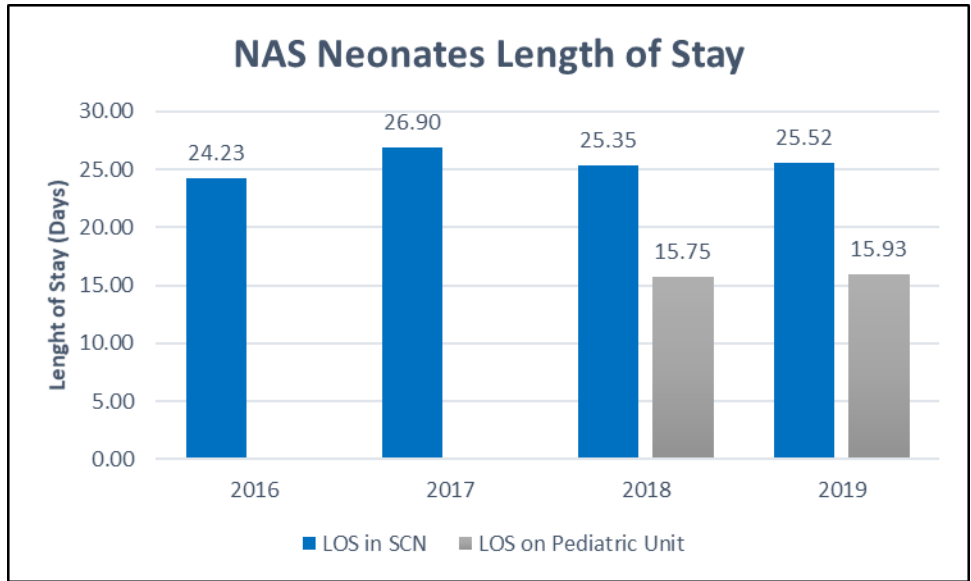
in March 2017. Topics included neonatal abstinence syndrome, long acting reversible contraceptives, menopause, and stress management.

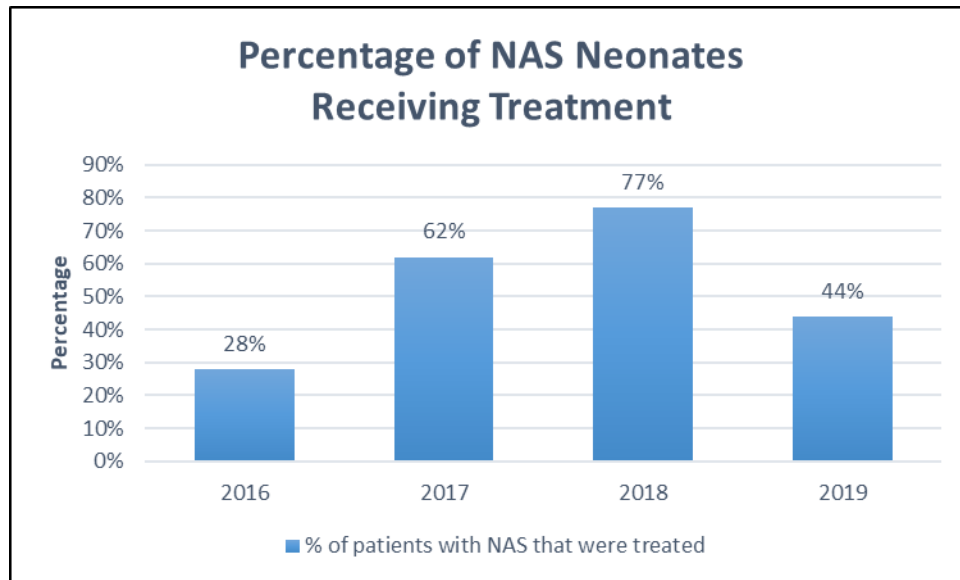
**Measurable Outcomes:**

The implementation of the NAS cohort model has significantly reduced the length of stay for neonates cared for in the pediatric unit. In FY18, the average LOS for NAS neonates treated in the Pediatric Unit was 15.75 days as compared to 25.35 days in the SCN. The program was implemented in February 2018 and 11% of NAS neonates received care in the Pediatric Unit.

The program expanded in FY19 with 29% of NAS neonates receiving care in the Pediatric Unit. The average LOS for NAS neonates in pediatrics was 15.93 days as compared to 25.52 days in the SCN. The cohort care delivery model has resulted in a significant reduction in length of stay for NAS neonates. The team actively tracking and monitoring all infants with a diagnosis of NAS to identify and proactively address issues early.

An additional finding is the percentage of NAS neonates requiring treatment has decreased since the implementation of the cohort model. In FY18, 77% of NAS neonates required treatment with medications as compared to only 44% in FY19.





The partnership with the community has been beneficial to all with the treatment center staff expressing appreciation and sharing success stories from their patients. The experience has allowed the manager and clinical nurses to build relationships with the mothers prior to delivery. The mothers and families have expressed appreciation that the nurses are “judgement free”. The positive feedback from staff and patients has created a plan to increase outreach activities in the community.

**Role of Collaboration and Leadership:**

The successful development and implementation of the inpatient cohort model and community outreach activities required strong interprofessional collaboration involving nurses of all levels, physicians and administration. The organization’s nursing leadership and senior executive team provided support through resources for staff education and time to implement the cohort model and clinic outreach education.

**Innovation:**

The innovative approach of community partnership and redesign of inpatient care delivery has fostered positive relationships to support NAS neonates and families. Other organizations have implemented components of inpatient care redesign but not addressed the community aspects of care. The enhanced relationships with mothers of NAS infants have resulted in the delivery of cost-effective care and improved quality outcomes. The strategies require minimal costs and are easily replicated in other communities. The organization has plans to expand community partnerships for ongoing support of families struggling with addiction.

**Culture of Safety:**

The cohort program increases the engagement of mothers/parents in the neonate's care. Nurses are available to provide coaching, support and guidance around the clock. As a result, the mothers/parents are better prepared to care for neonates at discharge. The neonates are receiving the appropriate care and are in the best environment. It has decreased our length of stay and reduced the medication treatment time for NAS infants.

**Patient and Family Integration:**

The cohort model keeps the mother-infant dyad together which promotes increased infant bonding and improved confidence in providing infant care. They are receiving immediate loving care from their parent, and the elimination of distractions and outside noises has likely helped in decreasing the length of stay for the neonates.

**Sustainability:**

The strategies require minimal costs and are easily replicated in other communities. The organization has plans to expand community partnerships for ongoing support of families struggling with addiction.

**Related Tools and Resources**