Aim: To reduce the median length of stay (LOS) for term infants with NAS who require pharmacological treatment from 20 days to 17 days by August 2014.

Setting: All standardization has occurred across all units in our children’s hospital including the maternal infant care center, neonatal intensive care unit, and general pediatric floor. We have also incorporated our outpatient substance use disorders clinic and obstetric clinics into our improvement work.

Mechanisms: The standardization of screening mothers and infants; formal, mandatory education for nurses conducting NAS scoring; and pharmacologic treatment has been implemented. Recently, a practice standard for the use of maternal breast milk was approved. The next mechanism being implemented in September, 2014 is the mandatory training for all nursing staff on the use of non-pharmacologic therapies.

Methods: To establish goals for improvement, a chart review was conducted to determine baseline LOS between January 2009 and December 2011. Key drivers for improvement were identified which included standardized nursing education for the use of the modified Finnegan NAS scoring tool, development of a standardized diagnosis and treatment algorithm, and development of a breast milk and breastfeeding policy specifically for infants with NAS. Formal nursing education was conducted by a core group of educators. A standardized treatment algorithm was created and enacted. Clinical parameters before and after implementation of standardization included gestational age, birth weight, birth location, toxicology screening, morphine initiation dose and maintenance dose, duration of therapy, use of phenobarbital, length of stay, number of steps in weaning process, percentage of compliant weans, discharge location, discharged on medication, and 30 day readmission. Adherence to the treatment algorithm (compliance) was monitored and reported every quarter by a single team member.

Measures: The outcome measure utilized is the median length of stay. The process measures are the percentage of nurses completing education and compliance with the pharmacologic therapy guideline. The balancing measure is the number of 30-day readmissions.

Data / Results: Between January 2009 and December 2011, 61 term infants received pharmacologic treatment for NAS. The median LOS of 20 days was observed during this period of pre-implementation; ranged from 5 to 61 days. Our project began in the mid of year 2012. Nursing education for NAS scoring was completed by the end of 2012, and standardized treatment algorithm was launched in January 2013. From January 2013 to June 2014, 65 term infants received pharmacologic treatment for NAS. The median LOS decreased to 18 days; ranged from 8 to 38 days. Number of infants requiring long hospitalization (> 21 days) was decreased by 17%. Compliance with the treatment algorithm improved from 29.3% in the first quarter of the year 2013 to 84.4% in the fourth quarter. No readmissions occurred during the year of implementation.

Discussion: Standardization of scoring and pharmacologic treatment has led to a reduction in median LOS for infants with NAS without readmissions. Further improvement is expected once the policy for breast feeding and use of maternal breast milk in infants with NAS is amended along with the development of a non-pharmacologic education toolkit for nursing and parent.