

## Neonatal Abstinence Syndrome Initiative Measurement Grid

**Definition of NAS (Inclusion Criteria):** Any infant  $\geq 37$  0/7 weeks gestational age admitted in any inpatient hospital location with all of the following: 1) NAS signs not explained by another etiology (e.g., sepsis, intracranial hemorrhage, hypocalcemia) AND 2) severity of NAS requires treatment (nonpharmacologic or pharmacologic) that extends beyond the facility's recommended observation period.

**Definition of NAS (Exclusion Criteria):** Exclude the following: 1) infants readmitted for management of NAS signs; 2) infants with iatrogenic withdrawal (ICD-10 code P96.2) defined as neonates who require opioids to prevent or treat signs of withdrawal following prolonged use of opioids for valid medical conditions (e.g., extracorporeal life support, or treatment of pain after surgical procedures); 3) conditions which in themselves may prolong length of hospital stay (e.g., major congenital anomalies, genetic syndromes, HIE, surgical diagnoses)

NOTE: These measures are subject to change during the process of finalizing data collection and reporting tools.

#	Outcome Measure	Description	Frequency
1	<b>Length of Stay</b>	Numerator: Total # of days of each infant's duration of hospitalization (i.e., date of final disposition minus date of birth)  Denominator: # of infants $\geq 37$ 0/7 weeks GA admitted anywhere in the hospital with a diagnosis of NAS	Monthly

#	Process Measures	Description	Frequency
	Some process measures will be reported on individual infants, and some will be reported on individual hospitals.		
1	<b>NAS education bundle compliance for staff and providers.</b>	Bundle includes: 1) trauma-informed care, 2) psychology of addiction, 3) motivational interviewing, and 4) NAS signs, scoring, and non-pharmacologic techniques.  <b>Nurses:</b> Numerator: # of nurses who received education on EACH topic of the NAS education bundle to date  Denominator: Total # of nurses who care for NAS infants to date  <b>Providers:</b> Numerator: # of advance practice nurses (ARNPs, PAs), and physicians who received education on EACH topic of the NAS education bundle to date  Denominator: Total # of advanced practice nurses (ANRPs, PAs) and physicians who care for NAS infants to date  Exclusion: Obstetric providers	Quarterly  (cumulative % for EACH individual topic)

2	<b>Primary caregiver perception of “engagement” during infant's hospitalization</b> <i>*provisional measure pending successful testing</i>	<p>Average of Likert scale responses from parent or primary caregiver for EACH survey question for all NAS infants at the time of final disposition.</p> <p>Exclusion: Foster care placement, mother is incarcerated, adoption, mother in inpatient MAT or hospitalized for a medical reason, initial disposition is transfer to another hospital</p>	Quarterly
3	<b>Inter-rater reliability with scoring tool</b>	<p>Numerator: # of current nurses who have demonstrated <math>\geq 90\%</math> inter-rater reliability with your institution's NAS scoring tool</p> <p>Denominator: Total # of current nurses caring for NAS infants to date</p> <p>Exclusions: institution decides which nurses to exclude (i.e. floats, core group of nurses that perform scoring, etc.).</p> <p><i>*Institution determines how to measure inter-rater reliability (FPQC will provide suggestions)</i></p>	Quarterly  (Cumulative %)
4	<b>NAS education bundle compliance for infant's primary caregiver</b>	<p>Bundle includes all of the following: 1) safe sleep, 2) expectations of hospital stay, 3) shaken baby syndrome, 4) postpartum depression, 5) NAS signs and nonpharmacologic techniques. (Only 1 parent or primary caregiver needs to receive education bundle per NAS infant)</p> <p>Numerator: # of primary caregivers with documented completion of ALL topics of the NAS education bundle at final disposition</p> <p>Denominator: # of infants <math>\geq 37</math> 0/7 weeks GA admitted anywhere in the hospital with a diagnosis of NAS</p> <p>Exception: foster care only requires NAS signs and nonpharmacologic techniques; non-biological mother placement does not require postpartum depression</p>	Monthly
5	<b>Rooming-in frequency</b>	<p>Rooming-in is defined as: parent, other caregiver, or hospital “cuddler” visits with infant for <math>\geq 6</math> hours/day. This may occur at the infant's bedside and does not require a private room.</p> <p>Numerator: # of hospital days where primary parent, caregiver, or hospital “cuddler” spent <math>\geq 6</math> hours rooming-in with infant</p> <p>Denominator: Total # of hospital days for ALL infants <math>\geq 37</math> 0/7 weeks GA admitted anywhere in the hospital with a diagnosis of NAS</p>	Monthly

6	<b>Any breast milk within first 3 days of life</b>	<p>Numerator: Total # of infants receiving any MOM (breastfeeding or EBM) within first 3 days of life. Day of birth is counted as day of life 0.</p> <p>Denominator: # of infants <math>\geq 37</math> 0/7 weeks GA admitted anywhere in the hospital with a diagnosis of NAS where MOM is not contraindicated</p> <p>Exclusion: MOM contraindicated, foster care placement, mother is incarcerated, adoption, mother in inpatient MAT, infant transferred <math>\geq</math> day of life 3</p>	Monthly
7	<b>Breast milk at initial disposition</b>	<p>Numerator: Total # of infants receiving any MOM (breastfeeding or EBM) on day of initial disposition</p> <p>Denominator: # of infants <math>\geq 37</math> 0/7 weeks GA admitted anywhere in the hospital with a diagnosis of NAS where MOM is not contraindicated</p> <p>Exclusion: MOM contraindicated, foster care placement, mother is incarcerated, adoption, mother in inpatient MAT or other reason (e.g., hospitalized for a medical reason)</p>	Monthly
8	<b>Pharmacologic management (1st line medication): initiation</b>	<p>Numerator: # of infants who were started on your institution's 1st line medication when treatment threshold was met</p> <p>Denominator: # of infants <math>\geq 37</math> 0/7 weeks GA admitted anywhere in the hospital with a diagnosis of NAS where the treatment threshold for medications was met</p> <p>Exclusions: already started on medications prior to transfer *Treatment threshold is defined by the individual institution.</p>	Monthly
9	<b>Pharmacologic management (1st line medication): recommended 1st dose</b>	<p>Numerator: # of infants who were started on your institution's 1st line medication at the correct dose according to the institution's guideline.</p> <p>Denominator: # of infants <math>\geq 37</math> 0/7 weeks GA admitted anywhere in the hospital with a diagnosis of NAS and started on medication</p> <p>Exclusions: already started on medications prior to transfer. *Correct drug and dose is determined by individual institution.</p>	Monthly

10	<b>Pharmacologic management (1st line medication): weaning</b>	<p>Numerator: # of infants weaned per your institution's guideline from "capture" to medication discontinuation or initial disposition (whichever comes first)</p> <p>Denominator: # of infants <math>\geq 37</math> 0/7 weeks GA admitted anywhere in the hospital with a diagnosis of NAS and started on medication</p> <p>Exclusions: initial disposition before medication weaning occurs            *Weaning parameters are determined by individual institution.            *"Capture" is defined as time from peak dose of the last added medication to first wean.            *To be included in the numerator, must be compliant with ALL weaning opportunity.</p>	Monthly
11	<b>Pharmacologic management bundle</b>	<p>Numerator: # of infants with compliance with your institution's guidelines including initiation (measure 8), 1st dose (measure 9), and weaning of 1st line medication (measure 10).</p> <p>Denominator: # of infants <math>\geq 37</math> 0/7 weeks GA admitted anywhere in the hospital with a diagnosis of NAS and started on medication</p> <p>Exclusions: initial disposition before medication weaning occurs, already started on medications prior to transfer</p>	Monthly *calculated by FPQC
12	<b>Safe Discharge bundle compliance.</b>	<p>Bundle includes all of the following: 1) All education provided on safe sleep, shaken baby syndrome, postpartum depression, NAS signs and nonpharmacologic techniques, and expectations of hospital stay (included in measure 4); 2) DCF report filed; 3) DCF discharge clearance determined; 4) Early steps referral made prior to hospital discharge; 5) Healthy Start referral made prior to hospital discharge; 6) Pediatrician appointment made within 3 business days of infant discharge</p> <p>Numerator: # of infants with documentation of all elements of the Safe Discharge bundle            Denominator: # of infants <math>\geq 37</math> 0/7 weeks GA admitted anywhere in the hospital with a diagnosis of NAS            Exclusions: initial disposition is transfer to another hospital            *To be included in the numerator, must be compliant with ALL Safe Discharge bundle elements. Exception: foster care only requires NAS signs and nonpharmacologic techniques; non-biological mother placement does not require postpartum depression</p>	Monthly

#	Balancing Measure	Description	Frequency
1	<b>Outpatient medication management for NAS</b>	<p>Numerator: # of NAS infants discharged home with any medication to manage NAS signs</p> <p>Denominator: # of infants <math>\geq 37</math> 0/7 weeks GA admitted anywhere in the hospital with a diagnosis of NAS and started on medication</p>	Quarterly