# PA PQC NAS Driver Diagram

* Optimize the health and well-being of pregnant women with OUD and their infants
* Increase standardized, compassionate care for Opioid-Exposed Newborns (OEN)

**INTERVENTIONS**

**KEY DRIVERS**

**AIMs**

* Create and use standardized coding and documentation for SENs and NAS, including specific ICD-10 codes for OENs
* Use trauma-informed principles for compassionate care for SENs and mothers
* Educate staff re: OEN and NAS, trauma-informed care, and MDWISEguidelines
* Develop screening criteria for prenatal identification of infants at risk for NAS
* Provide family education about NAS and what to expect

Standardize compassionate, non-judgmental maternal/infant screening, prenatal education, support, and tracking

**SMART Objective and Primary Aim**

1. Decrease hospital LOS for NAS by 1 day by December 2019 and 2 days by September 2020

**Secondary Aim**

1. Increase identification of OENs and diagnosed NAS
2. Increase percentage of OENs who receive non-pharmacologic treatment
3. Increase breastfeeding by 5% among mothers with OUD within one year
4. Increase recommended well-child visits through 15 months

**Tertiary Aims**

1. Increase % of infants who stay with their families during the stay and go home with their mother
2. Increase safe and optimized discharge plans for OENs
3. Increase linkage to pediatrician or PCP
4. Increase percentage of babies referred to and seen by Early Intervention services

* Train hospitals on validated screens for NAS (e.g., Finnegan and Eat, Sleep, Console)
* RN staff at Level 2 and 3 NICUs complete NAS scoring training and achieve 90% reliability with a validated screen (e.g., Finnegan and Eat, Sleep Console)
* Create and use NAS order sets
* Ensure each facility has a standardized protocol and adheres to it
* Create standardized prenatal consult template and pamphlet to help families understand beginning to end the process of their hospital stay
* Rooming-in (with safety measures) where the parent is present throughout stay
* Promote Kangaroo care (skin-to-skin contact)
* Swaddling, rocking, dimmed lighting, limited visitors, quiet environment
* Establish breastmilk guidelines and support breastfeeding guidelines
* Use empowering messaging to engage the mother
* Create and use EHR order sets
* Create standardized prenatal consult template and pamphlet to help families understand beginning to end the process of their hospital stay
* Initiate Rx if NAS score ≥ 8 three times
* Stabilization / Escalation Phase
* Wean when stable for 48 hrs by 10% daily
* Connect dyad to wrap around supports and treatment prior to discharge
* Facilitate communication with Pediatrician and PCP
* Provide training to pediatricians for managing mother/infant dyad post-discharge
* Provide lactation support
* Use Cuddler Program to free up mom for treatment
* Follow the mother/infant dyad for up to 18 months
* Link babies to Early Intervention (EI) Services.
* Prepare mom for post-discharge, home-based services
* Partner with families to establish plans of care for the infant, using MDWISE guidelines
* Collaborate with social and child services to ensure infant safety
* Provide home visits post-discharge with counties and health plans
* Follow-up to ensure that the plans of safe care are adopted (MDWISE)

Support Mother/Infant Dyad

Ensure Safe Discharge

Standardize medical management of all NAS patients

Adherence to standardized non-pharmacological measures for all OENs

Attain high reliability with NAS scoring by nursing staff

## NAS Quality Metrics

| Metric | Numerator  (Out of the Denominator) | Denominator | Data Source | Notes | Source |
| --- | --- | --- | --- | --- | --- |
| Median hospital length of stay for newborns with NAS  (Required) | Median number of hospital days from birth of newborns with NAS through discharge to home among newborns greater than 34 gestational weeks with NAS | | Birth Hospital Data Form or State Data with NAS ICD 10 code and total hospital LOS | Report quarterly, starting in January 2019.  In the PA PQC Data Portal, please enter the quarterly data in the last month of the quarter. For example, if you are entering data for the first quarter of 2019 (January through March), enter the quarterly data by selecting March 2019 in the drop down menu that is labeled as “date.” Please do not enter data for each month; just the last month of the quarter for quarterly reporting.  This measure is among those who have been discharged.  The data should be pulled based on discharge date (for example, for January 1 to March 31, data should be pulled for all patients who were *discharged* in that quarter)  The PA PQC is using the same definition of the NAS cases reported to PA DOH’s Division of Newborn Screening and Genetics via the Internet Case Management System (iCMS). These cases include “confirmed” and “probable” cases identified using clinical and laboratory criteria as defined in the Council of State and Territorial Epidemiologists’ (CSTE) NAS Standardized Case Definition (<https://cdn.ymaws.com/www.cste.org/resource/resmgr/2019ps/final/19-MCH-01_final_7.31.19.pdf>). This does not include “suspect cases.” Please note that maternal clinical evidence is defined as use in the four weeks prior to delivery, and maternal laboratory evidence is defined as detection from a screening or laboratory test performed in the four weeks prior to delivery. Please see DOH’s FAQs about the PA iCMS implementation here (<https://www.whamglobal.org/list-documents/154-nas-pa-icms-implementation-faq/file>).  Newborns are those admitted at 0 days old, transferred up to 1 week old, or readmitted from home/ER/clinic up to 1 week old (i.e., admitted at less than 7 days old)  Median calculations assume some sites will have outliers that will skew the normal distribution of data. The median is the value separating the higher half from the lower half of a data sample this ordered from low to high numbers. (In response to outliers, conduct a root cause analysis to understand the causes of the outliers.)  Includes all days hospitalized. If a transfer occurs to another institution, the **receiving hospital is responsible for including all days hospitalized, including the days hospitalized at the birth/transferring hospital**. The receiving hospital should get information on the perinatal and birth history from the birth/transferring hospital. | Informed by AIM Opioid Metrics Spreadsheet (O4)  Informed by ILPQC protocol for handling transfers |
| Percent of newborns with NAS who are treated with a non-pharmacologic bundle  *(Optional; prioritized)* | Number who are treated with a non-pharmacologic bundle | Number of NAS cases | EHR Data, Hospital data form, and/or PADOH NAS Notification Form | Report monthly, starting in May 2019.  This measure is among those who have been discharged during the reporting month. The data should be pulled based on discharge date (for example, for May, data should be pulled for all patients who were *discharged* in May).  The PA PQC is using the same definition of the NAS cases reported to PA DOH’s Division of Newborn Screening and Genetics via the Internet Case Management System (iCMS). These cases include “confirmed” and “probable” cases identified using clinical and laboratory criteria as defined in the Council of State and Territorial Epidemiologists’ (CSTE) NAS Standardized Case Definition (<https://cdn.ymaws.com/www.cste.org/resource/resmgr/2019ps/final/19-MCH-01_final_7.31.19.pdf>). This does not include “suspect cases.” Please note that maternal clinical evidence is defined as use in the four weeks prior to delivery, and maternal laboratory evidence is defined as detection from a screening or laboratory test performed in the four weeks prior to delivery. Please see DOH’s FAQs about the PA iCMS implementation here (<https://www.whamglobal.org/list-documents/154-nas-pa-icms-implementation-faq/file>).  One of the data fields in the DOH NAS Notification Form under “Infant Status” is “Medications or Therapy Used to Treat Infant?” The numerator can include those with “Nonpharmacologic therapy” option selected.  The non-pharmacologic interventions include environmental control, feeding methods, social integration, soothing techniques, and therapeutic modalities. Examples of non-pharmacologic measures include:   * gentle handling * demand feeding * breast feeding if not contraindicated * gentle rubbing instead of patting the infant when burping * avoidance of waking a sleeping infant unless due for feeding (if not on demand feeding) * pacifiers (if the woman is not breastfeeding) * swaddling * holding, cuddling and manual rocking * kangaroo care * rooming-in with the mother * continuous minimal stimulation with dim light and low noise environment * small, frequent feeding (e.g. every 2 hours) * high-calorie feeds (22 cal/oz) * music therapy * massage therapy use of bouncers (e.g. MamaRoo)   A patient can receive both non-pharm and pharm treatment, and in this case, they would be included in the numerators for both measures. In other words, the % pharm and % non-pharm measures will not add up to 100% because they are not mutually exclusive. |  |
| Percent of newborns with NAS who receive pharmacologic treatment  *(Optional; prioritized)* | Number receiving pharmacologic therapy | Number of NAS cases | EHR Data, Hospital data form, and/or PADOH NAS Notification Form | Report monthly, starting in May 2019  This measure is among those who have been discharged during the reporting month. The data should be pulled based on discharge date (for example, for May, data should be pulled for all patients who were *discharged* in May).  The PA PQC is using the same definition of the NAS cases reported to PA DOH’s Division of Newborn Screening and Genetics via the Internet Case Management System (iCMS). These cases include “confirmed” and “probable” cases identified using clinical and laboratory criteria as defined in the Council of State and Territorial Epidemiologists’ (CSTE) NAS Standardized Case Definition (<https://cdn.ymaws.com/www.cste.org/resource/resmgr/2019ps/final/19-MCH-01_final_7.31.19.pdf>). This does not include “suspect cases.” Please note that maternal clinical evidence is defined as use in the four weeks prior to delivery, and maternal laboratory evidence is defined as detection from a screening or laboratory test performed in the four weeks prior to delivery. Please see DOH’s FAQs about the PA iCMS implementation here (<https://www.whamglobal.org/list-documents/154-nas-pa-icms-implementation-faq/file>).  One of the data fields in the DOH NAS Notification Form under “Infant Status” is “Medications or Therapy Used to Treat Infant?” The numerator can include those with a medication selected.  A patient can receive both non-pharm and pharm treatment, and in this case, they would be included in the numerators for both measures. In other words, the % pharm and % non-pharm measures will not add up to 100% because they are not mutually exclusive. | Informed by the AIM Opioid Metrics Spreadsheet (Optional O1) |
| Percent of newborns with NAS who were referred to appropriate follow-up at discharge  *(Optional; prioritized)* | Number referred to follow-up services at discharge | Number of NAS cases | EHR Data, Hospital data form, and/or PADOH NAS Notification Form | Report monthly, starting in May 2019  This measure is among those who have been discharged during the reporting month. The data should be pulled based on discharge date (for example, for May, data should be pulled for all patients who were *discharged* in May).  The PA PQC is using the same definition of the NAS cases reported to PA DOH’s Division of Newborn Screening and Genetics via the Internet Case Management System (iCMS). These cases include “confirmed” and “probable” cases identified using clinical and laboratory criteria as defined in the Council of State and Territorial Epidemiologists’ (CSTE) NAS Standardized Case Definition (<https://cdn.ymaws.com/www.cste.org/resource/resmgr/2019ps/final/19-MCH-01_final_7.31.19.pdf>). This does not include “suspect cases.” Please note that maternal clinical evidence is defined as use in the four weeks prior to delivery, and maternal laboratory evidence is defined as detection from a screening or laboratory test performed in the four weeks prior to delivery. Please see DOH’s FAQs about the PA iCMS implementation here (<https://www.whamglobal.org/list-documents/154-nas-pa-icms-implementation-faq/file>).  One of the data fields in the DOH NAS Notification Form under “Infant’s Discharge Plan” is “Who was the baby referred to post-discharge?” The numerator can include those with the following referrals selected: early intervention, home visiting services, pediatrician experienced in working with NAS, high-risk infant follow-up clinic, or developmental assessment clinic. | Informed by AIM Opioid Metrics Spreadsheet (P15) |