* Implement training, assessment, and re-assessment of organizations’ systemic racism and individuals’ implicit bias
* Build a culture of equity, including systems for reporting, response, and learning, and applying resources towards identified problems
* Engage diverse patient, family, and community advocates on quality and safety leadership teams
* Train staff and provide ongoing coaching on shared decision making and motivational interviewing methods

**Global Aim**

Decrease maternal mortality and severe morbidity across races, ethnicities, and regions in the Commonwealth

Recognition of and Response to Racial and Ethnic Disparities

**INTERVENTIONS**

**AIMS**

**DRIVERS**

# Maternal Mortality Key Driver Diagram

* Review records of severe maternal morbidity and mortality with multi-disciplinary teams and support the PA Maternal Mortality Review Committee’s (PA MMRC) collection of complete medical records

Review of Mortality

& Severe Maternal Morbidity

Establish Levels of Maternity Care

* Establish levels of risk and levels of maternity care to properly triage patients and connect to the right provider
* Educate families and providers to make informed decisions about the appropriate place of birth
* Ensure integration and communication across levels of maternity care to ensure appropriate transfers
* Administer validated social determinants of health, mental health, and substance misuse screens during prenatal and postpartum visits
* Connect patients to mental health, substance misuse services, and community-based social services through warm handoffs, co-location, or integration models
* Engage women who smoke in smoking cessation programs
* Establish processes for screening, managing, and preventing intimate partner violence
* Apply trauma-responsive principles
* Offer access to comprehensive prenatal care that adheres to guidelines, including group education models and virtual options
* Implement policies on risk factor assessment, counseling, and follow-up for high risk patients prior to discharge
* Create and implement communication and referral workflows between hospitals/clinics and care manager, home visiting, and community support programs to meet patients where they are
* Deploy care managers (with health plans) for women with individualized needs, to ensure connections to wrap around supports, track outcomes, and increase self-efficacy in identifying warning signs and when to seek care

Comprehensive Perinatal Assessments & Connections to Behavioral Health and Wraparound Supports

Team-Based Care

* Educate families and providers to make informed decisions regarding diverse clinical provider options and appropriate scope of practice (e.g., licensed physicians (OBGYNs and family physicians) and midwives)
* Increase the use and impact of integration of CHWs and doulas in prenatal, laboring/intrapartum and postpartum care
* Create workflows and establish procedures related to communication and coordination between providers (supported by technology)

Standardized Protocols for Hemorrhage, VTE, and Severe Hypertension

* Establish and implement standardized protocols for identifying and reducing delays in diagnosis and effective treatment, missed diagnosis, and ineffective treatments for hemorrhage, VTE, and severe hypertension

Expand Postpartum Care

* Document postpartum care plans with warning signs, responses, and support teams
* Provide post-partum care within three weeks from delivery with ongoing care as needed (based on ACOG’s fourth trimester guidelines, including telehealth, home visits, and other innovative patient-centered approach)
* Ensure that each woman has a source of ongoing primary care and a pediatrician
* Use evaluation and management strategies for issues facing the mother-infant dyad
* Increase access to immediate postpartum contraception LARC and other options
* Increase utilization of pre-conception and inter-conception care, and prevent or control various conditions (e.g., high blood pressure and diabetes, depression, multivitamin use)

Pre-Conception and
Inter-conception Care

Availability of Comprehensive Reproductive Services

* Optimize and measure utilization of comprehensive reproductive services

##

## Maternal Mortality Quality Metrics

The PA PQC will rely on the PA Maternal Mortality Review Committee (MMRC) to track rates of maternal mortality at the state-level, including pregnancy-associated and pregnancy-related deaths. The PA PQC recommends tracking these rates by race/ethnicity, insurance status, and cause of death. To help serve as an action arm of the MMRC, the PA PQC sites will measure severe maternal morbidity. The PA PQC also recommends measuring and tracking optional measures that could prevent maternal mortality and morbidity and drive quality improvement projects at facilities. To ensure a focus on the optional measures, the PA PQC will prioritize certain categories of optional measures in phases. Initially, the optional measures in the hemorrhage, hypertension, and ACOG Fourth Trimester categories will be prioritized.

| Metric | Numerator | Denominator | Data Source | Notes | Source |
| --- | --- | --- | --- | --- | --- |
| Severe Maternal Morbidity*(Required)* | Number of cases with any severe maternal morbidity (SMM) code  | All mothers during their birth admission, excluding ectopics and miscarriages | Hospital Discharge Data File (ICD-9/ICD-10) | Report aggregate numbers and also by race, ethnicity (NH white, NH black, Hispanic, NH other), and insurance status (private, Medicaid, or uninsured)Report quarterly, starting in January 2019 | [AIM Severe Maternal Morbidity Codes List](https://safehealthcareforeverywoman.org/aim-data/)https://safehealthcareforeverywoman.org/aim-data/ |
| Severe Maternal Morbidity (excluding cases with only a transfusion code)*(Required)* | Number of cases with any non-transfusion SMM code | All mothers during their birth admission, excluding ectopics and miscarriages | Hospital Discharge Data File (ICD-9/ICD-10) | Report aggregate numbers and also by race and ethnicity (H white, NH black, Hispanic, NH other), and insurance status (private, Medicaid, or uninsured)Report quarterly, starting in January 2019 | [AIM Severe Maternal Morbidity Codes List](https://safehealthcareforeverywoman.org/aim-data/)https://safehealthcareforeverywoman.org/aim-data/ |
| Treatment of Severe HTN within 1 hour*(Optional; prioritized)* | Cases who were treated within 1 hour with IV Labetalol, IV Hydralazine, or PO Nifedipine | Women with persistent (twice within 15 minutes) new-onset Severe HTN (Systolic: ≥ 160 or Diastolic: ≥ 110) | Hospital logbooks, EHR, and pharmacy records | Report monthly starting in January in 2019Denominator excludes women with an exacerbation of chronic HTN It is best to use at least two systems for identification of denominator cases. | AIM Severe Hypertension P4 |
| Timely Fourth Trimester Contact*(Optional; prioritized)* | Cumulative number of patients receiving postpartum care contact within first three weeks from discharge | All patients who gave birth during a 12-month period | EHR and Claims Data | Report cumulatively on a monthly basis, starting in May 2019 “Postpartum care” can be counted as physician office visits, home health visits, nursing care, or telemedicine  | Based on ACOG Fourth Trimester<https://www.acog.org/Womens-Health/Optimizing-Postpartum-Care?IsMobileSet=false> |
| Post-Partum Care Assessments *(Optional)* | Cumulative number of patients receiving the following post-partum assessments:* Maternal functioning
* Infant care and feeding
* Breastfeeding evaluation and education
* Mood and emotional well-being
* Sleep and fatigue
* Post-partum depression screening
* Substance Use Disorder (SUD) screening
* Glucose screening for those with gestational diabetes
* Blood pressure check for those at risk of hypertension
* Family and contraceptive planning

Referral to primary care for chronic disease management  | All patients who gave birth during a 12-month period and were seen for a post-partum care visit within 8 weeks of giving birth    | EHR and Claims Data | Report cumulatively on a monthly starting in May 2019 or later(The PA PQC will monitor the feasibility of this comprehensive list of assessments and collect strategies for measuring it.) | Based on ACOG Fourth Trimester <https://www.acog.org/About-ACOG/ACOG-Departments/Toolkits-for-Health-Care-Providers/Postpartum-Toolkit> Adapted from the Post-Partum Follow-up and Care Coordination Measurehttps://www.ahrq.gov/sites/default/files/wysiwyg/policymakers/chipra/factsheets/chipra\_1415-p009-3-ef.pdfAdds Maternal Functioning Assessments (the Barkin Index). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3003914/>  |
| Social Determinants of Health Screening and Follow-up Services*(Optional)* | Cumulative number who were screened for social determinants of health (SDOH) at least once in a year, using a validated SDOH screen that includes SDOH domains, AND if positive, the number who received follow-up services within 30 days  | Cumulative number of women with at least one prenatal or postpartum encounter | PA PQC site’s EHR data | Report cumulatively on a monthly basis, starting in May 2019 or later.SDOH assessments:<https://sirenetwork.ucsf.edu/tools-resources/mmi/screening-tools-comparison/adult-nonspecific>SDOH Domains:Education, Literacy and LanguageEmployment Housing SecurityEconomic HardshipsSocial HealthPsychosocial and StressExperiences with Crime and Violence, and Judicial SystemSafety & Domestic ViolenceFamily and Social Support Issues | Informed by the design of the Depressing Screening and Follow-up Care Measure:<https://www.ncqa.org/hedis/the-future-of-hedis/hedis-depression-measures-specified-for-electronic-clinical-data/>  |
| Timeliness of Prenatal Care*(Optional)* | The cumulative number that received a prenatal care visit in the first trimester or within 42 days of enrollment in the organization. | All patients who gave birth during a 12-month period | Claims Data | Report cumulatively on a monthly basis, starting in January 2019 | Adapted from the HEDIS Measure<http://www.qualityforum.org/QPS/1517>  |
| Timeliness of Postpartum Care*(Optional)* | The cumulative number of deliveries that had a postpartum visit on or between 21 and 56 days after delivery. | All patients who gave birth during a 12-month period  | Claims Data | Report cumulatively on a monthly basis, starting in January 2019 | Adapted from the HEDIS Measure<http://www.qualityforum.org/QPS/1517>  |
| Inter-Conception Care*(Optional)* | Cumulative number of women who had provider contacts within 6 months to a year of becoming pregnant when the following occurred:• Asked the woman about reproductive health risk (e.g. medical risk, smoking, depression, family planning, multivitamin/folic acid, other)• Advised and educated her about desired healthy behaviors• Assessed any positive screens• Assisted in and arranged for interventions | Number of women who were pregnant in the past year  | PA PQC site’s EHR data | Report cumulatively on a monthly basis, starting in May 2019 or later.“Provider contacts” can be with a women’s health provider or well child provider.This measure can be limited to the visits that occur within the PA PQC site or health system. | Informed by the 5As in the IMPLICIT Toolkit https://www.prematurityprevention.org/Home.aspx |
| Venous Thromboembolism (VTE) Risk Screening among Obstetric Patients*(Optional)* | Number of women who received VTE risk screening or VTE prophylaxis before delivery or within 24 hours of an antepartum admission | Sample among all women admitted to the obstetric service for labor or for antepartum conditions  | Hospital | Report monthly starting in January in 2019Sample size= 45 admissions per quarter, or all admissions, if fewer than 45 | AIM VTE P3 Measure |
| Contraceptive Care for Postpartum women Ages 15-44*(Optional)*  | Number of women who were provided a most effective (i.e., sterilization, implants, IUD/IUS) or moderately effective (i.e., sterilization, implants, IUD/IUS) contraception method within 3 and 60 days of delivery  | Women ages 15 to 44 who had a live birth | EHR and claims data | Report monthly, starting in January 2019A specific benchmark has NOT been set for the Contraceptive Care - Most & Moderately Effective Methods measure, and the intent is not to reach 100%, as some women will make informed decisions to choose methods in the lower tier of efficacy even when offered the full range of methods.  | Adapted from National Performance Measures<https://www.hhs.gov/opa/performance-measures/index.html> |

## Maternal Mortality-Related Survey

 *Administered at the end of quarter (starting in April 2019 for January – March 2019)*

PA PQC Site Name: \_\_\_\_\_\_\_

**Team Education: Hemorrhage, Severe Hypertension, and VTE**

1. At the end of this quarter, what is the cumulative percent of OB/GYN physicians, neonatal physicians, nurses, and midwives at the PA PQC site that has completed an education program on Obstetric Hemorrhage, Obstetric Hemorrhage bundle elements, and the unit-standard protocol within the last 2 years? (Estimate in 10% increments, rounding up) **(prioritized question)**
2. At the end of this quarter, what is the cumulative percent of OB/GYN physicians, neonatal physicians, nurses, and midwives at the PA PQC site that has completed an education program on Severe HTN/Preeclampsia, severe HTN/Preeclampsia bundle elements, and the unit-standard protocol within the last 2 years? (Estimate in 10% increments, rounding up) **(prioritized question)**
3. At the end of this quarter, what is the cumulative percent of OB/GYN physicians, neonatal physicians, nurses, and midwives at the PA PQC site that has completed an education program on VTE Prophylaxis that includes teaching on the prevention of VTE bundle and the unit-standard protocol within the last 2 years? (Estimate in 10% increments, rounding up)

**Unit Drills: Hemorrhage and Hypertension**

1. At the end of this quarter, what is the cumulative percent of OB/GYN physicians, neonatal physicians, nurses, and midwives at the PA PQC site that has completed OB drills (In Situ and/or Sim Lab) at least annually for hemorrhage? (Estimate in 10% increments, rounding up) **(prioritized question)**
2. At the end of this quarter, what is the cumulative percent of OB/GYN physicians, neonatal physicians, nurses, and midwives at the PA PQC site that has completed OB drills (In Situ and/or Sim Lab) at least annually for severe hypertension? (Estimate in 10% increments, rounding up) **(prioritized question)**

*(see* [*https://safehealthcareforeverywoman.org/aim-resources-2/*](https://safehealthcareforeverywoman.org/aim-resources-2/) *for the AIM In Situ OB Drill Resource List, and see* [*https://safehealthcareforeverywoman.org/aim-emodules/*](https://safehealthcareforeverywoman.org/aim-emodules/) *for AIM eModules)*

**Hemorrhage Process Measure: Blood Loss Readiness and Response (prioritized questions)**

1. Does your hospital have hemorrhage cart with supplies, checklist, and instruction cards for intrauterine balloons and compressions stitches?
* Yes
* No
1. Does your site have Immediate access to hemorrhage medications (kit or equivalent)?
* Yes
* No
1. Has your site established a process to perform multidisciplinary systems-level reviews on all cases of severe maternal morbidity?
* Yes
* No
1. Does your site respond with a unit-standard, stage-based, obstetric hemorrhage emergency management plan with checklists?
* Yes
* No
1. Does your site offer support programs for patients, families, and staff for all significant hemorrhages?
* Yes
* No
1. Has your site established a system in your facility to perform regular, formal debriefs after cases with major complications?
* Yes
* No

**Hemorrhage Process Measure: Risk Assessment**

1. At the end of this quarter, what cumulative proportion of mothers had a hemorrhage risk assessment with risk level assigned, performed at least once between admission and birth and shared among the team? (Estimate in 10% increments, rounding up) **(prioritized question)**

**Hemorrhage Process Measure: Measuring Blood Loss**

1. In this quarter, what proportion of mothers had measurement of blood loss from birth through the recovery period using cumulative visual or quantitative techniques? (Estimate in 10% increments, rounding up) **(prioritized question)**

**Recognition of and Response to Racial/Ethnic Biases**

1. Does your PA PQC site assess and re-assess your organization’s systemic racism and disparities, including the recognition and response to implicit bias and disparities?
* Yes
* No
1. At the end of this quarter, what is the cumulative percent of OB/GYN physicians, neonatal physicians, nurses, and midwives at the PA PQC site who received education on implicit racial and ethnic bias, peripartum racial and ethnic disparities and their root causes, and best practices for shared decision making at any time? (Estimate in 10% increments, rounding up)
2. Does your PA PQC site engage diverse patient, family, and community advocates who can represent important community partnerships on quality and safety leadership teams?
* Yes
* No
1. Does your PA PQC site implement quality improvement projects that target disparities in healthcare access, treatment, and outcomes?
* Yes
* No

**Team-Based Care**

1. Does your PA PQC site inform patients about midwives?
* Yes
* No
1. Does your PA PQC site have midwives available to care for patients?
* Yes
* No
1. In this quarter, what percent of low-risk women with a delivery received care from midwives? (Estimate in 10% increments, rounding up)

*(“Low-risk” patients are defined as those who meet the “birth center level of care”:* [*https://www.acog.org/Clinical-Guidance-and-Publications/Obstetric-Care-Consensus-Series/Levels-of-Maternal-Care?IsMobileSet=false*](https://www.acog.org/Clinical-Guidance-and-Publications/Obstetric-Care-Consensus-Series/Levels-of-Maternal-Care?IsMobileSet=false)*)*

1. Does your PA PQC site inform patients about doulas?
* Yes
* No
1. Does your PA PQC site have doulas available to care for patients?
* Yes
* No
1. In this quarter, what percent of women with a delivery received support from doulas? (Estimate in 10% increments, rounding up)

**Maternity Levels of Care Protocols**

*(Levels of Maternity Care include birth centers, basic care level, specialty care level, subspecialty care, and regional perinatal health care centers based on the ACOG guidelines:* [*https://www.acog.org/Clinical-Guidance-and-Publications/Obstetric-Care-Consensus-Series/Levels-of-Maternal-Care?IsMobileSet=false*](https://www.acog.org/Clinical-Guidance-and-Publications/Obstetric-Care-Consensus-Series/Levels-of-Maternal-Care?IsMobileSet=false)*)*

1. Does your site evaluate risk or level of maternity care needed?
* Yes
* No
1. Is the patient transferred appropriately to that level of maternity provider based on that risk?
* Yes
* Optimize the health and well-being of pregnant women with OUD and their infants
* Increase standardized, compassionate care for Opioid-Exposed Newborns (OEN)

# NAS Driver Diagram

**INTERVENTIONS**

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

* 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

**AIMs**

**KEY DRIVERS**

**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

Support Mother/Infant Dyad

* 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

Adherence to standardized non-pharmacological measures for all OENs

* 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

Attain high reliability with NAS scoring by nursing staff

* 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)

Ensure Safe Discharge

* 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)

Standardize medical management of all NAS patients

* 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

## NAS Quality Metrics

| Metric | Numerator | Denominator | Data Source | Notes | Source |
| --- | --- | --- | --- | --- | --- |
| Average hospital length of stay for newborns with NAS(required) | Total number of hospital days from birth of newborns with NAS through discharge to home  | Number of newborns ≥ 35 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 2019Newborns 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)Newborns diagnosed with NAS are defined by:* ICD 10 Code P96.1 (Neonatal Withdrawal Symptoms from Maternal Use of Drugs of Addiction), or
* OEN with clinical signs of opioid withdrawal (e.g., Finnegan score ≥ 8 three consecutive times)

Includes all days hospitalized whether transferred outside of a NICU or transferred to another institution*Protocol for how to handle transfers:**For infants transferred between hospitals, this data is reported by the hospital that provided the majority of care during the acute period of risk. Typically, for mother this is during delivery and for infants this is approximately day 3 to day 10 of life. We are defining that hospital as the BIRTH hospital if the infant remains there for at least* 5 days of life, and the RECEIVING hospital if the infant is transferred at day of life 5 or less. For all mother/infants, the data should only be reported ONCE. Examples are listed below**Scenarios:*** Infant born at hospital A, remains at hospital A until discharge (Hospital reports data)
* Infant born at hospital A, transferred to hospital B on day of life 20 for convalescent care, remains at hospital B until discharge (Hospital A reports data)
* Infant born at hospital A, transferred to hospital B on day of life 2 for acute care, remains at hospital B until discharge (Hospital B reports data)
* Infant born at hospital A, transferred to hospital B on day of life 2 for acute care, transferred back to hospital A on day of life 20 for convalescent care, remains at hospital A until discharge (Hospital B reports data)

The hospital reporting th*e data should attempt to contact transferring or receiving hospitals for information needed. If an infant was transferred for acute care at day of life 5 or less, the receiving hospital should get information on the perinatal and birth history from the birth hospital. If the infant is transferred after day 10 for convalescent care, the transferring hospital should get information from the receiving hospital on eventual disposition and length of stay.* | Informed by AIM Opioid Metrics Spreadsheet (O4)Informed by ILPQC protocol for handling transfers  |
| Percent of OENs who are treated with a non-pharmacologic bundle(optional) | Number who are treated with a non-pharmacologic bundle  | Number of OENs | EHR Data and Hospital data form | Report monthly, starting in May 2019 *OENs are defined as:* All newborns ≥ 35 gestational weeks born to mothers with opioid use disorder if:* mother has positive self-report screen or positive opioid toxicology screen during pregnancy and assessed to have OUD, or
* patient endorses or reports misuse of opioids / opioid use disorder, or
* using non-prescribed opioids during pregnancy, or
* using prescribed opioids chronically for longer than a month in the third trimester, or
* newborn has an unanticipated positive neonatal cord, urine, or meconium screen for opioids, or
* newborn is affected by maternal use of opioids including NAS.

Infants who are only exposed to opioids post-natally are not included in this patient population. The non-pharmacologic bundle includes 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
* 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)
 |  |
| Percent of newborns diagnosed with NAS who receive pharmacologic treatment(optional) | Number receiving pharmacologic therapy  | Number of newborns ≥ 35 gestational weeks with NAS  | EHR Data and Hospital data form | Report monthly, starting in May 2019 For definitions of NAS and Newborns, see the “Notes” for the metric, “Average hospital length of stay for newborns with NAS.” | AIM Opioid Metrics Spreadsheet (Optional O1)  |
| Average number of days of pharmacological treatment for newborns with NAS(optional)  | The total number of days of pharmacological treatment for the group in the denominator  | Number of newborns ≥ 35 weeks gestation diagnosed with NAS | EHR Data and Hospital Data Form  | Report monthly, starting in May 2019For definitions of NAS and Newborns, see the “Notes” for the metric, “Average hospital length of stay for newborns with NAS.”  | AIM Opioid Metrics Spreadsheet (Optional O2)  |
| Percentage of mothers with Opioid-Exposed Newborns (OEN) who roomed together throughout hospitalization(optional) | The number of moms who had the ability to say in the same room with her newborn for at least 24 hours throughout the hospital stay | Mothers who had a delivery with an OEN  | Log created from hospital OB and neo data form) | Report monthly, starting in May 2019For the clinical definition of OENs, see the “Notes” for the metric, “Percent of OENs who are treated with a non-pharmacologic bundle”  | AIM Opioid Metrics Spreadsheet (Optional P13) |
| Percentage of recommended well-child visits during the first 15 months among infants who were diagnosed with NAS(optional) | Number who had the recommended number of well-child visits (6 or more) with a PCP during their first 15 months of life | Children 15 months old during the measurement period who were diagnosed with NAS | Claims Data  | Report cumulatively on a monthly basis, starting in January 2019 For definitions of NAS, see the “Notes” for the metric, “Average hospital length of stay for newborns with NAS.”Well-child visit codes related to this metric: ICD-10-CM: Z00.110, Z00.111, Z00.121, Z00.129CPT: 99381, 99382, 99391, 99392https://www.aap.org/en-us/Documents/coding\_preventive\_care.pdf | Informed by NQF 1392https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-and-chip-child-core-set-manual.pdf |
| Percentage of recommended well-child visits during the first 15 months among infantsborn to mothers with OUD(optional) | Among the denominator, those who had the recommended number of well-child visits (6 or more) with a PCP during their first 15 months of life   | Children 15 months old during the measurement year who were born to mothers diagnosed with OUD | Claims Data  | Report cumulatively on a monthly basis, starting in January 2019 Mothers diagnosed with OUD are defined as those with ICD-10 codes for OUD: F11 diagnosis codes.Well-child visit codes related to this metric: ICD-10-CM: Z00.110, Z00.111, Z00.121, Z00.129CPT: 99381, 99382, 99391, 99392https://www.aap.org/en-us/Documents/coding\_preventive\_care.pdf | Informed by NQF 1392https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-and-chip-child-core-set-manual.pdf |
| Percent of OENs with appropriate follow-up at discharge (Early intervention)(optional) | Number referred to appropriate developmental services for follow-up at discharge or at a subsequent visit  | Number of OENs  | EHR Data, Hospital Data Form, Claims Data | Report monthly, starting in May 2019For the clinical definition of OENs, see the “Notes” for the metric, “Percent of OENs who are treated with a non-pharmacologic bundle”The PA PQC will collect and disseminate options and strategies for how to collect information about referrals to Early Interventions services. | Informed by AIM Opioid Metrics Spreadsheet (P15)  |
| Percent of NAS infants with ER visits and hospitalizations within 30 days of discharge (optional) | Number with ER visits or hospitalizations within 30 days of discharge | Number of newborns diagnosed with NAS who were discharged | Claims Data | Report quarterly, starting in January 2019For definitions of NAS, see the “Notes” for the metric, “Average hospital length of stay for newborns with NAS.” |  |
| Percent of infants born to mothers with OUD with ER visits and hospitalizations within 30 days of discharge (optional) | The number with ER visits or hospitalizations within 30 days of discharge | Number of newborns who were born to mothers with OUD and who were discharged | Claims Data  | Report quarterly, starting in January 2019Mothers diagnosed with OUD are defined as those with ICD-10 codes for OUD: F11 diagnosis codes. |  |
| Percent of eligible OENs receiving mother’s milk at newborn discharge (optional) | Number receiving some mother’s milk at the time of discharge with any ongoing plan for use of some mother's milk after discharge | Number of OENs born to mothers who are eligible for breastfeeding | EHRHospital data form or logbook are preferred methods of collection   | Report monthly, starting in May 2019For the clinical definition of OENs, see the “Notes” for the metric, “Percent of OENs who are treated with a non-pharmacologic bundle.”Mothers who are eligible for breastfeeding: Women who are stable on their opioid agonists, who are not using illicit drugs, and who have no other contraindications, such as human immunodeficiency virus (HIV) infection. Women should be counseled about the need to suspend breastfeeding in the event of a relapse. (ACOG CO, #711, August 2017) | Informed by AIM Opioid Metrics Spreadsheet (P2)  |

## NAS-Related Survey

 *Administered at the end of quarter (starting in April 2019 for January – March 2019)*

PA PQC Site Name: \_\_\_\_\_\_\_

**NAS Screening Training and Inter-Rater Reliability**

1. At the end of the quarter, what cumulative percentage of nursing staff at the NICU have been trained on validated assessments for NAS in the past year? (Report estimate in 10 increments; round up)
2. At the end of the quarter, what cumulative percentage of nursing staff at the NICU have practiced inter-rater reliability with the validated assessments for NAS in the past year? (Report estimate in 10 increments; round up)
3. At the end of the quarter, what cumulative percentage of nursing staff at the NICU have achieved a 90% or greater inter-rater reliability score? (Report estimate in 10 increments; round up)
4. Does your PA PQC site have quality improvement efforts in place to increase inter-rater reliability?
* Yes
* No

**Key Interventions**

**Drivers**

**Aims**

# OUD Driver Diagram

* Provide staff-wide (clinical and non-clinical) education on SUD/OUD with an emphasis on stigma and trauma-informed care
* Provide evidence-based patient education materials on OUD and NAS in inpatient and outpatient settings
* Define culture of equity and trauma-responsive care

Educate patients and their families on OUD and NAS

1. Increase SUD, OUD, and NAS **education** among patients and staff
2. Increase pregnant women **screened** and appropriately **diagnosed** for SUD
3. Increase prenatal and postpartum women with OUD who are **referred** to and initiate MAT
4. Increase **duration** of MAT use among prenatal and postpartum women
5. Increase women with OUD who receive **prenatal care** in the 1st trimester and **postpartum care**

Provide staff-wide education and training on substance use, stigma and trauma-responsive care

* Screen all pregnant women for SUD/OUD using validated screening tools and SBIRT
* Check PDMP for opiate use
* Screen women with SUD/OUD for commonly occurring co-morbidities, including HIV, Hepatitis, STIs, mental health conditions, physical and sexual violence, smoking and ETOH use, and social determinants of health (SDOH)
* Screen for pregnancy intention and provide comprehensive contraceptive counseling
* Provide access to immediate postpartum contraceptive options (e.g. LARC) prior to hospital discharge.

Screen all pregnant women for substance use

**Goal:** Optimize the health and well-being of pregnant women with opioid use disorder and their children

Know state and local notification guidelines for maternal substance use and substance-exposed infants

* Establish specific prenatal, intrapartum and postpartum clinical pathways for women with OUD
* Identify a lead coordinator to ensure that all women with OUD/SUD are enrolled in clinical pathways
* Create a “plan of safe care” prior to discharge, using MDWISE guidelines
* Create multidisciplinary case review teams for patient, provider and system-level issues
* Map local SUD treatment options that provide MAT and women-centered care including local resources that support recovery
* Ensure and follow OUD treatment engagement during pregnancy and postpartum
* Provide Naloxone prescriptions
* Obtain patient consent to communicate with OUD treatment providers
* Ensure that women who are incarcerated have continuous access to MAT across the State

Establish specific prenatal, intrapartum and postpartum clinical pathways for women with OUD

Link all pregnant women with OUD to substance use treatment programs that provide MAT, behavioral health counseling and social services support

Screen all pregnant women for commonly occurring physical and behavioral co-morbidities

**Goal:** Optimize the health and well-being of pregnant women with opioid use disorder and their children

* Establish specific prenatal, intrapartum and postpartum clinical pathways for women with OUD
* Identify a lead coordinator to ensure that all women with OUD/SUD are enrolled in clinical pathways
* Create a “plan of safe care” prior to discharge
* Create multidisciplinary case review teams for patient, provider and system-level issues

Know state and local reporting guidelines for maternal substance use and substance-exposed infants

## OUD Metrics

| Metric | Numerator | Denominator | Data Source | Notes | Source |
| --- | --- | --- | --- | --- | --- |
| Percentage of pregnant women screened for SUD with a validated screen(required) | Cumulative number of women screened for SUD during the pregnancy or 6 weeks postpartum  | Number of women with a delivery  | EHR Data  | Report cumulatively on a monthly basis, starting in May 2019It is ideal to have multiple conversations/check ins, but at least one SUD screening per person would count for the numerator.SUD Domains Include: Alcohol, tobacco, opioids, and other drugs[Validated SUD screening tools](https://safehealthcareforeverywoman.org/wp-content/uploads/2018/08/AIM-Opioid-Screening-Tools.pdf): 4Ps Plus, Integrated 5Ps, NIDA Quick Screen, Substance Use Risk Profile Pregnancy (SURP-P) Scale, ASSIST, TICS | AIM Opioid Optional P3 (adapted) |
| Percentage of pregnant women diagnosed with OUD at any time of pregnancy(required) | Cumulative number of women with an OUD diagnosis  | Number of women with a delivery in the past year  | EHR Data | Report cumulatively on a monthly basis, starting in January 2019Clinical Criteria for “Women Diagnosed with OUD”:• positive self-report screen or positive opioid toxicology screen during pregnancy and assessed to have OUD, or• Patient endorses or reports misuse of opioids / opioid use disorder, or • using non-prescribed opioids during pregnancy, or• using prescribed opioids chronically for longer than a month in the third trimester• newborn has an unanticipated positive neonatal cord, urine, or meconium screen for opioids or if newborn has symptoms associated with opioid exposure including NASICD-10 codes for OUD: F11 diagnosis codes  |  |
| Percentage of pregnant and postpartum women diagnosed with OUD who initiate MAT (required) | Cumulative number who filled a prescription for or were administered or ordered an MAT medication (buprenorphine or methadone) for OUD  | Number of women with a delivery in the past year and OUD diagnosis  | EHR Data & Claims Data (based on Rx) | Report cumulatively on a monthly basis, starting in January 2019See above for clinical criteria for “Women Diagnosed with OUD” and ICD-10 codes for OUD  | Informed by NQF 3400 (Use of Pharmacotherapy for OUD)http://www.qualityforum.org/QPS/ |
| Percentage of pregnant and postpartum women with OUD and 90-day continuity of MAT pharmacotherapy for OUD(required) | Cumulative number who have at least 90 days of continuouspharmacotherapy with a medication prescribed for OUD (buprenorphine or methadone) without a gap of more than seven days | Number of women with a delivery in the past year, OUD diagnosis, and at least one claim for an MAT medication (buprenorphine or methadone) | EHR Data & Claims Data (based on Rx)  | Report cumulatively on a monthly basis, starting in May 2019 See above for clinical criteria for “Women Diagnosed with OUD” and ICD-10 codes for OUD  |  |
| Percentage of pregnant and postpartum women with OUD and 180-day continuity of MAT pharmacotherapy for OUD(required) | Cumulative number who have at least 180 days of continuouspharmacotherapy with a medication prescribed for OUD (buprenorphine or methadone) without a gap of more than seven days | Number of women with a delivery in the past year, OUD diagnosis, and at least one claim for an MAT medication (buprenorphine or methadone) | EHR Data & Claims Data (based on Rx) | Report cumulatively on a monthly basis, starting in May 2019 See above for clinical criteria for “Women Diagnosed with OUD” and ICD-10 codes for OUD  | Informed by NQF 3175 http://www.qualityforum.org/QPS/ |
| Percentage of women diagnosed with OUD receiving postpartum visit(required) | Cumulative number who received a postpartum visit on or between 21 and 56 days after delivery  | Number of women with a delivery in the past year who are diagnosed with OUD | Claims Data / EHR Data with Outpatient Post-Partum Information | Report cumulatively on a monthly basis, starting in January 2019 See above for clinical criteria for “Women Diagnosed with OUD” and ICD-10 codes for OUD  | Adapted from Medicaid Measureshttps://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-core-set/index.html |
| Percentage of pregnant women diagnosed with OUD screened for comorbidities (HIV, Hepatitis, STIs)(Optional) | The cumulative number screened for Hepatitis C, HIV, STI | Pregnant women diagnosed with OUD at any time of pregnancy  | EHR Data | Report cumulatively on a monthly, starting in May 2019See above for clinical criteria for “Women Diagnosed with OUD” and ICD-10 codes for OUD  |  |
| Percentage of pregnant and postpartum women diagnosed with OUD who are referred to MAT(optional) | Cumulative number referred to MAT (buprenorphine or methadone) during pregnancy  | Number of women with a delivery and who are diagnosed with OUD | EHR Data  | Report cumulatively on a monthly, starting in May 2019See above for clinical criteria for “Women Diagnosed with OUD” and ICD-10 codes for OUD A best practice is to add this to the EHR as an order that can be tracked.  |  |
| Percentage of pregnant women diagnosed with OUD receiving prenatal care in the first trimester(optional) | Cumulative number receiving a prenatal care visit in the first trimester or within 42 days | Number of women with a delivery in the past year who are diagnosed with OUD | Claims Data / EHR Data with Outpatient Prenatal Information | Report cumulatively on a monthly, starting in January 2019 See above for clinical criteria for “Women Diagnosed with OUD” and ICD-10 codes for OUD | Adapted from Medicaid Measureshttps://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-core-set/index.html |
| Contraceptive Care for Postpartum women Ages 15-44 with OUD diagnosis(optional) | Number of women who were provided a most effective (i.e., sterilization, implants, IUD/IUS) or moderately effective (i.e., sterilization, implants, IUD/IUS) contraception method within 3 and 60 days of delivery | Women ages 15 to 44 who had a live birth and a diagnosis of OUD | EHR and claims | Report monthly, starting in January 2019See above for clinical criteria for “Women Diagnosed with OUD” and ICD-10 codes for OUD A specific benchmark has NOT been set for the Contraceptive Care - Most & Moderately Effective Methods measure, and the intent is not to reach 100%, as some women will make informed decisions to choose methods in the lower tier of efficacy even when offered the full range of methods. | Adapted from national performance measureshttps://www.hhs.gov/opa/performance-measures/index.html  |

## Survey About Current OUD Processes

*Administered at the end of quarter (starting in April 2019 for January – March 2019)*

1. Does your site currently have a process in place to provide ongoing OUD sensitivity training requirements for staff and providers?
2. Yes
3. No

1a. If yes, which staff receive education? (Check all that apply)

* 1. Physicians
	2. Nurses
	3. Other clinical support staff
	4. Administrative support staff
	5. There is not a process to educate staff on substance use

1b. If yes, please describe the education (Check all that apply):

1. In-person
2. Web-based
3. Available for CME credits
4. Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1c. If yes, is staff education on substance use in pregnancy mandatory or volunteer?

1. Mandatory
2. Volunteer
3. Does your site have standardized materials for educating women with OUD, regarding OUD and in pregnancy and mother’s role in NAS newborn care (i.e. pediatric consult, patient education materials)?
	1. Yes
	2. No

2a. If yes, what patient education materials is your site providing to patients?

1. Institution-developed material
2. NIDA
3. SAMHSA
4. ASAM
5. ACOG
6. CDC
7. Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Does your site use a validated, self-reported screening tool for substance use in pregnancy?
	1. Yes
	2. No

3a. If yes, which self-report screening tool does your health system use? (You may choose more than once answer. If your health system does not screen pregnant women for substance use, choose “none.”)

* 1. The 4 P’s / The 4 P’s Plus
	2. Institution Developed Tool
	3. DAST-10
	4. NIDA Quick Screen
	5. SURP-P
	6. ASSIST
	7. Hospital Screening Questionnaire (HSQ)
	8. None
	9. Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3b. If yes, which pregnant patients receive self-reported screening?

* 1. Universal, we screen all pregnant women
	2. Risk-based, we only screen select pregnant women
	3. Varies by provider, we do not have institutional guidance regarding screening

3c. If yes, when do patients receive self-reported screening? (Check all that apply)

* 1. First prenatal appointment
	2. At prenatal appointments when substance use is suspected
	3. Delivery
	4. Varies by provider
	5. Other (Please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. Does your site use urine toxicology to identify substance use during pregnancy?
	1. Yes
	2. No

4a. How would you describe your health system’s urine toxicology screening process?

* 1. Universal, we screen all pregnant women
	2. Risk-based, we only screen select pregnant women
	3. Varies by provider, we do not have institutional guidance regarding screening

4b. When do patients receive urine toxicology screening? (Check all that apply)

* 1. First prenatal appointment
	2. At prenatal appointments when substance use is suspected
	3. Delivery
	4. Varies by provider
	5. Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. Does your site provide opioid pharmacotherapy for pregnant women with OUD?
	1. Yes
	2. No
	3. If yes, which services? (Check all that apply)
		1. Subutex
		2. Suboxone
		3. Methadone
		4. Detoxification
		5. Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Has your site developed referral relationships with any OUD treatment programs in your area/county?

 a. Yes

 b. No

1. Does your site provide behavioral health services for pregnant women with OUD?
	1. Yes
	2. No

7a. If yes, which services? (Check all that apply)

* + 1. Mental health counseling
		2. Drug and alcohol counseling
		3. Psychiatry
		4. Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. If yes, who provides those services? (Check all that apply)

* + 1. Psychiatry
		2. Social services/social work
		3. Primary care providers/family medicine
		4. Obstetrics/prenatal providers
		5. Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. Has your site developed unique clinical pathways/order sets for pregnant women with OUD?
	1. Yes
	2. No
	3. If yes, which pathways? (Check all that apply)
		1. Prenatal care
		2. Intrapartum care
		3. Postpartum pain control
		4. Postpartum care
		5. Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8a. If yes, do clinical pathways include screening all pregnant women with OUD for additional co-morbidities?

* 1. Yes
	2. No
	3. If yes, which comorbidities? (Check all that apply)
		1. HIV
		2. HCV
		3. Psychiatric comorbidities
		4. Intimate partner violence (IPV)
		5. Pregnancy intention
		6. Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. Is a “Plan of Safe Care” developed for all pregnant women with OUD prior to hospital discharge?
	1. Yes
	2. No
	3. If yes, which care team develops this plan? (Check all that apply)
		1. Social services/social work
		2. Obstetricians/prenatal providers
		3. Nursing
		4. Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Does your site provide immediate postpartum contraceptive counselling and services?
	1. Yes
	2. No
	3. If yes, which contraceptive methods are provided in the immediate postpartum period? (Check all that apply)
		1. Nexplanon
		2. IUD
		3. Oral contraceptives/vaginal ring/patch/injection
		4. Tubal ligation
		5. Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_