

## Maternal OUD

Site Name:	Key Interventions:
<b>Allegheny Health Network- Forbes Hospital</b>	<ul style="list-style-type: none"> <li>• Have OB offices send list of patients who have positive screen.</li> <li>• Social work able to initiate plan before patient even arrives for delivery.</li> <li>• Social work to reach out to other facilities to see how they are working through this.</li> </ul>
<b>Allegheny Health Network- Jefferson Hospital</b>	<ul style="list-style-type: none"> <li>• We provided staff-wide education on SUD/ODU as well as use of the 5P screening tool.</li> <li>• We began screening all pregnant people for OUD/SUD in the outpatient setting.</li> <li>• We refer appropriate patients to our Perinatal Hope Program and/or a social worker to more fully identify their needs and make a plan for the remainder of their pregnancy care.</li> <li>• We are now preparing to educate our inpatient staff to start the next phase of our work at Jefferson which will include screening all patients with the 5P tool on admission.</li> </ul>
<b>Allegheny Health Network- Saint Vincent Hospital</b>	<ul style="list-style-type: none"> <li>• Staff Education</li> <li>• Provider documentation education (<i>completed</i>)</li> <li>• Laminated tip sheets located at provider PC's</li> <li>• Incorporate information: SVH Growing Hope program &amp; community support available for addicted moms-to-be                             <ul style="list-style-type: none"> <li>○ Utilization of NAS informational booklet (<i>implemented</i>), access in provider offices and community locations</li> <li>○ Distribution of community agency support listing (<i>in process, target for completion – November 2020</i>)</li> </ul> </li> </ul>
<b>Einstein Medical Center Philadelphia</b>	<ul style="list-style-type: none"> <li>• No workflow in current state                             <ul style="list-style-type: none"> <li>○ Solution- work with current MAT program pilot to determine how to perform out-patient screening for OUD</li> </ul> </li> <li>• Need standardized screening tool                             <ul style="list-style-type: none"> <li>○ Solution- choose tool from ones presented at PA PQC and work with MAT program pilot leaders to coordinate efforts</li> </ul> </li> <li>• Change in workflow for providers and MA staff                             <ul style="list-style-type: none"> <li>○ Solution- develop educational plan for provider and MA staff</li> </ul> </li> <li>• Lack of provider resources for SBIRT                             <ul style="list-style-type: none"> <li>○ Solution- develop multi-disciplinary team to determine utilization of resources</li> </ul> </li> </ul>
<b>Conemaugh Memorial Medical Center</b>	<ul style="list-style-type: none"> <li>• Solidifying reporting process used to capture women screened for SUD and OUD.</li> <li>• Identification of standardized and universal screening tool.</li> <li>• Implementation of screening tool across all practices.</li> </ul>
<b>Geisinger</b>	<ul style="list-style-type: none"> <li>• Implementing universal NIDA screening</li> <li>• Implementing a clinical pathway for positive screens</li> <li>• Re-educating on urine toxicology protocol</li> </ul>
<b>Guthrie Hospital</b>	<ul style="list-style-type: none"> <li>• Finding a validated screening tool- chose 4P's tool</li> <li>• Educating staff and training on chosen tool</li> <li>• Implement screening of all pregnant women at least once during prenatal care (to start)</li> </ul>
<b>Jefferson Health- Abington Hospital</b>	<ul style="list-style-type: none"> <li>• Universal Screening with 5Ps tool at first prenatal visit &amp; all triage &amp; inpatient admissions to L&amp;D</li> </ul>

Site Name:	Key Interventions:
<b>Lehigh Valley Health Network- Pocono</b>	<ul style="list-style-type: none"> <li>• Educate all Prenatal Care Providers on the 4P's and scripting</li> <li>• Educate on the referral process to the LSW</li> <li>• Provide educational materials to pregnant women with OUD</li> <li>• Created an OB nurse navigator position to follow at risk patients from prenatal through post-partum for compliance</li> </ul>
<b>Main Line Health</b>	<ul style="list-style-type: none"> <li>• Social Work Evaluation of Outpatient Resources Across 4 Hospitals &amp; 4 Geographic Counties: Goal to Optimize &amp; Standardize</li> <li>• Develop Clinical and Psychosocial Pathways for OUD/SUD and NAS</li> <li>• Coordinate early consultation (34-36wks) of with Neonatology to optimize therapies and care plan</li> </ul>
<b>Penn Medicine- Chester County Hospital</b>	<ul style="list-style-type: none"> <li>• Completed process mapping, gap analysis, Affinity Diagram, &amp; brainstorming</li> <li>• Established working groups: <ul style="list-style-type: none"> <li>○ Development of staff and patient education program</li> <li>○ Implementation of Eat, Sleep, Console</li> <li>○ Establishment of 5P's in inpatient and outpatient settings</li> </ul> </li> </ul>
<b>Penn Medicine- Hospital of the University of Pennsylvania</b>	<ul style="list-style-type: none"> <li>• Create standardized workflow for SUD/OUD screening and education</li> <li>• Screen all pregnant patients for SUD/OUD using a validated screening tool</li> <li>• Map local SUD/OUD treatment options that provide MAT and women-centered care including local resources that support recovery</li> </ul>
<b>Penn State Health- Hershey Medical Center &amp; Children's Hospital</b>	<ul style="list-style-type: none"> <li>• Gain consensus &amp; approval on a validated screening tool to screen all pregnant women for substance use- Done</li> <li>• Draft a paper patient-friendly form to screen patients at the time of the first prenatal appointment- Done</li> <li>• Develop workflow to identify: who will respond to patients who screened positive; who will refer patients to treatment; and to whom can we refer our patients- Done</li> <li>• Draft Substance Use Treatment Referral Reference List- Done</li> <li>• Provide unbiased non-judgmental, trauma-informed care: <ul style="list-style-type: none"> <li>○ Complete baseline attitudes measurement staff survey- Done</li> <li>○ Provide education/intervention- Done</li> <li>○ Complete reassessment through the attitudes measurement staff survey</li> </ul> </li> <li>• Complete staff education regarding: <ul style="list-style-type: none"> <li>○ The 5Ps tool and screening rationale- Done</li> <li>○ The 5Ps screening process and SBIRT- Done</li> </ul> </li> <li>• Spread to other practice sites within the health system- In progress</li> </ul>
<b>St. Clair Hospital</b>	<ul style="list-style-type: none"> <li>• We began using the 5Ps tool for outpatient prenatal visits and inpatient admissions to our hospital in June 2019.</li> <li>• We coordinated with the affiliated OB offices for them to utilize this tool for screening their pregnant patients in the office setting, starting with the 1st prenatal visit and then again in the 2nd and 3rd trimester.</li> <li>• We provided the OB offices with referral forms to be faxed to our Level 2 Nursery Coordinator for follow-up care. When our nursery coordinator receives a referral, she reaches out to the family to discuss the care they can expect when they arrive for their delivery.</li> <li>• We educated inpatient nursing staff on 5Ps screening tool and implemented it to be utilized on all patients admitted.</li> </ul>

Site Name:	Key Interventions:
<b>Tower Health- Reading Hospital</b>	<ul style="list-style-type: none"> <li>● Clinical pathway for pregnant women with OUD <ul style="list-style-type: none"> <li>○ Screening for SUD</li> <li>○ Hospital observation for MAT induction, methadone and buprenorphine offered</li> <li>○ Connection with methadone program in county.</li> <li>○ Suboxone maintenance program at Women’s Health Center for pregnant women with OUD. <ul style="list-style-type: none"> <li>▪ Intensive case management with the COE, drug &amp; alcohol treatment, social services, prenatal development of Plan of Safe Care, connection with Early Intervention, prenatal parent education on NAS.</li> </ul> </li> </ul> </li> </ul>
<b>UPMC Womens Health Service Line</b>	<p>Access:</p> <ul style="list-style-type: none"> <li>○ Maternal medical support to prevent withdrawal during pregnancy</li> <li>○ On call service for all UPMC hospitals 24/7</li> <li>○ Provide regular prenatal and other medical appointments</li> <li>○ 4 Outreach Community Centers</li> <li>○ Same day on next day within 24-hour appointments</li> </ul> <p>Prevention:</p> <ul style="list-style-type: none"> <li>○ Community education</li> <li>○ Obstetrical provider education</li> <li>○ Minimize fetal exposure to Opioid substances</li> <li>○ Early engage mother as a leader in her recovery</li> <li>○ Narcan “to go”</li> </ul> <p>Response:</p> <ul style="list-style-type: none"> <li>○ Pregnancy Recovery Center (Prenatal &amp; Postpartum)</li> <li>○ UPMC Healthplan engagement <ul style="list-style-type: none"> <li>▪ Support programs for patients, families, staff</li> </ul> </li> <li>○ Multidisciplinary team OB, MFM, SW, Nurses, Mental Health therapists</li> <li>○ Methadone Conversion to buprenorphine from inpt. to outpt.</li> <li>○ Outpatient buprenorphine medication treatment</li> <li>○ Warm hand overs</li> <li>○ ED Physician and APP trained in buprenorphine treatment</li> </ul> <ul style="list-style-type: none"> <li>● Reporting: Centers of Excellence <ul style="list-style-type: none"> <li>○ State, Allegheny County, UPMC Healthplan</li> <li>○ Report as appropriate to various committees</li> </ul> </li> </ul>
<b>Wayne Memorial Hospital</b>	<ul style="list-style-type: none"> <li>● Offer the 5P’s screening at all patient encounters, NST Observation and admissions in paper form.</li> <li>● Enter answers to the screening questions in the patients’ medical record.</li> <li>● Enter Social services consult and/or provider evaluation as indicated</li> <li>● Evaluate screening report for monthly rate.</li> <li>● Track patients referred for MAT</li> </ul>

## Neonatal Abstinence Syndrome (NAS)

Site Name:	Key Interventions:
<b>Allegheny Health Network- Saint Vincent Hospital</b>	<ul style="list-style-type: none"> <li>• Met with key stakeholders (neonatologists, pediatrician, pharmacy, NICU nurse manager, MCH educator, two NICU nurses) re: modified Finnegan assessment, pharma logical intervention, nurse education/process in place to achieve a more standardized approach in NAS scoring babies in the NICU</li> <li>• Presented Eat, Sleep, Console (ESC) initiative to (9) Family Practice Residents plus medical students on 11/5/2020. Presented by: Dr. Susheel, NICU NM, and NICU nurse</li> <li>• Mother-baby staff assigned to watch YouTube video titled: “Reconsidering the Standard Approach to Neonatal Abstinence Syndrome” by Dr. Matthew Grossman on 11/2/2020</li> <li>• Two Mother-baby nurses (as part of their master’s capstone project) spearheading ESC initiative on Mother-baby (started on 11/16/2020). One of the nurses will focus on the mothers and their NAS babies, the other nurse will focus on the other mothers and their babies to prepare them to better manage the Baby’s Second Night and reinforce the ‘5 S’s’ by Dr. Harvey Karp.</li> <li>• Identified (6) super users on Mother-baby to resource mother-baby nurses re: ESC scoring</li> <li>• NICU NM working with IT re: EPIC build for ESC documentation</li> <li>• Developed a tracking sheet titled “NAS Admission Log” for babies admitted to NICU. Data points include: patient label, baby from Mother-Baby or outside transfer, Strict No Publicity, date and time of NICU admission, discharge date, pharma logical intervention.</li> <li>• Implementation date for ESC on Mother-baby is 12/14/2020</li> </ul>
<b>Allegheny Health Network- West Penn Hospital</b>	<ul style="list-style-type: none"> <li>• Reviewing and enforcing our process of inter-user reliability with Finnegan</li> <li>• Implementation of Eat-Sleep-Console strategy for management of NAS</li> <li>• Improve communication and provide education to referring PCP’s</li> <li>• Obtain certification as NAS Center of Excellence</li> </ul>
<b>Doylestown Hospital</b>	<ul style="list-style-type: none"> <li>• Reinforced education to all staff on ESC approach. Create an inter-rater reliability tool by working with contacts within the PA PQC. Review with staff ESC tool and inter-rater reliability process to achieve 90% reliability.</li> <li>• Continued use of NAS Order Sets with standardized medication dosing and faster weaning.</li> <li>• Educated staff and parents regarding non-pharmacological interventions. Empower parents to provide these interventions to their baby. Provide family education about NAS and ESC and what to expect in prenatal period through discharge.</li> <li>• Reaching out to obstetric providers to refer pregnant women with OUD for Neonatal consult in order to begin prenatal education, tour maternity and pediatric unit, and discuss care of infant prior to delivery. Reinforce the Neonatal Consult template and pamphlet to help families understand their hospital stay from beginning to end.</li> <li>• Create a questionnaire for mother to complete prior to consult and at time of discharge to monitor effectiveness of educational process.</li> </ul>

Site Name:	Key Interventions:
<b>Einstein Medical Center Montgomery</b>	<p>Sustain:</p> <ul style="list-style-type: none"> <li>• Multidisciplinary meetings bi-monthly</li> <li>• Continued distribution of information antenatally (pamphlets), and updated results at OB provider meetings</li> <li>• Non-pharmacologic supportive measures</li> <li>• Breastfeeding “Traffic Lights”</li> </ul> <p>Improve:</p> <ul style="list-style-type: none"> <li>• Transportation and Food Vouchers for parents to stay with infants</li> <li>• Post discharge follow-up and evaluation of Plan of Safe Care</li> <li>• Community Out-reach through clinics and support groups</li> </ul> <p>Start:</p> <ul style="list-style-type: none"> <li>• Transition to ESC with finalization of protocol and pathway</li> <li>• Infant massage training</li> <li>• Facility enhancements - parent lounge</li> </ul>
<b>Einstein Medical Center Philadelphia</b>	<p><b>ESC</b> (<i>pilot in January 2021</i>)</p> <ul style="list-style-type: none"> <li>• Open baby type NICU <ul style="list-style-type: none"> <li>○ Solution – Maryann Malloy to transition Care-by-Parent room to be able to be used for ESC dyad</li> </ul> </li> <li>• No current protocol in place for ESC at EMCP <ul style="list-style-type: none"> <li>○ Solution – Development of policy &amp; procedure by EMCP PA PQC team</li> </ul> </li> <li>• No educational materials for staff re: ESC <ul style="list-style-type: none"> <li>○ Solution – Development of Healthstream educational module by EMCP PA PQC team in conjunction with Nursing Education and Professional Development Dept.</li> </ul> </li> </ul> <p><b>Prenatal Consults</b> (<i>implementation in December 2020</i>)</p> <ul style="list-style-type: none"> <li>• Data collection of total opioid use mothers <ul style="list-style-type: none"> <li>○ Solution – place ticket for report from AeCIS</li> </ul> </li> <li>• Lack of educational materials in out-pt OB offices <ul style="list-style-type: none"> <li>○ Solution – finish informational pamphlet for mothers</li> </ul> </li> <li>• Ensure on-going inter-rater reliability for use of the MOM NAS Score in the NICU by implementing a process for above by December 1, 2020</li> <li>• Standardize use of MOM NAS Scoring system at EMCP by introduction and validation of system to Term Nursery by December 31, 2020</li> </ul> <p><b>Use of MOM NAS Score on MBU</b> (<i>Implementation Sept.-Dec. 31, 2020</i>)</p> <ul style="list-style-type: none"> <li>• Staff perception of difficulty of using MOM NAS Score <ul style="list-style-type: none"> <li>○ Solution – <ul style="list-style-type: none"> <li>▪ Education</li> <li>▪ Score NICU infants prior to rollout on MBU</li> </ul> </li> </ul> </li> </ul>
<b>Jefferson Health – Abington Hospital</b>	<ul style="list-style-type: none"> <li>• Implementation of Eat, Sleep, Console tool for NAS assessment</li> </ul>

Site Name:	Key Interventions:
<b>Mount Nittany Health System-Mount Nittany Medical Center</b>	<ul style="list-style-type: none"> <li>• Help mothers recognize that they are encouraged/welcome with new brochure (Given at 28-week appt AND ORT clinics) = 90/100 brochures given so far</li> <li>• Increase staff interest and knowledge with VON training</li> <li>• Standardize/maximize non-pharmacologic interventions for NAS</li> </ul>
<b>Penn Medicine-Lancaster General/Women and Babies</b>	<ul style="list-style-type: none"> <li>• Identified physician &amp; unit-based champions to participate in Eat, Sleep, Console (ESC) implementation team <ul style="list-style-type: none"> <li>○ Completed assessment of current state with champions and identified areas of opportunity to improve standardization and care of NAS infants</li> <li>○ Established a target condition to identify stakeholders and develop an action plan</li> <li>○ Investigate EMR tools for OUD screening, ESC assessment and order set changes</li> </ul> </li> <li>• Establish a method for reporting and determining baseline data <ul style="list-style-type: none"> <li>○ Validate current NAS report provides correct information</li> <li>○ % Pharmacologic treatment rates</li> <li>○ % weight loss during hospital stay</li> <li>○ % 30-day readmission rates for NAS infants</li> </ul> </li> </ul>
<b>Penn Medicine-Pennsylvania Hospital, Newborn Medicine</b>	<p>Prenatal consultation:</p> <ul style="list-style-type: none"> <li>• Creation of an EMR template for a prenatal consult for pregnant women with OUD</li> <li>• Consistent use of NAS pamphlet with consult</li> <li>• Educating OB staff about need for prenatal consultation when able</li> </ul> <p>NAS care:</p> <ul style="list-style-type: none"> <li>• PAH-specific NAS protocol (vs using CHOPs)</li> <li>• Guidelines on obtaining UDS for mothers and infants now live</li> </ul> <p>EI referral:</p> <ul style="list-style-type: none"> <li>• Standardized EI referral (via EMR) by assigning neonatal NP who tracks/reports all OENs</li> </ul>
<b>Penn Medicine-Hospital of the University of Pennsylvania</b>	<ul style="list-style-type: none"> <li>• Non-pharmacological interventions – supplies, huddle process</li> <li>• Education – staff and families</li> <li>• Family support, volunteer program</li> <li>• Optimal care guidelines (safe sleep, nutrition)</li> <li>• NAS Prenatal Consults</li> </ul>
<b>Penn State Health-Hershey Medical Center &amp; Children's Hospital</b>	<ul style="list-style-type: none"> <li>• Universal collection of meconium at delivery or transfer</li> <li>• Cerner (EHR) order and task created</li> <li>• Store refrigerated specimen for 7 days</li> <li>• Go-Live Date: June 1st, 2020</li> </ul>
<b>St. Luke's University Health Network</b>	<ul style="list-style-type: none"> <li>• Working with IT to create an EPIC report to accurately identify any babies with NAS &amp; who are affected by OUD</li> <li>• PA PQC core team: working on completing the required NAS education to build competence &amp; consistency within our NAS scoring throughout the network</li> </ul>
<b>Temple University Hospital</b>	<ul style="list-style-type: none"> <li>• Education to Moms pre/post delivery</li> <li>• Getting OUD screening into EPIC</li> <li>• Teaching for Eat, Sleep, Console approach available on Healthstream</li> <li>• Created Nesting Room protocol</li> </ul>

Site Name:	Key Interventions:
<b>Thomas Jefferson University Hospital-Center City (Intensive Care Nursery /Well Baby Nursery)</b>	<p>Improve Parental and Staff Education</p> <ul style="list-style-type: none"> <li>• ICN nurses to treatment program for education sessions</li> <li>• Educational materials and provider education at OB clinic</li> <li>• Breast feeding education during methadone/buprenorphine stabilization hospitalization</li> <li>• Standardized prenatal neonatology consult</li> </ul> <p>Improve Breast Pump Access</p> <ul style="list-style-type: none"> <li>• Coordinating with WIC</li> <li>• Standardized process with post-partum and case management</li> </ul> <p>Improve Treatment Program Involvement in supporting breast feeding</p> <ul style="list-style-type: none"> <li>• Working with new management to</li> <li>• improve maternal access from inpatient treatment to hospital</li> <li>• Create pumping and milk storage space</li> <li>• Support leaving sessions to pump</li> </ul> <p>Improve breast feeding support while in hospital</p> <ul style="list-style-type: none"> <li>• Improving lactation consultant access</li> <li>• Support skin-to-skin in NICU</li> <li>• Encourage early breast feeding in DR, upon post-partum arrival</li> </ul>
<b>Tower Health- Reading Hospital</b>	<ul style="list-style-type: none"> <li>• Implement “Eat Sleep Console” program on Specialty care unit. (Moms will room-in with newborns.) Transfer family to pediatrics when mother is discharged.</li> <li>• Staff education, music therapy, cuddlers, OT, patient/family education, community education</li> </ul>
<b>UPMC Womens Health Service Line</b>	<p>Access:</p> <ul style="list-style-type: none"> <li>• Maternal medical support to prevent withdrawal during pregnancy</li> <li>• Provide regular prenatal and other medical appointments</li> </ul> <p>Prevention:</p> <ul style="list-style-type: none"> <li>• Minimize fetal exposure to illicit substances</li> <li>• Engage mother as a leader in her recovery</li> </ul> <p>Response:</p> <ul style="list-style-type: none"> <li>○ Parent Partnership Unit (PPU) <ul style="list-style-type: none"> <li>▪ Eat, Sleep, Console (ESC) implemented and spreading across system <ul style="list-style-type: none"> <li>• April 2020 Dr. Greg Barretto presented concept at UPMC PQC 2020</li> </ul> </li> </ul> </li> <li>○ May 2020 conducted team training on Eat, Sleep, Console for Northwest, Horizon, Hamot, Cole</li> <li>○ Developing a PPU model at each hospital based on each hospital’s capabilities/resources</li> <li>○ Developing a service line SUD Committee with membership consisting of representatives from each hospital for Plans of Safe Care.</li> </ul> <ul style="list-style-type: none"> <li>• Reporting: <ul style="list-style-type: none"> <li>○ Pa DOH of all NAS occurrences</li> <li>○ Internal leadership and appropriate committees e.g. NICU</li> </ul> </li> </ul>

## Immediate Postpartum Long-Acting Reversible Contraception (IP LARC)

Site Name:	Key Interventions:
<b>Geisinger Medical Center (GMC)</b>	<ul style="list-style-type: none"> <li>• (re)educate providers and nurses on IUD insertion immediately postpartum.</li> <li>• Clarified billing, coding, and reimbursement processes.</li> <li>• Clarified patient eligibility for reimbursement outside of the DRG.</li> <li>• Improving device access on L&amp;D (storage).</li> <li>• Assessing patient desire for IP LARC.</li> </ul>
<b>Geisinger Wyoming Valley (GMV)</b>	<ul style="list-style-type: none"> <li>• (re)educate providers and nurses on IUD insertion immediately postpartum.</li> <li>• Clarified billing, coding, and reimbursement processes.</li> <li>• Clarified patient eligibility for reimbursement outside of the DRG.</li> <li>• Improving device access on L&amp;D (storage).</li> <li>• Assessing patient desire for IP LARC.</li> </ul>
<b>St. Luke's University Hospital- Anderson campus</b>	<ul style="list-style-type: none"> <li>• Provide counseling materials to outpatient offices and labor &amp; delivery</li> <li>• Using EMR to identify patients who desire and receive LARC</li> </ul>
<b>St. Luke's University Hospital- Allentown campus</b>	<ul style="list-style-type: none"> <li>• Provide counseling materials to outpatient offices and labor &amp; delivery</li> <li>• Using EMR to identify patients who desire and receive LARC</li> </ul>
<b>UPMC Horizon</b>	<ul style="list-style-type: none"> <li>• Educating providers on PP insertion of IUD</li> <li>• Increasing education for support staff in the hospital and the offices</li> <li>• Increasing patient knowledge regarding options for postpartum contraception.</li> <li>• Strategies for billing</li> <li>• Patient tracking so that those patients who desire it can receive it</li> <li>• Ensuring proper and appropriate documentation</li> </ul>

## Maternal Mortality: Hypertension

Site Name:	Key Interventions:
<b>Allegheny Health Network- Saint Vincent Hospital</b>	<ul style="list-style-type: none"> <li>• Provide each antepartum/postpartum elevated BP/pre-eclamptic discharged patient with automated BP cuff DME to take, track BP's outside of the hospital (Target go live currently on hold)</li> </ul>
<b>Commonwealth Health-Moses Taylor Hospital</b>	<ul style="list-style-type: none"> <li>• Provide education to Labor and Mom Baby staff on use of the appropriate size BP cuff and the appropriate way to obtain a BP.</li> <li>• Developed scripting to help staff notify MD of severe range BPs.</li> <li>• Development of Hypertensive Critical Event Checklist.</li> <li>• Education of Labor, Mom Baby, ED, and ICU staff on the use of the Hypertensive Critical Event Checklist.</li> </ul>

Site Name:	Key Interventions:
<b>Evangelical Community Hospital</b>	<p>We are currently participating in multi-disciplinary meetings to accomplish the following:</p> <ul style="list-style-type: none"> <li>• Patient education opportunities</li> <li>• Assessment, treatment, and follow-up protocols</li> <li>• Standardized order set and discharge instructions</li> <li>• Standardization of patient placement</li> <li>• Staff education: office, inpatient and ED</li> <li>• Simulation drills/ Badge buddies</li> <li>• Data collection</li> </ul>
<b>Geisinger</b>	<ul style="list-style-type: none"> <li>• Implementing checklist for HTN Crisis</li> <li>• Providing simulation &amp; drills for education</li> <li>• Reviewing medication access</li> <li>• Creating order sets to avoid unnecessary clinical variation (go live Nov. 3, 2020)</li> <li>• Instituted home BP monitoring for patients with a diagnosis of CHTN, GHTN or Pre-Eclampsia/Eclampsia prenatally and postpartum (GHP patients only).</li> </ul>
<b>Lehigh Valley Health Network- Pocono</b>	<ul style="list-style-type: none"> <li>• All providers and nursing staff were educated with a Hypertension Disorders in Pregnancy module through GNOSIS</li> <li>• Clinical Practice Guidelines (CPG) related to perinatal hypertension reviewed with all OB providers and OB nursing staff with ED providers being educated in the near future</li> <li>• Daily interdisciplinary team rounding with reference to CPG's on HTN patients</li> <li>• Submitted a Grant proposal collaboratively with ESU to have the nursing students provide blood pressure equipment and education to hypertensive pregnant patients in their home. Patients will proactively self-monitor and report blood pressures to OB office.</li> </ul>
<b>Penn Medicine- Chester County Hospital</b>	<ul style="list-style-type: none"> <li>• Preeclampsia Pathway</li> <li>• Hypertensive Management Pathway</li> <li>• Postpartum Hypertension Pathway</li> <li>• Adoption of Heart Safe Motherhood</li> </ul>
<b>Punxsutawney Hospital</b>	<ul style="list-style-type: none"> <li>• Develop order sets for the ED for timely treatment of Hypertensive pregnant/postpartum patients</li> <li>• Education of ED staff/physicians on identifying &amp; treating Hypertensive pregnant/postpartum patient using ACOG &amp; AIM guidelines</li> </ul>
<b>St. Luke's University Health Network</b>	<ul style="list-style-type: none"> <li>• Verified with ED if current screening process is to determine if patient recently had a baby</li> <li>• Enlisted our EPIC IT team members to assist us with building a screening tool to be used in ED</li> <li>• Contacted WellSpan contact to get input on what they have included in their screening tool <ul style="list-style-type: none"> <li>○ Ordered AWHONN magnets to distribute at discharge for mothers to put on fridge</li> </ul> </li> </ul>
<b>Tower Health- Reading Hospital</b>	<ul style="list-style-type: none"> <li>• HTN protocol in place by 7/1/20 (model after the California Quality Collaborative).</li> <li>• AWHONN post birth warning signs education for staff &amp; for all post-partum patients prior to discharge.</li> </ul>

Site Name:	Key Interventions:
<b>UPMC Womens Health Service Line</b>	<p>Readiness:</p> <ul style="list-style-type: none"> <li>Diagnostic criteria, monitoring &amp; treatment of severe preeclampsia/eclampsia, algorithms, order sets, protocols, staff &amp; provider education, unit-based drills, debriefs. Process defined for timely triage &amp; inpatient, outpatient, &amp; ED evaluation. Medications for treatment stocked and immediately available.</li> </ul> <p>Recognition and Prevention:</p> <ul style="list-style-type: none"> <li>Protocol for measurement and assessment of BP and labs for all <i>pregnant and postpartum women</i> <ul style="list-style-type: none"> <li>Prenatal &amp; postpartum patient education and management of hypertension &amp; preeclampsia provided at the UPMC PQC (August/September 2020)</li> <li>Implemented remote monitoring for outpatient B/P monitoring and symptomatology, and currently being spread to the other system hospitals</li> <li>Implemented a new daily discern report providing the nursing staff with patients who have blood pressures <math>\geq</math> 150/90 and communicate results to provider for further B/P management and a candidate for further remote monitoring.</li> </ul> </li> </ul> <p>Response:</p> <ul style="list-style-type: none"> <li>Implemented Nurse Driven Protocol for ordering remote monitoring.</li> <li>Provided take home toolkit for participants. Due to Covid-19, more patients are provided blood pressure cuffs in the outpatient setting.</li> <li>Post birth warning sign magnets provided to all mothers upon discharge across UPMC</li> <li>Implemented Maternal Fetal Triage Index (MFTI) obstetrical triage rapid assessment tool</li> <li>Draft system wide policy for assessing and managing HTN for approval December 7<sup>th</sup>.</li> <li>Providing patients with purple wrist bands to be worn for the 4<sup>th</sup> trimester as a reminder to tell any healthcare provider they delivered, and issue can be related to the recent delivery HTN. Rolled out to all 15 hospitals in July.</li> </ul>
<b>WellSpan Health</b>	<p>Completed:</p> <ul style="list-style-type: none"> <li>Roll out of low dose aspirin screening in epic at the first OB visit</li> <li>Free aspirin provided at office</li> <li>Roll out of Relias OB education-Hypertension module complete</li> <li>Roll out of Meds to Beds (YH) to get severe HTN meds to patients prior to discharge.</li> <li>Implemented new policy on severe hypertension</li> <li>Implemented new physician guidelines on severe hypertension</li> <li>Implemented severe maternal morbidity reviews</li> <li>Creation of an Epic grease board alert to OB team of severe HTN and to trigger need for repeat BP measurement in pregnant and postpartum women with severe hypertension</li> <li>Education on SMM for all ED nurses rolled out at each entity</li> <li>System wide ED policy approved by the ED system workgroup</li> <li>System wide debriefing form created and approved by the WCSL Education Committee</li> </ul> <p>In process:</p> <ul style="list-style-type: none"> <li>Post-birth screen in the ED with BPA (DONE) goes live Sept. 15th</li> </ul>

## Maternal Mortality: Hemorrhage

Site Name:	Key Interventions:
<b>Einstein Medical Center Philadelphia</b>	<p>Change in workflow for providers and nursing staff</p> <ul style="list-style-type: none"> <li>• Solution – educational plan developed for provider and nursing staff (January 2021)</li> </ul> <p>PPH Scoring in AeCIS</p> <ul style="list-style-type: none"> <li>• Solution – Cerner working with CMQCC to standardize scoring for risk tool based on AWHONN project (Jan. 2021)</li> </ul>
<b>Jefferson Health- Thomas Jefferson University Hospital</b>	<ul style="list-style-type: none"> <li>• Upgrade to EMR allows PPH calculation tool to flow directly into Delivery Summary</li> <li>• Collect data to determine predictability of PPH score</li> <li>• Hemorrhage supplies added to delivery cart for remote deliveries (ICU)</li> <li>• Assign K2 antepartum hemorrhage module</li> </ul>
<b>Penn Medicine- Chester County Hospital</b>	<ul style="list-style-type: none"> <li>• Code OB Emergency Response Developed</li> <li>• Hemorrhage Carts on Labor &amp; Delivery and Mother/Baby</li> <li>• OB Emergency Cards</li> <li>• Interdisciplinary Simulations</li> </ul>
<b>Penn Medicine- Lancaster General/Women and Babies</b>	<ul style="list-style-type: none"> <li>• Train champions to facilitate QBL process <ul style="list-style-type: none"> <li>○ Feedback and process recommendations for clinical workflow</li> <li>○ Communication/Education with teams</li> </ul> </li> <li>• Implemented EMR tool for PPH risk assessment (Go-Live 12/2/19)</li> <li>• Inventory tools/equipment required for QBL process <ul style="list-style-type: none"> <li>○ Additional scale obtained for L&amp;D</li> </ul> </li> <li>• Implemented QBL with EMR calculator (Go-Live 2/2/20) <ul style="list-style-type: none"> <li>○ Expanded QBL process to all vaginal delivery patients (7/27/20)</li> <li>○ Expand QBL process to include cesarean deliveries (TBD – January 2021)</li> </ul> </li> <li>• Order set changes approved by OBGYN Care Management team</li> <li>• Established a method for reporting and determining baseline data <ul style="list-style-type: none"> <li>○ OB Vaginal &amp; Cesarean PPH reports built in EMR</li> <li>○ Blood utilization and uterotonic usage reports</li> <li>○ QBL report</li> </ul> </li> </ul>
<b>Penn Medicine- Pennsylvania Hospital</b>	<ul style="list-style-type: none"> <li>• We implemented a comprehensive Code Crimson policy that includes 3 levels of hemorrhage with specific assessments, actions, and checklists for each.</li> <li>• We made significant improvements to our QBL calculator and created a dashboard to measure our progress.</li> <li>• We educated all nurses and providers working in L&amp;D or Mother Baby and had drills prior to implementation. A debrief occurs after each event.</li> </ul>
<b>Penn State Health- Hershey Medical Center &amp; Children's Hospital</b>	<ul style="list-style-type: none"> <li>• Assessment by provider using an evidence- based tool.</li> <li>• Risk Assessment score placed in EMR and on electronic Chalkboard.</li> <li>• Postpartum Hemorrhage kit with emergency medications present at every delivery.</li> <li>• Postpartum Hemorrhage Cart containing guidelines for actions &amp; emergency supplies immediately available.</li> <li>• Simulation exercises are ongoing.</li> </ul>

Site Name:	Key Interventions:
<b>St. Clair Hospital</b>	<ul style="list-style-type: none"> <li>• Unit-standard, stage-based, obstetric hemorrhage emergency management plan with checklists</li> <li>• Quantification of blood loss</li> <li>• Standards for early warning signs, diagnostic criteria, monitoring and treatment of severe preeclampsia/eclampsia (include order sets and algorithms)</li> <li>• Establish a culture of huddles for high-risk patients &amp; post-event debriefs to identify successes and opportunities</li> </ul>
<b>Temple University Hospital</b>	<ul style="list-style-type: none"> <li>• Risk assessment for every patient</li> <li>• Implement the hemorrhage protocol (everything will be consistent)</li> <li>• Hemorrhage cart (virtual)</li> <li>• Running Drills</li> <li>• Cultural diversity training</li> <li>• Pain Management protocol</li> </ul>
<b>Tower Health- Reading Hospital</b>	<ul style="list-style-type: none"> <li>• Create standard for prenatal identification of high-risk patients, quantitative blood loss, and early interventions</li> <li>• All nurses, providers attend yearly sim. QBL roll-out scheduled for 3/7/20; Sims – yearly</li> <li>• Policy / protocol in place and communicated by 7/1/20</li> </ul>

Site Name:	Key Interventions:
<b>UPMC Womens Health Service Line</b>	<p>Readiness:</p> <ul style="list-style-type: none"> <li>Includes: hemorrhage cart supplies, checklist, algorithms, hemorrhage medication kit, response team, advanced gynecologic surgery, massive transfusion protocols, unit guidelines, unit-based drills with post-drill debriefs, and staff/provider education</li> </ul> <p>Recognition and Prevention:</p> <ul style="list-style-type: none"> <li>Standardized assessment tool <ul style="list-style-type: none"> <li>Admission, other appropriate times</li> <li>Measurement from EBL to <b>QBL &amp; defined quantity</b></li> </ul> </li> </ul> <p>Response:</p> <ul style="list-style-type: none"> <li>Support programs for patients, families, staff</li> <li>Service Line MMRC has been established, second meeting held July 13, 2020, 4 cases reviewed from 2019 and 2020 and shared recommendations with UPMC PQC Leadership. One outcome was the creation of the WHSL Perinatal SUD Committee.</li> <li>Conduct tracers for compliance to 2020/2021 The Joint Commission Standards</li> <li>Draft system wide policy for assessing and managing PPH for approval December 7<sup>th</sup></li> <li>Established Service Line Education Committee to address opportunities identified in the Gap Assessment-ongoing <ul style="list-style-type: none"> <li>PPH protocol, addressing key elements within the 4 domains.</li> </ul> </li> <li>Plan to procure new medical device called Jada for managing PPH. Jada device approved and will be rolled out across all 15 birthing hospitals</li> <li>Training to begin 2021</li> <li>Provided education on management of PPH at UPMC PQC meeting October 2020 and conducted virtual simulation at the November session.</li> </ul> <p>Reporting:</p> <ul style="list-style-type: none"> <li>Event reporting to Risk/Quality Department</li> <li>Multidisciplinary review for opportunities in systems and processes <ul style="list-style-type: none"> <li>Internal hospital systematic reviews are conducted per occurrence</li> </ul> </li> <li>Monitor outcomes and metrics via Obstetrical Dashboard all hospitals have direct access</li> <li>Report as appropriate to various committees</li> </ul>

### Maternal Mortality: Timely Fourth Trimester Contact

Site Name:	Key Interventions:
<b>Jefferson Health-Abington Hospital</b>	<ul style="list-style-type: none"> <li>Standardized guidelines for PP follow-up (current focus on HTN and PPD)</li> <li>Interprofessional postpartum rounding on inpatient Mother-baby units</li> <li>Developing standardized guidelines for postpartum follow-up</li> </ul>