

Maternal Mortality: Hypertension

Site Name:	Key Interventions:
Allegheny Health Network- Saint Vincent Hospital	<ul style="list-style-type: none"> • Pre-eclampsia specific discharge instruction sheets for elevated BP/pre-eclamptic pre-birth and post-birth patients with provider indicated range of BP expectations. (currently in DRAFT form) • Provide each antepartum/postpartum elevated BP/pre-eclamptic discharged patient with automated BP cuff DME to take, track BP's outside of the hospital. (future plan – research vs provider order) • Provide each antepartum/postpartum discharged patient with <u>Save Your Life</u> magnets and <u>Save Your Life</u> flyers (implemented January 2019) • Share <u>Save Your Life</u> magnets and <u>Save Your Life</u> flyers with ED providers and staff. (December 2019) • Signage in each ED triage room to notify any patient to tell/notify ED staff if they have recently given birth. (<u>Save Your Life</u> information - December 2019)
Commonwealth Health- Moses Taylor Hospital	<ul style="list-style-type: none"> • Provide education to Labor and Mom Baby staff on use of the appropriate size BP cuff and the appropriate way to obtain a BP. • Developed scripting to help staff notify MD of severe range BPs. • Development of Hypertensive Critical Event Checklist. • Education of Labor, Mom Baby, ED, and ICU staff on the use of the Hypertensive Critical Event Checklist.
Evangelical Community Hospital	<p>We are currently participating in multi-disciplinary meetings to accomplish the following:</p> <ul style="list-style-type: none"> • Patient education opportunities • Assessment, treatment, and follow-up protocols • Standardized order set and discharge instructions • Standardization of patient placement • Staff education: office, inpatient and ED • Simulation drills/ Badge buddies • Data collection
Geisinger	<ul style="list-style-type: none"> • Implementing checklist for HTN Crisis • Providing simulation & drills for education • Reviewing medication access • Creating order sets to avoid unnecessary clinical variation • Instituted home BP monitoring for patients with a diagnosis of CHTN, GHTN or Pre-Eclampsia/Eclampsia prenatally and postpartum.

Site Name:	Key Interventions:
Lehigh Valley Health Network- Pocono	<ul style="list-style-type: none"> • All providers and nursing staff were educated with a Hypertension Disorders in Pregnancy module through GNOSIS • 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 • Daily interdisciplinary team rounding with reference to CPG's on HTN patients • 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.
Penn Medicine-Chester County Hospital	<ul style="list-style-type: none"> • Preeclampsia Pathway • Hypertensive Management Pathway • Postpartum Hypertension Pathway • Adoption of Heart Safe Motherhood
Punxsutawney Hospital	<ul style="list-style-type: none"> • Develop order sets for the ED for timely treatment of Hypertensive pregnant/postpartum patients • Education of ED staff/physicians on identifying & treating Hypertensive pregnant/postpartum patient using ACOG & AIM guidelines
St. Luke's University Health Network	<ul style="list-style-type: none"> • Verified with ED if current screening process is to determine if patient recently had a baby • Enlisted our EPIC IT team members to assist us with building a screening tool to be used in ED • Contacted WellSpan contact to get input on what they have included in their screening tool <ul style="list-style-type: none"> ○ Ordered AWHONN magnets to distribute at discharge for mothers to put on fridge
Tower Health-Reading Hospital	<ul style="list-style-type: none"> • HTN protocol in place by 7/1/20 (model after the California Quality Collaborative). • AWHONN postbirth warnings signs education for staff and for all post-partum patients prior to discharge.

Site Name:	Key Interventions:
<p>UPMC Womens Health Service Line</p>	<p>Readiness:</p> <ul style="list-style-type: none"> • Diagnostic criteria, monitoring and treatment of severe preeclampsia/eclampsia, algorithms, order sets, protocols, staff and provider education, unit-based drills, debriefs. Process defined for timely triage and inpatient, outpatient, and ED evaluation. Medications for treatment stocked and immediately available. <p>Recognition and Prevention:</p> <ul style="list-style-type: none"> • Protocol for measurement and assessment of BP and labs for all pregnant and postpartum women <ul style="list-style-type: none"> ○ Prenatal and postpartum patient education on signs and symptoms of hypertension and preeclampsia ○ Implemented remote monitoring for outpatient B/P monitoring and symptomatology ○ Implemented a new daily discern report providing the nursing staff with patients who have blood pressures > 150/90 and communicate results to provider for further B/P management and a candidate for further remote monitoring. <p>Response:</p> <ul style="list-style-type: none"> • Implemented Nurse Driven Protocol for ordering remote monitoring. • Provided take home toolkit for participants. Due to Covid-19, more patients are provided blood pressure cuffs in the outpatient setting. • Post birth warning sign magnets provided to all mothers upon discharge across UPMC • Implemented Maternal Fetal Triage Index (MFTI) obstetrical triage rapid assessment tool • Commercial and interviews by Medical Staff leaders on Maternal Morbidity & Mortality • Draft system wide policy for assessing and managing HTN • Providing patients with purple wrist bands to be worn for the 4th trimester as a reminder to tell any healthcare provider they delivered and issue can be related to the recent delivery HTN. <p>Reporting:</p> <ul style="list-style-type: none"> • MMRC 3 system wide maternal death case reviews for 2019 • 59% of patients enrolled in remote monitoring had medication management/interventions likely decreasing Emergency Department utilization and readmissions. • Reduction in readmissions for HTN from 2019 to 2020 from 8 to 5% • 80% of patients continued to report their blood pressure 1-week post discharge • 80% of patients enrolled in remote monitoring in 2020, returned for their postpartum follow-up appointment in • Follow up phone calls for all post-partum discharges and documented in the EHR and concerns routed to the physician's office staff

Site Name:	Key Interventions:
WellSpan Health	<ul style="list-style-type: none"> • Completed: <ul style="list-style-type: none"> ○ Roll out of low dose aspirin screening in epic at the first OB visit ○ Free aspirin provided at office ○ Roll out of Relias OB education-Hypertension module complete ○ Roll out of Meds to Beds (YH) to get severe HTN meds to patients prior to discharge. ○ Implemented new policy on severe hypertension ○ Implemented new physician guidelines on severe hypertension ○ Implemented severe maternal morbidity reviews ○ 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 • In process: <ul style="list-style-type: none"> ○ Creation of Education for ED nurses and providers (DONE) ○ Creation of a system wide ED policy on the care of pregnant and postpartum women (DONE) ○ Creation of a Post-Birth screen in the ED with BPA (DONE) ○ Creation of drills on severe HTN and PPH

Maternal Mortality: Hemorrhage

Site Name:	Key Interventions:
Jefferson Health-Thomas Jefferson University Hospital	<ul style="list-style-type: none"> • Hemorrhage data reviewed to determine predictive value of hemorrhage score • PPH risk score live in EMR • Identified need for hemorrhage cart on antepartum and postpartum unit • Education on PPH emergency cards • PPH Education via K2 online platform for all incoming staff
Penn Medicine-Lancaster General/Women and Babies	<ul style="list-style-type: none"> • Train champions to facilitate QBL process <ul style="list-style-type: none"> ○ Feedback and process recommendations for clinical workflow ○ Communication/Education with teams • Implemented EMR tool for PPH risk assessment (Go-Live 12/2/19) • Inventory tools/equipment required for QBL process <ul style="list-style-type: none"> ○ Additional scale obtained for L&D • Implemented QBL with EMR calculator (Go-Live 2/2/20) • Order set changes approved by OBGYN Care Management team • Established a method for reporting and determining baseline data <ul style="list-style-type: none"> ○ OB Vaginal & Cesarean PPH reports built in EMR ○ Blood utilization and uterotonic usage reports ○ QBL report

Site Name:	Key Interventions:
Penn Medicine-Pennsylvania Hospital	<ul style="list-style-type: none"> • Now include the risk assessment in every pre-op huddle (seen reduction in use of massive transfusion protocol) • Increase in communication of risk assessment & decrease in the need for the massive transfusion protocol
Penn State Health-Hershey Medical Center & Children's Hospital	<ul style="list-style-type: none"> • Development of written evidenced-based guidelines for management of acute hypertensive emergency in pregnant and postpartum patients • Staff education (initial and ongoing) • Availability of guidelines in the electronic manual(s) and posted on the unit • Development of a quick reference tool/checklist based on the written guidelines • Placement of medications in L&D Pyxis machine for quick and easy access • Distribution of an education module on hypertensive crisis in pregnancy and postpartum to staff in other related adult patient-care areas (ED, Surgical Anesthesia Intensive Care Unit, etc).
St. Clair Hospital	<ul style="list-style-type: none"> • Unit-standard, stage-based, obstetric hemorrhage emergency management plan with checklists • Quantification of blood loss • Standards for early warning signs, diagnostic criteria, monitoring and treatment of severe preeclampsia/eclampsia (include order sets and algorithms) • Establish a culture of huddles for high risk patients and post-event debriefs to identify successes and opportunities
Temple University Hospital	<ul style="list-style-type: none"> • Risk assessment for every patient • Implement the hemorrhage protocol (everything will be consistent) • Hemorrhage cart • Running Drills • Cultural diversity training • Pain Management protocol
Tower Health-Reading Hospital	<ul style="list-style-type: none"> • Create standard for prenatal identification of high risk patients, quantitative blood loss, and early interventions • All nurses, providers attend yearly sim. QBL roll-out scheduled for 3/7/20; Sims – yearly • Policy / protocol in place and communicated by 7/1/20

Site Name:	Key Interventions:
<p>UPMC Womens Health Service Line</p>	<p>Readiness:</p> <ul style="list-style-type: none"> • 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 <p>Recognition and Prevention:</p> <ul style="list-style-type: none"> • Standardized assessment tool. • Admission, other appropriate times • Measurement from EBL to QBL & defined quantity <p>Response:</p> <ul style="list-style-type: none"> • Support programs for patients, families, staff • Service Line MMRC has been established, meeting held February 17, 2020, 3 cases reviewed from 2019 and shared recommendations with UPMC PQC Leadership. • May 27, 2020 MMRC findings presented to the UPMC Perinatal PQC <ul style="list-style-type: none"> ○ Workgroups to be formed to address recommendations. • Conduct tracers for compliance to 2020/2021 The Joint Commission Standards • Draft system wide policy for assessing and managing PPH • Established a Service Line Education Committee to address opportunities identified in the Gap Assessment <ul style="list-style-type: none"> ○ PPH protocol, addressing key elements within the 4 domains. • Plan to procure new medical device called Jada for managing PPH <p>Reporting:</p> <ul style="list-style-type: none"> • Event reporting to Risk/Quality Department • Multidisciplinary review for opportunities in systems and processes <ul style="list-style-type: none"> ○ Internal hospital systematic reviews are conducted per occurrence • Monitor outcomes and metrics via Obstetrical Dashboard all hospitals have direct access • Report as appropriate to various committees

Maternal Mortality: Timely Fourth Trimester Contact

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

Maternal OUD

Site Name:	Key Interventions:
Allegheny Health Network- Forbes Hospital	<ul style="list-style-type: none"> • Screen pregnant women for substance misuse and physical and behavioral health co-morbidities using validated screens in office and upon admission if not previously completed. • Social work will connect women to treatment and supportive resources.
Allegheny Health Network- Jefferson Hospital	<ul style="list-style-type: none"> • Work with IT department to develop online tablet-based 5P questionnaire • Development of a system-wide algorithm for further assessment and possible treatment based on 5P score. This includes referral to the Perinatal Home Program within AHN as well as phone consultation by social work • 5/7/20: Teaching of all providers regarding 5P tool and how/when to implement. Discussed referral for services • 5/11/20: Implementation of the 5P screening tool starting at all NOB visits for Jefferson Women's Health and Allegheny Health Midwives • 5/12/20: Meeting with L&D nurses to discuss 5P tool and review how it will be utilized eventually on admission to L&D.
Allegheny Health Network- Saint Vincent Hospital	<ul style="list-style-type: none"> • Staff Education – See NAS QI update • Provider documentation education • Incorporate information on Growing Hope program and support available for addicted moms-to-be
Geisinger	<ul style="list-style-type: none"> • Implementing universal NIDA screening • Implementing a clinical pathway for positive screens • Re-educating on urine toxicology protocol
Guthrie Hospital	<ul style="list-style-type: none"> • Finding a validated screening tool- chose 4P's tool • Educating staff and training on chosen tool • Implement screening of all pregnant women at least once during prenatal care (to start)
Jefferson Health- Abington Hospital	<ul style="list-style-type: none"> • Universal Screening with 5Ps tool at first prenatal visit & all triage & inpatient admissions to L&D
Lehigh Valley Health Network- Pocono	<ul style="list-style-type: none"> • Educate all Prenatal Care Providers on the 4P's and scripting • Educate on the referral process to the LSW • Provide educational materials to pregnant women with OUD • Created an OB nurse navigator position to follow at risk patients from prenatal through post-partum for compliance
Main Line Health	<ul style="list-style-type: none"> • Working with MLH Clinical Informatics regarding enhancement of Risk Assessment • Completed Social Work Evaluation of Outpatient Resources • Developed Education Plan and 2020 Timeline to include (post-poned due to Covid-19): <ul style="list-style-type: none"> ○ NAS Education Brochure for Parents ○ Computer Based Training Education for All Providers ○ Grand Rounds with Dr. Gary Stoner

Site Name:	Key Interventions:
Penn Medicine-Chester County Hospital	<ul style="list-style-type: none"> • Completed process mapping, gap analysis, Affinity Diagram, & brainstorming • Evaluated screening tools; Agreed to use 5P's screening tool • Engaged County & Community representatives
Penn Medicine-Hospital of the University of Pennsylvania	<ul style="list-style-type: none"> • Creation of a template for a prenatal consult for pregnant women in OUD • Educate/email OB staff about need for prenatal consultation when able (& why) • Assigned EI referral (through EMR) to neonatal NP who tracks all OENs in our hospital
Penn State Health-Hershey Medical Center & Children's Hospital	<ul style="list-style-type: none"> • Gain consensus and approval on a validated screening tool to screen all pregnant women for substance use Done • Draft a paper patient-friendly form to screen patients at the time of the first prenatal appointment Done • 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 • Draft Substance Use Treatment Referral Reference List- Done • Provide unbiased non-judgmental, trauma-informed care: <ul style="list-style-type: none"> ○ Complete baseline attitudes measurement staff survey Done ○ Provide education/intervention Done ○ Complete reassessment through the attitude's measurement staff survey • Complete staff education regarding: <ul style="list-style-type: none"> ○ The 5Ps tool and screening rationale. Done ○ The 5Ps screening process and SBIRT. Done
St. Clair Hospital	<ul style="list-style-type: none"> • We began using the 5Ps tool for outpatient prenatal visits and inpatient admissions to our hospital in June 2019. • 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. • 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. • We educated inpatient nursing staff on 5Ps screening tool, and implemented it to be utilized on all patients admitted.
Tower Health-Reading Hospital	<ul style="list-style-type: none"> • Clinical pathway for pregnant women with OUD <ul style="list-style-type: none"> ○ Screening for SUD ○ Hospital observation for MAT induction, methadone and buprenorphine offered ○ Connection with methadone program in county. ○ Suboxone maintenance program at Women's Health Center for pregnant women with OUD. <ul style="list-style-type: none"> ▪ Intensive case management with the COE, drug and alcohol treatment, social services, prenatal development of Plan of Safe Care, connection with Early Intervention, prenatal parent education on NAS.

Site Name:	Key Interventions:
UPMC Womens Health Service Line	<ul style="list-style-type: none"> • Access: <ul style="list-style-type: none"> ○ Maternal medical support to prevent withdrawal during pregnancy ○ On call service for all UPMC hospitals 24/7 ○ Provide regular prenatal and other medical appointments ○ 4 Outreach Community Centers ○ Same day on next day within 24-hour appointments • Prevention: <ul style="list-style-type: none"> ○ Community education ○ Obstetrical provider education ○ Minimize fetal exposure to Opioid substances ○ Early engage mother as a leader in her recovery ○ Narcan “to go” • Response: <ul style="list-style-type: none"> ○ Pregnancy Recovery Center (Prenatal & Postpartum) ○ UPMC Healthplan engagement <ul style="list-style-type: none"> ▪ Support programs for patients, families, staff ○ Multidisciplinary team OB, MFM, SW, Nurses, Mental Health therapists ○ Methadone Conversion to buprenorphine from inpt. to outpt. ○ Outpatient buprenorphine medication treatment ○ Warm hand overs ○ ED Physician and APP trained in buprenorphine treatment • Reporting: Centers of Excellence <ul style="list-style-type: none"> ○ State, Allegheny County, UPMC Healthplan ○ Report as appropriate to various committees
Wayne Memorial Hospital	<ul style="list-style-type: none"> • Use of standardized codes & documentation for SEN’s and NAS. Including specific ICD codes for OEN’s • Educate staff re: OEN and NAS, trauma informed care and MD wise guidelines. • Develop screening criteria for prenatal ID of infants at risk • Provide family education about NAS and what to expect.

Neonatal Abstinence Syndrome (NAS)

Site Name:	Key Interventions:
Allegheny Health Network- Saint Vincent Hospital	<ul style="list-style-type: none"> • Two NICU RN’s researched & developed education in classroom format to teach all WAIC staff proper methods & tips to use when assessing neonates for withdrawal using Modified Finnegan Assessment • Upon completion of education, skill validation will be done by core group of 6 NICU RN’s. • Each staff RN must perform 10 assessments proficiently for skill validation • Comparison of retrospective RN assessment scores and post-education/validation scores by each RN

Site Name:	Key Interventions:
Allegheny Health Network- West Penn Hospital	<ul style="list-style-type: none"> • Decrease rate of smoking & un-prescribed drug use in mothers enrolled in Perinatal HOPE Program • Implementation of the Eat-Sleep-Console strategy for the management of NAS • Improve communication and provide education to referring PCP's
Doylestown Hospital	<ul style="list-style-type: none"> • Educated all staff on Eat, Sleep, Console Approach, will perform inter-rater reliability assessment. • Created and currently use NAS Order Sets with standardized medication dosing and faster weaning. • Educated staff and parents regarding non-pharmacological interventions. Empower parents to provide these interventions to their baby. • Reaching out to obstetric providers to refer pregnant women with OUD to hospital team in order to begin prenatal education, tour unit and discuss care of infant prior to delivery.
Einstein Medical Center Philadelphia	<ul style="list-style-type: none"> • continued use of new treatment guidelines & Mother score • implement prenatal joint nurse/doc consults with moms • informational pamphlet for families • pilot Eat, Sleep, Console approach in an open bay type NICU
Einstein Medical Center Montgomery	<ul style="list-style-type: none"> • Multidisciplinary monthly meetings to improve all 3 focus areas • NAS pamphlets for OB; presenting info at their monthly meeting • Transportation and Food Vouchers for parents to stay with infants • Actively educating staff to transition to Eat, Sleep, Console • Supportive care equipment (blankets, MamaRoos, Ergo Baby, etc) • Attending Plan of Safe Care meetings • Developing both EMCM hospital and CHOP Network policy for ESC • Breastfeeding "Traffic Lights" • Community outreach to Methadone Clinic • Infant massage training • Facility enhancements
Jefferson Health – Abington Hospital	<ul style="list-style-type: none"> • Implementation of Eat, Sleep, Console tool for NAS assessment
Mount Nittany Health System- Mount Nittany Medical Center	<ul style="list-style-type: none"> • Help mothers recognize they are the treatment with new welcoming brochure • Increase staff interest and knowledge with VON training • Maximize non-pharmacologic treatments for NAS, consider implementation of Eat-Sleep-Console; standardize medication usage and/or consider PRN use
Penn Medicine- Pennsylvania Hospital, Newborn Medicine	<ul style="list-style-type: none"> • Review pharmacologic treatment for every OED newborn from 3/1/2019 - 8/31/2019 to determine total medication use & weaning process
Penn State Health- Hershey Medical Center & Children's Hospital	<ul style="list-style-type: none"> • Universal collection of meconium at delivery or transfer • Cerner (EHR) order and task created • Store refrigerated specimen for 7 days • Go-Live Date: June 1st, 2020

Site Name:	Key Interventions:
St. Luke's University Health Network	<ul style="list-style-type: none"> • Working with IT to create an EPIC report to accurately identify any babies with NAS & who are affected by OUD • PA PQC core team: working on completing the required NAS education to build competence & consistency within our NAS scoring throughout the network
Temple University Hospital	<ul style="list-style-type: none"> • Education to Moms pre/post delivery • Getting OUD screening into EPIC • Research for what is currently available for Eat, Sleep, Console
Thomas Jefferson University Hospital-Center City (Intensive Care Nursery /Well Baby Nursery)	<ol style="list-style-type: none"> 1. Improve Parental and Staff Education <ul style="list-style-type: none"> • ICN nurses to treatment program for education sessions • Educational materials and provider education at OB clinic • Breast feeding education during methadone/buprenorphine stabilization hospitalization • Standardized prenatal neonatology consult 2. Improve Breast Pump Access <ul style="list-style-type: none"> • Coordinating with WIC • Standardized process with post-partum and case management 3. Improve Treatment Program Involvement in supporting breast feeding <ul style="list-style-type: none"> • Working with new management to • improve maternal access from inpatient treatment to hospital • Create pumping and milk storage space • Support leaving sessions to pump 4. Improve breast feeding support while in hospital <ul style="list-style-type: none"> • Improving lactation consultant access • Support skin-to-skin in NICU • Encourage early breast feeding in DR, upon post-partum arrival
Tower Health-Reading Hospital	<ul style="list-style-type: none"> • Implement "Eat Sleep Console" program on Specialty care unit. (Moms will room-in with newborns.) Transfer family to pediatrics when mother is discharged. • Staff education, music therapy, cuddlers, OT, patient/family education, community education

Site Name:	Key Interventions:
UPMC Womens Health Service Line	<ul style="list-style-type: none"> • Access: <ul style="list-style-type: none"> ○ Maternal medical support to prevent withdrawal during pregnancy ○ Provide regular prenatal and other medical appointments • Prevention: <ul style="list-style-type: none"> ○ Minimize fetal exposure to illicit substances ○ Engage mother as a leader in her recovery • Response: <ul style="list-style-type: none"> ○ Parent Partnership Unit (PPU) ○ Eat, Sleep, Console (ESC) implemented and spreading across system <ul style="list-style-type: none"> ▪ April 2020 Dr. Greg Barretto presented concept at UPMC PQC 2020 ○ May 2020 conducted team training on Eat, Sleep, Console for Northwest, Horizon, Hamot, Cole ○ Developing a PPU model at each hospital based on each hospital's capabilities/resources ○ Developing a service line SUD Committee with membership consisting with representatives from each hospital for Plans of Safe Care. • Reporting: <ul style="list-style-type: none"> ○ Pa DOH of all NAS occurrences ○ Internal leadership and appropriate committees e.g. NICU