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| **AIM MEASURES for Obstetric Hemorrhage Bundle** | | | | | |
| **Outcome Measures (O)** | **Description** | **Data Source** | **Reporting Frequency** | **Data Coordinator**  **Options** | **Notes** |
| **O1: Severe Maternal Morbidity (SMM)** | **Denominator**: All mothers during their birth admission, excluding ectopics and miscarriages  **Numerator:** Among the denominator, all cases with any SMM code | HDD File (ICD-10) | Quarterly  (if available), otherwise annual | ●State Agency ●Designated Data Coordinating Body/Hospital System | *The SMM Outcome Measures will also be calculated on an annual basis by major race/ethnicity groups:* ***NH white, NH black, Hispanic, NH AI/AN, NH API(NH=Non-Hispanic).***  *Each state will determine which race groups to report, but the first 3 are required.* |
| **O2: Severe Maternal Morbidity (excluding cases with only a transfusion code) among All Delivering Women** | **Denominator:** All mothers during their birth admission, excluding ectopics and miscarriages **Numerator:** Among the denominator, all cases with any non-transfusion SMM code | HDD File (ICD-10) | Quarterly  (if available), otherwise annual | ●State Agency ●Designated Data Coordinating Body/Hospital System |
| **O3: Severe Maternal Morbidity among Hemorrhage Cases** | **Denominator:** All mothers during their birth admission, excluding ectopics and miscarriages, meeting one of the following criteria:  • Presence of an Abruption, Previa or Antepartum hemorrhage diagnosiscode • Presence of transfusion procedure code without a sickle cell crisis diagnosis code • Presence of a Postpartum hemorrhage diagnosis code **Numerator:** Among the denominator, all cases with any SMM code | HDD File (ICD-10) | Quarterly  (if available), otherwise annual | ●State Agency ●Designated Data Coordinating Body/Hospital System |
| **O4: Severe Maternal Morbidity (excluding cases with only a transfusion code) among Hemorrhage Cases.** | **Denominator:** All mothers during their birth admission, excluding ectopics and miscarriages, meeting one of the following criteria:  • Presence of an Abruption, Previa or Antepartum hemorrhage diagnosis code • Presence of transfusion procedure code without a sickle cell crisis diagnosis code • Presence of a Postpartum hemorrhage diagnosis code **Numerator:** Among the denominator, all cases with any non-transfusion SMM code | HDD File (ICD-10) | Quarterly  (if available), otherwise annual | ●State Agency ●Designated Data Coordinating Body/Hospital System |

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| **Process Measures (P)** | **Description** | **Data Source** | **Reporting Frequency** | **Data Coordinator**  **Options** | **Notes** |
| **P1: Unit Drills** | **Report # of drills and the drill topics P1a:** In this quarter**,** how many OB drills (In Situ and/or Sim Lab) were performed on your unit for any maternal safety topic? **P1b**: In this quarter, what topics were covered in the OB drills? | Hospital | Quarterly | ●Perinatal Nurse Manager ●Designated QI Leader | *--* |
| **P2: Provider Education** | **Report estimate in 10% increments (round up)** **P2a**: At the end of this quarter, what cumulative proportion of OB physicians and midwives has completed (within the last 2 years) an education program on Obstetric Hemorrhage? **P2b**: At the end of this quarter, what cumulative proportion of OB physicians and midwives has completed (within the last 2 years) an education program on the Obstetric Hemorrhage bundle elements and the unit-standard protocol? | Hospital | Quarterly | ●Perinatal Nurse Manager ●Designated QI Leader | *Meant to be informal estimates by nursing leadership similar to the CDC survey to assess breastfeeding practices.*  *Cumulative means "Since the onset of the project, what proportion of the staff have completed the educational program?"* |
| **P3: Nursing Education** | **Report estimate in 10% increments (round up)** **P3a**: At the end of this quarter, what cumulative proportion of OB nurses has completed (within the last 2 years) an education program on Obstetric Hemorrhage? **P3b**: At the end of this quarter, what cumulative proportion of OB nurses has completed (within the last 2 years) an education program on the Obstetric Hemorrhage bundle elements and the unit-standard protocol? | Hospital | Quarterly | ●Perinatal Nurse Manager ●Designated QI Leader |
| **P4: Risk Assessment** | **Report estimate in 10% increments (round up)** 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? | Hospital | Quarterly | ●Perinatal Nurse Manager ●Designated QI Leader | *Meant to be informal estimates by nursing leadership similar to the CDC survey to assess breastfeeding practices.* |
| **P5: Quantified Blood Loss** | **Report estimate in 10% increments (round up)** In this quarter, what proportion of mothers had measurement of blood loss from birth through the recovery period using quantitative and cumulative techniques? | Hospital | Quarterly | ●Perinatal Nurse Manager  ●Designated QI Leader | *Meant to be informal estimates by nursing leadership similar to the CDC survey to assess breastfeeding practices.*  *Formal measurement can include any method beyond visual estimate alone (eg, under-buttock drapes with gradations, weighing clots and sponges, suction canisters with gradations.* |

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| **Structure Measures**  **(S)** | **Description** | **Data Source** | **Reporting Frequency** | **Data Coordinator**  **Options** | **Notes** |
| **S1: Patient, Family & Staff Support** | **Report Completion Date** Has your hospital developed OB specific resources and protocols to support patients, family and staff through major OB complications? | Hospital | Once | ●Perinatal Nurse Manager ●Designated QI Leader | -- |
| **S2: Debriefs** | **Report Start Date** Has your hospital established a system in your hospital to perform regular formal debriefs after cases with major complications? | Hospital | Once | ●Perinatal Nurse Manager ●Designated QI Leader | *Major complications will be defined by each facility based on volume, with a minimum being The Joint Commission Severe Maternal Morbidity Criteria* |
| **S3: Multidisciplinary Case Reviews** | **Report Start Date** Has your hospital established a process to perform multidisciplinary systems-level reviews on all cases of severe maternal morbidity (including women admitted to the ICU, receiving ≥4 units RBC transfusions, or diagnosed with a VTE)? | Hospital | Once | ●Perinatal Nurse Manager ●Designated QI Leader |
| **S4: Hemorrhage Cart** | **Report Completion Date** Does your hospital have OB hemorrhage supplies readily available, typically in a cart or mobile box? | Hospital | Once | ●Perinatal Nurse Manager ●Designated QI Leader |  |
| **S5: Unit Policy and Procedure** | **Report Completion Date** Does your hospital have an OB hemorrhage policy and procedure (reviewed and updated in the last 2-3 years) that provides a unit-standard approach using a stage-based management plan with checklists? | Hospital | Once | ●Perinatal Nurse Manager ●Designated QI Leader |  |
| **S6: EHR Integration** | **Report Completion Date** Were some of the recommended OB Hemorrhage bundle processes (i.e. order sets, tracking tools) integrated into your hospital’s Electronic Health Record system? | Hospital | Once | ●Perinatal Nurse Manager ●Designated QI Leader | *It can be any part of the Obstetric Hemorrhage bundle (i.e. orders, protocols, documentation)* |

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| **AIM MEASURES for Severe Hypertension/Preeclampsia Bundle** | | | | | |
| **Outcome Measures (O)** | **Description** | **Data Source** | **Reporting Frequency** | **Data Coordinator**  **Options** | **Notes** |
| **O1: Severe Maternal Morbidity (SMM)** | **Denominator**: All mothers during their birth admission, excluding ectopics and miscarriages  **Numerator:** Among the denominator, all cases with any SMM code | HDD File (ICD-10) | Quarterly (if available), otherwise annual | ●State Agency ●Designated Data Coordinating Body/Hospital System | *The SMM Outcome Measures will also be calculated on an annual basis by major race/ethnicity groups:* ***NH white, NH black, Hispanic, NH AI/AN, NH API(NH=Non-Hispanic).***  *Each state will determine which race groups to report, but the first 3 are required.* |
| **O2: Severe Maternal Morbidity (excluding transfusion codes)** | **Denominator:** All mothers during their birth admission, excluding ectopics and miscarriages **Numerator:** Among the denominator, all cases with any non-transfusion SMM code | HDD File (ICD-10) | Quarterly (if available), otherwise annual | ●State Agency ●Designated Data Coordinating Body/Hospital System |
| **O3: Severe Maternal Morbidity among Preeclampsia Cases** | **Denominator:** All mothers during their birth admission, excluding ectopics and miscarriages, with one of the following diagnosis codes: ●Severe Preeclampsia  ●Eclampsia  ●Preeclampsia superimposed on pre-existing hypertension  **Numerator:** Among the denominator, cases with any SMM code | HDD File (ICD-10) | Quarterly (if available), otherwise annual | ●State Agency ●Designated Data Coordinating Body/Hospital System |
| **O4: Severe Maternal Morbidity (excluding transfusion codes) among Preeclampsia Cases** | **Denominator**: All mothers during their birth admission, excluding ectopics and miscarriages, with one of the following diagnosis codes:  ●Severe Preeclampsia  ●Eclampsia  ●Preeclampsia superimposed on pre-existing hypertension  **Numerator:** Among the denominator, all cases with any non-transfusion SMM code | HDD File (ICD-10) | Quarterly (if available), otherwise annual | ●State Agency ●Designated Data Coordinating Body/Hospital System |

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| **Process Measures (P)** | **Description** | **Data Source** | **Reporting Frequency** | **Data Coordinator**  **Options** | **Notes** |
| **P1: Unit Drills** | **Report # of Drills and the drill topics P1a:** In this quarter**,** how many OB drills (In Situ and/or Sim Lab) were performed on your unit for any maternal safety topic? **P1b**: In this quarter, what topics were covered in the OB drills? | Hospital | Quarterly | ●Perinatal Nurse Manager ●Designated QI Leader | *--* |
| **P2: Provider Education** | **Report estimate in 10% increments (round up)** **P2a**: At the end of this quarter, what cumulative proportion of OB physicians and midwives has completed (within the last 2 years) an education program on Severe HTN/Preeclampsia? **P2b**: At the end of this quarter, what cumulative proportion of OB physicians and midwives has completed (within the last 2 years) an education program on the Severe HTN/Preeclampsia bundle elements and the unit-standard protocol? | Hospital | Quarterly | ●Perinatal Nurse Manager ●Designated QI Leader | *Meant to be informal estimates by nursing leadership similar to the CDC survey to assess breastfeeding practices.*  *Cumulative means "Since the onset of the project, what proportion of the staff have completed the educational program?"* |
| **P3: Nursing Education** | **Report estimate in 10% increments (round up)** **P3a**: At the end of this quarter, what cumulative proportion of OB nurses has completed (within the last 2 years) an education program on Severe HTN/Preeclampsia? **P3b**: At the end of this quarter, what cumulative proportion of OB nurses has completed (within the last 2 years) an education program on the Severe HTN/Preeclampsia bundle elements and the unit-standard protocol? | Hospital | Quarterly | ●Perinatal Nurse Manager ●Designated QI Leader |
| **P4: Treatment of Severe HTN** | **Report N/D Denominator:** Women with persistent (twice within 15minutes) new-onset Severe HTN (Systolic: ≥ 160 or Diastolic: ≥ 110), excludes women with an exacerbation of chronic HTN  **Numerator:** Among the denominator, cases who were treated within 1 hour with IV Labetalol, IV Hydralazine, or PO Nifedipine | Hospital | Quarterly | ●Perinatal Nurse Manager ●Designated QI Leader | *The hardest part of this measure is to identify cases with persistent Severe Hypertension. Recommended use at least 2 systems (i.e. logbooks, EHR, pharmacy records) for identification of denominator cases.* |

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| **Structure Measures**  **(S)** | **Description** | **Data Source** | **Reporting Frequency** | **Data Coordinator**  **Options** | **Notes** |
| **S1: Patient, Family & Staff Support** | **Report Completion Date** Has your hospital developed OB specific resources and protocols to support patients, family and staff through major OB complications? | Hospital | Once | ●Perinatal Nurse Manager ●Designated QI Leader | -- |
| **S2: Debriefs** | **Report Start Date** Has your hospital established a system in your hospital to perform regular formal debriefs after cases with major complications? | Hospital | Once | ●Perinatal Nurse Manager ●Designated QI Leader | *Major complications will be defined by each facility based on volume, with a minimum being The Joint Commission Severe Maternal Morbidity Criteria* |
| **S3: Multidisciplinary Case Reviews** | **Report Start Date** Has your hospital established a process to perform multidisciplinary systems-level reviews on all cases of severe maternal morbidity (including women admitted to the ICU, receiving ≥4 units RBC transfusions, or diagnosed with a VTE)? | Hospital | Once | ●Perinatal Nurse Manager ●Designated QI Leader |
| **S4: Unit Policy and Procedure** | **Report Completion Date** Does your hospital have a Severe HTN/Preeclampsia policy and procedure (reviewed and updated in the last 2-3 years) that provides a unit-standard approach to measuring blood pressure, treatment of Severe HTN/Preeclampsia, administration of Magnesium Sulfate, and treatment of Magnesium Sulfate overdose? | Hospital | Once | ●Perinatal Nurse Manager ●Designated QI Leader | -- |
| **S5: EHR Integration** | **Report Completion Date** Were some of the recommended Severe HTN/Preeclampsia bundle processes (i.e. order sets, tracking tools) integrated into your hospital’s Electronic Health Record system? | Hospital | Once | ●Perinatal Nurse Manager ●Designated QI Leader | *It can be any part of the Severe Hypertension bundle (i.e. orders, protocols, documentation)* |