Wisconsin Severe Maternal Hypertension Initiative Measure Set

WisPQC is partnering with the Wisconsin Hospital Association (WHA) Data Center to collect the severe maternal morbidity (SMM) outcome measure data for the initiative. The SMM outcome measures are defined by the Alliance for Innovation on Maternal Health (AIM) hypertension bundle and cannot be modified by states.

On a quarterly schedule (February, May, August and November), the WHA Data Center will run reports on the SMM outcome measures (using Hospital Discharge Data ICD-9/ICD 10) for each participating hospital team. On an annual basis the SMM outcome measure will be run and disaggregated by major Race/Ethnicity categories: Non-Hispanic (NH) white, NH black, Hispanic, NH American Indian/Alaska Native (AI/AN), NH Asian/Pacific Islander (API).

WisPQC will receive the SMM outcome measures reports and upload them into the AIM data portal on the quarterly or annual schedule. Each hospital team will have access to view the data and various data visualizations in the AIM data portal.

The outcome measures, as defined by AIM, are as follows:

O1: Severe Maternal Morbidity (SMM)	**Numerator:** Among the denominator, all cases with any SMM code **Denominator:** All mothers during their birth admission, excluding ectopics and miscarriages
O2: Severe Maternal Morbidity (excluding transfusion codes)	**Numerator:** Among the denominator, all cases with any non-transfusion SMM code **Denominator:** All mothers during their birth admission, excluding ectopics and miscarriages
O3: Severe Maternal Morbidity among Preeclampsia Cases	**Numerator:** Among the denominator, cases with any SMM code **Denominator:** All mothers during their birth admission, excluding ectopics and miscarriages, with one of the following diagnosis codes: Severe Preeclampsia, Eclampsia and Preeclampsia superimposed on pre-existing hypertension
O4: Severe Maternal Morbidity (excluding transfusion codes) among Preeclampsia Cases	**Numerator:** Among the denominator, all cases with any non-transfusion SMM code **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

Participating hospital teams will use Life QI® to enter all hospital level process measure data for continuous quality improvement throughout the initiative. WisPQC staff will export the data each hospital team enters into Life QI® and upload it into the AIM data portal. Each hospital teams will be able to view all their data in the AIM data portal. Below are the process measures and definitions that will **entered by hospital teams** into Life QI®.

Q1= Jan-Mar, Q2=Apr-Jun, Q3=Jul-Sep, Q4=Oct-Dec.

Process Measures	Data Collection Format	Notes
PM 1: 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? *Add a 'note' to each data point stating the topic(s) of the drill(s)	Teams report **quarterly** into Life QI.
PM 2 : Provider Education Report estimate in 10% increments (round up)	**P2**: At the end of this reporting period, what cumulative proportion of delivering physicians and midwives has completed within the last two years an education program on Severe Hypertension/Preeclampsia that includes the *unit-standard protocols and measures*? ●This is meant to be an informal estimate by nursing leadership similar to the CDC mPINC survey to assess breastfeeding practices. ●Cumulative means "Since the onset of the project, what proportion of the staff have completed the educational program? Time: Quarterly Count: Number of delivering physicians and midwives who have completed within the last two years an education program on Severe Hypertension/Preeclampsia Total: Number of delivering physicians and midwives on staff.	Teams report **quarterly** into Life QI.
PM3: Nursing Education Report estimate in 10% increments (round up)	**P3**: At the end of this reporting period, what cumulative proportion of OB nurses (including L&D and postpartum) has completed within the last two years an education program on Severe Hypertension/Preeclampsia that includes the *unit-standard protocols and measures*?	Teams report **quarterly** into Life QI.

	●This is meant to be an informal estimate by nursing leadership similar to the CDC mPINC survey to assess breastfeeding practices. ●Cumulative means "Since the onset of the project, what proportion of the staff have completed the educational program?" Time: Quarterly Count: Number of OB nurses (including L&D and postpartum) who have completed within the last two years an education program on Severe Hypertension/Preeclampsia Total: Number of OB nurses (including L&D and postpartum) on staff.	
PM 4: Treatment of Severe Hypertension within 1 hour Report Numerator/Denominator pulled by patients' admission date. *This should, if possible, include those admitted who were pregnant or postpartum but did not give birth.* *At the end of the measure set is a list of ICD-10 codes for severe hypertension. The ICD-10 codes are a starting point for getting the acute-onset severe hypertension (SHTN) denominator. Chart review will need to be done on patients identified via ICD-10	**Numerator:** Among the denominator, birthing patients who were treated within 1 hour of first identified elevated BP with IV Labetalol, IV Hydralazine, or PO Nifedipine. (See ACOG CO #767 February 2019). --- **Denominator:** Birthing patients with acute-onset severe hypertension* (Systolic: ≥ 160 or Diastolic: ≥ 110) that persists for 15 minutes or more, including those with preeclampsia, gestational or chronic hypertension. The 1 hour is measured from the first severe range BP reading, assuming confirmation of persistent elevation through a second reading. Create a sub-chart in Life QI® for each of the following race/ethnicity categories using the same numerator and denominator as above: Non-hispanic white, Non-hispanic black, Hispanic/Latinx, Non-hispanic American Indian/Alaska Native, Non-hispanic Asian/Pacific Islander *If your denominator is ever '0', do not enter any data into Life QI® for that month.* **Numerator:** Among the denominator, **NH white** birthing patients who were treated within 1 hour of first identified elevated BP with IV Labetalol, IV Hydralazine, or PO Nifedipine. (See ACOG CO #767 February 2019). ---	Teams report **monthly** into Life QI. Note: Only enter the race/ethnicity breakdown charts. Life QI will use those to generate the aggregate/total population chart for you. This will ensure there is no duplication of data.

codes to determine if STHN occurred.	**Denominator: NH white** Birthing patients with acute-onset severe hypertension (Systolic: ≥ 160 or Diastolic: ≥ 110) that persists for 15 minutes or more, including those with preeclampsia, gestational or chronic hypertension.	
PM 5: Follow-up plan** for blood pressure check for all women with acute-onset severe HTN*. Chart review: up to 20 severe HTN** charts, *pulled by patients' admission date.* If <20 charts, include all in denominator. If >20 charts, include every 5th chart until you have 20 charts identified.	**Numerator:** Number of women with acute-onset severe* HTN who had a follow-up plan** for a blood pressure check in appropriate timing***. --- **Denominator:** Number of total charts reviewed *If your denominator is ever '0', do not enter any data into Life QI® for that month.* * Birthing patients with acute-onset severe hypertension (Systolic: ≥ 160 or Diastolic: ≥ 110) that persists for 15 minutes or more, including those with preeclampsia, gestational or chronic hypertension. Use the patients from the PM4 denominator. ** 'Follow up plan' is defined as: documentation in patient chart of future blood pressure check either at office visit or at home via home monitoring program and reported back to provider, in accordance with appropriate timing recommendations. *** Appropriate timing is defined by ACOG as: no later than 7-10 days postpartum 28, and women with severe hypertension should be seen within 72 hours; other experts have recommends follow-up at 3-5 days (ACOG CO 736, May 2018).	Teams report **monthly** into Life QI. *(not an AIM-required measure)*

Participating hospital teams will complete a Structure Measure Audit form at baseline, 6, 12, and 18 months to enter all hospital level structure measure data. WisPQC staff will enter this data for each hospital team into the AIM data portal which hospital teams will be able to view. Below are the structure measures and definitions that will entered by hospital teams into the Structure Measure Audit Form (completed via weblink).

Structure Measures	Data Collection Format	Notes
SM1: 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- including women with hypertension in pregnancy?	Reported at baseline, 6, 12, and 18 months via WisPQC Structure Measure audit form.

SM2: Debriefs Report start date	Has your hospital established a system in your hospital to perform regular formal debriefs after cases with major complications?	Reported at baseline, 6, 12, and 18 months via WisPQC Structure Measure audit form.
SM3: Multidisciplinary case reviews Report start date	Has your hospital established a process to perform multidisciplinary systems-level reviews on cases of severe maternal morbidity (including, at a minimum, birthing patients admitted to the ICU or receiving ≥ 4 units RBC transfusions? *For greatest impact, AIM suggests that in addition to the minimum instances for review defined in S3, hospital teams also implement missed opportunity reviews for key bundle process measures (e.g. instances in which acute onset severe hypertension was not treated in < 60 minutes) in both unit debriefs and multidisciplinary case reviews.*	Reported at baseline, 6, 12, and 18 months via WisPQC Structure Measure audit form.
SM4 : 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?	Reported at baseline, 6, 12, and 18 months via WisPQC Structure Measure audit form.
SM5 : 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?	Reported at baseline, 6, 12, and 18 months via WisPQC Structure Measure audit form.
SM6 : Hypertension education for <u>all</u> delivering patients at time of discharge Report yes/no	Hospital provides specific preeclampsia discharge education materials to **all delivering** patients (not just patients with severe hypertension). I.e. available in multiple languages appropriate to your patient population (Spanish, Arabic, Hmong, etc.), built into discharge process/paperwork, etc.	Reported at baseline, 6, 12, and 18 months via WisPQC Structure Measure audit form.

Severe Preeclampsia or Eclampsia Diagnosis Codes (ICD-10)

O11.1	Pre-existing hypertension with pre-eclampsia, first trimester
O11.2	Pre-existing hypertension with pre-eclampsia, second trimester
O11.3	Pre-existing hypertension with pre-eclampsia, third trimester
O11.4	Pre-existing hypertension with pre-eclampsia, complicating childbirth
O11.5	Pre-existing hypertension with pre-eclampsia, complicating the puerperium
O11.9	Pre-existing hypertension with pre-eclampsia, unspecified trimester
O14.10	Severe pre-eclampsia, unspecified trimester
O14.12	Severe pre-eclampsia, second trimester
O14.13	Severe pre-eclampsia, third trimester
O14.14	Severe pre-eclampsia complicating childbirth
O14.15	Severe pre-eclampsia, complicating the puerperium
O14.20	HELLP syndrome (HELLP), unspecified trimester
O14.22	HELLP syndrome (HELLP), second trimester
O14.23	HELLP syndrome (HELLP), third trimester
O14.24	HELLP syndrome, complicating childbirth
O14.25	HELLP syndrome, complicating the puerperium
O15.00	Eclampsia in pregnancy, unspecified trimester
O15.02	Eclampsia in pregnancy, second trimester
O15.03	Eclampsia in pregnancy, third trimester
O15.1	Eclampsia in labor
O15.2	Eclampsia in the puerperium
O15.9	Eclampsia, unspecified as to time period

This is a starting point for determining acute onset severe hypertension. Pull these codes and then complete chart review to determine if acute severe hypertension occurred.

Data Reporting Frequency, Location and Responsibility

Measure Name	Teams enter Monthly (Life QI)	Teams enter Quarterly (Life QI)	Teams report at baseline, 6, 12, 18 months via survey; WisPQC enters data (AIM Portal)	WisPQC enters data Quarterly from WHA reports (AIM Portal)
PM 4 (Time to treatment)				
PM 5 (Timely follow up BP check)				
PM 1 (Unit drills)				
PM 2 (Provider education)				
PM 3 (Nursing education)				
SM 1 (Patient, family, staff support)				
SM2 (Debriefs)				
SM3 (Multidisciplinary case reviews)				
SM4 (Unit policy and procedure)				
SM5 (EHR integration)				
SM6 (HTN education for ALL patients)				
OM1 (Severe Maternal Morbidity)				
OM2 (SMM, excl. transfusion)				
OM3 (SMM among preeclampsia cases)				
OM4 (SMM among preeclampsia cases, excl. transfusion)				