

**Data to Inform™—
practice, policy, and research**

Perinatal Hypertension - 2016



The goal of this report is to share Wisconsin-specific data about the implications of promoting evidence-based identification and management of maternal hypertension and to encourage changes in clinical practice to improve both maternal and newborn outcomes.

Hypertensive disorders of pregnancy, including preeclampsia, complicate up to 10% of pregnancies worldwide, constituting one of the greatest causes of maternal and perinatal morbidity and mortality.¹ These disorders are a major health issue for women and their infants in the United States and in Wisconsin.

In 2015 WisPQC, the Wisconsin Perinatal Quality Collaborative, introduced an initiative with the aim of educating providers about the practice changes recommended by the American College of Obstetricians and Gynecologists (ACOG) Task Force. WisPQC accomplished this aim through the 2015 Regional Forum Series, seven educational sessions offered in each of the regions of the Wisconsin Association for Perinatal Care (WAPC).

In 2016, WisPQC launched a quality improvement initiative based on implementing the ACOG Task Force practice changes. The hypertension initiative included two cohorts of 10 clinical sites each. The sites selected which measures they would implement based on an assessment of their practice environments. Each site collected baseline data and implemented strategies to improve and monitored progress with monthly data collection. Each site used a rapid improvement cycle based on monthly data analysis.

The quality measures included:

Cohort I	Cohort II
<ul style="list-style-type: none">• Postpartum length of stay• Consumer education• NICU admissions• Provider education	<ul style="list-style-type: none">• Postpartum length of stay• Consumer education• NICU admissions• Antiplatelet therapy (low-dose aspirin)• Management of severe hypertension (hypertensive emergencies)• Debriefs for severe range hypertension• Severe maternal morbidity

Data for measures were available from a variety of sources. The measure definitions were aligned with ACOG Task Force recommendations and were consistently applied in both cohorts.

For Cohort II, collection of the data for length of stay was refined to reflect each category of hypertension in pregnancy to allow for further process improvement efforts. Also, in Cohort II, additional measures were captured from PeriData.Net®. These included antiplatelet therapy, treatment of hypertensive emergencies, and severe maternal morbidity.

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All statewide information, regardless of cohort participation, reported exclusively through PeriData.Net® (representing approximately 85% of deliveries in the state) was obtained for the 9-month time period April 1, 2016, through December 31, 2016. During that time a total of 41,897 women delivered 42,744 infants. Women and their infants delivering at 20 weeks gestation or more were used in the calculations.

This report presents and discusses the data reported in PeriData.Net® for the following measures:

1. Postpartum length of stay (LOS)
2. NICU admissions
3. Antiplatelet therapy (low-dose aspirin)
4. Management of severe hypertension (hypertensive emergencies)
5. Severe maternal morbidity

Postpartum Length of Stay (LOS)

The ACOG recommendation is that women with gestational hypertension be observed in the inpatient setting for a minimum of 72 hours postpartum, or receive equivalent monitoring for a minimum of 72 hours in the outpatient setting.

Target postpartum length of stay for women with any type of hypertension (HTN) in pregnancy or during the postpartum hospitalization (excluding chronic hypertension) was achieved for 38% of all women who delivered, but only for 13% of women who delivered vaginally. When further stratified, more women experiencing preeclampsia with severe features and delivering vaginally stayed for 72 hours. Sixty-three percent of women with chronic HTN with superimposed preeclampsia with severe features and 39% of women with preeclampsia with severe features were hospitalized 72 hours or more postpartum.

NICU Admissions

NICU admissions were used as a balancing measure. While there are no specific recommendations from ACOG or others regarding what might constitute a reasonable number of NICU admissions in the face of HTN, there is a higher cost of care of infants admitted to the NICU. Some admissions are necessary due to recommended timing of delivery at a lower gestational age based on the severity of the maternal hypertension. The balancing measure helps to answer the question: If women with severe hypertension are treated appropriately, will NICU admission rates increase?

Infants needing a higher level of care than newborn or mom/baby care are included in this measure. Approximately 10.5% of all babies born were admitted to the NICU; however, twice that percent (21.4%) were admitted to the NICU when “exposed” to maternal hypertension of any kind in utero.



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Antiplatelet Therapy (low dose aspirin)

This measure uses the US Preventive Services Task Force (USPSTF) guidelines recently endorsed by ACOG.² Women with any of the following conditions are candidates for low dose aspirin therapy: chronic HTN, history of preeclampsia, multifetal gestation, type 1 or 2 diabetes, renal disease, and/or autoimmune disease. At present the number of women receiving this therapy is low – 91/2707 (3.36%). As more providers adopt the recommendations, the number of women receiving antiplatelet therapy is expected to increase.

Management of Severe Hypertension (hypertensive emergencies)

Approximately 7% of the women delivering had some type of HTN. Five percent of the women (148/2881 [5.14%]) experienced severe range HTN, defined as systolic BP 160 or greater OR diastolic BP 110 or greater, during the hospitalization. The majority of women experiencing severe range hypertension, 135/148 (91.22%) received recommended treatment within one hour.

Severe Maternal Morbidity

Two maternal conditions were utilized in this measure to capture severity of maternal morbidity --women experiencing transfusion with four or more units of blood products and/or an admission to an intensive care unit (ICU). While these events are not common, women with HTN in pregnancy were five times more likely to experience severe maternal morbidity as their counterparts without HTN.

Table 1. Women with severe morbidity (transfused with 4 or more units of blood products &/or admitted to ICU) without and with HTN.

Category	Numbers severe morbidity	Percent severe morbidity
Women without HTN	64/38,471	0.17%
Women with HTN	28/3397	0.82%
All women delivering	92/41,868	0.22%

Source: PeriData.Net® April 1, 2016 through December 31, 2016.

Data to Decision: Data in this report can inform future policies, practices, and quality improvement and research initiatives.

Policy: Implementing the ACOG recommendations and the USPSTF recommendations have the potential to improve the outcomes for mothers and babies through 1) prompt identification of maternal hypertension, 2) appropriate treatment, and 3) vigilant continuing care postpartum and into a subsequent pregnancy. There



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are opportunities to improve electronic health record documentation, consumer education about signs and symptoms, and provider education about both simple and complex interventions.

Other broader policy implications focus on institutionalizing a culture of quality and safety throughout the continuum of perinatal care.

Practice: Practice changes have the potential to impact maternal and newborn care. Some practice changes may be relatively simple, like taking an accurate blood pressure, and others may be complex, like changing protocols to assure prompt and adequate treatment of women with severe hypertension.

Research/Quality Improvement: The ease of access and availability of PeriData.Net® reports for hospitals makes ongoing quality improvement efforts possible. The ability to work on process improvements by seeing both summary as well as patient level data allows clinicians and administrators to tailor process improvements based on detailed information at their facilities.

References:

1. ACOG Task Force on Hypertension in Pregnancy. Hypertension in pregnancy: Report of the American College of Obstetricians and Gynecologists' Task Force on Hypertension in Pregnancy. *Obstet Gynecol* 2013 Nov; 122:1122.
2. ACOG - Practice Advisory on Low-Dose Aspirin and Prevention of Preeclampsia: Updated Recommendations, July 2016.

