



Outpatient Severe Hypertension Evaluation and Management during Pregnancy and Postpartum: Policy and Procedure

(Adapted from CMCQQ)

Purpose

To outline the evaluation and management of severe hypertension in pregnant or postpartum patients inpatients including special considerations for pharmacological interventions and escalation of care.

Background

Hypertensive disorders in pregnancy (including chronic hypertension, gestational hypertension, preeclampsia, HELLP syndrome and eclampsia) affect at least 1 in 7 delivery hospitals during 2019 (1 in 5 for Black women and 1 in 6 for American Indian and Alaska Native women). Hypertension in pregnancy is a leading cause of preventable, pregnancy-related complications and death, with over 60 percent of deaths related to severe hypertension being identified as preventable. One strategy to reduce hypertensive morbidity and mortality is to improve recognition and response to severe hypertension in pregnant and postpartum patients. (Taken from the [AIM Severe HTN in Pregnancy Change Package](#))

- ▶ Severe Hypertension: two blood pressure readings of ≥ 160 systolic OR ≥ 110 diastolic taken at least fifteen minutes apart.

Goals of severe Hypertension Evaluation and Management

- ▶ Early recognition of severe hypertension and symptoms of preeclampsia, and early intervention to prevent maternal morbidity and/or mortality.

Reportable symptoms

Notify provider immediately for:

- ▶ Repeated blood pressure ≥ 160 mm Hg systolic OR ≥ 110 mm Hg diastolic (taken at least 15 minutes apart)
- ▶ New or worsening complaint of any of the following:
 - Headache
 - Visual changes





- Right Upper Quadrant (RUQ) or epigastric pain

▶ Abnormal lab values.

Front Desk/Clinic Call Center Triage (see Appendix for Front Desk Flow Chart)

Is the patient pregnant or has the patient been pregnant within the last year? If yes, assess for the following:

- Home blood pressure reading of greater or equal to 160/110
 - Severe headache that doesn't go away with Tylenol
 - Changes in vision
 - Shortness of breath/trouble breathing
 - Severe upper belly pain
 - Nausea/vomiting
- ▶ If the patient confirms any of the symptoms above:
- Transfer to or contact OB Provider, MD, or RN immediately
 - If none are available call 911 and have patient transferred to nearest L&D.

Rooming Patient and Completing Intake Vital Signs (see Appendix for Severe HTN Algorithm)

- ▶ Assess blood pressure using an appropriately sized blood pressure cuff with patient sitting or in the upright position with the patient's arm at the level of the heart (see Appendix for BP Measurement Checklist).
- If systolic pressure is 160 or diastolic pressure is greater or equal to 110- notify provider immediately. If within your scope continue assessing symptoms.
- ▶ Assess symptoms- severe headache, vision changes, right upper quadrant, or epigastric pain.
- If Absent- Repeat BP in 15 minutes
 - If Present- Notify provider immediately, interrupt if busy.
 - Give 10mg IR Procardia (aka nifedipine)
 - Prepare patient for admission to nearest L&D
 - If pregnant prepare patient for possible delivery if greater than 34 weeks gestation.
- ▶ After 15min repeat BP or notifying provider
- If systolic greater or equal to 160 or diastolic greater or equal to 110
 - Notify provider immediately, interrupt if busy.
 - Give 10mg IR nifedipine (Procardia)



- Prepare patient for admission to nearest L&D
 - If pregnant prepare patient for possible delivery if greater than 34 weeks gestation. If postpartum, prepare patient for the possibility of inpatient hospitalization for BP monitoring and control.
- After administering 10mg IR Procardia (nifedipine)
 - If still in clinic 20 minutes after administering Procardia (nifedipine) recheck BP.
 - If systolic greater than or equal to 160 or diastolic greater than or equal to 110 administer second dose of nifedipine (Procardia) 10mg IR.
- ▶ After 15 min repeat BP systolic 140-159 or diastolic 90-109
 - Consider- existing HTN diagnosis (chronic or pregnancy related)?
 - If No, and patient is pregnant- send to L&D for ongoing monitoring and labs; prepare patient for possible delivery if 37 weeks or more gestation
 - If No, and patient is postpartum- evaluate further for preeclampsia; individualized decision as to inpatient or outpatient treatment; consult maternal fetal medicine as needed.
 - If Yes, and patient is pregnant- continue individualized management and maternal fetal medicine consult as needed
 - If Yes, and patient is postpartum- continue outpatient management; initiate/increase oral antihypertensives as needed
- ▶ When escalating care
 - Is the clinic hospital based?
 - If Yes, send patient to L&D
 - If No, transfer to nearest L&D via ambulance
 - If patient declines ambulance, document recommendation, and encourage immediate transfer by personal vehicle.

Antihypertensives

Background

- ▶ A persistent systolic blood pressure ≥ 160 mm Hg OR ≥ 110 mm Hg diastolic persisting for 15 minutes or more, is treated with antihypertensive medication to protect the patient from stroke.*
- ▶ The goal of blood pressure treatment is **130-150/80-100 mm Hg** to maintain perfusion.
- ▶ Nifedipine is a calcium channel blocker that acts to relax the smooth muscle of the



heart and blood vessels.

Eclampsia management

Background

- ▶ Eclampsia is characterized by convulsions and loss of consciousness, which can occur without warning during the antepartum, intrapartum or postpartum period.
- ▶ The eclamptic patient is at risk for aspiration and cerebral hemorrhage.
- ▶ Fetal bradycardia frequently occurs during and following an eclamptic seizure due to tetanic contractions or maternal hypoventilation.
- ▶ Best treatment for baby is maternal stabilization.

Management

- ▶ Notify charge nurse and provider, immediately. Initiate emergency pager/code (if clinic has instituted).
- ▶ Position patient on side.
- ▶ Protect from injury.
- ▶ Note timing and how long seizure lasts.
- ▶ Following seizure:
 - Suction mouth with Yankauer PRN (if available)
 - Give oxygen by non-rebreather mask at 10 liters per minute.
 - Provide ventilatory support as needed
 - Assess blood pressure, pulse, and respirations every 5 minutes.
 - Assess oxygen saturation and level of consciousness every 15 minutes until time of transport.
 - Monitor fetal heart rate and uterine activity continuously if viable fetus is present.
 - Observe for signs and symptoms of placental abruption or impending delivery.

This sample was adapted from the Improving Health Care Response to Preeclampsia: A California Quality Improvement Toolkit, funded by the California Department of Public Health, 2014; supported by Title V funds.

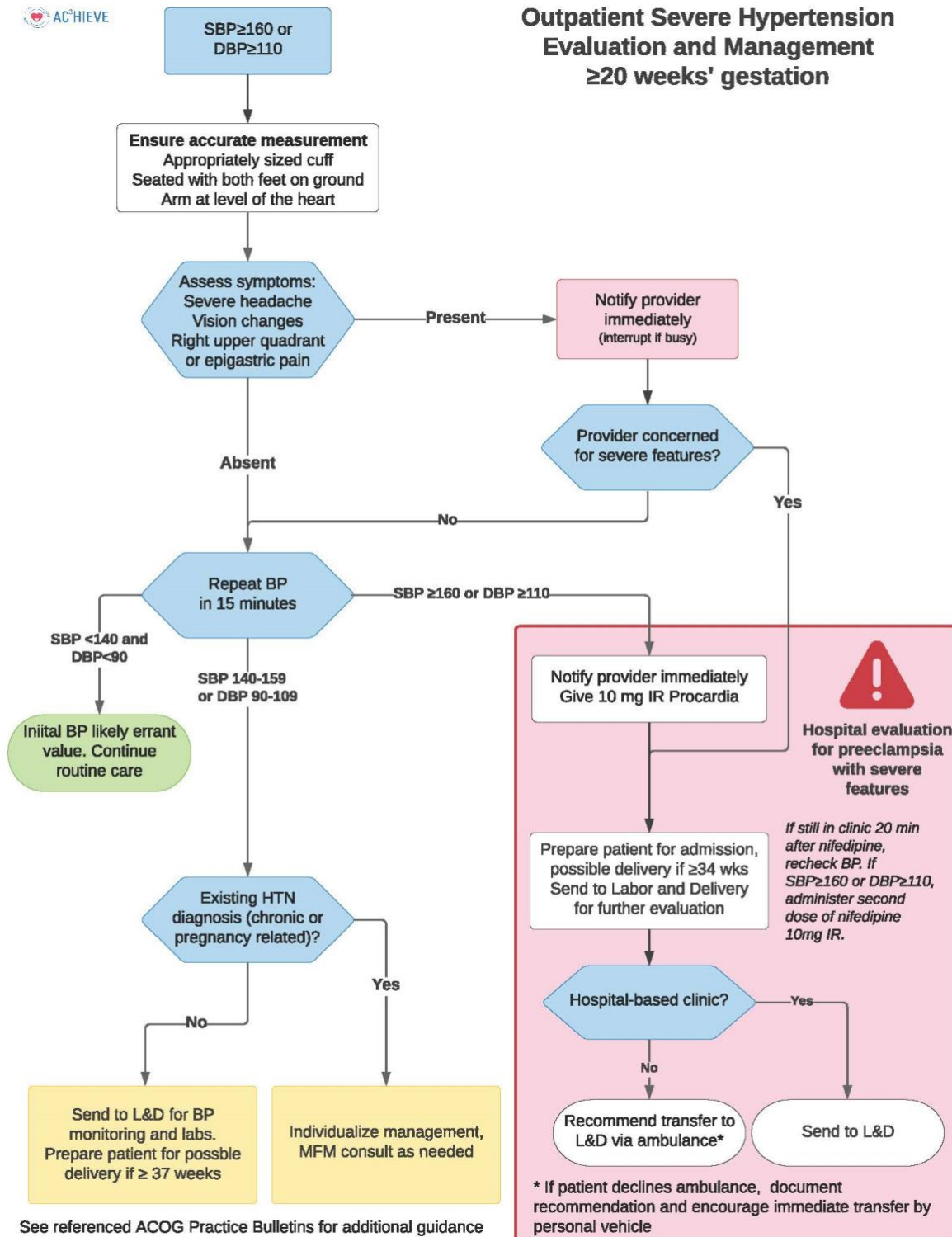


APPENDIX

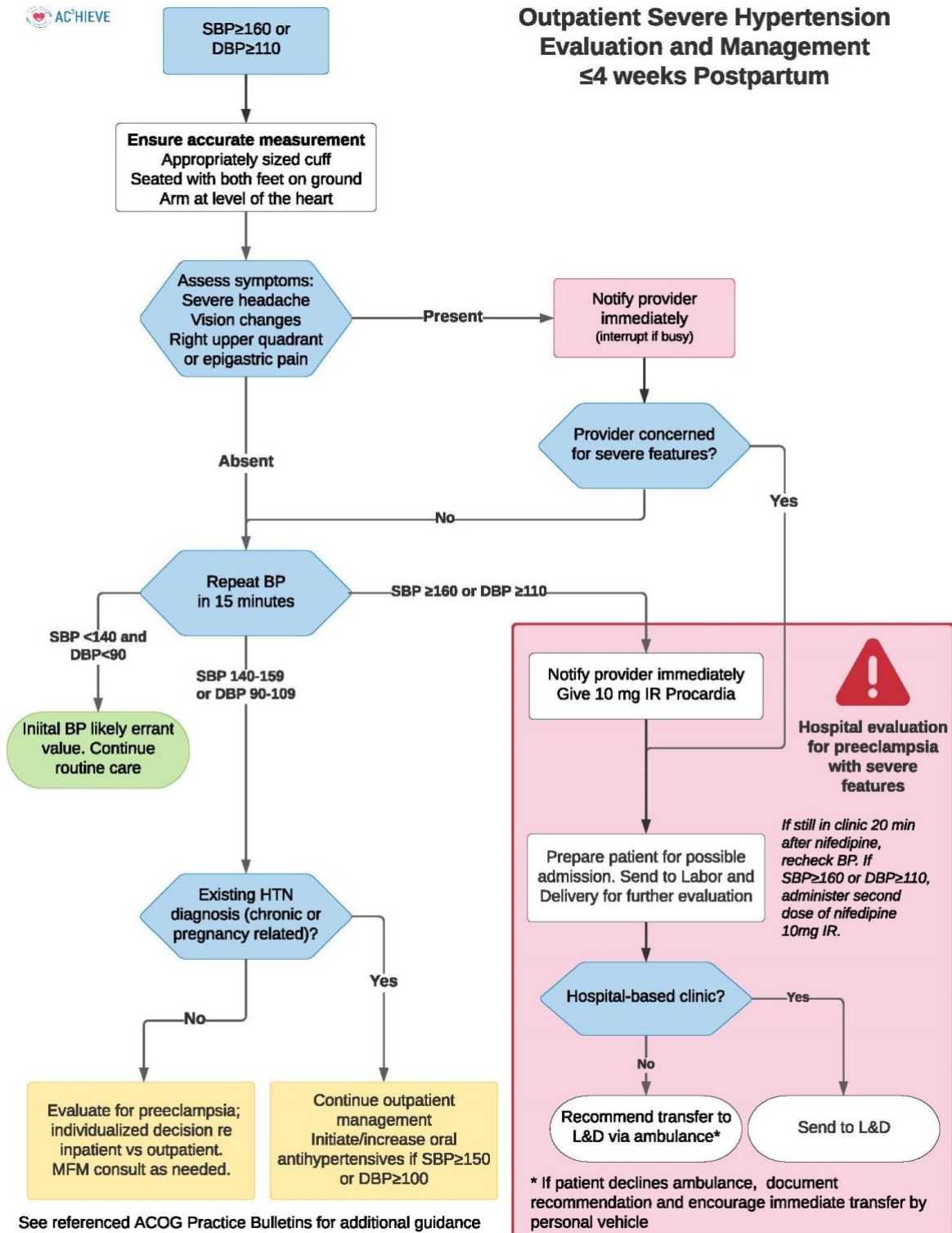
BP Measurement Checklist

Key Behaviors	
Prepare Patient	
1.	Ask patient to empty bladder
2.	Ask patient about nicotine and/or caffeine consumption within the last 30 minutes
3.	Have patient sit quietly for at least 5 minutes
Proper BP Cuff Fit	
1.	Use tape measure to measure the length of arm from shoulder bone to elbow bone in centimeters
2.	Mark half-length point and measures circumference in centimeters
3.	Reference circumference measurements on cuff to choose correct cuff
Patient Positioning	
1.	Patient is seated or semi-reclined with both feet flat on the floor and not crossed
2.	Bare arm – no clothing
3.	Arm supported at heart level
4.	No gap between the cuff and the arm
5.	Asks patient not to move their arm or talk during measurement

Outpatient Severe Hypertension Evaluation and Management ≥20 weeks' gestation



Outpatient Severe Hypertension Evaluation and Management ≤4 weeks Postpartum



References

Chronic hypertension in pregnancy. ACOG Practice Bulletin No. 203. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2019;133:e26–50.

Gestational Hypertension and Preeclampsia: ACOG Practice Bulletin Summary, Number 222. *Obstet Gynecol* 2020; 135:1492.

Vigil-De Gracia, P, Ludmir, J. (2015) The use of magnesium sulfate for women with severe preeclampsia or eclampsia diagnosed during the postpartum period, *The Journal of Maternal-Fetal & Neonatal Medicine*, 28:18, 2207-2209, DOI: 10.3109/14767058.2014.982529

Martin J, Thigpen B, Moore R, Rose C, Cushman J, May W. (2005). Stroke and Severe Preeclampsia and Eclampsia: A Paradigm Shift Focusing on Systolic Blood Pressure. *Obstetrics & Gynecology*, 105 (2), 246-254. doi: 10.1097/01.AOG.0000151116.84113.56

Judy AE, McCain CL, Lawton ES, et al. Systolic Hypertension, Preeclampsia-Related Mortality, and Stroke in California. *Obstet Gynecol* 2019.

Hauspurg A, Jeyabalan A. Postpartum preeclampsia or eclampsia: defining its place and management among the hypertensive disorders of pregnancy, *American Journal of Obstetrics and Gynecology* 2021, <https://doi.org/10.1016/j.ajog.2020.10.027>.

Sharshar T, Lamy C, Mas JL. Incidence and causes of strokes associated with pregnancy and puerperium. A study in public hospitals of Ile de France. Stroke in Pregnancy Study Group. *Stroke [Internet]*. 1995 ed. 1995. June;26(6):930–6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/7762040>

Liu S, Chan WS, Ray JG, Kramer MS, Joseph KS, for the Canadian Perinatal Surveillance System (Public Health Agency of Canada). Stroke and Cerebrovascular Disease in Pregnancy. *Stroke*. 2019. January;50(1):13–20.

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These algorithms are designed to assist the primary care provider in the clinical management of a variety of problems that occur during pregnancy. They should not be interpreted as a standard of care, but instead represent guidelines for management. Variation in practices should take into account such factors as characteristics of the individual patient, health resources, and regional experience with diagnostic and therapeutic modalities.

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Front Desk/Clinic Call Center Triage Flow Chart for Pregnant/Postpartum Patients with possible Severe Hypertensive Emergency

