AETNA BETTER HEALTH® OF MISSOURI
Management of Chronic Hypertension and Pregnancy
practice guidelines

The Guideline was adapted from the American College of Obstetricians and Gynecologists (ACOG) to provide treatment guidance to primary care providers and is not intended to replace or preclude clinical judgment. The recommendations in this guideline do not indicate an exclusive course of treatment or serve as a standard of care. Variations, taking into account individual circumstances, may be appropriate. Based on the Clinical Practice Guideline developed by (ACOG), Aetna Better Health recommends following:

**Services**

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<th>Clinical summary</th>
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<tr>
<td><strong>General</strong></td>
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<td>- Chronic hypertension occurs in up to 5% of pregnant women. This complication may result in significant maternal, fetal, and neonatal morbidity and mortality. Chronic hypertension is defined as hypertension present prior to the pregnancy, is present before the 20th week of pregnancy or persists longer than 12 week postpartum.</td>
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<td><strong>Diagnosis</strong></td>
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<td>- The blood pressure criteria used to define hypertension are systolic pressure of &gt;140 mmHg, a diastolic pressure of &gt;90 mmHg or both. Chronic hypertension during pregnancy is most commonly classified as mild (BP&gt;140/90 mmHg) or as severe (BP&gt;180/110 mmHg). The diagnosis can be difficult to establish or distinguish from preeclampsia when the women presents with hypertension late in gestation.</td>
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**Criteria for Diagnosis of Chronic Hypertension in Pregnancy**

- **Mild:**
  - Systolic blood pressure > 140 mmHg
  - Diastolic blood pressure > 90 mmHg

- **Severe:**
  - Systolic blood pressure >180 mmHg
  - Diastolic blood pressure > 110 mmHg
- Use of antihypertensive medications before pregnancy
- Onset of hypertension before 20th week of gestation
- Persistence of hypertension beyond the usual postpartum period

- Hypertension should be documented on more than one occasion. Pressure should be taken with the patient in an upright position, after a 10-minute or longer rest period. For patients in the hospital, the blood pressure can be taken with either the patient sitting up or in the left lateral recumbent position with the patient’s arm at the level of the heart. The patient should not use tobacco or caffeine for 30 minutes preceding the measurement. Although validated devices can be used, a mercury sphygmomanometer is preferred.
- Chronic hypertension usually can be distinguished from preeclampsia because preeclampsia typically appears after the 20 weeks of gestation in a woman who was normotensive before pregnancy. Moreover, preeclampsia resolves during the postpartum period. Additionally, preeclampsia is frequently associated with proteinuria and characteristic symptoms such as headache, scotomata, or epigastric pain. Women with preeclampsia also may have
hemolysis, elevated liver enzymes, and low platelet count (HELLP) syndrome).

- The development of superimposed preeclampsia in pregnant women with chronic hypertension is common. The acute onset of proteinuria and worsening hypertension in women with chronic hypertension is suggestive of superimposed preeclampsia. In addition to testing for proteinuria, other tests that may be helpful include hemoglobin and hematocrit evaluation, platelet count, and liver function tests. These tests are useful in the diagnosis of the HELLP syndrome. Oliguria and an elevated hemoglobin/hematocrit level be may be indicative of preeclampsia. Serum creatinine levels also may be elevated in women with preeclampsia.
- An additional diagnostic complication may arise in women with chronic hypertension who begin prenatal care after 20 weeks of gestation. A physiologic decrease in blood pressure normally occurs in the second trimester, and may be exaggerated in women with chronic hypertension. This decrease may lead to an erroneous assumption that the blood pressure is normal at this stage of gestation. By the third trimester, the blood pressure usually returns to its pre-pregnancy level.

Effects of Chronic Hypertension on Pregnancy

- Chronic hypertension complicates pregnancy and is associated with several adverse outcomes, including premature birth, intrauterine growth restriction (IUGR), fetal demise, placental abruption, and cesarean delivery.
- As many as one third of women with severe chronic hypertension may have a small-for-gestational-age (SGA) infant, and two thirds may have a preterm delivery.

Effects of Pregnancy on Hypertension

- Several physiologic changes occur in pregnant women that can affect chronic hypertension.
- The increase in blood volume may further burden an already stressed heart and, along with the decrease in colloid oncotic pressure, may lead to cardiac decompensation.
- The physiologic decrease in blood pressure, which begins by the end of the first trimester and reaches its lowest level at 16-18 weeks of gestation. This change can mask the course or the detection of chronic hypertension in early pregnancy.

| Initial evaluation of the patient | • Ideally, a woman with chronic hypertension should be evaluated before conception to ascertain potentially reversible causes and possible end-organ involvement (e.g., heart or kidney). Clinical testing at the initial evaluation during pregnancy or preconceptionally may include electrocardiography, echocardiography, ophthalmologic examination, and renal ultrasonography.
- Women with significant renal disease (serum creatinine >1.4 mg/dL) may experience deterioration of renal function, although it may be difficult to separate the effects of pregnancy from the disease process.
- Most pregnant women with mild chronic hypertension have uneventful pregnancies with no end-organ involvement.
- Young women (younger than 30 years) in whom hypertension has been diagnosed for the first time in early pregnancy, may benefit from further evaluation for the potentially reversible causes. A young woman with severe hypertension (especially with no family history) who has not been previously evaluated may benefit from Doppler flow studies or magnetic resonance angiography to detect renal artery stenosis. |

| Laboratory evaluation | • In pregnant women with known essential hypertension, baseline laboratory evaluations that may prove clinically useful include tests of renal function such as serum creatinine, blood urea nitrogen, and 24-hour urine evaluation for total protein, creatinine clearance, liver function tests, hemoglobin, hematocrit evaluation, and platelet count. A serum uric acid level may also be of value.
- Periodic measurement of urine protein may be useful in detecting worsening renal disease or the development of superimposed preeclampsia. |

| Who to treat | • Treatment of women uncomplicated mild chronic hypertension is not beneficial because it does not improve perinatal outcome. Women with mild hypertension (140-179 mmHg systolic or 90-109 mmHg diastolic pressure) generally do well during pregnancy and as a rule, do not require antihypertensive medication. |
- Antihypertensive therapy should be used for pregnant women with severe hypertension for maternal benefit.
- It is reasonable not to start antihypertensive therapy in women with mild hypertension who become pregnant unless they have other complicating factors (e.g., cardiovascular or renal disease) and to either stop or reduce medication in women who are already taking antihypertensive therapy.
- Therapy could be increased or reinstituted for women with blood pressures exceeding 150-160 mmHg systolic or 100-110 mmHg diastolic.
- In women with severe chronic hypertension (systolic pressure >180 mmHg or diastolic pressure >110 mmHg), antihypertensive therapy should be initiated or continued.

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<th>Treatment</th>
<th>Methyldopa has been commonly used if treatment is needed. Labetalol, a combined alpha- and beta-blocker, also can be used during pregnancy as an alternative to methyldopa. Nifedipine, a calcium-channel blocker also has been used with limited experience. The beta-blocker atenolol may be associated with growth restriction and is not recommended for use in pregnancy. There was an increase in SGA infant born to those women who took oral beta-blockers for mild hypertension. Diuretics also have been used to treat chronic hypertension, but there has been concern regarding the potential effect of these medications on normal blood volume expansion associated with pregnancy. Angiotensin-converting enzymes (ACE) inhibitors are contraindicated during pregnancy and are associated with fetal and neonatal renal failure and death.</th>
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<th>Fetal surveillance</th>
<th>There is no consensus as to the most appropriate fetal surveillance test(s) or the interval and timing of testing in women with chronic hypertension. Thus, such testing should be individualized and based on clinical judgment and on severity of disease. A baseline ultrasonography obtained at 18-20 weeks of gestation is generally recommended. Ultrasonography may be repeated at 28-32 weeks of gestation and monthly thereafter until delivery to monitor fetal growth. If growth restriction is detected or suspected, fetal status should be monitored frequently with nonstress testing or biophysical profile testing. If growth restriction is not present and superimposed preeclampsia is excluded, these tests are not indicated.</th>
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<th>Timing of delivery</th>
<th>Pregnant women with uncomplicated chronic hypertension of a mild degree generally can be delivered vaginally at term. Cesarean delivery should be reserved for other obstetric indications. Women with mild hypertension during pregnancy and prior adverse pregnancy outcome (e.g., stillbirth) may be candidates for earlier delivery after documentation of fetal lung maturity. Women with severe chronic hypertension during pregnancy most often either deliver prematurely or have to be delivered prematurely for fetal or maternal indications. Delivery should be considered in all women with superimposed severe preeclampsia at or beyond 28 weeks of gestation and in women with mild superimposed preeclampsia at or beyond 37 weeks of gestation. In women with superimposed severe preeclampsia and the HELLP syndrome, delivery should be considered even remote from term.</th>
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<th>Intrapartum Management</th>
<th>The majority of pregnant women with chronic hypertension have uncomplicated mild hypertension and can be managed the same as normal, nonhypertensive women during the intrapartum period. Women with severe hypertension may require antihypertensive medications for acute elevation of blood pressure. It is generally recommended that antihypertensive medications can be given to women with preeclampsia for systolic blood pressure of &gt;160 mmHg or diastolic blood pressure of 105-110 mmHg or greater. If regional anesthetic techniques are used in women with severe hypertension, clinicians with specialized training in obstetrics anesthesia should be available. General anesthesia may pose a risk in pregnant women with severe hypertension or</th>
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superimposed preeclampsia. Intubation and extubation may be associated with acute and significant elevations in blood pressure.

- Magnesium sulfate should be used for women with superimposed severe preeclampsia to prevent seizures. However, its benefit in women with mild preeclampsia is unclear.

| Timeliness of Prenatal and Postpartum care | Once Aetna Better Health is notified that a member is pregnant, the Case Manager will work with the member to assure they receive timely prenatal and postpartum care. This will be measured using the HEDIS measures for Timeliness of Prenatal Care and Postpartum Care. |

References