

EVIDENCE-STATEMENT:

HEALTHY PREGNANCY (Screening, Testing, Counseling, Immunization, and Preventive Medication)

Preeclampsia (Screening)

Clinical Preventive Service Recommendations

U.S. Preventive Services Task Force Recommendation

In 1996, the U.S. Preventive Services Task Force (USPSTF) recommended that clinicians screen all pregnant women for preeclampsia by taking a blood pressure measurement at the first prenatal visit and periodically throughout the pregnancy.¹

Given the availability of new evidence, the USPSTF decided to update its 1996 recommendation. This work is in a queue to be scheduled for review.

**Other Recommended Guidance
American College of Obstetricians and Gynecologists (ACOG)**

The American College of Obstetricians and Gynecologists (ACOG) recommends that clinicians monitor blood pressure at the first prenatal visit, every 4 weeks until 28 weeks' gestation, every 2 to 3 weeks until 36 weeks' gestation, and weekly thereafter.²

Information Sources

The recommendations and supporting information contained in this document came from several sources, including the:

- American Academy of Pediatrics (AAP)
- American College of Obstetricians and Gynecologists (ACOG)
- Agency for Healthcare Quality and Research (AHRQ)
- National Vital Statistics
- Peer-reviewed research
- Preeclampsia Foundation
- World Health Organization (WHO)

The background and supporting information contained in this document is a compilation of research findings. All information presented in this document should be attributed to its referenced source and should not be considered a reflection of other organizations cited in the text.

Condition/Disease Specific Information

Epidemiology of Condition/Disease

Preeclampsia occurs when a woman with normal blood pressure experiences acute hypertension (140 mm Hg or higher systolic or 90 mm Hg or higher diastolic) or an increase blood pressure (an increase of ≥ 30 mm Hg in systolic blood pressure or ≥ 15 mm Hg in diastolic blood pressure) after 20 weeks' of gestation.³ While more common towards the end of pregnancy, preeclampsia can appear as early as 20 weeks' gestation. Symptoms of the condition include the presence of protein in the urine, swollen extremities, sudden weight gain, headaches, and changes in vision. However, many women report no symptoms.⁴

Preeclampsia affects 5% to 7% of all pregnancies.⁵ Women with preeclampsia are at an increased risk for placental abruption, acute renal failure, cerebral hemorrhage, disseminated intravascular coagulation, pulmonary edema,

circulatory collapse, and progression to full-blown eclampsia, an extremely serious condition characterized by maternal seizure activity, coma, and death. Preeclampsia can also cause severe problems for the fetus such as delayed growth, low birth weight, and the risk of premature birth.⁶

Preeclampsia/eclampsia is the third leading cause of maternal death worldwide¹ and is responsible for 18% of all maternal deaths in the United States.⁷ In the United States during 2002, preeclampsia/eclampsia caused:

- Maternal death in 56 out of every 100,000 live birth.⁸
- Neonatal death in 71 out of every 100,000 live births.⁹

**Condition/Disease
Risk Factors**

Research indicates that women that are pregnant for the first time, women with multiple gestations, molar pregnancy or fetal hydrops, chronic hypertension or diabetes, and those with a personal or family history of eclampsia or preeclampsia are at increased risk for preeclampsia and eclampsia. Overweight and obese women are also at increased risk of preeclampsia.¹⁰

Value of Prevention

**Economic Burden of
Condition/Disease**

According to the Hospital Cost Utilization Project (HCUP) Nationwide Inpatient Survey (NIS), spending on hypertension during pregnancy totaled nearly \$2.3 billion in the United States in 2003.¹¹ During that year, approximately 204,868 pregnant women were admitted to the hospital for hypertension, staying an average of 3.5 days. The average per-person charge for such hospital admissions totaled \$11,208.¹¹ Few data are available about the incremental costs for infants because of preeclampsia or the value of years of life lost due to preeclampsia and its complications, including maternal or neonatal deaths.

**Workplace Burden of
Condition/Disease**

The medical care costs of maternal and neonatal complications due to preeclampsia impose an additional financial burden on employer-sponsored health insurance plans.

Pregnancy-related complications affecting their own health or the health of their children may also require working mothers to take significant time off from work, resulting in additional productivity losses at the workplace.

**Economic Benefit
of Preventive
Intervention**

Screening, which involves minimal cost, and early treatment can minimize and prevent otherwise costly medical conditions. For example, although there is a lack of recent research, there is acceptance of the finding that women with preeclampsia or eclampsia stay in the hospital substantially longer than do normotensive women (i.e., women having blood pressure typical of the group to which they belong), regardless of their method of delivery. The longer hospital stays and higher rates of cesarean section delivery among women with preeclampsia and eclampsia lead to more costly obstetric medical claims. For example, 217,700 excess hospital days for delivery admissions were attributable to preeclampsia and eclampsia in 1986.¹⁰

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Estimated Cost of Preventive Intervention	Blood pressure screening is a standard procedure at each office visit and involves minimal cost. Screening for preeclampsia is conducted as a part of routine prenatal care and does not require a separate visit.
Estimated Cost of Treatment	Not Provided
Cost-Effectiveness and/or Cost-Benefit Analysis of Preventive Intervention	Complete cost-effectiveness analyses are not available.

Preventive Intervention Information

Preventive Intervention: Purpose of Screening	Screening allows clinicians to identify affected women early in the course of their pregnancies and begin treatment, thereby reducing the risk of complications for affected women <i>and</i> their infants.
Benefits and Risks of Intervention	Regular blood pressure screening during pregnancy is used to detect preeclampsia. Early detection of hypertension permits continuous monitoring and early intervention (e.g., bed rest, medications, early delivery). Although studies have not shown that early identification of hypertension and preeclampsia is associated with better outcomes, clinical experience suggests that to be the case. As such, the medical community considers regular blood pressure screening to be in the best interest of both mother and fetus. At the same time, blood pressure screening is simple, inexpensive, and acceptable to patients.
Initiation, Cessation, and Interval of Screening	ACOG recommends that clinicians monitor blood pressure at the first prenatal visit, every 4 weeks until 28 weeks' gestation, every 2 to 3 weeks until 36 weeks' gestation, and weekly thereafter.
Intervention Process	Screening for preeclampsia can be conducted via conventional measures (arm cuff and a mercury calibrated aneroid or digital sphygmomanometer) or ambulatory blood pressure monitoring. Before a diagnosis of preeclampsia can be made, the patient must have two elevated blood pressure readings (defined as $\geq 140/90$ mmHg) taken at least 6 hours apart. Preeclampsia may also be diagnosed if a woman has undergone an increase of 30 mmHg or more in systolic pressure or 15 mmHg or more in diastolic pressure since becoming pregnant. Clinicians should be aware that overweight and obese patients may need to be monitored more closely, especially if they have preexisting hypertension, due to their increased risk of preeclampsia. ²
Treatment Information	Treatment methods for preeclampsia include bed rest, medication, and delivery. Health benefits should include provisions for follow-up and treatment services.

Strength of Evidence for the Clinical Preventive Service

The level of evidence supporting the recommendations contained in this section is described below.

Recommended Guidance:

The American College of Obstetricians and Gynecologists (ACOG)

Strength of Evidence: Not Specified

- The American College of Obstetricians and Gynecologists recommends screening pregnant women for preeclampsia by monitoring blood pressure at the first prenatal visit, every 4 weeks until 28 weeks' gestation, every 2 to 3 weeks until 36 weeks' gestation, and weekly thereafter.²

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Campbell KP, Chattopadhyay S. Preeclampsia evidence-statement: screening. In: Campbell KP, Lanza A, Dixon R, Chattopadhyay S, Molinari N, Finch RA, editors. *A Purchaser's Guide to Clinical Preventive Services: Moving Science into Coverage*. Washington, DC: National Business Group on Health; 2006.

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Preeclampsia (Screening)

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