

EVIDENCE-STATEMENT:

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

Asymptomatic Bacteriuria (Screening)

Clinical Preventive Service Recommendations

<p>U.S. Preventive Services Task Force Recommendation</p>	<p>The U.S. Preventive Services Task Force (USPSTF) strongly recommends screening for asymptomatic bacteriuria with urine culture for pregnant women at 12 to 16 weeks' gestation.¹</p>
<p>Evidence Rating: A (Strongly Recommended/ Good Evidence)</p>	<p>The USPSTF found good evidence that screening pregnant women for asymptomatic bacteriuria with urine culture significantly reduces symptomatic urinary tract infections, low birth weight, and preterm delivery. The benefits of screening and treatment substantially outweigh any potential harm.¹</p>
<p>Evidence-Based Recommendation American Academy of Family Physicians (AAFP)</p>	<p>The American Academy of Family Physicians (AAFP) strongly recommends that all pregnant women be screened for asymptomatic bacteriuria using urine culture at 12 to 16 weeks' gestation or at the first prenatal visit if after that time.²</p>
<p>Evidence Rating: SR (Strongly Recommends)</p>	<p>Good quality evidence exists which demonstrates the substantial net benefit of screening for asymptomatic bacteriuria over harm; the intervention is perceived to be cost-effective and acceptable to nearly all patients.²</p>
<p>Recommended Guidance American College of Obstetricians and Gynecologists (ACOG)</p>	<p>The American College of Obstetricians and Gynecologists (ACOG) recommends that clinicians screen all pregnant women for asymptomatic bacteriuria by taking a urine culture at the first prenatal visit. They further recommend that a repeat urine culture be obtained during the third trimester.³</p>
<p>Evidence Rating:</p>	<p>Not Specified</p>
<p>Information Sources</p>	<p>The recommendations and supporting information contained in this document came from several sources, including the:</p> <ul style="list-style-type: none">• American Academy of Family Physicians (AAFP)• American College of Obstetricians and Gynecologists (ACOG)• Peer-reviewed research• U.S. Preventive Services Task Force (USPSTF) <p>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.</p>

Condition/Disease Specific Information

Epidemiology of Condition/Disease

Asymptomatic bacteriuria in pregnancy is defined at the presence of a significant amount of bacterial growth in a urine culture taken from a urine sample⁴ and the absence of symptoms of a urinary infection such as pain or urgency.⁵

Asymptomatic bacteriuria occurs in approximately 2% to 14% of pregnant women and 80,000 to 400,000 cases occur each year in the United States.⁶

Without treatment, 20% to 40% of asymptomatic bacteriuria cases among pregnant women progress to pyelonephritis, a serious kidney infection. Pyelonephritis complicates 1% to 2% of all pregnancies and affects 100,000 women each year.⁶ It is also a leading cause of antepartum hospitalization.¹ With appropriate screening and treatment, only 3% of bacteriuria cases will progress to pyelonephritis.⁶

Condition/Disease Risk Factors

Bacteriuria increases the risk for preterm delivery and low birth weight and may also increase the risk of fetal and perinatal mortality.^{1,6} If fact, the risk of preterm delivery is twice as high among women who had asymptomatic bacteriuria at some point during pregnancy compared to those who did not.⁶

Risk factors for asymptomatic bacteriuria during pregnancy include low socioeconomic urinary tract infections (UTIs) in childhood. Other risk factors include preexisting medical conditions such as diabetes, sickle cell disease, immunosuppression (e.g., HIV/AIDS), urinary tract anatomic anomalies, and spinal cord injuries. UTIs experienced before pregnancy are predictive of the diagnosis of asymptomatic bacteriuria at the first prenatal visit.⁶

Value of Prevention

Economic Burden of Condition/Disease

Specific data about the economic burden of UTIs among pregnant women are not available. The annual cost of all community-acquired urinary tract infections in 1995 was estimated to be approximately \$1.6 billion, including \$659 million in direct costs and \$936 million in indirect costs.⁷ The direct and indirect costs of acute pyelonephritis were estimated to be \$2.14 billion (in year 2000 dollars).⁸

Workplace Burden of Condition/Disease

Lost productivity due to absenteeism associated with pregnancy-related complications of UTIs among working women (in addition to the increased medical care costs of such complications) has important financial ramifications for employers. Specific data on the workplace burden of pregnancy-related UTIs are not available.

Economic Benefit of Preventive Intervention

The preventive treatment of asymptomatic bacteriuria during pregnancy produces economic benefits such as preventing cases of cystitis, pyelonephritis, and premature births. In addition, preventing cases of mild and serious pyelonephritis produce significant improvements in quality of life.⁹

<p>Estimated Cost of Preventive Intervention</p>	<p>In 2004, the private-sector cost of screening for bacteriuria averaged \$17 per screen; approximately 95% of all paid claims fell within the range of \$1 to \$45 per screen.¹⁰</p>
<p>Estimated Cost of Treatment</p>	<p>One cost-effectiveness study estimated the cost of antibiotic treatment to be \$11, based on a 7-day course of the generic form of commonly used antibiotics for the treatment of asymptomatic bacteriuria (in year 1994 dollars).⁷</p>
<p>Cost-Effectiveness and/or Cost-Benefit Analysis of Preventive Intervention</p>	<p>Research shows that screening for asymptomatic bacteriuria using urine culture, when compared with use of dipstick analysis, is cost-effective among populations where the prevalence of asymptomatic bacteriuria is at least 9%.⁶</p>
<p>Preventive Intervention Information</p>	
<p>Preventive Intervention: Purpose of Screening</p>	<p>The purpose of screening for and treating asymptomatic bacteriuria in pregnancy is the prevention of poor maternal and infant outcomes associated with infection including pyelonephritis and prematurity.</p>
<p>Benefits and Risks of Intervention</p>	<p>Good evidence exists that screening pregnant women for asymptomatic bacteriuria with urine culture (rather than urinalysis) — and treating those with the infection — significantly reduces symptomatic urinary tract infections, low birth weight, and preterm delivery. A urine specimen obtained at 12 to 16 weeks' gestation will detect approximately 80% of patients with asymptomatic bacteriuria.^{6,11}</p> <p>The USPSTF did not identify any information on the potential harms of screening for asymptomatic bacteriuria.¹¹</p>
<p>Initiation, Cessation, and Interval</p>	<p>All pregnant women should be screened for asymptomatic bacteriuria at 12 to 16 weeks' gestation.^{1,3} The optimal frequency of subsequent urine testing during pregnancy is uncertain and is thus left to the discretion of the clinician. The American College of Obstetricians and Gynecologists (ACOG) recommends that clinicians re-screen all pregnant women for asymptomatic bacteriuria by performing a urine culture during the third trimester.³</p>
<p>Intervention Process</p>	<p>Urine culture is the gold standard for detecting asymptomatic bacteriuria.¹ Other types of screening tests commonly used in the primary care setting (such as dipstick analysis and direct microscopy) are not as accurate for detecting bacteriuria in asymptomatic persons.¹</p>
<p>Treatment Information</p>	<p>Asymptomatic bacteriuria can be treated with a range of antibiotics. A Cochrane Collaboration review of 14 randomized trials of asymptomatic bacteriuria in pregnant women showed that antibiotic treatment was significantly associated with decreased incidence of pyelonephritis. The review also determined that antibiotic treatment reduced the rate of preterm delivery and low birth weight.¹²</p> <p>Health benefits should include provisions for diagnostic and treatment services.</p>

Strength of Evidence for the Clinical Preventive Service

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

Evidence-Based Research:

U.S. Preventive Services Task Force (USPSTF)

Strength of Evidence: A (Strongly Recommended/Good Evidence)

- The U.S. Preventive Services Task Force (USPSTF) strongly recommends screening for asymptomatic bacteriuria with urine culture for pregnant women at 12 to 16 weeks' gestation.¹ The USPSTF found good evidence that screening pregnant women for asymptomatic bacteriuria with urine culture significantly reduces symptomatic urinary tract infections, low birth weight, and preterm delivery. The benefits of screening and treatment substantially outweigh any potential harm.¹

The American Academy of Family Physicians (AAFP)

Strength of Evidence: SR (Strongly Recommended)

- AAFP strongly recommends that all pregnant women be screened for asymptomatic bacteriuria using urine culture at 12 to 16 weeks' gestation or at the first prenatal visit if after that time. Good quality evidence exists which demonstrates the substantial net benefit of screening for asymptomatic bacteriuria over harm; the intervention is perceived to be cost-effective and acceptable to nearly all patients.²

Recommended Guidance:

American College of Obstetricians and Gynecologists (ACOG)

Strength of Evidence: Not Specified

- The American College of Obstetricians and Gynecologists (ACOG) recommends that clinicians screen all pregnant women for asymptomatic bacteriuria by taking a urine culture at the first prenatal visit. They further recommend that a repeat urine culture be obtained during the third trimester.³

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