Urine Culture Testing for Bacteria

Reimbursement Policies

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Important Note About This Policy

Oscar's reimbursement policies serve as a guide to assist providers with accurate claims submission and outline the basis for reimbursement if the service is a covered benefit. Coverage does not guarantee reimbursement; services must meet authorization and medical necessity guidelines for the procedure, diagnosis, and member's state of residence.

Our policies provide general reference for described services and do not cover every aspect of reimbursement. Other factors may supplement, modify, or supersede this policy, including legislative mandates, provider contracts, member benefit documents, and/or other reimbursement, medical, or drug policies. Unless otherwise noted within the policy, our reimbursement policies apply to both participating and non-participating professional providers and facilities.

Providers are responsible for submission of accurate documentation of services performed. Claims should be coded appropriately according to industry standard coding guidelines including, but not limited to: Uniform Billing Editor, American Medical Association, Current Procedural Terminology, CPT® Assistant, Healthcare Common Procedure Coding System, ICD-10 CM and PCS, National Drug Codes, Diagnosis Related Group guidelines, Centers for Medicare and Medicaid Services National Correct Coding Initiative Policy Manual, CCI table edits and other CMS guidelines. If appropriate coding/billing guidelines or current reimbursement policies are not followed, we may deny the claim and/or recoup claim payment.

Oscar routinely updates reimbursement policies, and new versions are published on this website. If you print a copy of this policy, please be aware that the policy may be updated later. Oscar communicates policy updates to providers via update notifications.

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I. Policy Description

Bacteriuria is the presence of bacteria in the urine. Urinary tract infections (UTIs) can occur in the urinary system and can be either symptomatic or asymptomatic. UTIs can include cystitis, an infection of the bladder or lower urinary tract; pyelonephritis, an infection of the upper urinary tract or kidney; urosepsis; urethritis; and male-specific conditions, such as bacterial prostatitis and epididymitis.[1,2] Typically, in an infected person, bacteriuria, and pyuria (the presence of pus in the urine) are present and can be present in both symptomatic and asymptomatic UTIs. A urine culture can be performed to determine the presence of bacteria and to characterize the bacterial infection.[3]

For guidance on pathogen panel testing from urine samples, please see AHS-G2149 Pathogen Panel Testing.

II. Related Policies

Policy Number	Policy Title
AHS-G2149	Pathogen Panel Testing

III. Indications and/or Limitations of Coverage

Application of criteria is dependent upon an individual's benefit coverage at the time of the request. Specifications pertaining to Medicare and Medicaid can be found in the "Applicable State and Federal Regulations" section of this policy document.

1) For pregnant individuals, urine culture testing (with isolate identification and antibiotic susceptibilities if applicable) for a urinary tract infection (UTI) **MEETS CRITERIA**.

2) For asymptomatic individuals undergoing urological interventions which breach the mucosa, urine culture testing (with isolate identification and antibiotic susceptibilities if applicable) prior to the procedure **MEETS CRITERIA**.

3) For individuals exhibiting at least one sign or symptom of a possible UTI or bacteriuria (see Note 1 below), urine culture testing (with isolate identification and antibiotic susceptibilities if applicable) **MEETS CRITERIA**.

4) To assess pyelonephritis, urine culture testing (with isolate identification and antibiotic susceptibilities if applicable) **MEETS CRITERIA**.

5) For all other instances of asymptomatic UTI or asymptomatic bacteriuria not described above, urine culture testing (with isolate identification and antibiotic susceptibilities if applicable) **DOES NOT MEET CRITERIA**.

6) For individuals that show evidence of clinical resolution of infection, follow-up urine culture testing for an uncomplicated UTI **DOES NOT MEET CRITERIA**.

The following does not meet criteria due to a lack of available published scientific literature confirming that the test(s) is/are required and beneficial for the diagnosis and treatment of an individual's illness.

7) Urine culture testing (with isolate identification and antibiotic susceptibilities if applicable) **DOES NOT MEET CRITERIA** in **any** of the following situations:
   a) As a part of initial screening for asymptomatic prostatitis.
   b) As a part of assessment or prognosis of prostate biopsy.

NOTES:

Note 1: Signs and symptoms of UTI/bacteriuria:

- Symptoms of a bladder infection include pain or burning while urinating, frequent urination, feeling the need to urinate despite having an empty bladder, bloody urine, and/or pressure or cramping in the groin or lower abdomen.[4]
- Symptoms of a kidney infection include fever, chills, lower back pain or pain in the side of your back, and/or nausea or vomiting.[4]
- Symptoms of a UTI in infants, babies and toddlers include fever, belly pain or fullness, strong, foul-smelling urine, weight loss, irritability, vomiting, poor feeding, fatigue, yellowish skin or eyes, and/or diarrhea.[5]
- Symptoms of a UTI in older kids include daytime accidents or bedwetting after being fully potty trained, painful or difficult urination, pain or discomfort in their lower belly, back or side, urine that smells bad, is cloudy or has blood in it, nausea and/or vomiting, fever and chills, fatigue, and/or a frequent, urgent need to urinate, especially if only a small amount comes out when they go.[5]

- Symptoms of a UTI in older, frail people or people with a urinary catheter include leaking urine (wetting themselves or incontinence) that is worse than usual, new shivering or shaking (rigors), and/or changes in behavior, such as acting agitated or confused (delirium).[6]

IV. Table of Terminology

Term	Definition
AAP	American Academy of Pediatrics
ABIM	American Board of Internal Medicine
ABP	Acute bacterial prostatitis
ACOG	American College of Obstetricians and Gynecologists
AMDA	The Society for Post-Acute and Long-Term Care Medicine
ARESC	Antimicrobial Resistance Epidemiological Survey on Cystitis
ASB	Asymptomatic bacteriuria
ASPN	American Society of Pediatric Nephrology
AUA	American Urological Association
AUC	Area under the curve
BP	Bacterial prostatitis
CAUTI	Catheter-associated urinary tract infection
CBP	Chronic bacterial prostatitis
CDC	Centers for Disease Control and Prevention
CFU	Colony-forming unit
CLIA ’88	Clinical Laboratory Improvement Amendments of 1988
CMS	Centers For Medicare and Medicaid
CPS	Canadian Paediatric Society
CUA	Canadian Urological Association
cUTI	Complicated urinary tract infection
DNA	Deoxyribonucleic acid
DOR	Diagnostic odds ratio
EAU	European Association of Urology
EQUC	Enhanced quantitative urine culture
FDA	Food and Drug Administration
FUM	Female urinary microbiota
ICU	Intensive care unit
IDSA	Infectious Diseases Society of America
KT	Kidney transplant
LCD	Local coverage determination
LDT	Laboratory-developed test
MRSA	Methicillin-Resistant *Staphylococcus Aureus*
MSSA	Methicillin-Sensitive *Staphylococcus Aureus*
NAAT	Nucleic acid amplification test
NCD	National coverage determination
NICE	National Institute for Health and Care Excellence
NSQIP	National Surgical Quality Improvement Program
OR	Odds ratio
PA	Prior authorization

PCR	Polymerase chain reaction
PSA	Prostate-specific antigen
RNA	Ribonucleic acid
rUTIs	Recurrent urinary tract infection
SCI	Spinal cord injury
SOT	Solid organ transplant
SPA	Suprapubic aspiration
SSI	Surgical site infection
SUFU	Society Of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction
tNGS	Targeted next-generation sequencing
UA	Urinalysis
USPSTF	United States Preventive Services Task Force
UTI	Urinary tract infection
WHO	World Health Organization

V. Scientific Background

Urinary tract infections (UTIs) can be either symptomatic or asymptomatic and can be classified as uncomplicated or complicated. Uncomplicated UTIs are "acute, sporadic or recurrent cystitis limited to non-pregnant [individuals] with no known relevant anatomical and functional abnormalities within the urinary tract or comorbidities."[2] All other UTIs that are not defined as uncomplicated are complicated UTIs. Complicated UTIs include "UTIs in a patient with an increased chance of a complicated course: i.e. all men, pregnant [individuals], patients with relevant anatomical or functional abnormalities of the urinary tract, indwelling urinary catheters, renal diseases, and/or with other concomitant immunocompromising diseases for example, diabetes."[2] *Escherichia coli* is the most common cause of complicated UTIs; however, "other uropathogens include other Enterobacteriaceae (such as *Klebsiella* spp and *Proteus* spp), *Pseudomonas*, enterococci, and staphylococci (methicillin-sensitive *Staphylococcus aureus* [MSSA] and methicillin-resistant *S. aureus* [MRSA])."[1] Even though both bacteriuria and pyuria are often present in UTIs, their presence alone is not indicative of a symptomatic infection.

The presence of bacteriuria does not guarantee negative outcomes for a patient. In fact, the paradigm of the sterility of the bladder environment has changed over recent years. At least for females, the presence of female urinary microbiota (FUM) is believed to occur naturally and has been documented using sensitive bacterial DNA screening tests on asymptomatic females.[7] Beneficial microbes, such as vaginal strains of *Lactobacillus*, can inhibit the grown of uropathogenic bacteria, including *E. coli* .[7,8] Over-prescribing antibiotics, especially in cases of asymptomatic bacteriuria, can lead to both an eradication of beneficial bacterial flora and an emergence of antibiotic-resistant bacteria. Prescribing antibiotics as a prophylactic measure or in the instance of asymptomatic bacteriuria is detrimental because it is of limited value and can also increase incidences of drug-resistance. A study in 2002 by Harding and colleagues show that antibiotic treatment in diabetic individuals with asymptomatic bacteriuria did not result in a decrease of future symptomatic UTIs as compared to the control group; in fact, the experimental group had higher rates of adverse antimicrobial reactions.[9] Even though the evidence-based guidelines by various societies, such as the EAU,[2] do not recommend performing urine testing or treatment for asymptomatic bacteriuria, inappropriate treatment is still occurring; in fact, one study by Cope and colleagues show that 32% of catheter-associated cases of asymptomatic bacteriuria and asymptomatic UTI received inappropriate treatment.[10] The Antimicrobial Resistance Epidemiological Survey on Cystitis (ARESC) shows that up to 10.3% of *E. coli* in UTIs are "resistant to at least three different classes of antimicrobial agents" with ampicillin having the highest degree of resistance (48.3%). This is a large study of 4264 individuals from ten different countries to show that antibiotic-resistance is of international importance.[11]

Signs and Symptoms of UTIs

Symptoms of a UTI in infants, babies and toddlers:[5]

- Fever
- Belly pain or fullness
- Strong, foul-smelling pee
- Weight loss
- Irritability
- Vomiting
- Poor feeding
- Fatigue
- Yellowish skin or eyes
- Diarrhea

Younger children may not be able to tell you about UTI symptoms they are having. While fever is the most common sign of UTI in infants and toddlers, most children with fever do not have a UTI.[4]

Symptoms of a UTI in older kids:[5]

- A frequent, urgent need to pee, especially if only a small amount comes out when they go
- Daytime accidents or bedwetting after being fully potty trained
- Painful or difficult urination
- Pain or discomfort in their lower belly, back or side
- Pee that smells bad, is cloudy or has blood in it
- Nausea and/or vomiting
- Fever and chills
- Fatigue

Symptoms of a UTI in Adults:[4]

- Pain or burning while urinating
- Frequent urination
- Feeling the need to urinate despite having an empty bladder
- Bloody urine
- Pressure or cramping in the groin or lower abdomen
- Fever
- Chills
- Lower back pain or pain in the side of your back
- Nausea or vomiting

Symptoms of a UTI in older, frail people or people with a urinary catheter:[6]

In addition to the signs and symptoms seen in the general population, older, frail people who have problems with memory, learning and concentration (such as dementia), and people with a urinary catheter, symptoms of a UTI may also include:

- Changes in behaviour, such as acting agitated or confused (delirium)
- Leaking pee (wetting themselves or incontinence) that is worse than usual
- New shivering or shaking (rigors)

Symptoms of a UTI in Immunocompromised individuals:[12]

Immunocompromised individuals generally experience the same primary clinical symptoms of UTIs as the general population, but their symptoms may be more severe and persist for more than seven days

- Urinary frequency
- Urgency
- Dysuria (painful urination)
- Hematuria (blood in urine)
- Suprapubic pain (pain above the pubic bone)
- Fever
- Chills
- Flank pain (pain in the side or back)
- Sepsis of urological origin

Analytical Validity

Urinalysis (UA) to detect nitrite and leukocyte esterase to indicate the presence of bacteria is an accepted laboratory practice. One report, though, has shown that the use of nitrite has "a sensitivity of 3%, a specificity of 97%, and a negative predictive value of 55%."[13] A 2004 meta-analysis study asserts that the "sensitivities of the combination of both tests vary between 68 and 88% in different patient groups, but positive test results have to be confirmed."[14] They did note that the accuracy of the leukocyte esterase testing was higher in urology patients with a diagnostic odds ratio (DOR) of 276 as compared to the accuracy of nitrites (for example, in elderly patients DOR = 108).[14]

Urine culture is considered a "gold standard" for detecting the presence of bacteria in urine.[15,16] That being said, "the interpretation of culture results can be considered as more of an art than a science. A urine culture result depends on so many variables, such as appropriate collection, transport, and the limits of the methods of detection. The reliability of single positive urine culture in diagnosing UTI is only 80%, rising to 90% if a repeat culture shows identical results."[15] This is using the definition of bacteriuria as being 10^5 bacteria/ml of urine.

A potential future alternative to the urine culture could be multiplex PCR-based molecular testing, which Wojno, et al. (2020) had found to be noninferior to urine culture for detection and identification of the bacteria. Agreement between the two testing methods was 90%, which exceeded the 85% noninferiority threshold. The multiplex PCR was also able to detect bacteria in 36% of symptomatic patients who had negative urine cultures and detected more polymicrobial infections than urine culture in a shorter amount of time (6 hours vs 48 hours for urine culture).[17]

Clinical Utility and Validity

A study in 2010 by Bruyere, et al. (2010) using 353 patients undergoing prostate biopsy show that the routine use of obtaining a pre-operative urine culture is not clinically relevant to positive outcomes. "Of the 353 men, 12 had a pre-biopsy-positive bacterial culture and underwent prostate biopsy without any infectious complication. Fifteen patients with a negative pre-biopsy culture developed a post-biopsy-positive bacterial culture, but remained asymptomatic without any treatment. Only four men from the group without pre-biopsy bacteriuria developed an infectious complication, requiring 3 weeks of antibiotic therapy." Both experimental and control groups had similar rates of complication, suggesting "that routine urine bacterial culture before prostate biopsy is not useful when antibiotic prophylaxis and enema are performed."[18]

The method of obtaining the urine sample for culture testing is important. This is especially true for children. A 2017 study of 4808 acutely ill children demonstrated that there was modest agreement between the results obtained if the test was conducted by a research laboratory versus a health service laboratory; however, the method of obtaining the urine sample

did have significance. The calculated areas under the receiver-operator curve (AUC) for UTI ranged from 0.75-0.86 if the sample was obtained using a clean-catch method versus AUC values of 0.65-0.79 if the sample was obtained using "nappy pad samples." The authors conclusions were that urine cultures did not necessarily have to be sent to a research lab for testing, but that "primary care clinicians should try to obtain clean-catch samples, even in very young children."[19] A smaller study of 83 infants compared the use of urine obtained either via bladder catheterization or suprapubic aspiration (SPA).[20] All 83 infants had previously tested positive using urine culture samples obtained via bladder catheterization. Then, they had samples removed by SPA. The SPA samples were used in both urinalysis and urine culture testing, and "only 24 (28.9%) and 20 (24%) yielded positive urine culture and abnormal urinalysis data, respectively." This indicates a 71.1% false positive result rate if the urine sample is obtained using bladder catheterization. "In infants younger than 12 months, SPA is the best method to avoid bacterial contamination, showing better results than transurethral catheterization."[20]

Another study by Ducharme, et al. (2007) researched the use of either urine cultures and/or reagent test strips for use in diagnosing UTIs in elderly patients. The study consisted of 100 elderly patients with one group having no symptoms and non-infectious complaints and a second group "presenting with acute confusion, weakness or fever but no apparent urinary symptoms." Their results show that "of the 33 positive cultures, ten had negative reagent strips. Thirteen of the 14 positive nitrite tests were culture positive for a specificity of 92.8% and a sensitivity of 36.1%. Positive cultures did not infer a diagnosis of UTI. Of the 67 positive reagent strips, 41 (61.2%) were associated with negative cultures." They conclude that, "in the elderly, reagent testing is an unreliable method of identifying patients with positive blood cultures. Moreover, positive urine culture rates are only slightly higher in patients with vague symptoms attributable to UTI than they are in (asymptomatic) patients treated for non-urologic problems, which suggests that many positive cultures in elderly patients with non-focal systemic symptoms are false positive tests reflecting asymptomatic bacteriuria and not UTIs."[21]

A study by Price, et al. (2016) show that using an enhanced quantitative urine culture (EQUC) increased the detection of microorganisms in UTIs. This study consisted of 150 female patients using an initial UTI symptom assessment questionnaire to divide them into symptomatic and asymptomatic groups. Both sets underwent culture testing using both conventional urine culture testing and an EQUC method. "Compared to expanded-spectrum EQUC, standard urine culture missed 67% of uropathogens overall and 50% in participants with severe urinary symptoms. Thirty-six percent of participants with missed uropathogens reported no symptom resolution after treatment by standard urine culture results." Their protocol resulted in an "84% uropathogen detection relative to 33% detection by standard urine culture."[22]

Cantey, et al. (2015) evaluated the utility of a Gram stain relative to UA. In reviewing 312 pediatric patients with suspected UTIs who had urine cultures, UA, and Gram stain performed, the researchers concluded that the UA "has excellent negative predictive value that is not enhanced by urine Gram stain and that antibiotic selection did not vary based on the urine Gram stain result." When compared to the urine Gram stain, the UA had equal sensitivity (97.3% vs 97.5%) and a higher specificity (85% vs 74%). This could allow the UA to take precedent as a test performed over the Gram stain due to its increased efficiency and lower cost.[23]

Petty, et al. (2019) evaluated the risk factors and clinical outcomes of treating asymptomatic bacteriuria (ASB) in hospitalized patients. There were 2733 patients with ASB (defined as "positive urine culture without any documented signs or symptoms attributable to urinary tract infection") included in the study. A total of 2259 patients were treated with antibiotics for an average of seven days. Certain characteristics tended to correlate with ASB treatment, such as positive urinalysis (odds ratio [OR] = 2.83), leukocytosis (OR = 1.55), and dementia (OR = 1.57). However, treatment of ASB was found to be associated with longer duration of hospitalization after urine testing (four vs three days; relative risk, 1.37), although no other differences in secondary outcomes were identified. The authors concluded that "hospitalized patients with ASB commonly receive inappropriate antibiotic therapy. Antibiotic treatment did not appear to be associated with improved outcomes; rather, treatment may be associated with longer duration of hospitalization after urine testing." The authors also recommended stewardship efforts to reduce inappropriate treatment.[24]

Coussement, et al. (2019) investigated the prevalence of ASB among kidney transplant patients beyond two months post-transplant. The authors identified 500 post-transplant patients, of which 17 had ASB (3.4%). Further, of the 76 patients that were 2-12 months post-transplant, only one had ASB, and of the other 424 patients, 16 patients had ASB. The authors concluded that the prevalence of ASB past the second month of kidney transplant was low and that further studies were needed to ascertain the cost-effectiveness of the screen-and-treat strategy in this population.[25] This finding regarding screening and treating ASB was confirmed by Fontserè, et al. (2021), who found that the "treatment of A[S]B diminished the microbiological cure and increased the rates of microbiologic relapses and reinfections… treated A[S]B patients showed a trend of developing symptomatic urinary tract infection in the following six months."

Chang, et al. (2025) demonstrated that traditional urine culture methods have major limitations in speed, sensitivity, and their ability to detect polymicrobial or fastidious organisms factors that significantly impact diagnostic accuracy and timely treatment. Their findings show that targeted next-generation sequencing (tNGS) provides markedly faster results, higher concordance with true-positive infections, superior detection of co-infections, and more comprehensive identification of antibiotic resistance genes. These results support incorporating tNGS as a complementary or second-line diagnostic tool when standard cultures are negative or inconclusive. Such an approach could reduce missed infections, strengthen antimicrobial stewardship through more precise susceptibility prediction, and improve patient outcomes by shortening the time to effective therapy.[27]

VI. Guidelines and Recommendations

Choosing Wisely

Choosing Wisely, an initiative by the American Board of Internal Medicine (ABIM) Foundation, consists of several national organizations representing medical specialists that write recommendations within their respective field to help choose care based on scientific evidence and to help reduce testing redundancy.

2019 AMDA-The Society for Post-Acute and Long-Term Care Medicine (AMDA)

In 2019 and 2022, the AMDA updated their earlier 2017 Choosing Wisely guideline concerning the use of urine cultures. Due to over-use of antibiotics and overtreatment of UTIs, they state "Don't obtain urine tests until clinical criteria are met." Since the urine culture would have a high likelihood of yielding a positive result in an otherwise asymptomatic case, this "contributes to the over-use of antibiotic therapy in this setting, leading to an increased risk of diarrhea or other adverse drug events, resistant organisms and infection due to *Clostridioides difficile*." They also note that "the finding of asymptomatic bacteriuria may lead to an erroneous assumption that a UTI is the cause of an acute change of status, hence failing to detect or delaying the timelier detection of five signs and symptoms likely indicative of uncomplicated cystitis. These include dysuria, and one or more of the following: frequency, urgency, supra-pubic pain or gross hematuria."[28]

2018 American Academy of Pediatrics-Section on Nephrology (ASPN) and the American Society of Pediatric Nephrology (AAP)

The AAP Section on Nephrology and the ASPN issued a joint Choosing Wisely recommendation stating, "Avoid ordering follow-up urine cultures after treatment for an uncomplicated urinary tract infection (UTI) in patients that show evidence of clinical resolution of infection. Studies have shown that clinical resolution of infection is adequate for determining effectiveness of antibiotic therapy after treatment for a UTI."[29]

2016 American Academy of Pediatrics (AAP)

The AAP updated their Choosing Wisely recommendation in 2022: "Avoid the use of surveillance cultures for the screening and treatment of asymptomatic bacteriuria. There is no evidence that surveillance urine cultures or treatment of asymptomatic bacteriuria is beneficial. Surveillance cultures are costly and produce both false positive and false negative results. Treatment of asymptomatic bacteriuria is harmful and increases exposure to antibiotics, which is a risk factor for

subsequent infections with a resistant organism. This also results in the overall use of antibiotics in the community and may lead to unnecessary imaging."[30]

European Association of Urology (EAU)

The EAU has guidelines for urological infections that are updated annually. With respect to **ASB**, they state (all with a 'Strong' strength of rating), "Do not screen or treat asymptomatic bacteriuria in the following conditions:

- Individuals without risk factors;
- Patients with well-regulated diabetes mellitus;
- Post-menopausal [individuals];
- Elderly institutionalised patients;
- Patients with dysfunctional and/or reconstructed lower urinary tracts;
- Patients with renal transplants;
- Patients prior to cardiovascular surgeries (Weak);
- Patients with recurrent urinary tract infections."

They do recommend with a 'Strong' rating to "screen for and treat asymptomatic bacteriuria prior to urological procedures breaching the mucosa" and a 'Weak' rating to "screen for and treat asymptomatic bacteriuria in pregnant [individuals] with standard short course treatment or single dose fosfomycin trometamol." They do recommend to "diagnose **recurrent UTI** by urine culture" with a 'Strong' rating. Please note that recurrent UTI indicates that the occurrences are symptomatic. It is further specified that "A urine culture must therefore be taken prior to such interventions."

With respect to **uncomplicated cystitis**, they give a 'Strong' rating to only perform urine culture analysis "in the following situations:

- Suspected acute pyelonephritis or systemic UTI;
- Symptoms that do not resolve or recur within four weeks after the completion of treatment;
- Individuals who present with atypical symptoms;
- Pregnant [individuals]."

The EAU gives a 'Weak' recommendation to "use urine dipstick testing for diagnosis of acute uncomplicated cystitis."

In cases of uncomplicated **pyelonephritis**, the EAU recommends with a 'Strong' rating to "perform urinalysis (e.g. using the dipstick method), including the assessment of white and red blood cells and nitrite, for routine diagnosis" and to "perform urine culture and antimicrobial susceptibility testing in patients with pyelonephritis." With respect to the 2026 revision, the EAU emphasizes avoiding nitrofurantoin, pivmecillinam, and oral fosfomycin due to inadequate tissue penetration.

The EAU defines **complicated UTI** (cUTI) as occurring "in an individual with factors (e.g., diabetes, immunosuppression, anatomical or functional urinary tract abnormalities) that may worsen clinical course or treatment success." Other factors associated with cUTIs include vesicoureteral reflux, recent history of instrumentation, UTI in males, pregnancy, and healthcare-associated infections. "Laboratory urine culture is the recommended method to determine the presence or absence of clinically significant bacteriuria in patients suspected of having a cUTI."

For **catheter-associated UTIs** (CAUTI), the EAU recommends with 'Strong' ratings to "not carry out routine urine culture in asymptomatic catheterised patients," to "not use pyuria as sole indicator for catheter-associated UTI," and to "not use the presence or absence of odorous or cloudy urine alone to differentiate catheter-associated asymptomatic bacteriuria from catheter-associated UTI." Additionally, they suggest to replace or remove the indwelling catheter before starting antimicrobial therapy and do not use prophylactic antimicrobials to prevent CAUTI, both with a 'Strong' rating.[31]

In cases of **urethritis,** the EAU states that "Clinicians should always perform point-of-care diagnostics (e.g. Gram staining, first-void urine with microscopy, leukocyte esterase testing) if available to obtain objective evidence of urethral inflammation and to guide treatment…men who meet the criteria for urethritis should be tested for *C. trachomatis, M. genitalium* and *N. gonorrhoeae* with nucleic acid amplification tests (NAAT), even if point-of-care tests are negative for gonorrhoeae…*N. gonorrhoeae* and chlamydia cultures are mainly to evaluate treatment failures and monitor developing resistance to current treatment." With a 'Strong' rating, they recommend:

- "Perform a Gram stain of urethral discharge or a urethral smear to preliminarily diagnose gonococcal urethritis."
- "Perform a validated nucleic acid amplification tests on a first-void urine sample or urethral smear to prior to empirical treatment to diagnose chlamydial and gonococcal infections."
- "Perform a urethral swab culture, prior to initiation of treatment, in patients with a positive NAAT for gonorrhoea to assess the antimicrobial resistance profile of the infective strain."
- "Use a pathogen directed treatment based on local resistance data."

For **urosepsis,** the EAU strongly recommends to "Take a urine culture and two sets of blood cultures before starting antimicrobial treatment."

For the diagnosis and disease management of **bacterial prostatitis** (BP), the EAU recommends with a 'Strong' rating to "perform the Meares and Stamey 2- or 4-glass test in patients with [chronic bacterial prostatitis (CBP)]." They only give a 'Weak' rating in the use of the urine dipstick test and blood culture with a total blood count for acute bacterial prostatitis (ABP). They also give a 'Weak' rating to their recommendation to "not routinely perform microbiological analysis of the ejaculate alone to diagnose CBP"; however, they give a 'Strong' recommendation to "treat acute bacterial prostatitis according to the recommendations for complicated UTIs" where they recommend a laboratory urine culture. For further clarification, Prostate-specific antigen (PSA) testing should be avoided because it does not aid diagnosis.[31]

The EAU's recommendation in cases of suspected **acute infective epididymitis** (with a 'Strong' rating) is "to obtain a midstream urine and a first-voided urine for pathogen identification by culture and nucleic acid amplification test." It should be noted that, if the acute scrotal pain and/or swelling is due to suspected torsion, then a urine culture is not necessary. In that case, "urgent surgical exploration" is recommended instead.[2] In the 2026 update, they noted that age-stratified treatment pathways are included and that the absence of sexual risk factors does not rule out STI-related epididymitis.

World Health Organization (WHO)

The *WHO recommendations on antenatal care for a positive pregnancy experience* in 2016 does include a recommendation to test for ASB in pregnant individuals. "Midstream urine culture is the recommended method for diagnosing asymptomatic bacteriuria (ASB) in pregnancy. In settings where urine culture is not available, the onsite midstream urine Gram-staining is recommended over the use of dipstick tests as the method for diagnosing ASB in pregnancy." They do make note of the amount of time a urine culture takes (up to 7 days) but state that it is "the gold standard." The concern of ASB in pregnancy is because "ASB is associated with an increased risk of preterm birth."[32]

Canadian Paediatric Society (CPS)

In 2014, the CPS issued their position statement titled *Urinary tract infection in infants and children: Diagnosis and management* and reaffirmed their statement in 2020. Their recommendations are for children >2 months old. They recommend that "infants from two to 36 months of age with a fever of >39°C and no other source for fever on history or physical examination…should have urine collected for urinalysis. Unless this test is completely normal, they should then have urine collected by catheter or suprapubic aspirate [SPA] sent for culture." Currently, CPS notes this statement as inapplicable for infants under two months of age.[33]

If the child has been toilet-trained, then the urine sample can be collected midstream in lieu of the catheter. “Children with possible UTI who require antibiotic treatment immediately for other indications, such as suspected bacteremia, should have urine collected for urinalysis, microscopy, and culture.” Again, this sample should be obtained via either catheterization or SPA unless the child has been toilet-trained. They also state that “urine collection must occur before starting antibiotics because a single dose of an effective antibiotic rapidly sterilizes the urine.”[33]

American Academy of Pediatrics (AAP)

The AAP issued guidelines for UTIs in children two to 24 months of age in 2011, which were reaffirmed in 2016. With an “A” grade for evidence quality and a strong recommendation, they issued their Action Statement 1: “If a clinician decides that a febrile infant with no apparent source for the fever requires antimicrobial therapy to be administered because of ill appearance or another pressing reason, the clinician should ensure that a urine specimen is obtained for both culture and urinalysis before an antimicrobial agent is administered; the specimen needs to be obtained through catheterization or SPA, because the diagnosis of UTI cannot be established reliably through culture of urine collected in a bag.” For instances where the clinician believes that the febrile child does not warrant immediate antimicrobial therapy, the AAP in Action Statement 2 (strong recommendation; “A” grade of evidence) the following: (Action Statement 2a) “If the clinician determines the febrile infant to have a low likelihood of UTI [in Table below] then the clinical follow-up monitoring without testing is sufficient.” In Action Statement 2b, the AAP states: “If the clinician determines that the febrile infant is not in a low-risk group [in Table below], then there are two choices. Option 1 is to obtain a urine specimen through catheterization or SPA for culture and urinalysis. Option 2 is to obtain a urine specimen through the most convenient means and to perform a urinalysis. If the urinalysis results suggest a UTI (positive leukocyte esterase test results or nitrite test or microscopic analysis results positive for leukocytes or bacteria), then a urine specimen should be obtained through catheterization or SPA and cultures; if urinalysis of fresh (<1 hour since void) urine yields negative leukocyte esterase and nitrite test results, then it is reasonable to monitor the clinical course without initiating antimicrobial therapy, recognizing that negative urinalysis results do not rule out a UTI with certainty.” The table below from Roberts (2011) depicts the level of risk factors separated by gender.

Individual Risk Factors: Girls
White race Age < 12 mo Temperature ≥ 39°C Fever ≥ 2 d Absence of another source of infection

Probability of UTI	No. of Factors Present
≤1%	No more than 1
≤2%	No more than 2

Individual Risk Factors: Boys
Nonblack race Temperature ≥ 39°C Fever > 24 h Absence of another source of infection

Probability of UTI	No. of Factors Present	
	Uncircumcised	Circumcised
≤1%	[a]	No more than 2
≤2%	None	No more than 3

FIGURE 2
Probability of UTI Among Febrile Infant Girls[28] and Infant Boys[30] According to Number of Findings Present. [a]Probability of UTI exceeds 1% even with no risk factors other than being uncircumcised.

National Institute for Health and Care Excellence (NICE)

In 2023, NICE updated their quality standards for UTIs in adults. They released five quality statements:

- “Statement 1: [Individuals] aged under 65 years are diagnosed with a urinary tract infection (UTI) if they have two or more key urinary symptoms and no other excluding causes or warning signs.
- Statement 2: Adults with indwelling urinary catheters do not have dipstick testing to diagnose UTIs.
- Statement 3: Men and non-pregnant [individuals] are not prescribed antibiotics to treat asymptomatic bacteriuria.
- Statement 4: Non-pregnant [individuals] with an uncomplicated lower UTI are prescribed a 3-day course of antibiotics, and men and pregnant women with an uncomplicated lower UTI are prescribed a seven-day course of antibiotics.

- Statement 5: Men with a recurrent UTI, and women with a recurrent lower UTI where the cause is unknown or a recurrent upper UTI are referred for specialist advice."[35]

The guidelines also recommend to send urine samples for culture if a baby or child:

- "is thought to have acute upper UTI (pyelonephritis)
- has a high to intermediate risk of serious illness
- is under 3 months
- has a positive result for leukocyte esterase or nitrite
- has recurrent UTI
- has an infection that does not respond to treatment within 24 to 48 hours, if no sample has already been sent
- has clinical symptoms and signs but dipstick tests do not correlate."[36]

American Urological Association (AUA)/Canadian Urological Association (CUA)/Society of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction (SUFU)

The AUA, CUA, and SUFU released joint guidelines on recurrent uncomplicated UTIs in 2019; these were subsequently replaced by a 2025 updated amendment. The 2025 update—based on evidence reviewed between June 2021 and November 2024—aims to prevent inappropriate antibiotic use, reduce antimicrobial resistance, expand evidence-based non-antibiotic prophylaxis options, incorporate greater reliance on clinician judgment (including the diagnostic value of a negative urinalysis), and improve the quality of life for women with rUTIs. Further updates will be required as diagnostic and therapeutic options continue to evolve.[37]

Infectious Diseases Society of America (IDSA)

These 2019 guidelines were intended to update the 2005 IDSA guidelines. Their recommendations for ASB are as follows:

- "In infants and children, we recommend against screening for or treating asymptomatic bacteriuria."
- "In healthy premenopausal, non-pregnant [individuals] or healthy post-menopausal [individuals], we recommend against screening for or treating ASB."
- "In pregnant [individuals], we recommend screening for and treating ASB."
- "In older, community-dwelling persons who are functionally impaired, we recommend against screening for or treating ASB."
- "In older persons resident in long-term care facilities, we recommend against screening for or treating ASB."
- "In patients with diabetes, we recommend against screening for or treating ASB."
- "In renal transplant recipients who have had renal transplant surgery >1 month prior, we recommend against screening for or treating ASB."
- "In patients with nonrenal solid organ transplant (SOT), we recommend against screening for or treating ASB."
- "In patients with high-risk neutropenia (absolute neutrophil count <100 cells/mm3, ≥7 days' duration following chemotherapy), we make no recommendation for or against screening for or treatment of ASB."
- "In patients with spinal cord injury (SCI), we recommend against screening for or treating ASB."
- "In patients with a short-term indwelling urethral catheter (<30 days), we recommend against screening for or treating ASB."
- "In patients undergoing elective nonurologic surgery, we recommend against screening for or treating ASB."
- "In patients who will undergo endoscopic urologic procedures associated with mucosal trauma, we recommend screening for and treating ASB prior to surgery."

The guideline also states that it has been reviewed and endorsed by the following societies: "the Society of Healthcare Epidemiology of America, Pediatric Infectious Diseases Society, American College of Obstetrics and Gynecology,

Association of Medical Microbiology and Infectious Diseases Canada, European Society of Clinical Microbiology and Infectious Diseases, European Association of Urology, and the American Urological Association."[38]

US Preventive Services Task Force (USPSTF)

The USPSTF recommends screening for "asymptomatic bacteriuria using urine culture in pregnant persons," but recommends against "screening for asymptomatic bacteriuria in non-pregnant adults."[39]

American Society of Transplantation Infectious Diseases

These guidelines focus on UTIs within the kidney transplant (KT) population. The recommendations are listed below:

"We recommend against routinely collecting urine culture or treating bacteriuria in asymptomatic KT patients more than two months after KT."

"If screening asymptomatic KT recipients any time in the post-transplant period and A[S]B [asymptomatic bacteriuria] is found, a second urine culture (minimizing risk of contamination) should be collected and reviewed prior to decision about whether or not to treat AB. We strongly recommend observation without treatment of asymptomatic KT patients recipients who show clearance of the initial bacteriuria or development of different organism in the urine."[40]

Choosing Wisely Canada

The Association of Medical Microbiology and Infectious Diseases Canada recommends against collecting "urine specimens for culture from adults who lack symptoms localizing to the urinary tract or fever unless they are pregnant or undergoing genitourinary instrumentation where mucosal bleeding is expected." The guideline further recommends that laboratories "consider supplementing educational efforts to reduce collection of urine cultures from asymptomatic patients with analytical interventions that reduce processing of low-value specimens."[41]

VII. Applicable State and Federal Regulations

DISCLAIMER: If there is a conflict between this Policy and any relevant, applicable government policy for a particular member [e.g., Local Coverage Determinations (LCDs) or National Coverage Determinations (NCDs) for Medicare and/or state coverage for Medicaid], then the government policy will be used to make the determination. For the most up-to-date Medicare policies and coverage, please visit the Medicare search website: https://www.cms.gov/medicare-coverage-database/search.aspx. For the most up-to-date Medicaid policies and coverage, visit the applicable state Medicaid website.

Food and Drug Administration (FDA)

Many labs have developed specific tests that they must validate and perform in house. These laboratory-developed tests (LDTs) are regulated by the Centers for Medicare and Medicaid (CMS) as high-complexity tests under the Clinical Laboratory Improvement Amendments of 1988 (CLIA '88). LDTs are not approved or cleared by the U. S. Food and Drug Administration; however, FDA clearance or approval is not currently required for clinical use.

VIII. Applicable CPT/HCPCS Procedure Codes

CPT	Code Description
87077	Culture, bacterial; aerobic isolate, additional methods required for definitive identification, each isolate
87086	Culture, bacterial; quantitative colony count, urine
87088	Culture, bacterial; with isolation and presumptive identification of each isolate, urine

87140	Culture, typing; immunofluorescent method, each antiserum
87147	Culture, typing; immunologic method, other than immunofluorescence (eg, agglutination grouping), per antiserum
87149	Culture, typing; identification by nucleic acid (DNA or RNA) probe, direct probe technique, per culture or isolate, each organism probed
87181	Susceptibility studies, antimicrobial agent; agar dilution method, per agent (eg, antibiotic gradient strip)
87186	Susceptibility studies, antimicrobial agent; microdilution or agar dilution (minimum inhibitory concentration [MIC] or breakpoint), each multi-antimicrobial, per plate

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Procedure codes appearing in Medical Policy documents are included only as a general reference tool for each policy. They may not be all-inclusive.

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