Medical Necessity Criteria for Urine Culture Testing in Pediatrics

For Opinion and Feedback for 1 month

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For communication with the medical department

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(In collaboration with the Saudi Pediatric Infectious Disease Society)

The following recommendations are based on medical evidence, clinician input, and expert opinion. The content of the document is dynamic and will be revised as new information becomes available. The purpose of this document is to assist practitioners in clinical decision-making, to standardize and improve the quality of patient care, and to promote cost-effective test ordering. **THE CLINICIAN SHOULD UTILIZE THIS GUIDANCE AND INTERPRET IT IN THE CLINICAL CONTEXT OF THE INDIVIDUAL PATIENT.**

Scope:

- This guideline provides a framework for ordering urine culture for pediatrics and suggests alternative tests to avoid unnecessary and costly urine cultures.
- This guideline is currently limited to:
    - Healthy infants more than 3 months and children younger than 14 years with the first UTI.
    - It does not apply to infants less than 3 months.
    - It does not apply to patients with urinary catheters in situ, neurogenic bladders, significant pre-existing urinary tract disorders (uropathies), recurrent UTI, underlying renal disease or immunosuppression.
    - It also does not apply to hospitalized patients.

Recommendations:

- Do not routinely test the urine of children 3 months and over who have symptoms and signs that suggest an infection other than a UTI. If they remain unwell and there is diagnostic uncertainty, consider urine testing.
- Indications for urine testing (if unexplained by other etiology)

  Clinical manifestations of UTI:
    - In older children (3 – 14 years) important findings include dysuria, urgency and/or frequency, abdominal or flank pain and new-onset incontinence.

- In infancy (3 months – 1 year) are nonspecific symptoms such as an undifferentiated febrile illness, irritability, vomiting, or poor feeding.
- In infants and toddlers (1– 3 years) the presentation is also likely to be non-specific, including fever, diarrhea, or vomiting with dehydration.
- The physical examination is useful to detect signs of urinary tract infection including distention, presence of a mass or palpable stool, flank or suprapubic tenderness, and/or a palpable bladder, particularly after voiding.

- **Urine Tests**

Collection of an uncontaminated urine specimen is essential for accurate diagnosis, particularly in non–toilet trained children. Contaminated urine specimens may lead to unnecessary antibiotic treatment or delayed treatment in those with true UTIs.

- Method of urine collection:
- - Suprapubic aspiration: invasive, not recommended routinely
- - Trans-urethral bladder catheterization: an accurate method of urine collection
- - Clean-voided (clean-catch/ midstream) urine specimen: the current recommended method in the outpatient
- - Bag urine collection: high risk of contamination

- Urine Dipstick
  - Urinalysis should be performed within 60 minutes of obtaining the specimen.
  - Urine dipstick test results and recommendations are:

Test strip results		Recommendations
Leukocyte esterase	**Nitrite**	
Positive	Positive	The result indicates a urinary tract infection. Submit a urine sample for culture.
Negative or Trace	Positive	The result suggests sign of urinary tract infection; Submit a urine sample for culture.
Positive	Negative	The result suggests sign of urinary tract infection; Submit a urine sample for microscopy and culture.

Negative or Trace	Negative	The result indicates that there is no urinary tract infection and no need for urinalysis or culture. (Unless the patient has sign and symptoms of UTI based of his/her age)

- Urine microscopy
  - The optimal cut point for diagnosing pyuria. The cutoff value for significant pyuria varies depending on quantification methods. The accepted cutoffs include 10 leukocytes/µL and 5-10 leukocytes per high -power field.
  - The presence of any bacteria in microscopy indicates bacteriuria.
  - Urine microscopy result and recommendations are:

Microscopy results		Recommendations
Pyuria	**Bacteriuria**	
Positive	Positive	The result indicates a urinary tract infection; Submit a urine sample for culture**.**
Positive	Negative	The result suggests a urinary tract infection; submit a urine sample for culture**.**
Negative	Positive	The result suggests a urinary tract infection; submit a urine sample for culture**.**
Negative	Negative	The result indicates that there is no urinary tract infection and no need for culture.

- Urine culture
  - Urine culture is the cornerstone for laboratory diagnosis of urinary tract infection following positive urine analysis.
  - It is not appropriate to use urine culture as a screening test in the general population.
  - Urine culture is recommended in the following scenarios:
    - If there is suspicion of upper UTI (symptoms and signs that increase the likelihood of urinary tract infection)
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    - Patient with underlying disorders that predispose him or her to UTI e.g. anatomical or neurological urinary tract disorders, and patients with impaired immunity

- If The child has a positive result for leukocyte esterase or nitrite
- The patient has signs and symptoms of UTI based of his/her age.

Follow-up and Monitoring

Follow-up urine cultures are of no utility in outpatient children; however, we recommend being decided by pediatric specialty care if clinically indicated.

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