Treatment Algorithm: Urinary Tract Infection (UTI) in Children >2 Months Old

**Concern for UTI**
- Symptoms of one or more of the following?
  - Fever
  - Strong-smelling urine
  - Dysuria
  - Frequency
  - Urgency

- NO: Consider alternative diagnoses
- YES: Perform urinalysis and culture*
  - Urinalysis with one of the following?
    - Pyuria (≥5 WBC/hpf)
    - LE (trace or more)
    - Bacteria
    - Nitrites

- NO: Defer antibiotics (see Table 1)
- YES: Prescribe antibiotics
  - Non-toilet trained: 10 days
  - Toilet trained: 7 days
  - Teen with cystitis: 3 days

- NO: Await urine culture (goal >100K cfu on clean catch)
  - Adjust or stop antibiotics based on sensitivities as needed
- YES: Allergic to cephalexin?
  - NO: Cephalexin (first line)
    - 25 mg/kg/dose PO Q8 hours
    - Max 500 mg Q8 hours
  - YES: Alternatives:
    - TMP/SMX
    - Or discuss with Infectious Diseases

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**TABLE 1 Sensitivity and Specificity of Components of Urinalysis, Alone and in Combination**

<table>
<thead>
<tr>
<th>Test</th>
<th>Sensitivity (Range), %</th>
<th>Specificity (Range), %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leukocyte esterase test</td>
<td>83 (67-94)</td>
<td>78 (64-92)</td>
</tr>
<tr>
<td>Nitrite test</td>
<td>53 (15-82)</td>
<td>98 (90-100)</td>
</tr>
<tr>
<td>Leukocyte esterase or nitrite test positive</td>
<td>93 (90-100)</td>
<td>72 (58-91)</td>
</tr>
<tr>
<td>Microscopy, WBCs</td>
<td>73 (52-100)</td>
<td>81 (65-90)</td>
</tr>
<tr>
<td>Microscopy, bacteria</td>
<td>81 (15-90)</td>
<td>83 (11-100)</td>
</tr>
<tr>
<td>Leukocyte esterase test, nitrite test, or microscopy positive</td>
<td>90.6 (80-100)</td>
<td>70 (60-82)</td>
</tr>
</tbody>
</table>

*Note: For non-toilet-trained patients, may use bag UA to rule out UTI. If UA suggests UTI, repeat a catheter specimen for UA and culture.

Adapted from: Subcommittee on Urinary Tract Infection, Steering Committee on Quality Improvement and Management, Roberts KB. Urinary tract infection: Clinical practice guideline for the diagnosis and management of the initial UTI in febrile infants and children 2 to 24 months. Pediatrics 2011;128(3):595-610; SCH Clinical Standard Work Pathway.