Clinical Guideline
Suspected Urinary Tract Infection
Pediatric Emergency, Outpatient and Inpatient Pediatrics

Risk Factors

<table>
<thead>
<tr>
<th>High Risk Groups</th>
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<tbody>
<tr>
<td>Girls or uncircumcised boys with fever without a source (1.65-25% positivity)</td>
</tr>
<tr>
<td>Girls or uncircumcised boys with a fever ≥ 39°C with another source of fever (3-7.7% positive)</td>
</tr>
</tbody>
</table>

UA Screen Result

<table>
<thead>
<tr>
<th>Positive Likely UTI</th>
<th>Equivocal Unlikely UTI</th>
<th>Negative No evidence of UTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Nitrite OR</td>
<td></td>
<td>Negative or trace LE AND</td>
</tr>
<tr>
<td>≥ 2+ LE OR</td>
<td></td>
<td>Negative Nitrite AND</td>
</tr>
<tr>
<td>≥ 10 WBC/hpf</td>
<td></td>
<td>&lt;10 WBC/hpf</td>
</tr>
<tr>
<td>1+ LE AND</td>
<td></td>
<td>Culture not routinely indicated</td>
</tr>
<tr>
<td>&lt;10 WBC/hpf</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Decision to Test:

- Use clinical judgment and shared decision making with family
- See table below to assist in risk assessment

Interpret UA Results:

- Admit if:
  - Ill appearing
  - Failing PO/dehydration
  - Per request of urology/nephrology
  - Concern for ability to sustain o/p therapy and follow up

- Discharge home:
  - Appropriate outpt f/u
  - Antibiotics if indicated

Use UA with reflex order for cath and clean catch specimens. Order urine culture separately only for <2 mos, neutropenic, or subspecialty request. Do not send bagged urine for culture—if using 2-step process with bag urine, obtain cath specimen for culture if bag udip/ua is positive.

Routine UTI/pyelonephritis admission to peds hospital medicine
If followed by nephrology and/or urology, discuss appropriate admission service with consultants.
For IP admissions for patients not followed by uro or nephro, consider consultation and/or subspecialty referral as clinically indicated or to facilitate expeditious follow-up.
Empiric Therapy – Pyelonephritis (Negative history of recent infection)

<table>
<thead>
<tr>
<th>Age</th>
<th>Recommendation Agent and Dose</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 months - 12 years</td>
<td><strong>Oral option:</strong> Cephalexin 25 mg/kg/dose every 8 hours <strong>IV option</strong> (if unable to tolerate oral medications): Cefazolin 25 mg/kg/dose every 8 hours</td>
<td>&lt; 6 months: 10 days ≥ 6 months: 7 days</td>
</tr>
<tr>
<td></td>
<td><strong>Cephalosporin allergy:</strong> <strong>Oral:</strong> Trimethoprim/sulfamethoxazole 4 mg TMP/kg/dose every 12 hours <strong>IV:</strong> Consider Gent or Cipro per attending/consultant preference</td>
<td></td>
</tr>
<tr>
<td>&gt;12 years</td>
<td><strong>Oral option:</strong> Cephalexin 500 mg every 12 hours <strong>IV option</strong> (if unable to tolerate oral medications): Cefazolin 1000 mg every 8 hours <strong>Cephalosporin allergy:</strong> <strong>Oral:</strong> Ciprofloxacin 15 mg/kg/dose (max 500 mg/dose) every 12 hours <strong>IV:</strong> Consider Gent or Cipro per attending/consultant preference</td>
<td>7 days</td>
</tr>
</tbody>
</table>

Empiric Therapy – Cystitis (Negative history of recent infection)

<table>
<thead>
<tr>
<th>Age</th>
<th>Recommendation Agent and Dose</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;24 months</td>
<td>See above table for pyelonephritis</td>
<td></td>
</tr>
<tr>
<td>24 months* - 12 years</td>
<td><strong>Oral option:</strong> Cephalexin 25 mg/kg/dose every 8 hours  <strong>IV option</strong> (if unable to tolerate oral medications): Cefazolin 25 mg/kg/dose every 8 hours</td>
<td>3-5 days</td>
</tr>
<tr>
<td></td>
<td><strong>Cephalosporin allergy:</strong> <strong>Oral:</strong> Trimethoprim/sulfamethoxazole 4 mg TMP/kg/dose every 12 hours <strong>IV:</strong> Consider Gent or Cipro per attending/consultant preference</td>
<td></td>
</tr>
<tr>
<td>&gt;12 years</td>
<td><strong>Oral option:</strong> Cephalexin 500 mg every 12 hours <strong>IV option</strong> (if unable to tolerate oral medications): Cefazolin 1000 mg every 8 hours <strong>Cephalosporin allergy:</strong> <strong>Oral:</strong> Nitrofurantoin (Macrobid) 100 mg every 12 hours (5 day duration) <strong>IV:</strong> Consider Gent or Cipro per attending/consultant preference</td>
<td>3 days</td>
</tr>
<tr>
<td></td>
<td><strong>Agent specific duration:</strong> Nitrofurantoin 5 days Gentamicin 3 days</td>
<td></td>
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Empiric Therapy – Pyelonephritis (Positive history of recent infection)
Empiric regimen based on previous culture/susceptibilities

Empiric Therapy – Cystitis (Positive history of recent infection)
Empiric regimen based on previous culture/susceptibilities
Suspected Urinary Tract Infection Guideline
Executive Summary

Children's Hospital of Richmond at VCU Suspected Urinary Tract Infection Workgroup

Executive Summary

Approved (August 2021)

Chief of Pediatric Emergency Medicine:
Frank Petruzella, MD

Chief of Pediatric Nephrology:
Timothy Bunchman, MD

Chief of Pediatric Urology:
C.D. Anthony Herndon, MD

Chief of Pediatric Infectious Diseases:
Suzanne Lavoie, MD

Chief of Pediatric Hospital Medicine:
David Marcello, MD

Chief of General Pediatrics:
N. Romesh Wijesooriya, MD

Pediatric Emergency Medicine Quality Committee:
Rashida Woods, MD

CHoR Clinical Guidelines Committee:
Ashlie Tseng, MD
Jonathan Silverman, MD, MPH

CHoR Quality Council, Executive Sponsor:
Dory Walczak, MS, RN, NE-BC, CPHQ
Matthew Schefft, DO, MSHA

References


