



# University of Missouri Pediatric Service Line

Pediatric Emergency • Clinical Practice Guidelines

## Pediatric Urinary Tract Infection (UTI) Management

Clinical concern for UTI/pyelonephritis (see exclusion criteria)<sup>a</sup>

**Meeting Admission  
Criteria<sup>b</sup>**

Yes

No

**Risk Factors for  
Recurrent UTI<sup>c</sup>**

**Risk Factors for  
Recurrent UTI<sup>c</sup>**

Yes

No

Yes

No

Plan for admission

IV access, blood culture, CBC, CMP

IV Ceftriaxone<sup>d</sup>  
or  
Other IV antibiotic based on previous susceptibilities

(Use PowerPlan: '**ED  
PED Urinary Tract Infection**' for antibiotic selection & dosing)

If cephalosporin allergy: IV Ciprofloxacin

Plan for admission

IV access, blood culture, CBC, CMP

IV Cefazolin<sup>d</sup>  
  
(Use PowerPlan: '**ED  
PED Urinary Tract Infection**' for antibiotic selection & dosing)

If cephalosporin allergy: IV Ciprofloxacin

Plan for discharge home

PO Cephalexin<sup>d,e</sup>

or  
Other oral antibiotic based on previous susceptibilities x 3-5 days for cystitis or 7 days for pyelonephritis

(Use PowerPlan: '**ED  
PED Urinary Tract Infection**' for antibiotic dosing)

If amoxicillin or cephalosporin allergy: PO TMP/SMX

Discuss ED return precautions<sup>f</sup>

Discuss PCP follow up and indications for outpatient renal US as needed<sup>g</sup>

Plan for discharge home

PO Cephalexin<sup>d,e</sup> x 3-5 days for cystitis or 7 days for pyelonephritis

(Use PowerPlan: '**ED  
PED Urinary Tract Infection**' for antibiotic dosing)<sup>c,e</sup>

If amoxicillin or cephalosporin allergy: PO TMP/SMX

Discuss ED return precautions<sup>f</sup>

Discuss PCP follow up and indications for outpatient renal US as needed<sup>g</sup>



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## Footnotes:

- a. Exclusion criteria: age <60 days or >18 years, concern for sepsis or meningitis, immunocompromise, pregnancy, sexual abuse
- b. Hospital admission criteria: requiring IV fluids due to nausea/vomiting or inability to maintain hydration and/or tolerate oral antibiotic, failed outpatient management (i.e. persistent symptoms despite >48 hours on appropriately chosen/dosed antibiotic), UTI in the setting of kidney stone or other cause of urinary obstruction<sup>1</sup>
- c. Risk factors for recurrent UTI/Pyelonephritis: patients with vesicoureteral reflux (VUR), neurogenic bladder, recent instrumentation, indwelling catheters or stents, kidney stone or other cause of urinary obstruction<sup>2</sup>
- d. If past history of UTIs, empiric therapy should be based on previous microbiology and susceptibility.
- e. **Cefdinir has lower urinary excretion in children than adults and therefore not recommended for pediatric UTIs.**<sup>3,4</sup>
- f. ED return precautions: lack of improvement after 48 hours of antibiotic therapy, progressive systemic symptoms (e.g. development of altered mental status, dehydration), inability to tolerate oral antibiotics or maintain oral hydration
- g. Indications for outpatient renal US: Children < 2 years with first febrile UTI, children of any age with recurrent febrile UTIs, children of any age with a UTI who have a family history of kidney or urologic disease, poor growth, or hypertension, children who do not respond as expected to appropriate antibiotic therapy<sup>1</sup>

## References:

1. Urinary tract infections in infants older than one month and children younger than two years: Acute management, imaging, and prognosis, UpToDate, 2025.
2. Urinary Tract Infection/Pyelonephritis: Management, Children's Mercy Kansas City Evidence Based Practice Guidelines, 2024.
3. Mitzner T, et al. "Cefdinir versus cephalexin for the treatment of uncomplicated urinary tract infections." Open Forum Infect Dis. 2025 Oct 23;12(10).
4. MU Cumulative Antimicrobial Susceptibility Report 2025, Children's Hospital Organisms % Susceptible page 7, <https://mailmissouri.sharepoint.com/sites/umhs-mymu-antimicrobial-stewardship/SiteAssets/Forms/AllItems.aspx?id=%2Fsites%2Fumhs%2Dmymu%2Dantimicrobial%2Dstewardship%2FSiteAssets%2FSitePages%2FClinical%2DMicrobiology%2FMUHC%2DUH%2DAntibiogram%2D2026%2Epdf&>