

Pediatric ED UTI Clinical Pathway, Age 2 months to 17 years

EXCLUSION CRITERIA: Hx of resistant organisms in urine cultures • Indwelling catheter • Abnormal GU anatomy • Septic shock or toxic appearance

- Determine Need for UTI Evaluation¹
- Obtain UA and Urine Culture:
Catheter specimen if not toilet trained,
Clean catch if toilet-trained

UA concerning
for UTI²?

Yes

- Determine Disposition

Well-appearing?

Comfortable, Eating/Drinking
well, No vomiting

Discharge Home

- Antibiotics (review prior urine cultures):
 - ≤ 12y: **Cephalexin** 25mg/kg/dose PO TID for **7 days** (max 500mg/dose)
 - > 12y: **Cephalexin** 500mg PO BID for **7 days**
- PCP follow-up in 2 days for UCx results and reassessment

1. Risk Factors for UTI in Children

- Recurrent UTI, UT Anomaly, constipation
- Dysuria/flank pain
- T ≥ 38 for infant < 3 months*
- T ≥ 39 for infants ≥ 3 mos
- T > 38.5 for > 2 days for infants ≥ 3 mos
- Female
- Uncircumcised male

*consider sepsis evaluation

2. Urinalysis Sensitivity Specificity

+ Leukocyte Esterase	83	78
+ Nitrite	53	98
>5 WBC/HPF	73	81

Urine Culture

UTI requires + U/A **and** U/Cx with
≥ 50,000 CFU/ml of a single uropathogen

Asymptomatic bacteriuria → - U/A, + U/Cx
STI, appy, KD, viral GE → + U/A, - U/Cx

Unwell-appearing?

Inconsolable, lethargic, poor PO,
< 3 urine voids/24 hours,
recurrent vomiting (esp if large
pyuria or WBC casts)

Admit to Pediatric Hospitalist

- **Cefazolin** 50mg/kg IV Q8hr (max 2g/dose)
- Consider CBC, blood culture, and BMP
- Consider 20 ml/kg NS IV bolus

Consider [UTICalc](http://www.uticalc.pitt.edu) at www.uticalc.pitt.edu for 2-23 months old

See AAP UTI Guideline 2011

*See Page 3 and SIU Empiric Antibiotic Recommendations if allergy or need for alternative

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Pediatric Inpatient UTI/Pyelonephritis Clinical Pathway, Age 2 months to 17 years

EXCLUSION CRITERIA: Hx of resistant organisms in urine cultures • Indwelling catheter • Abnormal GU anatomy • Septic shock or toxic appearance

- Consider Blood Culture, CBC, BMP, UA and Urine Culture
- **Cefazolin 50mg/kg/dose IV q8hrs (max 2g/dose)***
- Consider Renal Ultrasound¹

No

Patient Improving
and BCx neg x 24hr?

Yes

Decrease Cefazolin dose to
25 mg/kg/dose IV q8hrs (max 1g/dose)

No

Meeting
Discharge
Criteria²?

Yes

1. Renal Ultrasound
recommended for first
febrile UTI in infants 2-24
months, timing based on
clinician judgement.

2. Discharge Criteria

- Improving fever curve
- Tolerating PO feeds/meds
- Improving pain
- Follow-up arranged

Consider:

- Review urine culture sensitivities
- Continue antibiotics for another 24hrs?
- Check antibiotic dosing and frequency?
- Repeat renal ultrasound to evaluate for complication such as abscess?
- Consult ID, Urology or Nephrology?

Discharge Home

- Antibiotics:
 - If ≤ 12y: **Cephalexin** 25mg/kg/dose PO TID for a total of **7 days** (max 500mg/dose)
 - If > 12y: **Cephalexin** 500mg PO BID for a total of **7 days**
- PCP follow-up in 1-2 days
- Caregiver Education Provided
- Imaging arranged (if needed)

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

Test	Sensitivity (Range), %	Specificity (Range), %
Leukocyte esterase test	83 (67–94)	78 (64–92)
Nitrite test	53 (15–82)	98 (90–100)
Leukocyte esterase or nitrite test positive	93 (90–100)	72 (58–91)
Microscopy, WBCs	73 (32–100)	81 (45–98)
Microscopy, bacteria	81 (16–99)	83 (11–100)
Leukocyte esterase test, nitrite test, or microscopy positive	99.8 (99–100)	70 (60–92)

(PEDIATRICS 128 (3), Sept 2011)

Empiric Discharge Antibiotics:

If needing additional choices, see SIU SOM Pediatric Empiric Antibiotic Recommendations:

www.siumed.edu/sites/default/files/u1091/final_siu_empiric_antibiotics_for_select_infections.pdf

Antibiotic:

(If 2 months to 12yrs of age)

- 1st line - Cephalexin 25 mg/kg/dose PO TID (max 500mg/dose) for a total of 7 days of antibiotics (Ref#5,8)
- 2nd line - Bactrim 5 mg/kg/dose PO BID (max 800/160mg/dose) for a total of 7 days of antibiotics (Ref #8)
- 3rd line - Ciprofloxacin 10mg/kg/dose PO q12hrs (max: 500mg/dose) for a total of 7 days of antibiotics

(If ≥ 12 yrs. of age)

- 1st line - Cephalexin 500mg PO BID for a total of 7days of antibiotics
- 2nd line - Sulfamethoxazole-trimethoprim 800-160mg/dose PO BID for 7 days
- Third line - Nitrofurantoin 100mg PO BID for a total of 7days of antibiotics

References

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