# 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 Evaluation<sup>1</sup>
- Obtain UA and Urine Culture:
   Catheter specimen if not toilet trained,
   Clean catch if toilet-trained



• Determine Disposition

#### 1. Risk Factors for UTI in Children

- Recurrent UTI, UT Anomaly, constipation
- Dysuria/flank pain
- T ≥ 38 for infant < 3 months\*
- $T \ge 39$  for infants  $\ge 3$  mos
- T > 38.5 for > 2 days for infants  $\geq$  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  $\geq 50,000$  CFU/ml of a single uropathogen

Asymptomatic bacteriuria  $\rightarrow$  - U/A, + U/Cx STI, appy, KD, viral GE  $\rightarrow$  + U/A, - U/Cx

# Well-appearing?

Comfortable, Eating/Drinking well, No vomiting

# Unwell-appearing?

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

# **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

### **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



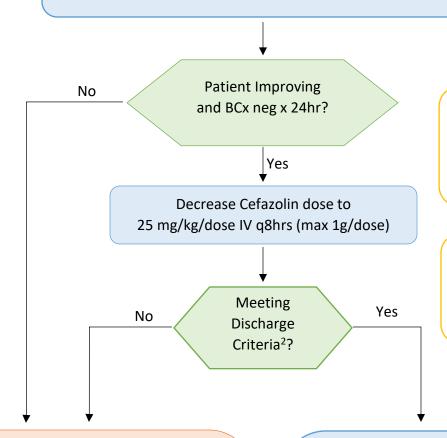




# Pediatric Inpatient UTI/Pyelonephritis Clinical Pathway, Age 2 months to 17 years

**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 Ultrasound<sup>1</sup>



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: <a href="https://www.siumed.edu/sites/default/files/u1091/final\_siu\_empiric\_antibiotics\_for\_select\_infections.pdf">www.siumed.edu/sites/default/files/u1091/final\_siu\_empiric\_antibiotics\_for\_select\_infections.pdf</a>

#### 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 $\geq$ 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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