Clinical Guideline
Suspected Urinary Tract Infection

This guideline should not replace clinical judgment.

Pediatric Emergency, Outpatient and Inpatient Pediatrics

Reminders:
- Contact nephrology and/or urology for patients known to them or with suspected underlying GU issues early in presentation.
- Providers must contact urology for any patients who have previously undergone urologic surgery.

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

Exclusion criteria:
- If critically ill, see sepsis guideline
- If under 60 days, see neonatal fever guidelines
- Immunocompromised patients are excluded

Risk Factors	High Risk Groups
T ≥ 39C	Girls or uncircumcised boys with fever without a source (1.65-25% positivity)
Age < 12 months	
No apparent source of fever	
Female	Girls or uncircumcised boys with a fever ≥ 39C with another source of fever (3-7.7% positive)
Uncircumcised	
Fever > 48 hours	
Prior UTI, GU anomalies, +Fhx, voiding dysfunction/constipation	

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.

Interpret UA Results:

	Positive Likely UTI	Equivocal Unlikely UTI	Negative No evidence of UTI
UA Screen Result	+ Nitrite OR ≥=moderate ++ LE (250 LEU/µL) OR ≥ 10 WBC/hpf	1+/small + LE (75 LEU/µL) AND <10 WBC/hpf	Negative or trace LE (25 LEU/µL) AND Negative Nitrite AND <10 WBC/hpf
Culture Decision	Reflex urine culture	Reflex urine culture	Culture not routinely indicated
Antibiotic Decision	Treat empirically while awaiting culture	Empiric antibiotics NOT recommended while awaiting culture	Consider alternate source of fever

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

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.

Children's Hospital of Richmond at VCU

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chorclinicalguidelines@vcuhealth.org

Last updated: August 2021
Next expected update: August 2024

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Presumed pyelonephritis is UTI with fever, systemic illness, and/or flank or back pain.

Empiric Therapy – Pyelonephritis (Negative history of recent infection)		
Age	**Recommendation Agent and Dose**	**Duration**
2 months - 12 years	**Oral option:** Cephalexin 25 mg/kg/dose every 8 hours	< 6 months: 10 days ≥ 6 months: 7 days
	IV option (if unable to tolerate oral medications): Cefazolin 25 mg/kg/dose every 8 hours	
	Cephalosporin allergy: **Oral:** Trimethoprim/ sulfamethoxazole 4 mg TMP/kg/dose every 12 hours **IV:** Consider Gent or Cipro per attending/consultant preference	
>12 years	**Oral option:** Cephalexin 500 mg every 12 hours	7 days
	IV option (if unable to tolerate oral medications): Cefazolin 1000 mg every 8 hours	
	Cephalosporin allergy: **Oral:** Ciprofloxacin 15 mg/kg/dose (max 500 mg/dose) every 12 hours **IV:** Consider Gent or Cipro per attending/consultant preference	
Empiric Therapy – Pyelonephritis (Positive history of recent infection) Empiric regimen based on previous culture/susceptibilities		

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

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Suspected Urinary Tract Infection Guideline Executive Summary

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

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References

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 Sep;128(3):595-610. doi: 10.1542/peds.2011-1330. Epub 2011 Aug 28. PMID: 21873693.

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Citation

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Example:
Children's Hospital of Richmond at VCU, Lo M, Zee R, Silverman J, Godbout E, Donowitz J, Noda A, Byrum K, Gill M, Keane M, Schefft M, Tseng A, Kaspar C, Doern C. Suspected Urinary Tract Infection Guideline. Available from: http://www.chrichmond.org/clinicalguideline-pneumonia