

Clinical Algorithm for Emergency Department Evaluation and Management of UTI in Febrile Infants and Young Children

References

Background

Urinary tract infection (UTI) is the most common serious bacterial infection in infants and young children. This algorithm applies to infants or children 2 to 24 months of age presenting to an emergency department with fever. This algorithm was developed by the American Academy of Pediatrics Section on Emergency Medicine based on current literature and expert consensus. Guidelines are not applicable for all patients and do not replace clinical judgement. Ultimately, the patient's physician must determine the most appropriate care.

Includes: ED patients 2 to 24 months of age with fever $\geq 38^{\circ}\text{C}$

Excludes Immunocompromised, known genitourinary anomalies, genitourinary procedures, neurogenic bladder, history of GU reflux, suspected sepsis

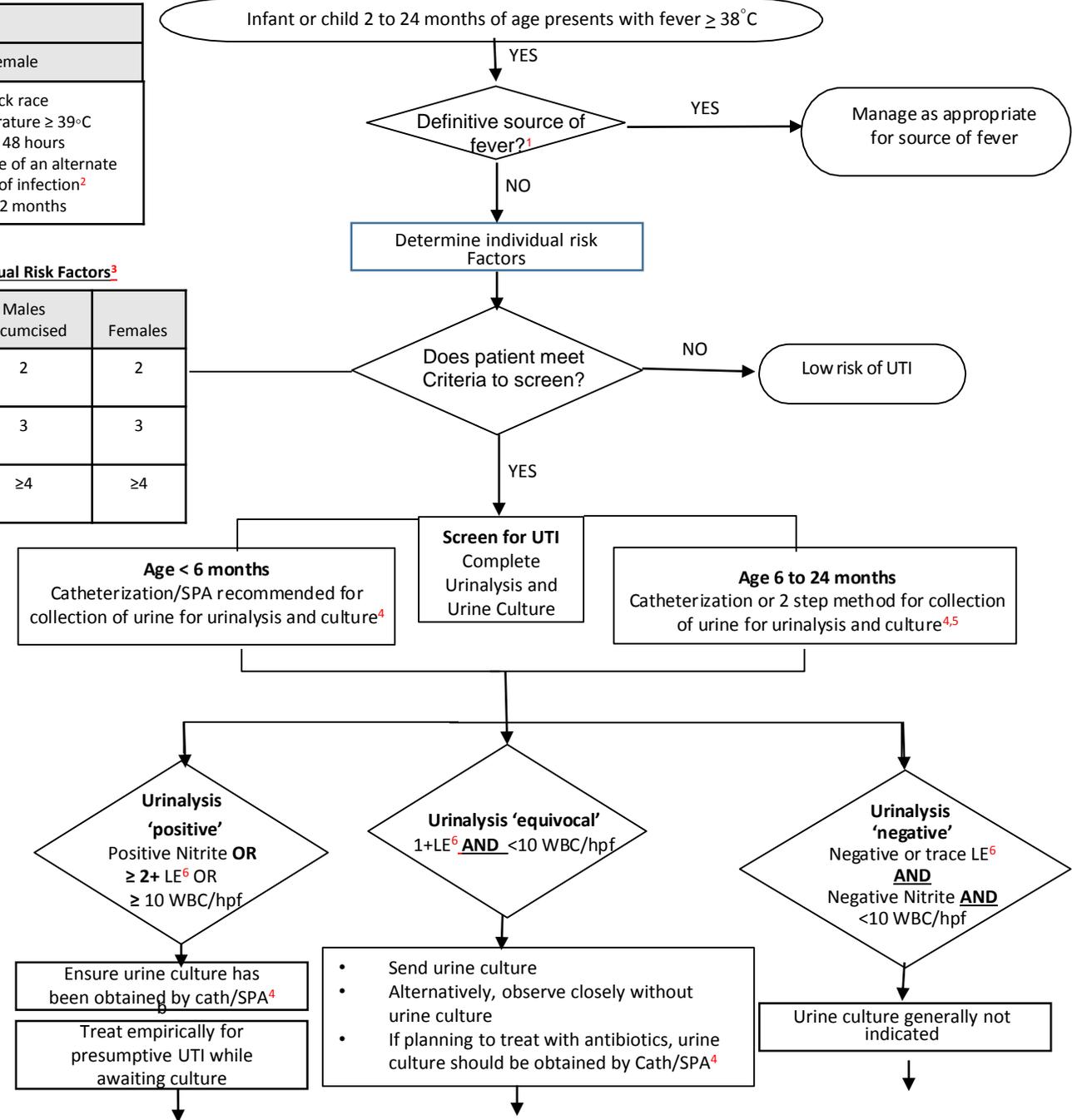
Footnotes:

- Definitive sources of fever:** Bacterial meningitis, pneumonia, strep pharyngitis, recognizable viral syndromes (Coxsackie, varicella, HSV stomatitis), Kawasaki disease, croup
- Alternate sources of infection that might explain fever (e.g. bronchiolitis, gastroenteritis, upper respiratory infection, etc.)
- If history of previous UTI, lower threshold for UTI screening
- SPA- suprapubic bladder aspiration - recommended for urine specimen collection if anatomy precludes catheterization
- 2 step method involves using a bag specimen or clean catch specimen (includes bladderstimulation technique) as initial screen; if positive, need to obtain urine for culture using catheterization/SPA
- Leukocyte esterase (LE)- 1+ (small), 2+ (moderate), 3+ (large)

Individual Risk Factors	
Male	Female
<ul style="list-style-type: none"> Nonblack race Temperature $\geq 39^{\circ}\text{C}$ Fever ≥ 24 hours Absence of an alternate source of infection² Age < 6 months 	<ul style="list-style-type: none"> Nonblack race Temperature $\geq 39^{\circ}\text{C}$ Fever ≥ 48 hours Absence of an alternate source of infection² Age < 12 months

Screening Recommendations Base on Number of individual Risk Factors³

	Males Uncircumcised	Males Circumcised	Females
• May screen for UTI	1	2	2
• Should screen for UTI	2	3	3
• Must screen for UTI	≥ 3	≥ 4	≥ 4



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- Admission criteria: unable to tolerate oral fluids/medications, suspicion of complicated UTI (abscess, obstruction), compromised renal function, unable to ensure follow-up/compliance, strongly consider for patients < 6 months, and consider for patients 6-12 months based on clinician judgement
- Antibiotic choice should be based on local patterns of resistance and MIC sensitivities. E. coli resistance rate to sulfamethoxazole/trimethoprim for pediatric emergency department patients is > 30%. Sulfamethoxazole/trimethoprim may not be an appropriate empiric or first line antibiotic for febrile patients with UTIs, unless supported by culture results.
- If urine culture results do not suggest a UTI, contact family to discontinue antibiotics

Institution Specific: Do Not order "Urinalysis with Reflex to Culture" on pediatric patients. Instead, order the lab "Urinalysis" and "Urine Culture" separately.

References:

- RKB; Subcommittee on Urinary Tract Infection, Steering Committee on Quality Improvement and Management. 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;128(3):595-610. PMID: 21873693

