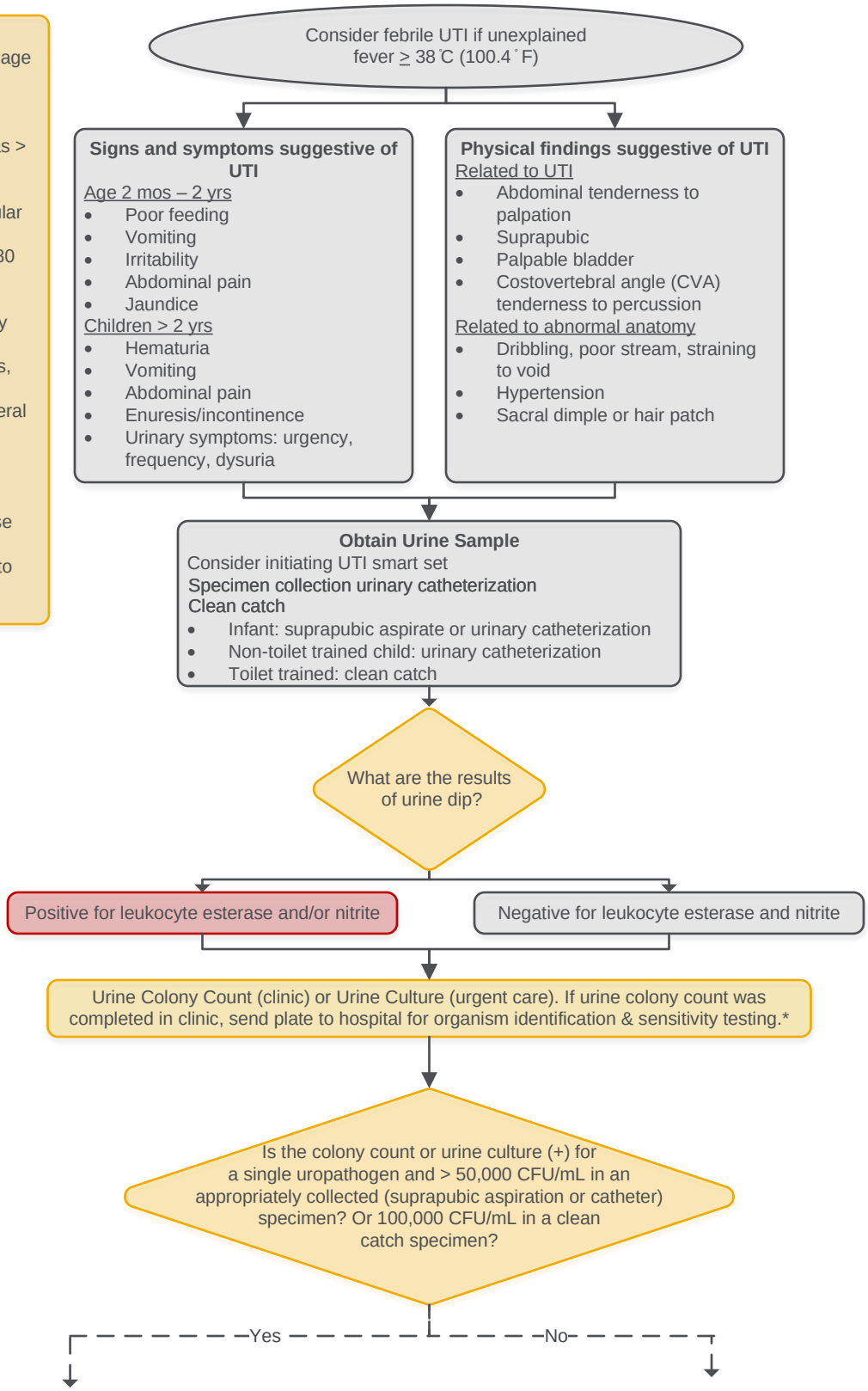
# URINARY TRACT INFECTION (FEBRILE)
## FOR PATIENTS ≥ 2 MONTHS – 18 YEARS

**Inclusion Criteria**
Children ≥ 2 months – 18 years of age with presumed or definite UTI

**Exclusion Criteria**
- Toxic appearing
- Prior history of UTI (defined as > 2 febrile UTIs)
- Chronic kidney disease as defined by estimated glomerular filtration rate (GFR) by the original Schwartz Formula < 80 mL/min/1.73m2
- Genitourinary abnormalities, including previous GU surgery (other than circumcison) neurogenic bladder conditions, known obstructive uropathy, known high-grade vesicoureteral reflux (Grades III-V)
- Septic shock
- Immunocompromised host
- Pregnancy
- Recent history of sexual abuse
- Children < 2 months
- Patients requiring admission to ICU
- Premature infants




CLINICAL EFFECTIVENESS

**Disclaimer:** Pathways are intended as a guide for practitioners and do not indicate an exclusive course of treatment nor serve as a standard of medical care. These pathways should be adapted by medical providers, when indicated, based on their professional judgement and taking into account individual patient and family circumstances.

ChildrensNebraska.org/Pathways

**Updated 04/2022**

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## FOR PATIENTS ≥ 2 MONTHS – 18 YEARS

YES

- Review sensitivities
- Assure appropriate antibiotics are prescribed**
- Start patient on antibiotics if not prescribed at initial visit
- Long term follow-up management: routine follow-up surveillance cultures are not recommended

*If a clinician decides a febrile infant with no apparent source for fever requires antimicrobial therapy to be administered because of ill appearance or another pressing reason, the clinician should ensure a urine specimen is obtained for both culture & urinalysis before an antimicrobial is administered.*

**Discharge Plan:**

- Caregiver(s) should follow up with clinician if the child is not afebrile or not showing improvement within 48 hours
- Caregivers should seek prompt medical evaluation (ideally within 48H) for future febrile illnesses
- Education: the link between bowel/bladder dysfunction (e.g. constipation) and febrile UTI and the importance of timed and double voiding

NO

- If > 1 uropathogen is present, collect new samples for testing (if antibiotics were not started previously)
- Discontinue antibiotic therapy (if warranted)
- **Manage off pathway**

****Antimicrobial Therapy: Children's Antibiogram Data**

**First Line**

**Cephalexin:** 75 mg/kg/day PO in three divided doses (usual adult dose 1000 mg/day in two divided doses) for 7-14 days
Dosing frequency in children must be more frequent than in adults in this setting due to difference in drug metabolism

**Ceftriaxone:** 75 mg/kg (max single dose 1 gram)

- For children who are dehydrated, unable to tolerate oral medication or unlikely to be adherent to the initial doses of antibiotic. If clinical improvement is observed at 24H, an oral antibiotic can be substituted to complete the course of therapy.
- Children who are still significantly febrile or symptomatic at 24H may require additional parenteral doses before switching to oral therapy.

**Second line**

**Cefixime:** infants and children weighing ≤ 45 kg: 8mg/kg/day PO in one dose (usual adult dose 400 mg) for 7-14 days

- Children weighing >45 kg and adolescents: 400 mg PO in one dose for 7-14 days

**Cefdinir**: 14 mg/kg/day PO in one dose (usual adult dose 600 mg/day given one daily) for 7-14 days

- Cefdinir does not concentrate in the urine as well as other beta-lactam antibiotics

**Cephalosporin-allergic Patient**

**Bactrim**: 8 mg/kg/day PO in two divided doses (usual adult dose 320 mg/day divided two times a day, e.g. one double strength tablet two times a day) for 7-14 days

**Indications for referral to Urology:**
Any grade of reflux can be referred to Urology; under any of the following conditions, a referral should be made:

- Moderate-severe vesicoureteral reflux (Grades 3-5)
- ≥ third febrile UTI all ages
- Abnormal anatomy (surgical consideration)
- Recent or history of genitourinary surgery
- Persistent VUR on follow-up imaging

**Imaging:**

**First Febrile UTI**

**Renal Bladder Ultrasound** (RBUS) within 1-2 weeks for children ≥ 2 months – 2 years old with 1st febrile UTI & older children who fail to respond to antibiotics

- Normal – manage in primary clinic/observe
- Abnormal – consider voiding cystourethrogram (VCUG) & refer to Urology

**Voiding Cystourethrogram** (VCUG) - Consider in infant boys ≤ 1 year of age for posterior urethral valves

**Second Febrile UTI**

RBUS within 1-2 weeks for older children with a recurrent febrile UTI
VCUG within a few weeks of diagnosis for children ≥ 2 months- 2 years with a recurrent febrile UTI

- Normal or grade 1-2 vesicoureteral reflux (VUR) manage in primary clinic/observe & educate caregiver(s) about bowel/bladder dysfunction or refer to Urology
- Moderate-Severe VUR (Grades 3-5)
- Abnormal anatomy other than VUR, refer to Urology
- Persistent VUR on follow-up VCUG, refer to Urology

CLINICAL EFFECTIVENESS