

## Fever/Suspected Sepsis in Infants 29-60 days Clinical Pathway

March 2022

<b>Outcomes/Goals</b>	<ol style="list-style-type: none"> <li>1. Identification and treatment of infants 29-60 days with rectal/axillary temperature <math>\geq 38</math> C</li> <li>2. Create a team-oriented approach to efficient and timely evaluation and work-up</li> <li>3. Antibiotic administration within 60 minutes for acutely ill/toxic appearing infants</li> </ol>
<b>Inclusion</b>	Aged 29-60 days with rectal/axillary temperature $\geq 38.0$ C at home, other healthcare facility, or in ED
<b>Exclusions</b>	History of prematurity < 37 weeks, pre-existing medical conditions, indwelling devices, focal bacterial infections (except otitis media), clinical bronchiolitis, received immunizations in last 48 hours
<b>NURSE documentation</b>	Chief complaint. Onset of fever. Documented route of measuring temperature. Associated symptoms. Birth and medical history, immunizations, medications, allergies, vital signs, weight.
<b>INTERVENTIONS</b> Initiate on arrival	ESI Triage level II Full set of vitals including rectal temperature and weight Oxygen to maintain SaO <sub>2</sub> > 93% LMX to lumbar puncture (LP) site and/or J-tip LP tray to bedside IV placement for all ill appearing/toxic presentations. Consider IO per policy guidelines
<b>DIAGNOSTICS</b>	Bedside CBG for ill appearing/hypoglycemic symptoms/vomiting/decreased po intake Catheter specimen UA Micro and Mandatory Culture CBC with differential, Procalcitonin (serum), Blood culture, BMP/CMP (if ill-appearing chem8) CSF (gram stain, cell count, protein, glucose, culture, hold extra fluid) per MD Chest x-ray if tachypnea, hypoxia, respiratory symptoms), stool sample if diarrhea VBG/lactate POC if ill/toxic appearing
<b>PHYSICIAN (LIP)</b>	
Fluids (if indicated)	Normal Saline bolus 20 ml/kg
Medication	
Hypoglycemia	D10 5ml/kg for CBG <50
Antipyretics	Acetaminophen 12.5 mg/kg PO or Acetaminophen 15-30 mg/kg PR
Antibiotics	<p><b><u>Acutely Ill/Toxic appearing infant/Positive Inflammatory Markers</u></b></p> <p><u>If suspected meningitis (CSF <math>\geq 10</math> WBCs) or toxic appearing infant:</u>            Ceftriaxone 100mg/kg/day IV q12 hours +Vancomycin 20 mg/kg once</p> <p><u>Positive inflammatory markers with traumatic CSF or CSF not obtained</u>            Ceftriaxone 50mg/kg dose IV qday</p> <p><u>Positive inflammatory markers with negative CSF and negative UA</u>            Ceftriaxone 50mg/kg dose IV qday            If UA positive, complete additional 9-13 days of cefdinir 14mg/kg daily</p> <p><b><u>Negative inflammatory markers with positive UA</u></b>            Cephalexin 50-100mg/kg/day divided QID or cefdinir 14mg/kg daily</p> <p><b><u>Negative inflammatory markers with negative UA</u></b>            Antibiotics discouraged</p>
<b>DISPOSITION</b>	<p><b><u>Admit:</u></b>            Acutely ill/toxic appearing            Positive inflammatory markers and positive CSF (<math>\geq 10</math>WBCs, + gram stain)</p> <p><b><u>Consider admission for observation vs discharge with close follow-up:</u></b>            Positive inflammatory markers with traumatic tap vs CSF not obtained            Positive inflammatory markers with negative CSF with positive or negative UA</p> <p><b><u>Discharge:</u></b>            Negative inflammatory markers with positive or negative UA</p>

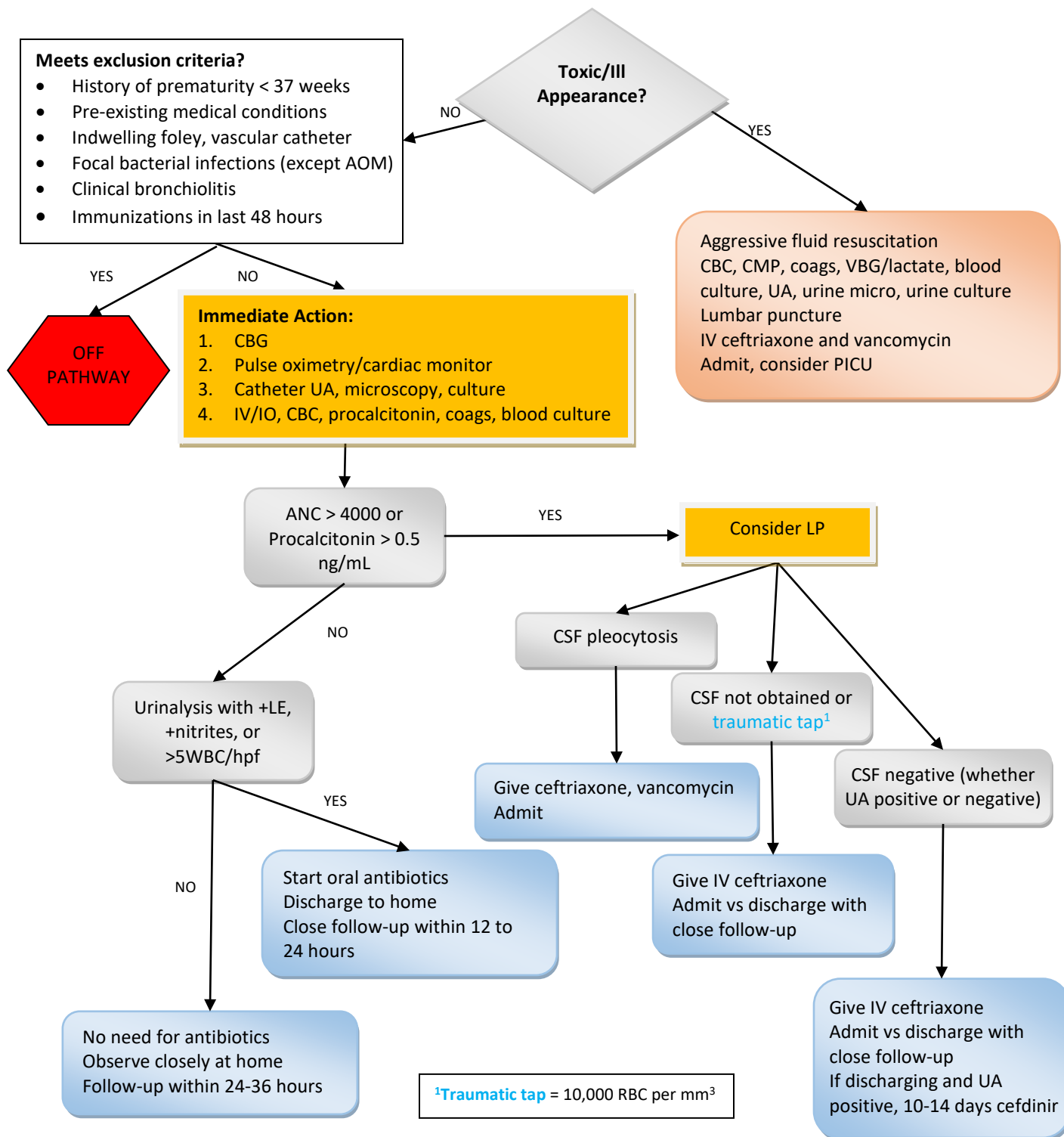
# Clinical Pathway Decision Making Process

## Fever/Suspected Sepsis

Temp >38 R in infants 29-60 days\*

(\* Rectal/axillary temperature by parent, clinic or ED)

March 2022



## Febrile Infant 29-60 Days Rationale and Data

### Goals of Clinical Pathway

1. Rapid identification and treatment of infants 29-60 days with presenting complaint of documented fever  $\geq 38$  C
2. Create a team-oriented approach to efficient and timely evaluation and work-up.
3. Antibiotic administration within 60 minutes for acutely ill/toxic appearing infants

Data Considerations	Interventions	Rationale
Fever	Documented rectal temperature	Defined as rectal temperature $>38^{\circ}\text{C}$ (100.4F). Rectal thermometry is the gold standard, and studies have demonstrated greatest discordance in young children between rectal thermometry and temporal measurements. Parental report of tactile fever is likely to be accurate. Range of reported sensitivity 82-89%, specificity 76-86%.
Urine collection	Catheter specimen collection	Bladder catheterization or suprapubic bladder aspiration is the methods of choice for obtaining urine samples according to AAP guidelines. Bag collection sample has an increased risk of contamination, false-positive rate in excess of 67%.
Urine Analysis	Urine culture	Urine culture should be obtained in conjunction with dipstick and microscopy if LE is trace or greater, nitrites +, or if $> 5$ WBCs or bacteria present on micro. Historically, UA with micro not felt to be sensitive marker in infants. However, high quality recent studies suggest sensitivity of UA with micro is excellent, with LE of 94% or higher. Pyuria ( $>5$ WBCs) adds additional sensitivity incrementally.
White blood cell count, UA, Procalcitonin	Lumbar puncture	Lumbar puncture is not necessary in patients aged 29-60 days with negative inflammatory markers, as this group appears to be at very low risk for bacterial meningitis (no missed cases in PECARN, Step-by-Step, or PROS). Lumbar puncture should be considered in infants with ANC $>4000$ or PCT $> 0.5$ and in ill appearing infants in whom the risk of meningitis is likely substantially greater than 0.25%.
Procalcitonin ANC	Empiric antibiotics	In the setting of negative urine, ANC $< 4000$ and procalcitonin $< 0.5\text{ng/mL}$ has sensitivity 97.7% (95% CI 91.3-99.6%) and negative predictive value of 99.6% (98.4-99.9%) in identifying infants with invasive bacterial infection per multicenter PECARN study. Therefore, empiric antibiotics are not warranted in this subgroup, though close-follow-up is.

### References:

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