

ED Pediatric Sepsis Pathway

Triage: Assess whether FEVER at home or a High Risk patient. Document in ED Sepsis Screening section of the Triage Navigator. Record vital signs



Patient has 2 or more of the following

Fever, High Risk, Abnormal HR or RR, Abnormal WBC

1. Fever

- ED Temp <36 or >38 C, a home temp or parent report of tactile fever

2. High risk

- Central Line/PICC/Port
- Malignancy
- Neonate 0-4 weeks of age
- Chronic oral steroid dependence (asthma, autoimmune disease)
- Asplenia including Sickle Cell Disease
- Congenital heart disease
- Bone Marrow or Solid Organ Transplant
- Complex urogenital anatomy/repair
- Severe neurologic impairment
- Technology dependence

3. Abnormal Heart Rate (HR) or Respiratory Rate(RR)

Age	Abnormal HR	Abnormal RR
< 1 month	<100 or >180	>60
1 month-< 1 year	<90 or ≥160	>60
1-< 2 years	≥160	>40
2-5 years	≥140	>40
6-12 years	≥130	> 30
13-18 years	≥ 110	> 18

4. WBC count <5,000 or >12,000 if available when patient screened



SEPSIS SCREEN POSITIVE

1. Notify attending or resident in person for immediate assessment and document
2. Obtain BP, complete triage and assign ESI level (and room as appropriate)



Attending/Resident Assessment Confirms Sepsis



Initiate ED PEDIATRIC SEPSIS BUNDLE. Use PED SEPSIS Order Set

- Notify **Pharmacist**. State Pediatric Code Sepsis. Provide MRN and antibiotic.
- Establish IV or IO
- Obtain **CBC with diff, loaded blood gas and blood culture**
- Push isotonic **FLUIDS-20 ml/kg boluses (x3 if indicated) via pressure bag or syringe within 15"**
- Administer **ANTIBIOTICS** after blood culture obtained; do not delay if culture cannot be drawn
- Implement **SEPTIC SHOCK ALGORITHM** if septic shock suspected
- Admit patient to PICU if ≥ 60ml/kg fluid given or physician concern.

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Attending/Resident Assessment

Attending/ Resident Assessment

1. Confirm Sepsis Screen Vital Signs
2. Obtain Brief History
3. Assess for
 - Altered **MENTAL STATUS**
 - Mottled, cool **SKIN**
 - Weak, thready or Bounding **PULSES**
 - > 3 SEC **Cap Refill**
 - **Hypotension ***
 - **Other physician concerns**

*Hypotension

Age	Systolic BP
0-1 month	<60
1 mo-1 year	<70
1-2 year	<74
3-4 year	<78
5-6 year	<82
7-8 year	<86
9 y and older	<90

ANTIBIOTICS

PEDIATRIC ANTIBIOTICS (STAT one time doses upon response to Code Sepsis)			
Age > 28 days		Dosing (IV)	Max single dosing (IV)
Primary therapy	Ceftriaxone AND	100 mg/kg/dose	2000 mg
	Vancomycin	20 mg/kg/dose	2000 mg
Beta lactam allergy	[Ciprofloxacin OR	15 mg/kg/dose	400 mg
	Aztreonam] AND	30 mg/kg/dose	2000 mg
	Vancomycin	20 mg/kg/dose	2000 mg
Suspected source			
Catheter-associated	Cefepime AND	50 mg/kg/dose	2000 mg
	Vancomycin	20 mg/kg/dose	2000 mg
Gastrointestinal	Meropenem (monotherapy) OR	20 mg/kg/dose	2000 mg
	Cefepime AND	50 mg/kg/dose	2000 mg
	Metronidazole	10 mg/kg/dose	500 mg
Age > 28 days – IMMUNOCOMPROMISED AND/OR SIGNIFICANT PRIOR ANTIBIOTIC USE WITHIN PREVIOUS 30 DAYS			
Primary therapy	Cefepime AND	50 mg/kg/dose	2000 mg
	Vancomycin	20 mg/kg/dose	2000 mg
Beta lactam allergy	Ciprofloxacin AND	15 mg/kg/dose	400 mg
	Vancomycin	20 mg/kg/dose	2000 mg
Fungal history	Fluconazole OR	12 mg/kg/dose	800 mg
	Micafungin	3 mg/kg/dose	100mg
Neonate < or = 28 days			
Primary therapy	Ampicillin AND	100 mg/kg/dose	
	Gentamicin	Based on corrected gestational age	
HSV concern	Ampicillin AND	100 mg/kg/dose	
	Gentamicin AND	Based on corrected gestational age	
	Acyclovir	20 mg/kg/dose	
Suspected source			
Gastrointestinal	Ampicillin AND	100 mg/kg/dose	
	Gentamicin AND	Based on corrected gestational age	
	Metronidazole	15 mg/kg/dose	

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SEPTIC SHOCK ALGORITHM

Time Frame

0 min

5 min

15 min

60 min

Recognize decreased mental status and perfusion.
Begin high flow O₂. Establish IV/IO access.

Initial Resuscitation: If not already done, push boluses of 20 cc/kg isotonic saline or colloid up to ≥ 60 cc/kg until perfusion improves or unless rales or hepatomegaly develop. Correct hypoglycemia. Shock not reversed? Give antibiotics if not already given.

Inotrope Doses
Can be given peripherally

Fluid Refractory Shock
Begin inotrope IV/IO.
Use atropine IV/IO and ketamine IV/IO/IM to obtain central access and airway if needed.
Reverse **cold shock** by titrating dopamine or, if resistant, epinephrine.
Reverse **warm shock** by titrating norepinephrine.
Use central line if available; otherwise give peripherally.

Dopamine: dose up to 10 mcg/kg/min

Epinephrine (EPI): start at 0.03-0.05mcg/kg/min (max dose-0.3 micrograms/kg/min)

Shock not reversed?

Norepinephrine (Norepi): start at 0.1 mcg/kg/min (max dose 1 micrograms/kg/min)

Catecholamine Resistant Shock
Begin **hydrocortisone** if at risk for absolute adrenal insufficiency

Admit to **PICU** and monitor CVP. Attain normal MAP-CVP and ScvO₂ > 70%

Cold Shock with normal BP

1. Titrate fluid and EPI, ScvO₂ > 70%, Hgb > 10g/dL
2. If ScvO₂ still < 70% add vasodilator with volume loading (nitrovasodilators, milrinone, imrinone and others). Consider levosimendan

Cold Shock with low BP

1. Titrate fluid and EPI, ScvO₂ > 70%, Hgb > 10g/dL
2. Consider Norepi if still hypotensive
3. If ScvO₂ still < 70% consider dobutamine, milrinone, enoximone or levosimendan

Warm Shock with low BP

1. Titrate fluid and EPI, ScvO₂ > 70%, Hgb > 10g/dL
2. Consider vasopressin, terlipressin or angiotensin if still hypotensive
3. If ScvO₂ still < 70% consider low dose EPI

Persistent Catecholamine Resistant Shock

Rule out and treat pericardial effusion, pneumothorax and intra-abdominal pressure > 12mm Hg
Consider pulmonary artery, PICCO or FATH catheter and/or Doppler ultrasound to guide fluid, inotrope, vasopressor, vasodilator and hormonal therapies
Goal C.I. > 3.3 and < 6.0 L/min/m²