## Sepsis Management in Children
### Greater than 28 Days of Age

**EMERGENCY DEPARTMENT – Pediatrics**

- **Date (yyyy/MON/dd):** __________
- **Time (24 hr/hh:mm):** __________
- **Prescriber Signature:** __________
- **Verified By (Signature):** __________
- **Printed Surname/Registration #:** __________

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### INVESTIGATIONS:

- Urinalysis
- Urine Culture
- Chest x-ray
- Crossmatch ________ units of pRBCs ________ Blood type and screen
- Lumbar puncture for CSF cell count, CSF protein, CSF glucose, CSF culture when feasible
- Other: _____________________________________________________________________________________

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### INOTROPES (Note: Prime lines to patient)

- **EPINEPHrine** _______micrograms/kg/minute IV/IO (for “cold shock”)
  - Range: (0.05 to 0.3 micrograms/kg/minute) and titrate to effect.
  - Less than or equal to 20 kg: 0.05 mg/mL
  - Greater than 20 kg: 0.2 mg/mL

- **norepinephrine** _______micrograms/kg/minute IV/IO (for “warm shock”)
  - Range: (0.05 to 0.3 micrograms/kg/minute) and titrate to effect.
  - Less than or equal to 20 kg: 0.04 mg/mL
  - Greater than 20 kg: 0.16 mg/mL

- **DOPamine** 10 micrograms/kg/minute IV/IO
  - Range: (5 micrograms to 15 micrograms/kg/minute) and titrate to effect.

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### FOR CATECHOLAMINE RESISTANT SHOCK

- **Hydrocortisone** (2 mg/kg/dose) _______ mg IV/IO x 1 dose

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### EMPIRIC ANTIMICROBIAL (NOT applicable to immunocompromised or cystic fibrosis patients)

- **cefTRIAXone** (100 mg/kg/dose, maximum 2000 mg) _______mg IV/IO/IM x 1 dose then reassess on admission

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### AND IF **MENINGITIS** SUSPECTED:

- **vancomycin** (15 mg/kg/dose, maximum 1000 mg) _______mg IV/IO x 1 dose then reassess on admission

Antimicrobial choice is intended as empiric therapy and should be reevaluated once additional clinical and laboratory information is available either at or prior to admission.

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Note: Page 2 Clinician Information Only

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Pediatric Severe Sepsis Algorithm

For Children greater than 28 days of age

Recognition of Severe Sepsis:
- Fever (greater than 38°C) or hypothermia (less than 36°C)
- High Risk Conditions*
- Signs of infection*
- And signs of impaired perfusion:
  - Tachycardia, cap refill greater than 2 sec, cold extremities, ↓ urine output, SpO2 less than 94%, mottled skin
  - Mental status changes (confusion, lethargy, inconsolability)

Initial Management:
- Access ABCs, cardiorespiratory monitoring
- O₂ 10 to 15 L non-rebreather mask
- IV access x2; IO access if 2 failed IV attempts
- Investigations:
  - Bedside glucose
  - CBC, blood C&S, electrolytes, venous gas, glucose, urea, creatinine, lactate, INR/PTT, ALT, blood type & screen
  - CXR
  - Urinalysis and C&S (consider indwelling urinary catheter)

1st Bolus
- 0.9% NaCl 20 mL/kg rapid direct over 5 to 10 min
- Give Antibiotics
  - cefTRIAXone (100 mg/kg/dose, MAX 2 g/dose) IV q24h
  - vancomycin if suspect meningitis (15 mg/kg/dose, MAX 1 g/dose) IV q6h

Reassess HR, RR, BP, Perfusion, SpO₂
If remain abnormal:

2nd Bolus
- 0.9% NaCl 20 mL/kg rapid direct over 5 to 10 min

Reassess HR, RR, BP, Perfusion, SpO₂
If remain abnormal:

3rd Bolus
- 0.9% NaCl 20 mL/kg rapid direct over 5 to 10 min
  - Prepare inotrope infusion

Reassess HR, RR, BP, Perfusion, SpO₂
If remain abnormal:

If "Cold Shock"
- (↓ perfusion, ↓ peripheral pulses)
- EPINEPHrine 0.05 micrograms/kg/min IV, titrate up by 0.02 micrograms/kg/min to effect

Reassess HR, RR, BP, Perfusion, SpO₂
If remain abnormal:

Repeat boluses of 0.9% NaCl 20 mL/kg until adequate perfusion

If "Warm Shock"
- (↑ pulse pressure, bounding pulses)
- norepinephrine 0.05 micrograms/kg/min IV, titrate up by 0.02 micrograms/kg/min to effect

CONSIDERATION OF:
- Intubation
  - Be prepared for clinical deterioration
  - Ensure adequate fluid resuscitation
- Addition of 2nd inotrope
- Steroid (catecholamine resistant shock)
- PRBC transfusion

Adapted from: A PedsPacs TREKK Resource. Published: June 2017
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