Pediatric Severe Sepsis Algorithm

For children >28 days of age

Recognition of Severe Sepsis:

- Fever (>38.0°C) or hypothermia (<36.0°C)
- High Risk Conditions*
- Signs of infection*

And signs of impaired perfusion:

- Tachycardia, cap refill >2 sec, cold extremities, ↓urine output, SpO_2 <94%, mottled skin
- Mental status changes (confusion, lethargy, inconsolability)

** See Sepsis Screener in Drug Dosing Binder*

Initial Management:

- Assess ABCs, cardiorespiratory monitoring
- O_2 10-15 L/min non-rebreather mask
- IV access x2; IO access if 2 failed IV attempts
- May use IO for blood tests, fluids & medications in lieu of IV
- Investigations:
  - Bedside glucose (If glucose ≤2.6 mmol/L, give 5 mL/kg D10W IV push, then start D10NS infusion @ 5 mL/kg/hr (MAX 250 mL/hr). Recheck glucose in 5 min)
  - CBC and diff, blood C&S, electrolytes, venous gas, glucose, urea, creatinine, lactate, PT/PTT, ALT, blood type & screen
  - CXR
  - Urinalysis and C&S (consider indwelling urinary catheter)

Alert Pediatric Referral Centre

10 min

1st Bolus - NS 20 mL/kg IV rapid push over 5 – 10 min

Give Antibiotics

- Ceftriaxone (100 mg/kg/dose, MAX 2g/dose) IV q24h
- Vancomycin if suspect meningitis (15 mg/kg/dose, MAX 1 g/dose) IV q6h

! Reassess HR, RR, BP, Perfusion, SpO_2
If remain abnormal:

20 min

2nd Bolus - NS 20 mL/kg IV rapid push over 5 – 10 min

- Alert Pediatric Referral Centre, if not already done

! Reassess HR, RR, BP, Perfusion, SpO_2
If remain abnormal:

30 min

3rd Bolus - NS 20 mL/kg IV rapid push over 5 – 10 min

- Prepare inotrope infusion
- Alert Pediatric Referral Centre, if not already done

! Reassess HR, RR, BP, Perfusion, SpO_2
If remain abnormal:

40 min

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

! Reassess HR, RR, BP, Perfusion, SpO_2
If remain abnormal:

Ongoing Care

Repeat boluses of NS 20 ml/kg
until adequate perfusion

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

CAUTION!

- **Assess for fluid overload after each bolus (palpate for hepatomegaly, auscultate for crackles)**
- **Consider cardiogenic shock if deterioration after fluid boluses**

Pediatric Referral Centre Discussion

CONSIDERATION OF:

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

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