



Refer EARLY to KIDSNTS for advice - 0300 200 1100

- Sepsis is characterised by a life-threatening organ dysfunction due to a dysregulated host response to infection.<sup>1</sup>
- Septic shock should be a term used in written & verbal communication to describe a patient who is hypotensive AND who has a lactate >2 mmol/l following appropriate fluid resuscitation. The rate at which lactate improves following initiation of fluid resuscitation is indicative of survival.<sup>1</sup>
- For some patients, each hour's delay in giving antibiotics increases mortality & for others, significant delays are likely to adversely impact on outcome.<sup>1</sup>

### AMBER FLAG SIGNS (ANY ONE PRESENT)

- Not responding normally / no smile / not wanting to play.
- Reduced activity / very sleepy / seizures / acute deterioration.
- Moderate tachycardia (see chart).
- Moderate tachypnoea (see chart).
- SpO<sub>2</sub> < 92% or increased O<sub>2</sub> requirement.
- Nasal flaring.
- Capillary refill time ≥ 3 seconds.
- Reduced urine output (<1 ml/kg/hr if catheterised).
- Leg pain or cold extremities.
- Temperature <36°C.
- Immunocompromised/suppressed.
- Injury or surgery in past 8 weeks or evidence of wound / vascular access (such as a Broviac line) infection.
- Parental concern.

### RED FLAG SIGNS (ANY ONE PRESENT)

- Doesn't wake when roused / won't stay awake / altered mental state.
- Looks very unwell to healthcare professional.
- Weak, high-pitched or continuous cry in infant.
- Severe tachycardia (see chart).
- Severe tachypnoea (see chart).
- Bradycardia (<60 bpm).
- Needing O<sub>2</sub> to keep SpO<sub>2</sub> >92% (unless cyanotic heart disease - needing O<sub>2</sub> to keep SpO<sub>2</sub> normal for child).
- Non-blanching rash / mottled / ashen / cyanotic.
- Temperature <36°C or if under 3 months, temperature >38°.
- No urine output over past 12 hours.
- Recent chemotherapy.
- Lactate > 2mmol/l.

### Further Review Required

Send bloods & review results. Consider antimicrobial treatment  
**ENSURE SENIOR CLINICAL REVIEW** within 1HR  
 Monitor observations closely

### Activate Paediatric Sepsis 6

Full Monitoring (O<sub>2</sub> Saturation/ECG/BP on 1-2 min cycles)  
**ACTIVATE PAEDIATRIC RESUS TEAM**  
 (Paediatrician & Anaesthesia)

Age (years)	RESPIRATORY RATE		HEART RATE	
	Moderate	Severe	Moderate	Severe
Neonate 37 - 44 weeks	60-79	≥ 80	150-179	≤ 70 or ≥ 180
<1	50-59	≥ 60	150-159	<80 or >160
1-2	40-49	≥ 50	140-149	<80 or >150
3-4	35-39	≥ 40	130-139	<60 or >140
5-7	24-28	≥ 28	110-129	<60 or >130
8-11	20-24	≥ 25	100-114	<60 or >115
>12	15-20	≥ 25	90-130	<55 or >130

### SEPSIS 6

1. Ensure senior clinician attends & paediatric consultant en route.
2. Give 100% O<sub>2</sub> if SaO<sub>2</sub> <92% & to maintain 94-98% - or if signs of shock or to maintain SpO<sub>2</sub> 'normal for child'.
3. Urgent vascular access x 2 – blood gas/lactate, cultures, glucose, FBC, CRP, coagulation, U&E's, LFT's & group & save - **LOW THRESHOLD FOR IO ACCESS.**
4. Max dose broad spectrum antibiotics such as Cefotaxime - <28 days add Amoxicillin. **DO NOT DELAY!** Also consider Aciclovir.
5. Fluid bolus - 10mls/kg, reassess & repeat as necessary.
6. Consider inotropes if > 40mls/kg fluid given and still signs of shock - use balanced solution such as Plasma-Lyte 148 if available.

### For further specialist advice including if progressing to Rapid Sequence Induction (RSI) Call KIDS NTS

Decision making around this plan will include consideration of current A/B/C & neurological status.

High Flow Nasal O<sub>2</sub> may be helpful whilst preparing.

**RSI - AVOID Propofol or gas inductions.**

Prepare 2 x resus doses of adrenaline & 2 x 10mL/kg fluid bolus.  
 Prepare dilute adrenaline - 0.1mls/kg of 1:10,000 diluted to 10ml with 0.9% NaCl).

Adrenaline (peripheral strength) infusion running pre-intubation.

### Discuss with KIDS consultant if ;

- Severe acidosis -pH <7.2 despite adequate fluid resus
  - Need for further inotropes +/- hydrocortisone
- Electrolyte imbalances – aim for ionised Calcium >1.0 mmols
  - Central venous access &/or arterial line (if local expertise available)
- Hb and Platelets low. Also for coagulopathy management .
  - Monitor lactate clearance with regular blood gases.

**Remember:** patients with neurodisability, learning difficulties & autistic spectrum disorder may not present typically. Have a high index of suspicion if there is a change from baseline. Parents/ carers are the best source of information regarding baseline.

### If ongoing fluid requirements & inadequate breathing Prepare to INTUBATE

(use the KIDSNTS pre-intubation checklist)

**Most experienced operator. Use cuffed, oral ET tube**

- RSI (use cardio-stable drugs e.g. Ketamine)
- Prepare Resus drugs (risk of cardiac arrest)
- **Peripheral strength adrenaline** prepared & running at 0.05 - 0.1 mcgs/kg/min (use the KIDSNTS drug calculator)
- Minimum of 2 x 10ml/kg volume bolus drawn up - preferably balanced solution such as Plasma-Lyte 148.

### Goal is to reverse shock.

Assess:

- If vital signs are within normal limits for age or improving.
- If pulse volume is normal & CRT <2seconds.
- If lactate is declining to <2mmol.
- If Urine output > 0.5 - 1ml/kg/hr.
- If serum glucose is normal.

If not achieving these goals consider other differential diagnosis such as:

Tension pneumothorax,  
 Tamponade/pericardial effusion, Toxin ingestion, Metabolic disorder, Pulmonary thromboembolism, Anaphylaxis, Hemorrhage, Myocarditis, Arrhythmia, Adrenal insufficiency, Hypothyroidism, Intussusception/volvulus.