Clinical Practice Guidelines: Medical/Sepsis

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<tr>
<td>Purpose</td>
<td>To ensure consistent management of patients with Sepsis.</td>
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Sepsis is a syndrome of infection complicated by systemic inflammation and can result in organ dysfunction, shock and death. Sepsis remains a major cause of death worldwide and creates a large burden on communities and hospital systems with an associated high economic cost. Severe sepsis mortality exceeds that of AMI, stroke and trauma. Sepsis mortality rates can be as high as 50% in severe sepsis and up to 80% in septic shock.[1–3] Sepsis is a complex process that can progress along a continuum from sepsis, through severe sepsis and onto septic shock, with no clear delineation between these phases. Overall, respiratory infections account for approximately half of all cases of sepsis. The next most common causes are genitourinary and abdominal sources of infection.[3–5]

Sepsis has the potential to affect anyone but risk factors are related to both a patient’s predisposition to infection and the likelihood of acute organ dysfunction if infection develops. Additionally, the incidence of sepsis is higher in infants, older persons and higher in males than in females.

Key components in the pre-hospital management of sepsis are:[6]

- Early identification
- Early oxygenation
- Early haemodynamic resuscitation[7]
- Hospital notification[8]

It is critical to prevent end organ hypoxia in the septic patient. For respiratory distress consider the early application of high flow oxygen therapy and the possibility of the need for positive pressure ventilation (i.e. BVM/CPAP) and the possibility of an advanced airway in cases of altered level of consciousness or severe respiratory compromise and/or failure.

Fluid resuscitation boluses with sodium chloride 0.9% of 250–500 mL (10–20 mL/kg) should be considered. Additional fluid boluses should be administered if there is no improvement of vital signs and no signs of pulmonary oedema. If there are signs of organ hypoperfusion despite appropriate fluid resuscitation, consider administration of a vasopressor and aim for a Mean Arterial Pressure (MAP) > 65 mmHg.[9]

**Clinical features**

Diagnosis of sepsis requires the presence of a presumed or known site of infection with evidence of Systemic Inflammatory Response Syndrome (SIRS) characterised clinically in adults by two or more of:

- Temperature > 38.3 or < 36°C
- Heart rate > 90 min
- Respiratory rate > 20 min
- BGL > 6.6 mmol/L (unless diabetic)
- Acutely altered mental status

Severe sepsis is identified by the presence of sepsis and evidence of organ hypoperfusion or dysfunction and is characterised clinically in adults by one or more of:

- Blood pressure systolic < 90 or MAP < 65 mmHg
- Oxygen saturations < 90%
- Not passed urine for > 8 hours
- Prolonged bleeding from minor injury or gums.[10]
**Risk Assessment**

- One of the hypothesised reasons for the misdiagnosis of severe sepsis and septic shock is because the initial presentation is often non-specific and its severity ambiguous.\[10\]
- Diagnosis requires the presence of a presumed or known site of infection which may be bacterial, viral, fungal or even parasitic in origin.\[11\]
- The most common presenting symptom in sepsis is tachypnoea.\[12\]

**Additional information**

- Sepsis should be suspected in any generally unwell patient that is potentially immunosuppressed (e.g. recent chemotherapy, on immunosuppressive medications like methotrexate and prednisolone, history of chronic liver or renal disease).
- Fluid overload may be difficult to detect if the patient has sepsis-induced acute lung injury and Acute Respiratory Distress Syndrome (ARDS). Response to interventions should be constantly monitored through patient vital signs.
- A child who is bradycardic and/or hypotensive is pre-arrest and requires immediate intervention.
- BGL should be regularly monitored and maintained especially in children.
- Whilst fever is commonly associated with sepsis, hypothermia is a worrying sign that is associated with higher morbidity particularly in the elderly.\[13\]
- Paediatric and elderly patients may present with only mild hyperthermia in the setting of sepsis.

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**CPG: Paramedic Safety**
**CPG: Standard Cares**

**Suspected meningococcal sepsis?**

- **Y**: Manage as per:
  - CPG: Meningococcal septicemia

**Suspected severe sepsis or septic shock?**

- **N**: Consider:
  - Antipyretic
  - IV fluid

- **Y**: Consider:
  - Oxygen
  - IV fluid
  - Adrenaline (epinephrine)

**Transport to hospital**
**Pre-notify as appropriate**

**Note:** Officers are only to perform procedures for which they have received specific training and authorisation by the QAS.