GUIDELINE

Presumed Bacteraemia/Sepsis: Paediatric
(Neonates and immunocompetent children)

Scope (Staff): Clinical Staff – Medical, Nursing, Pharmacy
Scope (Area): Perth Children’s Hospital (PCH)

This document should be read in conjunction with this DISCLAIMER

- Management of sepsis should take into consideration previous microbiological results and recent travel history.
- For therapeutic advice, discuss with the Infectious Diseases Department or Clinical Microbiology Services.

<table>
<thead>
<tr>
<th>CLINICAL SCENARIO</th>
<th>DRUGS/DOSES</th>
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<tbody>
<tr>
<td></td>
<td>Standard Protocol</td>
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<tr>
<td>Severe Sepsis with haemodynamic instability requiring ICU admission and/or vasopressors.</td>
<td>In severe sepsis, antimicrobial therapy should be administered without delay. Following empiric treatment with antimicrobials, all patients with severe sepsis should be discussed with infectious diseases or clinical microbiology services</td>
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<tr>
<td>Neonatal viral infections can sometimes present with neonatal sepsis. Consider HSV testing and empiric treatment with aciclovir</td>
<td>Early onset neonatal sepsis (&lt;48 hours of life)</td>
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<tr>
<td>Late onset (hospital acquired) neonatal sepsis (≥48 hours old)</td>
<td>IV gentamicin AND IV vancomycin</td>
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Refer to the separate ChAMP guidelines for children with suspected meningitis/ meningoencephalitis or presumed bacteraemia/sepsis in immunocompromised patients (febrile neutropenia)
**Presumed bacteraemia/sepsis – Paediatric**

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<td><strong>Standard Protocol</strong></td>
<td>Known or Suspected MRSA&lt;sup&gt;a&lt;/sup&gt;</td>
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### Community acquired neonatal sepsis - meningitis excluded
- IV gentamicin
- AND
- IV benzylpenicillin doses as per neonatal guidelines

- As per standard protocol
- Discuss with ID or Microbiology service

### Community acquired neonatal sepsis - meningitis not excluded
- IV benzylpenicillin
- AND
- IV cefotaxime

**CONSIDER ADDING**
- IV gentamicin IF haemodynamically unstable doses as per neonatal guidelines

- As per standard protocol
- Discuss with ID or Microbiology service

### Fever >38°C without a source and with no hemodynamic instability (1 to ≤3 months)
- IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) 12 hourly

**As per standard protocol**

**Febrile children >3 months who are well without signs of serious illness** are not routinely recommended antibiotics. Observation and investigation is recommended.

### Community acquired sepsis with hemodynamic instability (≥1 month)
- IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) 12 hourly

**CONSIDER ADDING**
- IV vancomycin<sup>c</sup> 15mg/kg/dose (to a maximum initial dose of 750mg) 6 hourly if unable to obtain a LP due to contraindication or if gram positive cocci on CSF microscopy

- As per standard protocol
- **gentamicin**<sup>e</sup> AND **vancomycin**<sup>c</sup>

**IF ongoing instability requiring admission to ICU see severe sepsis**

### Healthcare-Associated Sepsis
- i.e. presumed* serious bacterial infection with no known source (≥ 1 month): includes community acquired sepsis with CVL in place
- Management of Healthcare-Associated Sepsis should take into consideration previous microbiological results. For therapeutic advice, discuss with Infectious Diseases or Clinical Microbiology services

- IV piperacillin/tazobactam 100mg/kg/dose (to a maximum of 4 grams piperacillin component) 6 hourly
- **AND**
- IV vancomycin<sup>c</sup> 15mg/kg/dose (to a maximum initial dose of 750mg) 6 hourly

**CONSIDER ADDING** (as a stat dose)
- IV gentamicin 7.5mg/kg as a single dose (to a maximum of 480mg) IF haemodynamically unstable

- As per standard protocol
- **gentamicin**<sup>e</sup> AND **vancomycin**<sup>c</sup>
- **gentamicin**<sup>e</sup> AND **vancomycin**<sup>c</sup>
### Presumed bacteraemia/sepsis – Paediatric

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<td><strong>Asplenia</strong></td>
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<td>Sepsis in an asplenic patient – presumed* serious bacterial infection</td>
<td>Treat as for community acquired sepsis</td>
</tr>
<tr>
<td>Fever in an asplenic patient (possible** serious bacterial infection)</td>
<td>IV <strong>ceftriaxone</strong> 50mg/kg/dose (to a maximum of 2 grams) 24 hourly</td>
</tr>
<tr>
<td>Endocarditis or other endovascular infection; native valve or homograft</td>
<td>IV <strong>benzylpenicillin</strong> 50mg/kg/dose (to a maximum of 1.8 grams) 4 hourly <strong>AND</strong> IV <strong>flucloxacillin</strong> 50mg/kg/dose (to a maximum of 2 grams) 4 hourly <strong>AND</strong> IV <strong>gentamicin</strong> 7.5mg/kg/dose (to a maximum of 480mg) 24 hourly</td>
</tr>
<tr>
<td>Endocarditis or other endovascular infection; prosthetic valve or graft</td>
<td>IV <strong>vancomycin</strong> 15mg/kg/dose (maximum initial dose 750mg) 6 hourly <strong>AND</strong> IV <strong>flucloxacillin</strong> 50 mg/kg/dose (to a maximum of 2 grams) 4 hourly <strong>AND</strong> IV <strong>gentamicin</strong> 7.5mg/kg/dose (to a maximum of 480mg) 24 hourly</td>
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**a.** Children known or suspected to be colonised with MRSA may need to have their therapy/prophylaxis modified. Children suspected of having MRSA include:
- i) Children previously colonised with MRSA
- ii) Household contacts of MRSA colonised individuals
- iii) In children who reside in regions with higher MRSA rates (e.g. Kimberley and the Pilbara) a lower threshold for suspected MRSA should be given
- iv) Children with recurrent skin infections or those unresponsive to ≥ 48 hours of beta-lactam therapy. For further advice, discuss with Microbiology or ID service.

**b.** An immediate (IgE mediated) reaction is characterised by the development of urticaria, angioedema, bronchospasm or anaphylaxis within 1 to 2 hours of drug administration. Delayed reactions including maculopapular or morbilliform rashes, drug fever and cytopenias and are more in keeping with other forms of immunological reactivity. Isolated diarrhoea is not usually immune-mediated and does NOT contraindicate the future use of an antibiotic.

**c.** IV **vancomycin** 15mg/kg/dose (maximum initial dose 750mg) 6 hourly. Therapeutic drug monitoring required.

**d.** IV **amikacin** 30mg/kg/dose (to a maximum of 1250mg) 24 hourly. Clinical review is required after 3 doses Therapeutic drug monitoring is required for all patients. ChAMP approval is also required.

**e.** IV **gentamicin** 7.5mg/kg/dose (to a maximum of 480mg) 24 hourly. Therapeutic drug monitoring required if therapy extends beyond 72 hours.
Presumed bacteraemia/sepsis – Paediatric

f. IV [flucloxacillin 50mg/kg/dose](#) (to a maximum of 2 grams) 4 hourly.

g. IV [cefazolin 50mg/kg/dose](#) (to a maximum of 2 grams) 6 hourly.

* **Presumed**: Moderate to high likelihood of serious bacterial infection but serious bacterial infection has not been confirmed

**Possible**: Low likelihood of serious bacterial infection but serious bacterial infection has not been excluded

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### Related internal policies, procedures and guidelines

- **Antimicrobial Stewardship Policy**
- **ChAMP Empiric Guidelines**

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### References


2. Expert opinion – Paediatric Infectious Diseases Physicians

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This document can be made available in alternative formats on request for a person with a disability.