## GUIDELINE

### Skin, Soft Tissue and Orthopaedic Infections
(Paediatric Empiric Guidelines)

**Scope (Staff):** Medical, Nursing and Pharmacy

**Scope (Area):** Perth Children’s Hospital (PCH)

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### DISCLAIMER

This document should be read in conjunction with this **DISCLAIMER**

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<table>
<thead>
<tr>
<th>CLINICAL SCENARIO</th>
<th>Usual duration</th>
<th>DRUGS/DOSES</th>
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</thead>
<tbody>
<tr>
<td>Cellulitis, erysipelas or soft tissue infection &lt;1 month old</td>
<td>5-10 days</td>
<td>Standard Protocol</td>
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<tr>
<td>Cellulitis, erysipelas or soft tissue infection ≥1 month old</td>
<td>5 days</td>
<td>Standard Protocol</td>
</tr>
<tr>
<td>Moderate cellulitis, erysipelas or soft tissue infection ≥1 month old</td>
<td>≤10 days (oral + IV)</td>
<td>Standard Protocol</td>
</tr>
<tr>
<td>Severe skin and soft tissue infection</td>
<td>refer to ID</td>
<td>Standard Protocol</td>
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</tbody>
</table>

**DRUGS/DOSES**

- **Standard Protocol**: IV **flucloxacillin** (dose as per neonatal guidelines)
- **Known or Suspected MRSA<sup>a</sup>**: vancomycin<sup>c</sup> (dose as per neonatal guidelines)
- **Penicillin allergy<sup>b</sup> Delayed**: **cefalexin**
- **Penicillin allergy<sup>b</sup> Immediate**: **cotrimoxazole<sup>d</sup>** OR **clindamycin**

**Cellulitis**

For cellulitis or soft tissue infection PLUS concern for sepsis, refer to *Presumed bacteraemia/sepsis*.

**Mild cellulitis or erysipelas ≥1 month old**

- Oral **cefalexin** 12.5mg/kg (to a maximum of 500mg) 6 hourly
- OR
- Oral **flucloxacillin** 12.5mg/kg (to a maximum of 500mg) 6 hourly

**ADD**

- **cotrimoxazole**
- **cefalexin**
- **clindamycin**

**Moderate cellulitis, erysipelas or soft tissue infection ≥1 month old**

- IV **flucloxacillin** 50mg/kg (to a maximum of 2 grams) 6 hourly

**ADD**

- **cotrimoxazole** to standard protocol
- **cefazolin**
- **clindamycin**

For oral step down options refer to mild cellulitis/erysipelas ≥1 month old above.

Refer to HiTH Antimicrobial guidelines for suitable HiTH antibiotic options.

**Severe skin and soft tissue infection**

- IV **flucloxacillin** 50mg/kg (to a maximum of 2 grams) 6 hourly **AND**
- IV **vancomycin** 15mg/kg (to a maximum initial dose of 750mg) 6 hourly **ADD**
- IV **clindamycin** 10mg/kg (to a maximum of 600mg) 6 hourly in suspected/proven necrotising fasciitis or severe cellulitis with shock.

**ADD**

- **vancomycin**
- **clindamycin**
## CLINICAL SCENARIO

<table>
<thead>
<tr>
<th>Suspected or proven polymicrobial necrotising fasciitis/ Fournier’s gangrene</th>
<th>IV meropenem 40mg/kg (to a maximum of 2 grams) 8 hourly <strong>AND</strong> IV vancomycin 15mg/kg (to a maximum initial dose of 750mg) 6 hourly <strong>AND</strong> IV clindamycin 10mg/kg (to a maximum of 600mg) 6 hourly</th>
<th>As per standard protocol</th>
<th>Discuss with ID or Microbiology service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervical lymphadenitis &lt; 3 months of age</td>
<td>IV or oral amoxicillin 50mg/kg (to a maximum of 500mg) 6 hourly <strong>OR</strong> Oral clindamycin 10mg/kg (to a maximum of 600mg) 6 hourly</td>
<td>cotrimoxazole</td>
<td>cefalexin <strong>OR</strong> clindamycin</td>
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<tr>
<td>Lymphadenitis</td>
<td>IV or oral amoxicillin 50mg/kg (to a maximum of 500mg) 6 hourly</td>
<td>ADD vancomycin to standard protocol</td>
<td>cefazolin <strong>OR</strong> clindamycin <strong>OR</strong> vancomycin</td>
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<tr>
<td>Suspected retropharyngeal abscess or deep neck space infection</td>
<td>Refer to <a href="#">Ear, Nose, Throat and Dental empiric guidelines</a></td>
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</tr>
<tr>
<td>Impetigo – mild/localised</td>
<td>Topical mupirocin 2% ointment apply 8 hourly</td>
<td>As per standard protocol</td>
<td>As per standard protocol</td>
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<tr>
<td>Impetigo – widespread/recurrent</td>
<td>Oral cefalexin 12.5mg/kg (to a maximum of 500mg) 6 hourly for 7 days</td>
<td>cotrimoxazole</td>
<td>cefalexin <strong>OR</strong> cotrimoxazole</td>
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<tr>
<td>Impetigo - high risk of ARF/ PSGN</td>
<td>Single dose of IM Benzathine benzylpenicillin. 3kg-6kg: 300,000units (0.6mL) 6kg-10kg: 450,000units (0.9mL) 10kg-15kg: 600,000units (1.2mL) 15kg–20kg: 900,000units (1.7mL) ≥20kg: 1,200,000units (2.3mL) <strong>OR</strong> Oral cotrimoxazole 4mg/kg (to a maximum of 160mg trimethoprim component) twice daily</td>
<td>cotrimoxazole</td>
<td>cotrimoxazole <strong>OR</strong> cotrimoxazole</td>
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</table>

### Notes:
- **a** Known or Suspected MRSA
- **b** Immediate Penicillin allergy
- **d** 3 days
- **e** 7 days
- **f** Course may be completed before 10 days if clinically resolved. For oral step down options refer to mild cervical lymphadenitis above
- **h** Refer to HiTH Antimicrobial guidelines for suitable HiTH antibiotic options.
<table>
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<tr>
<th><strong>CLINICAL SCENARIO</strong></th>
<th><strong>Usual duration</strong></th>
<th><strong>DRUGS/DOSES</strong></th>
<th><strong>Known or Suspected MRSA</strong></th>
<th><strong>Penicillin allergy</strong>&lt;sup&gt;a&lt;/sup&gt; Delayed</th>
<th><strong>Penicillin allergy</strong>&lt;sup&gt;b&lt;/sup&gt; Immediate</th>
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<tbody>
<tr>
<td><strong>Bites</strong></td>
<td>5 days</td>
<td>Standard Protocol</td>
<td>Oral <strong>amoxicillin/clavulanic acid</strong> 25mg/kg (to a maximum of 875mg of amoxicillin component) 12 hourly</td>
<td>Discuss with ID or Microbiology service</td>
<td><strong>cotrimoxazole</strong>&lt;sup&gt;d&lt;/sup&gt; AND <strong>metronidazole</strong>&lt;sup&gt;k&lt;/sup&gt;</td>
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<tr>
<td><strong>Bites - Severe infection or injury</strong></td>
<td>14 days (IV + oral)</td>
<td><strong>amoxicillin/clavulanic acid</strong>&lt;sup&gt;d&lt;/sup&gt;</td>
<td>Discuss with ID or Microbiology service</td>
<td><strong>ceftriaxone</strong>&lt;sup&gt;m&lt;/sup&gt; AND <strong>metronidazole</strong>&lt;sup&gt;n&lt;/sup&gt;</td>
<td>Discuss with ID or Microbiology service</td>
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<tr>
<td><strong>Mild post traumatic skin and soft tissue wounds</strong></td>
<td>5 days</td>
<td>Oral <strong>cefalexin</strong> 12.5mg/kg (to a maximum of 500mg) 6 hourly</td>
<td><strong>cotrimoxazole</strong>&lt;sup&gt;d&lt;/sup&gt;</td>
<td><strong>cefalexin</strong>&lt;sup&gt;e&lt;/sup&gt;</td>
<td><strong>cotrimoxazole</strong>&lt;sup&gt;d&lt;/sup&gt;</td>
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<td><strong>Contaminated wounds</strong></td>
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<td><strong>Heavily contaminated wounds requiring IV antibiotics</strong></td>
<td>7 days</td>
<td><strong>piperacillin/tazobactam</strong> 100mg/kg (to a maximum of 4 grams piperacillin component) 8 hourly</td>
<td>Discuss with ID or Microbiology service</td>
<td><strong>cefazolin</strong>&lt;sup&gt;g&lt;/sup&gt; AND <strong>metronidazole</strong>&lt;sup&gt;n&lt;/sup&gt;</td>
<td><strong>ciprofloxacin</strong>&lt;sup&gt;n&lt;/sup&gt; AND <strong>clindamycin</strong>&lt;sup&gt;n&lt;/sup&gt;</td>
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<td><strong>Compound fracture without:</strong></td>
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<td><em>significant contamination,</em></td>
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<td><em>clinical evidence of infection OR</em></td>
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<td><em>tissue damage/devitalisation</em></td>
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<tr>
<td><strong>Compound fracture with severe tissue damage and/or evidence of infection</strong></td>
<td>refer to ID</td>
<td><strong>piperacillin/tazobactam</strong> 100mg/kg (to a maximum of 4 grams piperacillin component) 8 hourly</td>
<td>Discuss with ID or Microbiology service</td>
<td><strong>cefazolin</strong>&lt;sup&gt;g&lt;/sup&gt; AND <strong>metronidazole</strong>&lt;sup&gt;n&lt;/sup&gt;</td>
<td><strong>ciprofloxacin</strong>&lt;sup&gt;n&lt;/sup&gt; AND <strong>clindamycin</strong>&lt;sup&gt;n&lt;/sup&gt;</td>
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Tetanus immunisation history needs to be reviewed. Consider the need for tetanus prophylaxis.
## Clinical Scenario

### Osteomyelitis and Septic Arthritis

- **Uncomplicated osteomyelitis or septic arthritis ≥3 months old**
  - **Usual duration**: refer to ID
  - **DRUGS/DOSES**
    - **Standard Protocol**
      - IV **Flucloxacillin** 50mg/kg (to a maximum of 2 grams) 6 hourly
    - **ADD**
      - **Vancomycin**
        - to standard protocol
      - **Cefazolin**
      - **Vancomycin**
  - Consider oral step down to **Cefalexin** or **Cotrimoxazole**

- **Osteomyelitis or septic arthritis that is:**
  - i) Multifocal OR
  - ii) With pneumonia or myositis OR
  - iii) Requiring ICU admission
  - **Usual duration**: refer to ID
  - **DRUGS/DOSES**
    - IV **Flucloxacillin** 50mg/kg (to a maximum of 2 grams) 6 hourly **AND**
    - IV **Vancomycin** 15mg/kg (to a maximum initial dose of 750mg) 6 hourly
    - **Vancomycin** AND **Clindamycin**
  - All patients with sepsis/disseminated infection requiring ICU admission should be discussed with infectious diseases or clinical microbiology services.

### MRSA and Penicillin Allergy

- 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

- 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

- Doses as per **neonatal guidelines**

- Oral **Cotrimoxazole** 4mg/kg/dose of trimethoprim component 12 hourly; equivalent to 0.5mL/kg/dose of mixture, (maximum of 160mg trimethoprim component per dose)

- Oral **Cefalexin** 12.5mg/kg/dose (to a maximum of 500mg) 6 hourly.

- Oral **Clindamycin** 10mg/kg/dose (to a maximum of 450mg) 8 hourly. Use only if the calculated dose is a multiple of 150mg (i.e. a full capsule) and patient is capable of swallowing capsules due to the bitter taste of the powder.
g. IV **cefazolin 25mg/kg/dose** (to a maximum of 2 grams) 8 hourly.

h. IV **clindamycin 10mg/kg/dose** (to a maximum of 600mg) 8 hourly.

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

j. IV **clindamycin 10mg/kg/dose** (to a maximum of 600mg) 6 hourly.

k. Oral **metronidazole 10mg/kg/dose** (to a maximum of 400mg) 12 hourly.

l. IV **amoxicillin/clavulanic acid (doses based on amoxicillin component)**
   - Birth (term) to 3 months and <4kg: IV infusion 25mg/kg/dose every 12 hours.
   - Birth (term) to 3 months and >4kg: IV infusion 25mg/kg/dose every 8 hours.
   - >3 months and <40kg: IV 25mg/kg/dose (maximum 1g) every 8 hours; increase to every 6 hours in severe infections.
   - >40kg: IV 1g every 8 hours; increase to every 6 hours in severe infections. Up to 2g every 6-8 hours can be used.

m. IV **ceftriaxone 50mg/kg/dose** (to a maximum of 2 grams) 24 hourly

n. IV **metronidazole 12.5mg/kg/dose** (to a maximum of 500mg) 12 hourly.

o. IV **cefazolin 50mg/kg/dose** (to a maximum of 2 grams) 8 hourly.

p. IV **ciprofloxacin 10mg/kg/dose** (to a maximum of 400mg) 12 hourly.

q. Oral **cotrimoxazole 8mg/kg/dose of trimethoprim component 12 hourly; equivalent to 1mL/kg/dose of mixture**, (maximum of 320mg trimethoprim component per dose). Plus folic acid 0.1mg/kg up to 5mg orally daily while prescribed high dose co-trimoxazole.

\[\] Children living in remote Indigenous communities or with previous acute rheumatic fever (ARF) or post-streptococcal glomerulonephritis (PSGN) are at greatest risk. IM Benzathine benzylpenicillin should be used for impetigo.
Related internal policies, procedures and guidelines

**Antimicrobial Stewardship Policy** (Medication Management Manual)

**ChAMP Empiric Guidelines**

References


Useful Resources

**National Healthy Skin Guideline: for the Prevention, Treatment and Public Health Control of Impetigo, Scabies, Crusted Scabies and Tinea for Indigenous Populations and Communities in Australia – 1st edition.**

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

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