**GUIDELINE**

### Acute Respiratory Tract Infection

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

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*This document should be read in conjunction with this [DISCLAIMER](#)*

Prior to initiation of antibiotic therapy, microbiology samples should be taken as appropriate. This guideline gives information on the appropriate duration of antibiotic therapy. Consider IV to oral switch to complete the course of antibiotics as required.

<table>
<thead>
<tr>
<th>CLINICAL SCENARIO</th>
<th>Usual duration</th>
<th>DRUGS/DOSES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community Acquired pneumonia (CAP)</strong></td>
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</table>
| All CAP < 1 month of age | 7 days | **Standard Protocol**  
IV gentamicin\(^c\)  
**AND**  
IV benzylpenicillin (doses as per neonatal guidelines) | **Known or Suspected MRSA**\(^a\) | **Penicillin allergy**\(^b\)  
Delayed | **Penicillin allergy**\(^b\)  
Immediate |
| CAP (mild to moderate) ≥ 1 month of age | 5 days (IV and oral) | Oral amoxicillin 25mg/kg/dose (to a maximum of 1 gram)  
8 hourly | As per standard protocol | cefotaxime\(^d\) | Discuss with ID or Microbiology service  
Consider investigating and treating for pertussis and/or Chlamydia trachomatis |
| CAP (severe) ≥ 1 month of age requiring intensive care admission, fluid bolus ≥ 20mL/kg, or hypoxia (<85% in air) | Up to 7 days (IV and oral) | IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) once daily  
**AND**  
IV vancomycin\(^f\) 15mg/kg/dose (to a maximum initial dose of 750mg) 6 hourly  
**AND**  
IV/oral azithromycin 10mg/kg/dose (to a maximum of 500mg) once daily | As per standard protocol | | Discuss with ID or Microbiology service  
Oral oseltamivir 3mg/kg/dose (to a maximum of 75mg) twice daily for five days should be added empirically during flu season (July to September inclusive)  
Information regarding influenza activity can be found on [Virus WAtch](#)  
Empiric therapy should be modified once diagnostic tests are available  
For empiric oral step down therapy, see mild to moderate CAP |

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\(^a\) See penicillin sensitivity guidelines  
\(^b\) Discontinue if not sensitive  
\(^c\) Due to Renal function  
\(^d\) Ceftriaxone or cefotaxime  
\(^e\) If tolerated  
\(^f\) Ceftriaxone or cefotaxime  
\(^g\) Oral ceftriaxone or oral azithromycin  
\(^h\) Oral ceftriaxone or oral azithromycin  
\(^i\) Oral ceftriaxone or oral azithromycin

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<tr>
<td><strong>Acute Respiratory Tract Infections</strong></td>
<td></td>
<td><strong>Standard Protocol</strong></td>
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<tr>
<td><strong>Community Acquired pneumonia (CAP)</strong></td>
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<td></td>
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<tr>
<td>CAP (with empyema or parapneumonic effusion) ≥ 1 month of age</td>
<td>Up to 14 days (IV and oral)</td>
<td>IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) once daily</td>
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<td>In the setting of severe CAP with empyema, see CAP (severe). If diagnostic sampling is not deemed safe or feasible, discuss with ID or Microbiology service. In confirmed pneumococcal empyema, IV benzylpenicillin with step down to oral amoxicillin is recommended (excluding penicillin allergic patients).</td>
</tr>
<tr>
<td>CAP: Aspiration pneumonia</td>
<td>7 days (IV and oral)</td>
<td>Oral amoxicillin 25mg/kg/dose (to a maximum of 1 gram) 8 hourly</td>
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<td>If intolerant to oral therapy, IV benzylpenicillin 50mg/kg/dose (to a maximum of 1.2 grams) 6 hourly</td>
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<tr>
<td>CAP: Severe Aspiration pneumonia requiring intensive care admission, fluid bolus ≥ 20mL/kg or hypoxia (&lt;85% in air)</td>
<td>7 days (IV and oral)</td>
<td>IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) once daily AND IV metronidazole 12.5mg/kg/dose (to a maximum of 500mg) 12 hourly OR oral metronidazole 10mg/kg/dose (to a maximum of 400mg) 12 hourly</td>
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<tr>
<td></td>
<td></td>
<td>For empiric oral step down therapy, use oral amoxicillin/clavulanic acid 25mg/kg/dose (to a maximum of 875mg amoxicillin component) 12 hourly</td>
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<td></td>
<td></td>
<td>Discuss with ID or microbiology service</td>
</tr>
<tr>
<td><strong>Hospital Acquired pneumonia (HAP)</strong></td>
<td>7 days (IV or oral)</td>
<td>Oral amoxicillin/clavulanic acid 25mg/kg/dose (to a maximum of 875mg amoxicillin component) 12 hourly OR IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) once daily</td>
</tr>
<tr>
<td><strong>Ventilator associated pneumonia (VAP)</strong></td>
<td>7 days (IV and oral)</td>
<td>IV piperacillin/tazobactam 100mg/kg/dose (to a maximum of 4 grams piperacillin component) 8 hourly</td>
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### Acute Respiratory Tract Infections

#### CLINICAL SCENARIO

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<th>Hospital Acquired pneumonia</th>
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<tr>
<td>HAP or VAP (severe) requiring intensive care admission, fluid bolus ≥ 20mL/kg, or hypoxia (&lt;85% in air)</td>
<td>varies</td>
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#### DRUGS/DOSES

<table>
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<tr>
<th>Standard Protocol</th>
<th>Known or Suspected MRSA&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Penicillin allergy&lt;sup&gt;b&lt;/sup&gt; Delayed</th>
<th>Penicillin allergy&lt;sup&gt;b&lt;/sup&gt; Immediate</th>
</tr>
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<tr>
<td>IV piperacillin/tazobactam 100mg/kg/dose (to a maximum of 4 grams piperacillin component) 8 hourly <strong>AND</strong> IV vancomycin 15mg/kg/dose (to a maximum initial dose of 750mg) 6 hourly</td>
<td>As per standard protocol</td>
<td>cefepime&lt;sup&gt;j&lt;/sup&gt; <strong>AND</strong> vancomycin&lt;sup&gt;i&lt;/sup&gt;</td>
<td>Discuss with ID or Microbiology service</td>
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<td>For empiric oral step down therapy, use oral amoxicillin/clavulanic acid 25mg/kg/dose (to a maximum of 875mg amoxicillin component) 12 hourly</td>
<td>Discuss with ID or microbiology service</td>
<td>cefuroxime&lt;sup&gt;f&lt;/sup&gt;</td>
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For empiric oral step down therapy, use oral amoxicillin/clavulanic acid 25mg/kg/dose (to a maximum of 875mg amoxicillin component) 12 hourly

#### Atypical infections

| Confirmed or probable pertussis (awaiting microbiological confirmation) < 6 months old | 5 days |
| Confirmed or probable pertussis (awaiting microbiological confirmation) ≥ 6 months old | 5 days |
| Confirmed mycoplasma pneumonia | 3 days |

#### Influenza

| Laboratory confirmed Influenza in a child without risk factors for severe disease, not requiring hospital admission | N/A |
| Proven or probable Influenza infection in a child < 1 month | N/A |

#### Notes

- Oseltamivir therapy not required. Note: consider therapy for CAP (as per standard protocol) if coexisting bacterial pneumonia suspected.
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<td><strong>Influenza</strong></td>
<td><strong>5 days</strong></td>
<td><strong>Standard Protocol</strong>&lt;br&gt;Oral oseltamivir 3mg/kg/dose (to a maximum of 75mg per dose) twice daily.&lt;br&gt;The best efficacy is when started in the first 48 hours of illness. Beyond this, there is still efficacy in the patient with risk factors or in severe disease&lt;br&gt;Note: consider therapy for CAP (as per standard protocol) if coexisting bacterial pneumonia suspected</td>
</tr>
<tr>
<td>Early laboratory confirmed influenza infection (in a child ≥ 1 month with risk factors for severe disease)&lt;br&gt;Proven or probable Influenza infection severe enough to require hospital admission in a child ≥ 1 month</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:<br>i. Children previously colonised with MRSA<br>ii. Household contacts of MRSA colonised individuals<br>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<br>iv. Children with recurrent skin infections or those unresponsive to ≥ 48 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)** Gentamicin is rapidly bactericidal and should be administered prior to benzylpenicillin. Aminoglycoside antibiotics may be inactivated by penicillin and cephalosporin antibiotics and lines should be flushed well with a compatible fluid between administration.

**d)** IV cefotaxime dose as per neonatal guidelines

**e)** Clinical trial data demonstrates that oral amoxicillin and IV benzylpenicillin are equivalent in children hospitalised with mild to moderate pneumonia

**f)** Oral cefuroxime 3 months to 2 years - **10mg/kg/dose** (to a maximum of 125mg) twice daily, ≥ 2 years **15mg/kg/dose** (to a maximum of 500mg) twice daily

**g)** Oral azithromycin **10mg/kg/dose** (to a maximum of 500mg) once daily

**h)** IV ceftriaxone **50mg/kg/dose** (to a maximum of 2 grams) once daily

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

**j)** IV cefepine **50mg/kg/dose** (to a maximum of 2 grams) 8 hourly

**k)** Oral clindamycin **10mg/kg/dose** (to a maximum of 450mg) 8 hourly
Acute Respiratory Tract Infections

Related internal policies, procedures and guidelines

- **Antimicrobial Stewardship Policy**
- **ChAMP empiric guidelines and monographs**

References

3. Expert opinion – Infectious Diseases team

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

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W:\Safety & Quality\CAHS\CLOVERS MEDICAL Pharmacy\Procedures Protocols and Guidelines\ChAMP\PDFs\Monographs

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