



GUIDELINE	
Acute Respiratory Tract Infection	
Scope (Staff):	Medical, Nursing, Pharmacy
Scope (Area):	Perth Children's Hospital (PCH)
Child Safe Organisation Statement of Commitment	
The Child and Adolescent Health Service (CAHS) commits to being a child safe organisation by meeting the National Child Safe Principles and National Child Safe Standards. This is a commitment to a strong culture supported by robust policies and procedures to ensure the safety and wellbeing of children at CAHS.	

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.

CLINICAL SCENARIO	Usual duration	DRUGS/DOSES			
		Standard Protocol	Known or Suspected MRSA ^a	Low Risk Penicillin allergy ^b	High Risk Penicillin allergy ^b
Community Acquired pneumonia (CAP)	7 days	IV gentamicin ^c AND IV benzylpenicillin (doses as per neonatal guidelines)	As per standard protocol	cefotaxime ^d (dose as per neonatal guidelines)	Discuss with ID or Microbiology service
		Consider investigating and treating for pertussis and/or <i>Chlamydia trachomatis</i>			
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	cefuroxime ^f or consider amoxicillin challenge in discussion with immunology	Oral azithromycin ^g
		If intolerant to oral therapy, IV benzylpenicillin 50mg/kg/dose (to a maximum of 1.2 grams) 6 hourly ^e	As per standard protocol	ceftriaxone ^h	Discuss with ID or Microbiology service

Acute Respiratory Tract Infections

CLINICAL SCENARIO		Usual duration	DRUGS/DOSES			
			Standard Protocol	Known or Suspected MRSA ^a	Low Risk Penicillin allergy ^b	High Risk Penicillin allergy ^b
Community Acquired pneumonia (CAP)	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 ⁱ 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			
	CAP (with empyema or parapneumonic effusion) ≥ 1 month of age	Up to 14 days (IV and oral)	IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) once daily	Add vancomycin ⁱ to standard protocol	As per standard protocol	Discuss with ID or microbiology service
			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).			
	CAP: Aspiration pneumonia	7 days (IV and oral)	Oral amoxicillin 25mg/kg/dose (to a maximum of 1 gram) 8 hourly	As per standard protocol	cefuroxime ^f	azithromycin ⁹
			If intolerant to oral therapy, IV benzylpenicillin 50mg/kg/dose (to a maximum of 1.2 grams) 6 hourly	As per standard protocol	Discuss with ID or Microbiology service	
	CAP: Severe Aspiration pneumonia requiring intensive care admission, fluid bolus ≥ 20mL/kg or hypoxia (<85% in air)	7 days (IV and oral)	IV amoxicillin/clavulanic acid ^j	Discuss with ID or microbiology service	ceftriaxone ^h AND metronidazole ^k	Discuss with ID or microbiology service
			For empiric oral step down therapy, use oral amoxicillin/clavulanic acid 25mg/kg/dose (to a maximum of 875mg amoxicillin component) 12 hourly	Discuss with ID or microbiology service	cefuroxime ^f or consider amoxicillin challenge in discussion with immunology	clindamycin ^l

Acute Respiratory Tract Infections

CLINICAL SCENARIO		Usual duration	DRUGS/DOSES			
			Standard Protocol	Known or Suspected MRSA ^a	Low Risk Penicillin allergy ^b	High Risk Penicillin allergy ^b
Hospital Acquired Pneumonia	Hospital acquired pneumonia (HAP)	7 days (IV or oral)	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	As per standard protocol	cefuroxime ^f or consider amoxicillin challenge in discussion with immunology	Discuss with ID or Microbiology service
	Ventilator associated pneumonia (VAP)	7 days (IV and oral)	IV piperacillin/tazobactam 100mg/kg/dose (to a maximum of 4 grams piperacillin component) 8 hourly	As per standard protocol	cefepime ^m	Discuss with ID or Microbiology service
	HAP or VAP (severe) requiring intensive care admission, fluid bolus ≥ 20mL/kg, or hypoxia (<85% in air)	varies	IV piperacillin/tazobactam 100mg/kg/dose (to a maximum of 4 grams piperacillin component) 8 hourly AND IV vancomycin 15mg/kg/dose (to a maximum initial dose of 750mg) 6 hourly	As per standard protocol	cefepime ^m AND vancomycin ⁱ	Discuss with ID or Microbiology service
			For empiric oral step down therapy, use oral amoxicillin/clavulanic acid 25mg/kg/dose (to a maximum of 875mg amoxicillin component) 12 hourly	Discuss with ID or microbiology service	cefuroxime ^f or consider amoxicillin challenge in discussion with immunology	Discuss with ID or Microbiology service
Atypical infections	Confirmed or probable pertussis (awaiting microbiological confirmation) < 6 months old	5 days	Oral azithromycin 10mg/kg/dose (to a maximum of 500mg) once daily for 5 days	As per standard protocol		
	Confirmed or probable pertussis (awaiting microbiological confirmation) ≥ 6 months old	5 days	Oral azithromycin 10mg/kg/dose (to a maximum of 500mg) on day 1 then 5mg/kg (maximum 250mg) once daily for 4 days	As per standard protocol		
			Refer to Medical prophylaxis guideline and Communicable Diseases Network Australia: Pertussis for information on prophylaxis indications			
Confirmed mycoplasma pneumonia	3 days	Oral azithromycin 10mg/kg/dose (to a maximum of 500mg) once daily for 3 days	As per standard protocol			

CLINICAL SCENARIO	Usual duration	DRUGS/DOSES		
		Standard Protocol	Known or Suspected MRSA ^a	Low Risk Penicillin allergy ^b
Laboratory confirmed Influenza in a child without risk factors for severe disease, not requiring hospital admission	N/A	Oseltamivir therapy not required. Note: consider therapy for CAP (as per standard protocol) if coexisting bacterial pneumonia suspected		
Proven or probable Influenza infection in a child < 1 month	N/A	Discussion with Infectious Diseases or Clinical Microbiology recommended		
Influenza Early laboratory confirmed influenza infection in a child ≥ 1 month with risk factors for severe disease OR Proven or probable Influenza infection severe enough to require hospital admission in a child ≥ 1 month	5 days	Oral oseltamivir 3mg/kg/dose (to a maximum of 75mg per dose) twice daily. 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 Note: consider therapy for CAP (as per standard protocol) if coexisting bacterial pneumonia suspected		
		Refer to Medical prophylaxis guideline for information on influenza prophylaxis Individuals at higher risk of poor outcomes with flu (adapted TG – Box 2.7) <ul style="list-style-type: none"> - Chronic cardiac disease - Chronic respiratory conditions - Severe neurological conditions - Immunocompromised - Down Syndrome - Obesity - Other chronic illness - Residents of long-term residential facilities 		

- 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, Pilbara and Goldfields) 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) Refer to the [ChAMP Beta-lactam Allergy Guideline](#):
- Low risk allergy: a delayed rash (>1hr after initial exposure) without mucosal or systemic involvement (without respiratory distress and/or cardiovascular compromise).
 - High risk allergy: an immediate rash (<1hr after exposure); anaphylaxis; severe cutaneous adverse reaction (e.g. Drug Rash with Eosinophilia and Systemic Symptoms (DRESS) and Stevens – Johnson syndrome (SJS) / Toxic Epidermal Necrolysis (TEN)) or other severe systemic reaction.
- 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](#)

Acute Respiratory Tract Infections

- 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 or older - 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 [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.
- k) IV [metronidazole](#) **12.5mg/kg/dose** (to a maximum of 500mg) 12 hourly
- l) Oral [clindamycin](#) **10mg/kg/dose** (to a maximum of 450mg) 8 hourly
- m) IV [cefepime](#) **50mg/kg/dose** (to a maximum of 2 grams) 8 hourly

Related CAHS internal policies, procedures and guidelines

[Antimicrobial Stewardship Policy](#)




[ChAMP empiric guidelines and monographs](#)

References and related external legislation, policies, and guidelines

1. Antibiotic Writing Group (2020). eTG complete. West Melbourne, Therapeutic Guidelines Ltd.
2. McMullan BJ, et al. (2016). "Antibiotic duration and timing of the switch from intravenous to oral route for bacterial infections in children: systematic review and guidelines." [Lancet Infect Dis](#) **16**(e139-52).

Expert opinion – Infectious Diseases team

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