



GUIDELINE

Acute Respiratory Tract Infection

Scope (Staff):	Medical, Nursing, Pharmacy
Scope (Area):	All Clinical areas

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

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. A Biofire Respiratory Multiplex PCR should be sent on all admitted patients with a suspected respiratory tract infection.

Empiric antibiotics are listed below in the order they should be administered.

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)	All CAP < 4 weeks of age	7 days	IV gentamicin ^c AND IV benzylpenicillin (doses as per neonatal guidelines)	As per standard protocol	IV cefotaxime ^d (dose as per neonatal guidelines)	Discuss with ID or Microbiology service
	CAP (mild to moderate) ≥ 4 weeks of age	3 to 5 days (IV and oral)	Oral amoxicillin 25 mg/kg/dose (to a maximum of 1 gram) 8 hourly	As per standard protocol	Oral cefuroxime ^e or consider amoxicillin challenge in discussion with immunology	Oral azithromycin ^f
			If intolerant to oral therapy, IV benzylpenicillin 50 mg/kg/dose (to a maximum of 1.2 grams) 6 hourly	As per standard protocol	IV ceftriaxone ^g	Discuss with ID or Microbiology service

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) ≥ 4 weeks of age requiring intensive care admission, fluid bolus ≥ 20 mL/kg, or hypoxia (<85% in air)	Up to 7 days (IV and oral)	IV ceftriaxone 50 mg/kg/dose (to a maximum of 2 grams) once daily AND IV vancomycin ^h 15 mg/kg/dose (to a maximum initial dose of 750 mg) 6 hourly	As per standard protocol	Discuss with ID or Microbiology service	
	The Biofire Respiratory Multiplex PCR is a rapid PCR test. IF positive for atypical organisms (<i>Bordetella pertussis</i> , <i>Bordetella parapertussis</i> , <i>Chlamydophila pneumoniae</i> or <i>Mycoplasma pneumoniae</i>) ADD IV/oral azithromycin 10 mg/kg/dose (to a maximum of 500 mg) once daily for up to 5 days IF the PCR is positive for Influenza A or Influenza B ADD Oral oseltamivir 3mg /kg/dose (to a maximum of 75 mg) twice daily for five days Empiric therapy should be modified once diagnostic tests are available For empiric oral switch therapy, see mild to moderate CAP					
	CAP (with empyema or parapneumonic effusion) ≥ 4 weeks of age	variable	IV ceftriaxone 50 mg/kg/dose (to a maximum of 2 grams) once daily	ADD IV vancomycin ^h to standard protocol	As per standard protocol	IV ciprofloxacin ⁱ AND IV vancomycin ^h
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 switch to oral amoxicillin is recommended (excluding patients with a high risk allergy to penicillin or amoxicillin). Refer to Clinical Practice Guidelines: Pleural empyema						
CAP: Aspiration pneumonia ≥ 4 weeks of age	7 days (IV and oral)	Oral amoxicillin 25 mg/kg/dose (to a maximum of 1 gram) 8 hourly	As per standard protocol	Oral cefuroxime ^e or consider amoxicillin challenge in discussion with immunology	Oral azithromycin ^f	
		If intolerant to oral therapy, IV benzylpenicillin 50 mg/kg/dose (to a maximum of 1.2 grams) 6 hourly	As per standard protocol	Discuss with ID or Microbiology service		

CLINICAL SCENARIO		Usual duration	DRUGS/DOSES			
			Standard Protocol	Known or Suspected MRSA ^a	Low Risk Penicillin allergy ^b	High Risk Penicillin allergy ^b
CAP: Severe Aspiration pneumonia requiring intensive care admission, fluid bolus ≥ 20mL/kg or hypoxia (<85% in air) ≥ 4 weeks of age	7 days (IV and oral)	IV amoxicillin/clavulanic acid ^j	Discuss with ID or microbiology service	IV ceftriaxone ^g AND IV metronidazole ^k	Discuss with ID or microbiology service	
		For empiric oral step down therapy, use oral amoxicillin/clavulanic acid 25 mg/kg/dose (to a maximum of 875 mg amoxicillin component) 12 hourly	Discuss with ID or microbiology service	Oral cefuroxime ^e or consider amoxicillin challenge in discussion with immunology	Oral clindamycin ^l	
Hospital Acquired Pneumonia	7 days (IV or oral)	Oral amoxicillin/clavulanic acid 25 mg/kg/dose (to a maximum of 875 mg amoxicillin component) 12 hourly OR IV ceftriaxone 50 mg/kg/dose (to a maximum of 2 grams) once daily	As per standard protocol	Oral cefuroxime ^e or consider amoxicillin challenge in discussion with immunology	Discuss with ID or Microbiology service	
	5 days (IV and oral)	IV piperacillin/tazobactam 100 mg/kg/dose (to a maximum of 4 grams piperacillin component) 8 hourly	As per standard protocol	IV cefepime ^m	Discuss with ID or Microbiology service	
	varies	IV piperacillin/tazobactam 100 mg/kg/dose (to a maximum of 4 grams piperacillin component) 8 hourly AND IV vancomycin 15 mg/kg/dose (to a maximum initial dose of 750 mg) 6 hourly	As per standard protocol	IV cefepime ^m AND IV vancomycin ^h	Discuss with ID or Microbiology service	
HAP or VAP (severe) requiring intensive care admission, fluid bolus ≥ 20mL/kg, or hypoxia (<85% in air) ≥ 4 weeks of age	varies	For empiric oral step down therapy, use oral amoxicillin/clavulanic acid 25 mg/kg/dose (to a maximum of 875 mg amoxicillin component) 12 hourly	Discuss with ID or microbiology service	Oral cefuroxime ^e or consider amoxicillin challenge in discussion with immunology	Discuss with ID or Microbiology service	

CLINICAL SCENARIO		Usual duration	DRUGS/DOSES		
			Standard Protocol	Known or Suspected MRSA ^a	Low Risk Penicillin allergy ^b
Atypical infections	Confirmed pertussis < 6 months old	5 days	Oral azithromycin 10 mg/kg/dose (to a maximum of 500 mg) once daily	As per standard protocol	
			The Biofire Respiratory Multiplex PCR is a rapid PCR test. Only commence therapy if a positive result is reported.		
			Refer to Medical prophylaxis guideline and Communicable Diseases Network Australia: Pertussis for information on prophylaxis indications		
Atypical infections	Confirmed pertussis ≥ 6 months old	5 days	Oral azithromycin 10 mg/kg/dose (to a maximum of 500 mg) on day 1 then 5 mg/kg (maximum 250 mg) 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 pneumoniae ≥ 4 weeks of age	3 days	Oral azithromycin 10 mg/kg/dose (to a maximum of 500 mg) once daily	As per standard protocol	
Influenza	Influenza (confirmed or probable) requiring hospitalisation (≥ 4 weeks of age)	5 days	Oral oseltamivir 3 mg/kg/dose (to a maximum of 75 mg per dose) twice daily. Refer to ChAMP monograph for suggested dose bands Note: consider therapy for CAP (as per standard protocol) if coexisting bacterial pneumonia suspected		
	Influenza (confirmed) not requiring hospitalisation (≥ 4 weeks of age)	5 days	IF risk factors for severe disease give oral oseltamivir 3 mg/kg/dose (to a maximum of 75 mg per dose) twice daily. IF no risk factors, oseltamivir is not required. Refer to ChAMP monograph for suggested dose bands. Refer to Medical prophylaxis guideline for information on influenza prophylaxis Individuals at higher risk of poor outcomes with flu (adapted TG – Figure 2.41)		
			<ul style="list-style-type: none"> - Chronic cardiac disease - Chronic respiratory conditions - Severe neurological conditions - Immunocompromised 	<ul style="list-style-type: none"> - Down Syndrome - Obesity - Other chronic illness - Residents of long-term residential facilities 	

CLINICAL SCENARIO	Usual duration	DRUGS/DOSES			
		Standard Protocol	Known or Suspected MRSA ^a	Low Risk Penicillin allergy ^b	High Risk Penicillin allergy ^b
Influenza (confirmed or probable) (< 4 weeks of age)		Discuss with Infectious Diseases or Clinical Microbiology			
SARS-CoV-2 COVID-19		Refer to: Clinical care of paediatric patients with COVID-19 Discuss patients ≥ 12 years and ≥ 40 kg with significant immunocompromise and/or multiple risk factors for severe disease who are unvaccinated or under-vaccinated as antiviral therapy may be considered.			

- 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; lines should be flushed well with a compatible fluid between administration.
- d) IV cefotaxime dose as per [neonatal guidelines](#)
- e) Oral [cefuroxime](#) **3 months or older: 15 mg/kg/dose** (to a maximum of 500mg) twice daily. Suspension has recently been discontinued, where possible round to the nearest portion of a tablet or discuss with ChAMP or pharmacy for alternative options
- f) Oral [azithromycin](#) **10 mg/kg/dose** (to a maximum of 500mg) once daily
- g) IV [ceftriaxone](#) **50 mg/kg/dose** (to a maximum of 2 grams) once daily
- h) IV [vancomycin](#) **15 mg/kg/dose** (to a maximum initial dose of 750 mg) 6 hourly. Therapeutic drug monitoring is required.
- i) IV [ciprofloxacin](#) **10 mg/kg/dose** (to a maximum of 400mg) given 12 hourly.
- j) IV [amoxicillin/clavulanic acid \(doses based on amoxicillin component\)](#):
 - Birth (term) to 3 months and < 4 kg: IV infusion 25 mg/kg/dose every 12 hours.
 - Birth (term) to 3 months and > 4kg: IV infusion 25 mg/kg/dose every 8 hours.
 - > 3 months and < 40 kg: IV 25 mg/kg/dose (maximum 1 gram) every 8 hours; increase to every 6 hours in severe infections.
 - > 40 kg: IV 1 gram every 8 hours; increase to every 6 hours in severe infections. Up to 2 grams every 6-8 hours can be used.
- k) IV [metronidazole](#) **12.5 mg/kg/dose** (to a maximum of 500 mg) 12 hourly
- l) Oral [clindamycin](#) **10 mg/kg/dose** (to a maximum of 450 mg) 8 hourly
- m) IV [cefepime](#) **50 mg/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](#)



[Neonatal Medication Protocols](#)

[Pleural empyema](#)

References and related external legislation, policies, and guidelines

1. Antibiotic Writing Group. Therapeutic Guidelines - Antibiotic. West Melbourne: Therapeutic Guidelines Ltd; 2022. Available from: <https://tgldcdp-tg-org-au.pklibresources.health.wa.gov.au/etgAccess>.
2. McMullan BJ, Andresen D, Blyth CC, Avent ML, Bowen AC, Britton PN, et al. Antibiotic duration and timing of the switch from intravenous to oral route for bacterial infections in children: systematic review and guidelines. Lancet Infect Dis. 2016;16(e139-52).

This document can be made available in alternative formats on request.

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Standards Applicable:	NSQHS Standards:  NSMHS: N/A Child Safe Standards: N/A		
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 <h2 style="margin: 0;">Healthy kids, healthy communities</h2> <div style="display: flex; justify-content: space-around; align-items: center;"> Compassion Excellence Collaboration Accountability Equity Respect </div> <p style="font-size: small; margin: 0;">Neonatology Community Health Mental Health Perth Children’s Hospital</p>			