



GUIDELINE

Ear, Nose, Throat and Dental Infections: Paediatric Empiric Guidelines

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

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](#)

CLINICAL SCENARIO		Usual duration	DRUGS/DOSES		
			Standard Protocol	Known or Suspected MRSA ^a	Low risk Penicillin allergy ^b
Ear infections (low risk of CSOM)	Acute otitis media (no systemic features)	N/A	Antibiotic treatment of Acute Otitis Media has limited benefit in those six (6) months and older with unilateral disease and no systemic features. A 'wait and watch' approach is recommended for these children.		
	Acute otitis media with systemic features (e.g. fever, vomiting, lethargy)	5-7 days	Oral amoxicillin 15mg/kg/dose (to a maximum of 1 gram) 8 hourly OR For recurrent/unresponsive infection: Oral amoxicillin/clavulanic acid 25mg/kg/dose (to a maximum of 875mg amoxicillin component) twice daily	cefuroxime ^c	OR consider amoxicillin challenge in discussion with immunology

CLINICAL SCENARIO	Usual duration	DRUGS/DOSES			
		Standard Protocol	Known or Suspected MRSA ^a	Low risk Penicillin allergy ^b	High risk Penicillin allergy ^b
Ear infections (Aboriginal or Torres Strait Islanders / high risk of CSOM)	Those living in rural or remote Aboriginal communities where persistent disease and chronic perforation of the eardrum are common are at a higher risk of Chronic Suppurative Otitis Media (CSOM).				
	Acute otitis media WITHOUT perforation	Consider antibiotic treatment if less than 2 years of age with bilateral disease and/or with a history of ear discharge or systemic features			
		7 days	Oral amoxicillin 15mg/kg/dose (to a maximum of 1 gram) 8 hourly IF no response after 4 to 7 days, increase to oral amoxicillin 30mg/kg/dose (to a maximum of 1 gram) 8 hourly for a further 7 days	azithromycin ^e OR consider amoxicillin challenge in discussion with immunology	azithromycin ^e
	Acute otitis media WITH perforation	14 days	Oral amoxicillin 30mg/kg/dose (to a maximum of 1 gram) 8 hourly	co-trimoxazole ^d OR consider amoxicillin challenge in discussion with immunology	co-trimoxazole ^d
			In patients with persistent perforation (>7days) consider oral amoxicillin with clavulanic acid (25mg/kg/dose - to a maximum of 875mg amoxicillin component twice daily for seven days)		
Persistent otitis media with effusion OR Recurrent acute otitis media	3-6 months	<ul style="list-style-type: none"> Persistent otitis media with effusion defined as: presence of fluid in middle ear for >3 months without inflammation Recurrent acute otitis media (AOM) defined as: ≥3 episodes of AOM within 6 months OR ≥ 4 episodes in 12 months 			
		Consider oral amoxicillin 25mg/kg/dose (to a maximum of 1 gram) 12 hourly	Consider amoxicillin challenge in discussion with immunology	Discuss with ID or Microbiology Service	
Chronic suppurative otitis media (perforated eardrum and discharge >6 weeks)	Varies	Cleaning and drying of the ear canal is important and must be done six (6) hourly and/or prior to the instillation of any ear drops			
		Topical ciprofloxacin 0.3% ear drops, instil 5 drops into the affected ear(s) 12 hourly until free of discharge for at least three (3) days. Note: Ciproxin HC [®] (ciprofloxacin 0.2% with hydrocortisone 1%) ear drops should not be used routinely as there is inadequate evidence to support its use			

CLINICAL SCENARIO		Usual duration	DRUGS/DOSES			
			Standard Protocol	Known or Suspected MRSA ^a	Low risk Penicillin allergy ^b	High risk Penicillin allergy ^b
Mastoiditis	Acute Mastoiditis (<1 month duration)	12-15 days (IV and oral) min 5 days IV	Antibiotics alone are not definitive management. Urgent referral to the ENT team is essential. Therapy may need to be modified on the basis of previous microbiology.			
			IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) once daily	ADD vancomycin ^g to standard protocol	As per standard protocol	Discuss with ID or Microbiology Service
			Switch to oral therapy once clinical improvement to complete a total duration of 12 to 15 days. Intracranial complications, delayed response to treatment and chronic mastoiditis may require further treatment, discuss with Infectious Diseases (ID) or Clinical Microbiology for advice.			
Mastoiditis	Acute Mastoiditis (<1 month duration) – oral switch options	To complete total course of 12-15 days	Oral amoxicillin/clavulanic acid 25mg/kg/dose (to a maximum of 875mg amoxicillin component) 12 hourly	Discuss with ID or Microbiology Service	cefuroxime ^c OR consider amoxicillin challenge in discussion with immunology	azithromycin ^h
	Acute Mastoiditis (with history of chronic ear disease OR isolation of <i>Pseudomonas aeruginosa</i> from mastoid)	varies	IV piperacillin/tazobactam 100mg/kg/dose (to a maximum of 4 grams piperacillin component) 8 hourly If concern regarding intracranial extension, discuss with ID or Microbiology Service	ADD vancomycin ^g to standard protocol	cefepime ⁱ	Discuss with ID or Microbiology Service
Otitis externa	Otitis externa	3-7 days	Cleaning and drying of the ear canal is important and must be done six (6) hourly and / or prior to the instillation of any ear drops.			
			Topical dexamethasone 0.05% + framycetin 0.5% + gramicidin 0.005% (Sofradex [®]) ear drops. Instil 3 drops into the affected ear(s) three times a day. A cotton ball must be placed in the ear canal for 20 minutes after instillation of the ear drops.			

CLINICAL SCENARIO		Usual duration	DRUGS/DOSES			
			Standard Protocol	Known or Suspected MRSA ^a	Low risk Penicillin allergy ^b	High risk Penicillin allergy ^b
Sinusitis	Acute bacterial sinusitis (mild)	5-10 days based on clinical response	The majority of cases are due to acute viral rhinosinusitis and 80% resolve spontaneously or improve within two (2) weeks. Consider antibiotic treatment if: Purulent discharge for longer than seven (7) days, sinus tenderness, fever or worsening after an initial improvement.			
			Consider Oral amoxicillin 15mg/kg/dose (to a maximum of 500mg) 8 hourly or if inadequate response Oral amoxicillin/clavulanic acid 25mg/kg/dose (to a maximum of 875mg amoxicillin component) 12 hourly		cefuroxime ^c OR consider amoxicillin challenge in discussion with immunology	Children ≥8 years: doxycycline ⁱ OR Children <8 years: cotrimoxazole ^d
	Acute bacterial sinusitis (moderate or treatment failure with oral antibiotics >72 hours)	7-14 days based on clinical response	IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) once daily	ceftriaxone ^f AND vancomycin ^g	As per standard protocol	Discuss with ID or Microbiology Service
	Acute bacterial sinusitis (severe: CNS complications)	refer to ID	IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) 12 hourly AND IV metronidazole 12.5mg/kg (to a maximum 500mg) 8 hourly	ADD vancomycin ^g to standard protocol	As per standard protocol	Discuss with ID or Microbiology Service
Dental infections	Superficial Dental infections	5 days	Oral antibiotics should be considered if there is infection that has caused facial swelling WITHOUT severe or systemic features. Antibiotics alone are not definitive management. Immediate referral to appropriate specialist dental services is essential			
			Oral phenoxymethylpenicillin (Penicillin V) 12.5mg/kg/dose (to a max. of 500mg) 6 hourly AND Oral metronidazole 10mg/kg/dose (to a max. of 400mg) 12 hourly		clindamycin ^k OR consider penicillin challenge in discussion with immunology	clindamycin ^k

Ear, Nose, Throat and Dental Paediatric Empiric Guidelines

CLINICAL SCENARIO		Usual duration	DRUGS/DOSES			
			Standard Protocol	Known or Suspected MRSA ^a	Low risk Penicillin allergy ^b	High risk Penicillin allergy ^b
Dental infections	Deep dental infections	5 days IV and oral	IV antibiotics should be considered only if the infection has spread beyond the jaw and has produced facial swelling, or if there are systemic symptoms/fever Antibiotics alone are not definitive management. Immediate referral to appropriate specialist dental services is essential			
			IV benzylpenicillin 50mg/kg/dose (to a maximum of 1.2 grams) 6 hourly AND IV metronidazole 12.5mg/kg/dose (to a maximum of 500mg) 12 hourly	cefazolin ^l AND metronidazole ^m	clindamycin ⁿ	
Pharyngeal / retropharyngeal infections	Suspected or proven Group A Streptococcal Tonsillitis/ Pharyngitis	10 days	Antibiotic therapy is only recommended in the following patient groups: <ul style="list-style-type: none"> patients aged 2 to 25 years with sore throat in communities with a high incidence of acute rheumatic fever (e.g. Aboriginal or Torres Strait Islander children, Maori and Pacific Islander people, children from countries with a high burden of rheumatic fever e.g. refugees) patients of any age with existing rheumatic heart disease patients with scarlet fever. 			
			Consider Oral phenoxymethylpenicillin (Penicillin V) 15mg/kg/dose (to a maximum of 500mg) 12 hourly or IM benzathine benzylpenicillin <20kg: 600,000 units IM (1.2mL) as a single dose ≥20kg: 1,200,000 units IM (2.3mL) as a single dose	cefalexin ^o OR consider penicillin challenge in discussion with immunology	azithromycin ^p	
	Peritonsillar abscess (quinsy)	10 days - IV and oral	Antibiotics alone are not definitive management. Immediate referral to appropriate specialist surgical services is essential			
			IV benzylpenicillin 50mg/kg/dose (to a maximum of 1.2 grams) 6 hourly	clindamycin ⁿ	clindamycin ⁿ	
	Peritonsillar abscess (quinsy) – oral switch options	10 days - IV and oral	Oral phenoxymethylpenicillin (Penicillin V) 15mg/kg/dose (to a maximum of 500mg) 12 hourly	cefalexin ^o OR consider penicillin challenge in discussion with immunology	azithromycin ^p	

CLINICAL SCENARIO		Usual duration	DRUGS/DOSES			
			Standard Protocol	Known or Suspected MRSA ^a	Low risk Penicillin allergy ^b	High risk Penicillin allergy ^b
Pharyngeal / retropharyngeal infections	Retropharyngeal abscess/ deep neck space infection (>3 months old)	10-14 days IV and oral	Antibiotics alone are not definitive management. Immediate referral to appropriate specialist surgical services is essential			
	Retropharyngeal abscess/ deep neck space infection (>3 months old) Oral switch options		IV amoxicillin/clavulanic acid ^q	ADD IV vancomycin ^g to standard protocol	cefazolin ^l AND metronidazole ^m	clindamycin ⁿ
	Cervical lymphadenitis		Refer to ChAMP Guidelines – Skin and soft tissue infections			
	Bacterial tracheitis	varies	IV ceftriaxone 50mg/kg/dose (to a maximum of 2 grams) once daily	ADD IV vancomycin ^g to standard protocol	As per standard protocol	Discuss with ID or Microbiology service
	Primary herpetic gingivostomatitis	5 to 7 days	Aciclovir or valaciclovir is proven to be beneficial for HSV gingivostomatitis if commenced within 72 hours of onset. Oral aciclovir : 10mg/kg/dose (to a maximum of 400mg) five (5) times daily. OR Children ≥ 3 months: Oral valaciclovir : 20mg/kg/dose (to a maximum of 1gram) 12 hourly OR if unable to tolerate oral therapy consider IV aciclovir ≥1 month old:10mg/kg/dose (to a maximum of 750mg) 8 hourly			

- 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. Oral [cefuroxime](#):
 - i. Child 3 months to <2years **10mg/kg/dose** (to a maximum of 125mg) twice daily
 - ii. Child ≥2 years: **15mg/kg/dose** (to a maximum of 500mg) twice daily
- d. Oral [co-trimoxazole](#) 4mg/kg/dose of trimethoprim component twice daily; equivalent to 0.5mL/kg/dose of the mixture. Maximum of 160mg trimethoprim component per dose.
- e. Oral [azithromycin](#) **30mg/kg/dose** (to a maximum of 1000mg) as a single dose
- f. IV [ceftriaxone](#) **50mg/kg/dose** (to a maximum of 2 grams) once daily
- g. IV [vancomycin](#) **15mg/kg/dose** (to a maximum initial dose of 750mg) 6 hourly. Therapeutic drug monitoring required.
- h. Oral [azithromycin](#) **10mg/kg/dose** (to a maximum of 500mg) once daily
- i. IV [cefepime](#) **50mg/kg/dose** (to a maximum of 2 grams) 8 hourly
- j. Oral [doxycycline](#) **2mg/kg/dose** (to a maximum of 100mg) 12 hourly
- k. Oral [clindamycin](#) **10mg/kg/dose** (to a maximum of 450mg) 8 hourly
- l. IV [cefazolin](#) **50mg/kg/dose** (to a maximum of 2 grams) 8 hourly
- m. IV [metronidazole](#) **12.5mg/kg/dose** (to a maximum of 500mg) 12 hourly
- n. IV [clindamycin](#) **15mg/kg/dose** (to a maximum of 600mg) 8 hourly
- o. Oral [cefalexin](#) **25mg/kg/dose** (to a maximum of 1 gram) 12 hourly
- p. Oral [azithromycin](#) **12mg/kg/dose** (to a maximum of 500mg) for five (5) days
- q. 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.

Related CAHS internal policies, procedures and guidelines

[Antimicrobial Stewardship Policy](#)

[ChAMP Empiric Guidelines](#)


References and related external legislation, policies, and guidelines *(if required)*

1. Shulman ST, Bisno AL, Clegg HW, Gerber MA, Kaplan EL, Lee G, Martin JM, Van Beneden C. Clinical Practice Guideline for the Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012 Update by the Infectious Diseases Society of America. Clin Inf Dis. 2012 Sept;55(10).
2. Antibiotic Writing Group. eTG complete. West Melbourne: Therapeutic Guidelines Ltd; 2020. Available from: <https://tqldcdp-tg-org-au.pklibresources.health.wa.gov.au/etgAccess>.
3. BMJ Best Practice [Internet]. BMJ Publishing Group Limited. 2016 [cited 01/11/2019]. Available from: <http://bestpractice.bmj.com.pklibresources.health.wa.gov.au/best-practice/welcome.html>.
4. McMullen BJ 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.
5. Leach, A. J., et al. (2021). "Otitis media guidelines for Australian Aboriginal and Torres Strait Islander children: summary of recommendations." *Med J Aust* **214**(5): 228-233.

Useful resources (including related forms)

[2020 Otitis Media Guidelines](#)

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

File Path:	<u>W:\Safety & Quality\CAHS\CLOVERS MEDICAL Pharmacy\Procedures Protocols and Guidelines\ChAMP\Word\Empiric Guidelines\PCH Templated (ED Guidelines)</u>		
Document Owner:	Head of Department – Infectious Diseases		
Reviewer / Team:	Children’s Antimicrobial Management Program		
Date First Issued:	December 2013	Last Reviewed:	June 2021
Amendment Dates:	November 2019	Next Review Date:	June 2024
Approved by:	Drug and Therapeutics Committee	Date:	September 2021
Endorsed by:	Chair, Drug and Therapeutics Committee	Date:	September 2021
Standards Applicable:	NSQHS Standards:  NSMHS: N/A Child Safe Standards: N/A		

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