GUIDELINE	
Bone and Joint Infections (Paediatric Empiric Guidelines)	
Scope (Staff):	Medical, Nursing and 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

CLINICAL SCENARIO		Usual duration	DRUGS/DOSES			
			Standard Protocol	Known or Suspected MRSA[a]	Low Risk Penicillin allergy[b]	High Risk Penicillin allergy[b]
Complex or traumatic wounds ≥1 month old	Compound fracture **without:** • significant contamination, • clinical evidence of infection **OR** • tissue damage/ devitalisation	refer to ID	If debridement of the injury has occurred within 8 hours, systemic antibiotic prophylaxis should be given for 24 to 72 hours. For patients where debridement occurs greater than 8 hours after the injury, presumptive therapy should be continued for 7 days.			
			IV cefazolin 50mg/kg/dose (to a maximum of 2 grams) 8 hourly	vancomycin[c]	As per standard protocol	clindamycin[d]
			Tetanus immunisation history needs to be reviewed. Consider the need for tetanus prophylaxis as per Tetanus prone wounds. For oral step down options refer to; mild post traumatic wounds in the Skin and Soft Tissue Infections Guideline			
	Compound fracture **with** severe tissue damage and/or evidence of infection	refer to ID	IV piperacillin/tazobactam 100mg/kg/dose (to a maximum of 4 grams piperacillin component) 8 hourly	Discuss with ID or Microbiology service	cefazolin[e] **AND** metronidazole[f]	ciprofloxacin[g] **AND** clindamycin[d]
			Tetanus immunisation history needs to be reviewed. Consider the need for tetanus prophylaxis as per Tetanus prone wounds.			

CLINICAL SCENARIO		Usual duration	DRUGS/DOSES			
			Standard Protocol	Known or Suspected MRSA[a]	Low Risk Penicillin allergy[b]	High Risk Penicillin allergy[b]
Osteomyelitis and Septic Arthritis	Osteomyelitis or septic arthritis <3 months old	refer to ID	IV cefotaxime 50mg/kg/dose (to a maximum of 2 grams) 8 hourly	**ADD** vancomycin[c] to standard protocol	As per standard protocol	Discuss with ID or Microbiology service
	Uncomplicated osteomyelitis or septic arthritis ≥3 months old	3* days IV Min. 3 weeks total	IV flucloxacillin 50mg/kg/dose (to a maximum of 2 grams) 6 hourly	**ADD** vancomycin[c] to standard protocol	cefazolin[e]	vancomycin[c]
			Consider oral step down to cefalexin[h] or cotrimoxazole[i]			
	Uncomplicated osteomyelitis or septic arthritis ≥3 months old from an area with high MRSA rate (including Kimberley, Pilbara and Goldfields)	3* days IV Min. 3 weeks total	IV flucloxacillin 50mg/kg/dose (to a maximum of 2 grams) 6 hourly **AND** IV vancomycin 15mg/kg/dose (to a maximum initial dose of 750mg) 6 hourly	As per standard protocol	cefazolin[e] **AND** vancomycin[c]	vancomycin[c]
			Consider oral step down to cotrimoxazole[i] or cefalexin[h] (if proven susceptible)			
	Osteomyelitis or septic arthritis (≥1 month old) that is: i) Multifocal **OR** ii) With pneumonia or myositis **OR** iii) Requiring ICU admission	refer to ID	IV flucloxacillin 50mg/kg/dose (to a maximum of 2 grams) 6 hourly **AND** IV vancomycin 15mg/kg/dose (to a maximum initial dose of 750mg) 6 hourly	As per standard protocol	cefazolin[e] **AND** vancomycin[c]	vancomycin[c] **AND** clindamycin[d]
			All patients with sepsis/disseminated infection requiring ICU admission should be discussed with infectious diseases or clinical microbiology services.			

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

d. IV clindamycin **15mg/kg/dose** (to a maximum of 600mg) 8 hourly.

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

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

g. IV ciprofloxacin **10mg/kg/dose** (to a maximum of 400mg) 12 hourly. ChAMP approval required

h. Oral cefalexin **40mg/kg/dose** (to a maximum of 1500mg) 8 hourly.

i. Oral cotrimoxazole **8mg/kg/dose of trimethoprim component 12 hourly; equivalent to 1mL/kg/dose of mixture**, (maximum of 320mg trimethoprim component per dose). Folic acid 0.1mg/kg up to 5mg orally daily should be added for courses greater than 1 week.

* For the treatment of Osteomyelitis children usually require a shorter duration than adults as their bones have excellent blood supply. Intravenous therapy should generally be continued for 3 days or until blood culture results are negative, the child is afebrile and has clinically improved and C-reactive protein (CRP) or erythrocyte sedimentation rate (ESR) is decreasing. Total intravenous/oral duration is for a minimum of 3 weeks.

Related CAHS internal policies, procedures and guidelines
Antimicrobial Stewardship Policy (Medication Management Manual)
ChAMP Empiric Guidelines

References and related external legislation, policies, and guidelines

1. Antibiotic Writing Group. Therapeutic Guidelines - Antibiotic. West Melbourne: Therapeutic Guidelines Ltd; 2019. Available from: http://online.tg.org.au.pklibresources.health.wa.gov.au/ip/.
2. Stevens DL, Bisno AL, Chambers HF, Dellinger EP, Goldstein EJ, Gorbach SL, Hirschmann SL, Montoya JG, Wade JC. Practice Guidelines for the Diagnosis and Management of Skin and Soft Tissues Infections: 2014 Update by the Infectious Diseases Society of America. 2014 52(2).
3. The 2020 Australian guideline for prevention, diagnosis and management of acute rheumatic heart disease (3rd edition). Available from : https://www.rhdaustralia.org.au/system/files/fileuploads/arf_rhd_guidelines_3rd_edition_final.pdf

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