



| GUIDELINE | |
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| Surgical Prophylaxis: Vascular, Cardiovascular and Neurosurgery | |
| Scope (Staff): | Medical, Nursing and Pharmacy |
| Scope (Area): | Perth Children's Hospital (PCH) |
| Child Safe Organisation Statement of Commitment | |
| <p>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.</p> | |

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

- Surgical prophylaxis refers to a **single** preoperative dose given 0-60 minutes prior to surgical incision unless otherwise stated.
- If **vancomycin** is required for surgical prophylaxis, start the vancomycin infusion within the 120 minutes before surgical incision (ideally at least 15 minutes before incision) to ensure adequate blood and tissue concentrations at the time of incision and allow potential infusion-related toxicity to be recognised before induction of anaesthesia. The infusion can be completed after surgical incision.

| CLINICAL SCENARIO (all ages) | | DRUGS/DOSES | | | |
|------------------------------|---|--|---|--|---|
| | | Standard Protocol | Known or Suspected MRSA ^a | Low Risk Penicillin Allergy ^b | High Risk Penicillin Allergy ^b |
| Vascular | Vascular surgery including placements of grafts or stents | IV cefazolin 30mg/kg (to a maximum of 2 grams) as a single dose. Repeat dose if operation > 3 hours. | ADD vancomycin^c to standard protocol. | As per standard protocol. | vancomycin ^c |
| | Implantable Central Venous Access Device (CVAD) Placement | IV cefazolin 30mg/kg (to a maximum of 2 grams) as a single agent. | ADD vancomycin^c to standard protocol. | As per standard protocol. | vancomycin ^c |
| | <p>ALL patients require <i>Staphylococcus aureus</i> decolonisation for each insertion of a CVAD. Ideally decolonisation should be completed prior to the surgical procedure. If this is not possible, patients should commence decolonisation prior to surgery with the full five day course completed post operatively. Refer to: CVAD bundle for further information (awaiting protocol)</p> | | | | |

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| CLINICAL SCENARIO (all ages) | | DRUGS/DOSES | | | |
|--|--|---|--|--|--|
| | | Standard Protocol | Known or Suspected MRSA ^a | Low Risk Penicillin Allergy ^b | High Risk Penicillin Allergy ^b |
| Cardiothoracic | Cardiac Surgery | IV cefazolin 30mg/kg (to a maximum of 2 grams). Repeat if operation > 3 hours OR if there is excessive blood loss Continue 8 hourly for a total of 24 hours. | ADD vancomycin ^d to standard protocol. | As per standard protocol. | vancomycin ^d AND gentamicin ^e |
| | Thoracotomy or thoracoscopic surgery into an uninfected surgical site | IV cefazolin 30mg/kg (to a maximum of 2 grams) as a single dose Repeat dose if operation > 3 hours. | ADD vancomycin ^c | As per standard protocol | vancomycin ^c AND gentamicin ^e |
| Neurosurgery | Routine neurosurgery including uncomplicated shunt insertions | IV cefazolin 30mg/kg (to a maximum of 2 grams) as a single dose. Repeat dose if operation > 3 hours. | ADD vancomycin ^c to standard protocol. | As per standard protocol. | vancomycin ^c |
| | VP shunt insertion in high risk patients (neonates and infants with recurrent shunt complications) | IV vancomycin 15mg/kg/dose (to a maximum of 750mg, regardless of gestational age). Continue 8 hourly (neonates) or 6 hourly (infants) for 24 hours. AND IV cefotaxime 50mg/kg (to a maximum of 2 grams). Continue 8 hourly for a total maximum duration of 24 hours. | As per standard protocol. | As per standard protocol. | vancomycin ^f AND gentamicin ^g |
| For neonates born pre-term refer to neonatal guidelines for ongoing doses. | | | | | |

- 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 and the Pilbara) a lower threshold for suspected MRSA should be given
 - 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) 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** (to a maximum initial dose of 750mg) given via slow infusion. Repeat dose if operation > 6 hours (**not required in setting of abnormal renal function**). Start the vancomycin infusion within the 120 minutes before surgical incision (ideally at least 15 minutes before incision) to ensure adequate blood and tissue concentrations at the time of incision and allow potential infusion-related toxicity to be recognised before induction of anaesthesia. The infusion can be completed after surgical incision.


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- d) IV [vancomycin](#) **15mg/kg** (to a maximum of 750mg) continued 6 hourly for 24 hours.
- e) IV [gentamicin](#) **5mg/kg** (to a maximum of 480mg) as a single dose only.
- f) IV [vancomycin](#) **15mg/kg** (to a maximum of 750mg) continued 6 hourly for 24 hours, **adjust dose for patients with renal impairment.**
- g) IV [gentamicin](#) **5mg/kg** (to a maximum of 320mg) as a single dose followed by standard treatment dosing as per ChAMP monograph for a total of 24 hours.

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| Related internal policies, procedures and guidelines |
| Antimicrobial Stewardship Policy ChAMP Empiric Guidelines |

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| References |
| <ol style="list-style-type: none"> 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. Bratzler DW, Dellinger EP, Olsen KM, Perl TM, Auwaerter PG, Bolon MK, et al. Clinical practice guidelines for antimicrobial prophylaxis in surgery. Am J Health-Syst Pharm. 2013;70:195-283. |

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| Standards Applicable: | NSQHS Standards:  NSMHS: N/A Child Safe Standards: N/A | | |

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Healthy kids, healthy communities

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