



GUIDELINE

Surgical Prophylaxis: Gastrointestinal and Abdominal

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](#)

- Surgical prophylaxis refers to a **single** preoperative dose given 0 to 60 minutes prior to surgical incision unless otherwise stated.⁽¹⁾
- 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.⁽¹⁾
- Consider a higher capped dose of cefazolin (to a maximum of 3 grams) in obese patients. Refer to: [Guidelines for Drug Dosing in Overweight and Obese Children 2 to 18 years of age](#).^(1, 2)

CLINICAL SCENARIO	DRUGS/DOSES			
	Standard Protocol	Known or Suspected MRSA ^a	Low Risk Penicillin allergy ^b	High Risk Penicillin allergy ^b
All gastrointestinal surgery in neonates not already on antibiotics (neonates < 1 month old)	IV cefazolin 30 mg/kg (to a maximum of 2 grams) as a single dose. AND IV metronidazole 15 mg/kg as a single dose.	As per standard protocol		High risk penicillin allergy is rare in neonates. Discuss with Infectious Diseases
	For prolonged surgeries, additional doses <u>may</u> be required after 8 hours – refer to neonatal guidelines for subsequent doses and intervals based on neonatal age and weight.			

CLINICAL SCENARIO	DRUGS/DOSES			
	Standard Protocol	Known or Suspected MRSA ^a	Low Risk Penicillin allergy ^b	High Risk Penicillin allergy ^b
Upper gastrointestinal tract or biliary surgery (≥1 month old)	IV cefazolin 30 mg/kg (to a maximum of 2 grams) as a single dose. For prolonged surgeries, repeat the dose every 4 hours intraoperatively	As per standard protocol		clindamycin ^c AND gentamicin ^d
PEG tube placement, revision or conversion OR Insertion of peritoneal dialysis (PD) catheter	IV cefazolin 30 mg/kg (to a maximum of 2 grams) as a single dose.	ADD vancomycin ^e to standard protocol	As per standard protocol	clindamycin ^c AND gentamicin ^d
	Prior to insertion of PD catheter, consider screening for <i>Staphylococcus aureus</i> carriage and completing a course of decolonisation if positive.			
Endoscopic procedures, with or without biopsy (≥1 month of age)	No antibiotic surgical prophylaxis indicated.			
Non-endoscopic elective colorectal surgery (≥1 month old)	IV cefazolin 30 mg/kg (to a maximum of 2 grams) as a single dose. (For prolonged surgeries, repeat the dose every 4 hours intraoperatively) AND IV metronidazole 12.5 mg/kg (to a maximum of 500 mg) as a single dose.	As per standard protocol		metronidazole ^f AND gentamicin ^d

CLINICAL SCENARIO	DRUGS/DOSES			
	Standard Protocol	Known or Suspected MRSA ^a	Low Risk Penicillin allergy ^b	High Risk Penicillin allergy ^b
Appendicectomy or Intra-abdominal surgery with peritonitis or a perforated viscus (≥1 month old)	If the patient is already receiving antibiotic therapy with either amoxicillin clavulanic acid, cefazolin or piperacillin tazobactam an additional dose is required if more than 4 hours have passed since the last dose.			
	IV amoxicillin/clavulanic acid ^g as a single dose For prolonged surgeries, repeat the dose every 3 hours intraoperatively	As per standard protocol	cefazolin ^h AND metronidazole ^f	metronidazole ^f AND gentamicin ^d
	See Intra-abdominal Sepsis treatment guideline for the recommended post-operative antibiotic therapy.			
Hernia repair – no entry to bowel lumen (≥1 month old without prosthetic material)	Not routinely recommended.			
Hernia repair (≥1 month old, with prosthetic material)	Consider IV cefazolin 30mg/kg (to a maximum of 2 grams) as a single dose. IF entering bowel lumen ADD IV metronidazole 12.5 mg/kg (to a maximum of 500 mg) as a single dose	ADD vancomycin ^e to standard protocol	As per standard protocol	metronidazole ^f AND gentamicin ^d

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. Check for MicroAlert B or C on iCM
- ii. Household contacts of MRSA colonised individuals
- iii. In children who reside in regions with higher MRSA rates (e.g. Kimberley, Goldfields and the Pilbara) 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 Infectious Diseases.

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 **clindamycin 15 mg/kg** (to a maximum of 600 mg) as a single dose. For prolonged surgeries, repeat the dose every 6 hours intraoperatively.
- d. IV **gentamicin 2 mg/kg** as a single dose only. For children ≥ 1 month to < 10 years, maximum dose of 320mg, for those ≥ 10 years, maximum dose of 560mg. If the surgery is expected to last 6 hours or longer, consider using a single 5mg/kg dose.
- e. IV **vancomycin 15 mg/kg** (to a maximum of 750mg) given via slow infusion. For prolonged surgeries in patients with normal renal function, repeat the dose every 6 hours intraoperatively (repeat dose not required in the 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
- f. IV **metronidazole 12.5 mg/kg** (to a maximum of 500mg) as a single dose only. For prolonged surgeries, repeat the dose every 12 hours intraoperatively.
- g. IV **amoxicillin/clavulanic acid** (doses based on amoxicillin component)
 - Birth (term) to < 40 kg: IV 25 mg/kg (to a maximum of 1 gram) as a single dose.
 - > 40 kg: IV 1 gram as a single dose.
- h. IV **cefazolin 30 mg/kg** (to a maximum of 2 grams) as a single dose.

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/etqAccess>.
2. Kimberlin DW, Barnett E, Lynfield R, Sawyer MH, editors. Red Book: 2021 Report of the Committee on Infectious Diseases. . 32nd edition ed. Illinois: American Academy of Pediatrics; 2021 - 2024.
3. Bianchini S, Rigotti E, Monaco S, Nicoletti L, Auriti C, Castagnola E, et al. Surgical Antimicrobial Prophylaxis in Abdominal Surgery for Neonates and Paediatrics: A RAND/UCLA Appropriateness Method Consensus Study. *Antibiotics*. 2022;11(2):279.
4. Chow KM, Li PK, Cho Y, Abu-Alfa A, Bavanandan S, Brown EA, et al. ISPD Catheter-related Infection Recommendations: 2023 Update. *Perit Dial Int*. 2023;43(3):201-19.

Useful resources (including related forms)

[Antimicrobial Stewardship Policy](#)

[ChAMP Empiric Guidelines and Monographs](#)

[KEMH Neonatal Medication Protocols](#)

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

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