

# Royal Hospital for Children Glasgow - Antibiotic Prophylaxis for Paediatric Surgery

## General Principles for prescribing:

- Administer the pre-operative IV prophylaxis dose at induction, **no more** than 60 minutes prior to skin incision/intervention.
- If severe blood loss repeat antibiotic dose for: **cefuroxime, flucloraxillin, clarithromycin, co-amoxiclav (all at full prophylactic dose) and gentamicin (at half prophylactic dose). Do not re-dose metronidazole or teicoplanin.**
- To reduce the risk of post-operative drug errors, prescribe antibiotics on the 'Once Only' section of the drug kardex and also on the anaesthetic record.
- Check previous microbiology and seek opinion for patients on existing antimicrobial therapy or with complex microbiological history.
- Follow RHC Glasgow monographs or Medusa monograph for drug reconstitution and administration.

Surgery	Procedure	Antibiotic	Induction dose	Intra-operative Doses	Post-operative Doses
<b>ENT surgery</b>	Saliva reduction surgery (submandibular duct transfer; salivary duct ligation)	Co-amoxiclav	30mg/kg (max 1.2g)	Neonate <7 days: Not required Neonate ≥7days/child: 4 hourly	Continue for 1 week post-op <b>Dose as per BNF-C</b>
		<b>Penicillin allergy:</b> Clindamycin	5mg/kg (max 1.2gram) infused over 15 minutes	Neonate <14 days: 6 hourly Neonate ≥14 days/child: 4 hourly	
	Open airway reconstruction surgery (laryngotracheal reconstruction; cricotracheal resection)	Co-amoxiclav <b>Or</b>	30mg/kg (max 1.2g)	Neonate <7 days: Not required Neonate ≥7days/child: 4 hourly	Switch to oral when possible and continue for 1 week post-op if reconstruction or recurrent/recent tracheostomy <b>Dose as per BNF-C</b>
		If <b>pseudomonas colonisation:</b> Ceftazidime AND	25mg/kg (max 2g)	Neonate <7 days: Not required Neonate ≥7days/child: 4 hourly	
		Metronidazole	<b>15mg/kg</b> (max 500mg) infused over 20-30 min	Neonate: Not recommended Child: <b>7.5mg/kg</b> 8 hourly	
Closure of tracheocutaneous fistula	Co-amoxiclav	30mg/kg (max 1.2g)	Neonate <7 days: Not required Neonate ≥7days/child: 4 hourly	Continue for 1 week post-op <b>Dose as per BNF-C</b>	
	<b>Penicillin allergy:</b> Clindamycin	5mg/kg (max 1.2gram) infused over 15 minutes	Neonate <14 days: 6 hourly Neonate ≥14 days/child: 4 hourly		
Grommets	Ofloxacin (Exocin) eye drops – to be administered to the ear, single dose in theatre used at surgeon's discretion				
All other surgery (tonsillectomy, adenoidectomy, tracheostomy, thyroglossal cyst excision, preauricular sinus, dermoid cyst, branchial anomaly, thyroidectomy, parotidectomy, lymph node biopsy etc)	No antibiotics used routinely				
<b>General Surgery</b>	Upper Gastrointestinal Surgery	Cefotaxime <b>Or</b> Co-amoxiclav	50mg/kg (max 2g) 30mg/kg (max 1.2g)	All: 4 hourly Neonate <7 days: Not required Neonate ≥7days/child: 4 hourly	Continue until 24hr post-op following cholecystectomy if cholecystitis. <b>Dose as per BNF-C/WoS Neonatal guidelines</b>
		<b>Penicillin allergy:</b> Clindamycin AND	5mg/kg (max 1.2g) infused over 15 mins	Neonate <14 days: 6 hourly Neonate ≥14 days/child: 4 hourly	
		Gentamicin <b>(Caution re dosing in obesity)</b>	5mg/kg (max 400mg)	Not required	
	Lower Gastrointestinal Surgery  If Peritonitis suspected, antibiotic treatment should be initiated as soon as possible & not delayed until patient gets to theatre.	Cefotaxime AND Metronidazole	50mg/kg (max 2g) <b>15mg/kg</b> (max 500mg) infused over 20-30 minutes	All: 4 hourly Neonate: Not recommended Child: <b>7.5mg/kg</b> 8 hourly	Not routinely required for elective surgery. 24-48 post-op prophylaxis can be considered based on level of contamination at the time of surgery. <b>Dose as per BNF-C.</b> <b>Consider treatment course if clinically indicated:</b> <b>&lt;28days old – as per WoS Neonatal guidelines.</b> <b>≥28days old – as per BNF-C</b>
		<b>Penicillin allergy:</b> Clindamycin	5mg/kg (max 1.2g) infused over 15 mins	Neonate <14 days: 6 hourly Neonate ≥14 days/child: 4 hourly	
		AND Gentamicin <b>(Caution re dosing in obesity)</b>	5mg/kg (max 400mg)	Not Required	
	Tumour surgery (Wilms, Neuroblastoma)	Cefotaxime AND Metronidazole	50mg/kg (max 2g) <b>15mg/kg</b> (max 500mg) infused over 20-30 minutes	All: 4 hourly Neonate: Not recommended Child: <b>7.5mg/kg</b> 8 hourly	Not routinely required. 24-48 post-op prophylaxis can be considered based on level of contamination at the time of surgery. <b>Dose as per BNF-C</b>
		<b>Penicillin allergy:</b> Clindamycin AND	5mg/kg (max 1.2g) infused over 15 mins	Neonate <14 days: 6 hourly Neonate ≥14 days/child: 4 hourly	
		Gentamicin <b>(Caution re dosing in obesity)</b>	5mg/kg (max 400mg)	Not required	
	<b>Orthopaedic Surgery</b>	Procedures involving implantation metalwork and/or arthroscopy	Cefuroxime	50mg/kg (max 1.5g)	Neonates <7 days: 6 hourly Neonates ≥7 days/child: 4 hourly
<b>Penicillin allergy:</b> Clindamycin			5mg/kg (max 1.2g) infused over 15 minutes	Neonate <14 days: 6 hourly Neonate ≥14 days/child: 4 hourly	Not required

Surgery	Procedure	Antibiotic	Induction dose	Intra-operative Doses	Post-operative Doses	
<b>Urology Surgery</b>	Circumcision	Not required				
	Cystoscopy	Gentamicin <b>(Caution re dosing in obesity)</b> <b>If patient has renal impairment or procedure requires botox:</b> Cefotaxime <b>Penicillin allergy:</b> Discuss with Microbiology/ID	2.5mg/kg (max 160mg)  50mg/kg (max 2g)	Not required  All: 4 hourly	For patients at high risk of UTI at surgeons discretion: Give a 3 day treatment course of antibiotics based on previous microbiology Review antibiotics if patient on prior to procedure.	
	Hypospadias repair	Not required				
	Nephrectomy heminephrectomy Pyeloplasty Re implantation of ureter	Gentamicin <b>(Caution re dosing in obesity)</b>	2.5mg/kg (max 160mg)	Not required	Trimethoprim 2mg/kg at night until stent removed OR discuss with microbiology if previous trimethoprim resistance.	
	Urological procedure that results in entry into the bowel	Cefotaxime AND Metronidazole  <b>Penicillin allergy:</b> Clindamycin AND Gentamicin <b>(Caution re dosing in obesity)</b>	50mg/kg (max 2g)  15mg/kg (max 500mg) infused over 20-30 mins  5mg/kg (max 1.2g) infused Over 15 mins  2.5mg/kg (max 160mg)	All: 4 hourly  Neonate: Not recommended Child: <b>7.5mg/kg</b> 8 hourly  Neonate <14 days: 6 hourly Neonate ≥14 days/child: 4 hourly  Not required	Not required	
<b>Plastic Surgery</b>	Trauma Soft Tissue Trauma	Flucloxacillin	25mg/kg (max 1g)	Neonate <21 days: 6 hourly Neonate ≥21 days/child: 4 hourly	Continue for 1 week for significantly contaminated wound. <b>Dose as per BNF-C</b>	
		<b>Compound fracture</b> Co-amoxiclav	30mg/kg (max 1.2g)	Neonate <7days: Not required Neonate ≥7 days/child: 4 hourly		
		AND Gentamicin (if wound is very contaminated) <b>(Caution re dosing in obesity)</b>	5mg/kg (max 400mg)	Not required		
		<b>Penicillin allergy:</b> Clindamycin	5mg/kg (max 1.2g) infused over 15 mins	Neonate <14 days: 6 hourly Neonate ≥14 days/child: 4 hourly		
	Elective Soft Tissue Surgery	No prophylaxis unless complex prolonged procedure.				
		If complex: Flucloxacillin  or Cefuroxime	25mg/kg(max 1g)  50mg/kg (max 1.5g)	Neonate <21 days: 6 hourly Neonate ≥21 days/child: 4 hourly  Neonates <7 days: 6 hourly Neonates ≥7 days/child: 4 hourly	Not required	
	Elective Hand Or Foot Surgery Involving Bone	Flucloxacillin	25mg/kg (max 1g)	Neonate <21 days: 6 hourly Neonate ≥21 days/child: 4 hourly	Not required	
		<b>Penicillin allergy:</b> Clindamycin	5mg/kg (max 1.2g) infused over 15 mins	Neonate <14 days: 6 hourly Neonate ≥14 days/child: 4 hourly	Not required	
	Cleft lip and Palate Surgery	Co-amoxiclav	30mg/kg (max 1.2g)	Neonate <7 days: Not required Neonate ≥7days/child: 4 hourly	Up to 24 hours post-op For all intra-oral surgery continue PO Abx for 5 days post-op. <b>Dose as per BNF-C</b>	
		<b>Penicillin allergy:</b> Clindamycin	5mg/kg (max 1.2g) infused over 15 mins	Neonate <14 days: 6 hourly Neonate ≥14 days/child: 4 hourly		
Burns	No prophylaxis required					
Application of Biobrane	Co-amoxiclav	30mg/kg (max 1.2g)	Neonate <7 days: Not required Neonate ≥7days/child: 4 hourly	Until biobrane adherent and microbiology available. Treatment may be required depending on microbiology. <b>Dose as per BNF-C</b>		
	<b>Penicillin allergy:</b> Discuss choice with microbiology or ID					
Excision and Grafting Surgery	Co-amoxiclav	30mg/kg (max 1.2g)	Neonate <7 days: Not required Neonate ≥7days/child: 4 hourly	Up to 24hr post-op depending on size/ complexity of injury. Treat based on microbiology/ cultures. <b>Dose as per BNF-C</b>		
	<b>Penicillin allergy:</b> Discuss choice with microbiology or ID					
<b>Neurosurgery</b>  <b>(note: antimicrobial choices in this section do not offer good CNS penetration. If clinical infective concerns please refer to ID/ Microbiology for advice).</b>	Craniotomy	Cefuroxime	50mg/kg (max 1.5g)	Neonates <7 days: 6 hourly Neonates ≥7 days/child: 4 hourly	Not required	
		<b>Penicillin allergy:</b> Teicoplanin	>2months: 10mg/kg (max 800mg) <2months: 16mg/kg infuse over 30mins	Not required	Not required	
		AND Gentamicin <b>(Caution re dosing in obesity)</b>	5mg/kg (max 400mg)	Not required		
	Clean contaminated (procedures that breach air sinuses, mastoid air cells or nasal or oral cavity)	Co-amoxiclav	30mg/kg (max 1.2g)	Neonate <7 days: Not required Neonate ≥7days/child: 4 hourly	Not required	
		<b>Penicillin allergy:</b> Clarithromycin  AND Metronidazole	7.5mg/kg (max 500mg) infused over 60 minutes  <b>15mg/kg</b> (max 500mg) infused over 20-30 minutes	All: 8 hourly  Neonate: Not recommended Child: <b>7.5mg/kg</b> 8 hourly	Not required	
	CSF shunt	Teicoplanin: Single dose only. 2month and over 10mg/kg (max 800mg); <2months 16mg/kg infused over 30mins; <b>Not required post-op</b>				
	Spinal Surgery	Cefuroxime	50mg/kg (max 1.5g)	Neonates <7 days: 6 hourly Neonates ≥7 days/child: 4 hourly	Not required	
		<b>Penicillin allergy:</b> Teicoplanin	>2months: 10mg/kg (max 800mg) <2months: 16mg/kg Infused over 30 mins	Not required		
	<b>Cardiothoracic surgery</b>	Please see separate guideline.				