

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



## General Principles for prescribing:

- Administer the pre-operative IV prophylaxis dose within the 60 minutes prior to skin incision/intervention.
- If severe blood loss repeat antibiotic dose for: cefuroxime, flucloxacillin, clarithromycin, co-amoxiclav (all at full prophylactic dose) and gentamicin (at half prophylaxis dose). Do not redose 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 problems.
- Follow paediatric monographs for drug reconstitution and administration.

| Surgery   | Procedure   | Antibiotic   | Pre-operative 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)   | Every 4 hours                                       | 8 hourly for 1 week  |
|   |   | <b>Penicillin allergy:</b> Clindamycin   | 5mg/kg (max 300mg) infused over 15 minutes   | Every 4 hours                                       | 6 hourly for 1 week  |
|   | Open airway reconstruction surgery (laryngotracheal reconstruction; cricotracheal resection)  | Co-amoxiclav 30mg/kg (max 1.2g) for 1 week<br><b>Or if colonised with pseudomonas:</b> Cefazidime AND Metronidazole                                | 30mg/kg (max 1.2g)<br><br>25mg/kg<br>7.5mg/kg (max 500mg) Every 8 hours infused over 20-30 minutes               | Every 4 hours<br><br>Every 4 hours<br>Every 8 hours | 8 hourly for 1 week if recurrent or recent tracheostomy  |
|   |   | <b>Penicillin allergy:</b> Discuss with microbiology or Infectious Diseases  |  |   |  |
|   | Closure of tracheocutaneous fistula   | Co-amoxiclav   | 30mg/kg (max 1.2g)   | Every 4 hours                                       | 8 hourly for 1 week  |
|   |   | <b>Penicillin allergy:</b> Clindamycin   | 5mg/kg (max 300mg) infused over 15 minutes   | Every 4 hours                                       | 6 hourly for 1 week  |
| Grommets  | Gentisone HC ear drops, 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<br><b>Or</b><br>Co-amoxiclav  | 50mg/kg (max 1g)<br>30mg/kg (max 1.2g)   | Every 4 hours<br>Every 4 hours                      | Consider 2 further doses following cholecystectomy if cholecystitis.<br><br>Consult protocol for post splenectomy patients for Penicillin maintenance. |
|   |   | <b>Penicillin allergy:</b> Clindamycin AND Gentamicin  | 5mg/kg (max 300mg) infused over 15 mins<br>5mg/kg (max 400mg)  | Every 4 hours<br>Not required                       |  |
|   |   |  |  |   |  |
|   | Lower Gastrointestinal Surgery<br>If Peritonitis suspected, antibiotic treatment should be initiated as soon as possible & not delayed until patient gets to theatre. | Cefotaxime<br>AND<br>Metronidazole   | 50mg/kg (max 1g)<br>7.5mg/kg (max 500mg) infused over 20-30 minutes  | Every 4 hours<br>Every 8 hours                      | Not required   |
|   |   | <b>Penicillin allergy:</b> Clindamycin AND Metronidazole AND Gentamicin  | 5mg/kg (max 300mg) infused over 15 mins<br>7.5mg/kg (max 500mg) infused over 20-30 minutes<br>5mg/kg (max 400mg) | Every 4 hours<br>Every 8 hours<br>Not Required      | If clinically indicated, continue with a treatment course  |
|   |   |  |  |   |  |
| Tumour surgery (Wilms, Neuroblastoma)   | Cefotaxime<br>AND<br>Metronidazole  | 50mg/kg (max 1g)<br>7.5mg/kg (max 500mg) infused over 20-30 minutes  | Every 4 hours<br>Every 8 hours   | Not required  |  |
|   | <b>Penicillin allergy:</b> Clindamycin AND Metronidazole AND Gentamicin   | 5mg/kg (max 300mg) infused over 15 mins<br>7.5mg/kg (max 500mg) infused over 20-30 minutes<br>5mg/kg (max 400mg)                                   | Every 4 hours<br>Every 8 hours<br>Not required   | Not required  |  |
| <b>Urology Surgery</b>  | Circumcision  | Not required   |  |   | Topical chloramphenicol if required  |
|   | Cystoscopy  | Gentamicin   | 2.5mg/kg (max 160mg)   | Not required  | For patients at high risk of UTI at surgeons discretion:<br>Trimethoprim 2mg/kg at night for 3 days  |
|   |   | <b>If patient has renal impairment or procedure requires botox:</b> Co-amoxiclav<br><br><b>Penicillin allergy:</b> Discuss with microbiology or ID | 30mg/kg (max 1.2g)   | Every 4 hours                                       | If previous trimethoprim resistance use co-amoxiclav once daily<br><br>Review prophylactic antibiotics if patient on prior to procedure.               |
|   | Hypospadias repair  | Not required   |  |   | Co-amoxiclav once daily at night until catheter/stent removed.<br>Dose as per BNFC.  |
|   | Nephrectomy heminephrectomy Pyeloplasty Re implantation of ureter   | Gentamicin   | 2.5mg/kg (max 160mg)   | Not required  | Trimethoprim 2mg/kg at night until stent removed<br>If previous trimethoprim resistance use co-amoxiclav once daily at night.                          |

| Surgery                                | Procedure  | Antibiotic  | Pre-operative Dose  | Intra-operative Doses  | Post-operative Doses  |  |
|--|--|---|---|--|---|--|
|  | Urological procedure that results in entry into the bowel  | Cefotaxime<br>AND<br>Metronidazole<br><b>Penicillin allergy:</b> Clindamycin<br>AND<br>Gentamicin | 50mg/kg (max 1.5g)<br><br>7.5mg/kg (max 500mg)<br>5mg/kg (max 300mg) infused over 15 mins<br>2.5mg/kg (max 160mg) | Every 4 hours<br><br>Every 4 hours<br>Not required   | Not required  |  |
| <b>Plastic Surgery</b>                 | Trauma<br>Soft Tissue Trauma   | Flucloxacillin  | 25mg/kg (max 1g)  | Every 4 hours  | Continue for 1 week if wound is very contaminated<br><br>Dose as per BNFC |  |
|  |  | <b>Compound fracture</b><br>Co-amoxiclav<br>AND<br>Gentamicin (if wound is very contaminated)     | 30mg/kg (max 1.2g)<br>5mg/kg (max 400mg)  | Every 4 hours<br>Not required  |   |  |
|  |  | <b>Penicillin allergy:</b> Clindamycin<br>AND<br>Gentamicin (if wound is very contaminated)       | 5mg/kg (max 300mg) infused over 15 minutes<br>5mg/kg (max 400mg)  | Every 4 hours<br>Not required  |   |  |
|  | Elective Soft Tissue Surgery   | No prophylaxis unless complex prolonged procedure.  |   |  |   |  |
|  |  | If complex:<br>Flucloxacillin<br>or<br>Cefuroxime   | 25mg/kg(max 1g)<br>50mg/kg (max 1.5g)   | Every 4 hours<br>Every 4 hours   | Not required  |  |
|  |  | <b>Penicillin allergy:</b> Clarithromycin   | 7.5mg/kg (max 500mg) infused over 60 minutes  | Every 8 hours  | Not required  |  |
|  | Elective Hand Or Foot Surgery Involving Bone   | Flucloxacillin  | 25mg/kg (max 1g)  | Every 4 hours  | Not required  |  |
|  |  | <b>Penicillin allergy:</b> Clindamycin  | 5mg/kg (max 300mg) infused over 15 mins   | Every 4 hours  | Not required  |  |
|  | Cleft lip and Palate Surgery   | Co-amoxiclav  | 30mg/kg (max 1.2g)  | Every 4 hours  | 8 hourly for 5 days in primary cleft surgery                              |  |
|  |  | <b>Penicillin allergy:</b> Clindamycin  | 5mg/kg (max 300mg) infused over 15  | Every 4 hours  | 6 hourly for 5 days in primary cleft surgery                              |  |
| Burns                                  | No prophylaxis required  |   |   |  |   |  |
| Application of Biobrane                | Co-amoxiclav   | 30mg/kg (max 1.2g)  | Every 4 hours   | Until biobrane adherent and microbiology available. Treatment may be required depending on microbiology.                 |   |  |
|  | <b>Penicillin allergy:</b> Discuss choice with microbiology or ID                                  |   |   |  |   |  |
| Excision and Grafting Surgery          | Co-amoxiclav   | 30mg/kg (max 1.2g)  | Every 4 hours   | For 1-3 doses depending on size and complexity of injury. Treatment subsequently depends on microbiology culture results |   |  |
|  | <b>Penicillin allergy:</b> Discuss choice with microbiology or ID                                  |   |   |  |   |  |
| <b>Neurosurgery</b>                    | Craniotomy   | Cefuroxime  | 50mg/kg (max 1.5g)  | Every 4 hours  | Not required  |  |
|  |  | <b>Penicillin allergy:</b> Teicoplanin AND Gentamicin   | 10mg/kg (max 400mg) infused over 30 mins<br>5mg/kg  | Not required<br>Not required   | Not required  |  |
|  | Clean contaminated (procedures that breach air sinuses, mastoid air cells or nasal or oral cavity) | Co-amoxiclav  | 30mg/kg (max 1.2g)  | Every 4 hours  | Not required  |  |
|  |  | <b>Penicillin allergy:</b> Clarithromycin<br>AND<br>Metronidazole                                 | 7.5mg/kg (max 500mg) infused over 60 minutes<br>7.5mg/kg (max 500mg) infused over 20-30 minutes                   | Every 8 hours<br>Every 8 hours   | Not required  |  |
|  | CSF shunt  | Teicoplanin 10mg/kg (max 400mg) infused over 30 minutes   |   |  | Not required  |  |
|  | Spinal Surgery   | Cefuroxime  | 50mg/kg (max 1.5g)  | Every 4 hours  | Not required  |  |
| <b>Penicillin allergy:</b> Teicoplanin |  | 10mg/kg (max 400mg) infused over 30 mins  | Not required  |  |   |  |
| <b>Cardiothoracic surgery</b>          | Please see separate guideline  |   |   |  |   |  |
| <b>Orthopaedic Surgery</b>             | Procedures involving implantation metalwork and/or arthroscopy                                     | Cefuroxime  | 50mg/kg (max 1.5g)  | Every 4 hours  | Not required  |  |
|  |  | <b>Penicillin allergy:</b> Clindamycin  | 5mg/kg (max 300mg) infused over 15 minutes  | Every 4 hours  | Not required  |  |