CHQ Paediatric surgical antibiotic prophylaxis guidelines

Purpose

The recommendations of this guideline are for peri-operative antibiotic prophylaxis for patients undergoing a surgical procedure at the Queensland Children's hospital (QCH) and who are cared for by Children's Health Queensland (CHQ). These guidelines are to be used only before the results of microbiological investigations are available or finalised.

Scope

This guideline provides information for all Children's Health Queensland (CHQ) employees (permanent, temporary and casual) and all organisations and individuals acting as its agents (including Visiting Medical Officers and other partners, contractors, consultants and volunteers).

Related documents

Procedures, Guidelines, Protocols

- CHQ-PROC-01035 Antimicrobial Restrictions
- CHQ Antimicrobial Restriction list
- CHQ-GDL-01023 Tetanus Prophylaxis in Wound Management- Prescribing aid algorithm
Guideline

Peri-operative considerations:

Drug administration

- Pre-operative IV antibiotics – should be given within 60 minutes (ideally within 30 minutes) of skin incision.
- Administration after skin incision or > 60 minutes before incision reduces effectiveness.
- One dose is generally sufficient for prophylaxis, when required.
- A second prophylactic dose should be given intra-operatively if the procedure is longer than two half-lives of the agent used:
  - For cephalazolin, cefoxitin, benzylpenicillin and piperacillin/tazobactam: give a repeat dose after 4 hours.
  - For gentamicin, only a single dose per 24 hour period should be given. Seek Infectious Diseases (ID) team/Pharmacy advice about re-dosing and therapeutic drug monitoring.
  - For vancomycin (Loading dose of 25 mg/kg (more than 12 years of age) or 30 mg/kg (under 12 years of age), maximum of 1.5 g/dose), give a repeat dose of 15mg/kg (maximum 500 mg/dose) after 12 hours and seek ID team/pharmacy advice on therapeutic drug monitoring.
  - For teicoplanin, only a single dose per 24 hour period should be given. Seek ID/Pharmacy advice about re-dosing.
  - For lincomycin: give a repeat dose after 8 hours.
- Unless specified below, continued dosing will always require ID discussion and approval.

Pre-existing infections (known or suspected) – if patients are on broad spectrum antibiotics, additional surgical antibiotic prophylaxis may not be necessary. Doses should be scheduled to allow for re-dosing just prior to skin incision.

Multi-drug resistance - Colonisation with known Multi-drug resistant organisms may need to be taken into consideration as an alternative regimen could be required. Seek ID advice.

Neonates - Prophylaxis regimens should be individualised by surgeons in consultation with the ID team. Refer to Antibiotic or Neofax for neonatal antibiotic dosing advice.

Therapeutic drug monitoring: Seek pharmacist,ID advice on appropriate therapeutic drug monitoring (TDM) and appropriate dosing for patients in renal failure

- Pediatric Tobramycin/Gentamicin Therapeutic drug monitoring
- Pediatric Vancomycin Therapeutic drug monitoring
## Table 1: Surgical Antibiotic Prophylaxis Guidelines

<table>
<thead>
<tr>
<th>SURGERY</th>
<th>PROPHYLAXIS</th>
<th>ALTERNATIVE (Immediate type or severe penicillin or cephalosporin hypersensitivity)</th>
<th>Multi resistant organism colonisation</th>
</tr>
</thead>
</table>
| ENT (adenotonsillectomy/ grommet insertion prophylaxis not required) | Cephazolin IV 30 mg/kg (up to 1 g maximum) before incision (2 g if more than 80 kg)  
(Continues Cephazolin IV 30 mg/kg/dose (maximum 1 g) every 8 hours for total of 3 postoperative doses.) | Substitute with Lincomycin IV 15 mg/kg (600 mg if more than 12 years old) as a single dose infused over 60 minutes | For MRSA: Add Vancomycin IV 30 mg/kg (25 mg/kg if more than 12 years old) (up to 1.5 g maximum) slow IV infusion (maximum rate of 10 mg/minute) |
| Head/Neck/Thoracic Neurosurgery    | For Cochlear implantation: Cephazolin IV 30 mg/kg (up to 1 g maximum) before incision (if more than 80 kg, give 2 g).  
(Continues Cephazolin IV 30 mg/kg/dose (maximum 1 g) every 8 hours for total of 7 days.) | For cochlear implantation: Substitute with Lincomycin IV 15 mg/kg (600 mg if more than 12 years old) as a single dose infused over 60 minutes. | For VRE: Add Teicoplanin IV 10 mg/kg (up to 400 mg maximum) as an IV bolus over 5 minutes and contact ID for further advice.  
Note: Vancomycin not required if concurrently MRSA colonised |
| Orthopaedic Surgery               | For Laryngeal reconstruction: Cephazolin IV 30 mg/kg (up to 1 g maximum) before incision (if more than 80 kg, give 2 g).  
(Continues Cephazolin IV 30 mg/kg/dose (maximum 1 g) every 8 hours for total of 7 days.) | For Laryngeal reconstruction: Substitute with Lincomycin IV 15 mg/kg (600 mg if more than 12 years old) as a single dose infused over 60 minutes. | For Pseudomonas aeruginosa: Base antibiotic prophylaxis choice on sensitivities and seek ID advice |
|                                   | For Cranial vault remodelling or Craniosynostosis surgery: Cephazolin IV 30 mg/kg (up to 1 g maximum) before incision (if more than 80 kg, give 2 g).  
(Continues Cephazolin IV 30 mg/kg/dose (maximum 1 g) every 8 hours for total of 48 hours.) | For Cranial vault remodelling or Craniosynostosis surgery: Seek ID advice. | |
<table>
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<tr>
<th>SURGERY</th>
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<tr>
<td>Cardiac Surgery Refer to CHQ-GDL-01064 Paediatric Cardiac surgical antibiotic prophylaxis guideline</td>
<td>Cephalozin IV 50 mg/kg (up to 2 g) at induction as loading dose, then 30 mg/kg/dose (up to 1 g) every 8 hours for further 3 doses. A second dose of 30 mg/kg to be given at 4 hours if surgery prolonged</td>
<td>Substitute with Lincomycin IV 15 mg/kg (600 mg if more than 12 years old) as a single dose infused over 60 minutes PLUS Gentamicin IV 5 mg/kg as a single dose infused over 30 minutes (1 month to 10 years: Maximum 320 mg) (More than 10 years old: Maximum 560 mg)</td>
<td>For MRSA: Add Vancomycin IV 30 mg/kg (25 mg/kg if more than 12 years old) (up to 1.5 g) slow IV infusion (maximum rate of 10 mg/minute). For VRE: Add Teicoplanin IV 10 mg/kg (up to 400 mg) as a single bolus dose over 5 minutes and contact ID for further advice. Note: Vancomycin not required if concurrently MRSA colonised For Pseudomonas aeruginosa: Base antibiotic prophylaxis choice on sensitivities and seek ID advice</td>
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<td>Eradication of Staph Aureus nasal colonisation in cardiac surgery patients: Apply Mupirocin 2% (Bactroban®) intranasally twice daily. Ideally start 2 days prior to surgery. Continue to a total of 5 days.</td>
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<tr>
<td>Abdominal Surgery (Including colorectal, appendicectomy, upper GIT or biliary including laparoscopic surgery) For Endoscopic or colonoscopic procedures: antibiotic prophylaxis not indicated For appendicitis, if antibiotics to continue for treatment, see CHQ-GDL-01202 Paediatric Antibocard for recommendations</td>
<td>Cefoxitin IV 40 mg/kg (up to 2 g) as a single dose before incision.</td>
<td>Substitute with Metronidazole IV 7.5 mg/kg (up to 500 mg) as a single dose, infused over 20 minutes PLUS Gentamicin 5 mg/kg IV as a single dose, infused over 30 minutes (1 month to 10 years of age: Maximum 320 mg) (More than 10 years of age: Maximum 560 mg)</td>
<td>For MRSA: Add Vancomycin IV 30 mg/kg (25 mg/kg if more than 12 years of age) (up to 1.5 g) slow IV infusion (maximum rate of 10 mg/minute). For VRE: Add Teicoplanin IV 10 mg/kg (up to 400 mg) as a single bolus dose over 5 minutes and contact ID for further advice. Note: Vancomycin not required if concurrently MRSA colonised For Pseudomonas aeruginosa: Base antibiotic prophylaxis choice on sensitivities and seek ID advice</td>
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<td>For Kasai procedure and similar biliary reconstructive surgery: Continue Cefoxitin IV 40 mg/kg/dose (up to 2 g) every 8 hours until biliary drain is removed.</td>
<td>Substitute with Metronidazole IV 7.5 mg/kg/dose (up to 500 mg) slow IV infusion every 8 hourly PLUS Gentamicin 5 mg/kg IV once daily (infuse over 30 minutes) (1 month to 10 years: Maximum 320 mg) (More than 10 years of age: Maximum 560 mg), until biliary drain is removed</td>
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<tr>
<td>For Gastro-intestinal anastomosis performed, without bowel prep: Continue Cefoxitin 40 mg/kg/dose (up to 2 g) IV every 8 hours for total 3 postoperative doses.</td>
<td>Substitute with Metronidazole 7.5 mg/kg/dose (up to 500 mg maximum) slow IV infusion every 8 hourly for total of 3 post operative doses PLUS Gentamicin 5 mg/kg IV (infuse over 30 minutes) as a single dose (1 month to 10 years: Maximum 320 mg) (More than 10 years old: Maximum 560 mg)</td>
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CHQ-GDL-01064 – CHQ Paediatric surgical prophylaxis guidelines
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<td>Liver transplantation (For further information, see QCH Paediatric Post-Liver Transplant Medication Management Guideline)</td>
<td>Piperacillin / Tazobactam IV 100 mg/kg/dose (Up to 4 g Piperacillin component) as a single dose, infused over 30 minutes, before incision. A second dose to be given after 4 hours intra-operatively if surgery prolonged. Prophylaxis should be no greater than 24 hours, with a single dose sufficing in most cases. If abdomen left unsutured or chronic cholangitis present, continue Piperacillin/Tazobactam IV 100 mg/kg (Up to 4 g Piperacillin component) every SIX hourly for 72 hours For use in high risk patients per transplant surgeon (e.g. PELD score &gt;22, Cholestasis, Second transplant, previous Kasai surgery) Liposomal Amphotericin (Ambisome ®) IV 1mg/kg (max 50 mg/dose) once DAILY and CONTINUE FOR 5 DAYS</td>
<td>For delayed hypersensitivity (e.g. Rash) use: Meropenem IV 20 mg/kg/dose (Up to 1 g) every EIGHT hourly intraoperatively PLUS Vancomycin 15 mg/kg/dose (Up to 500 mg) every SIX hourly intraoperatively</td>
<td>For MRSA: Add Vancomycin IV 30 mg/kg (25 mg/kg if more than 12 years of age) (up to 1.5 g) slow IV infusion (maximum rate of 10 mg/minute). For VRE: Add Teicoplanin IV 10 mg/kg (up to 400mg) as a single bolus dose over 5 minutes and contact ID for further advice Note: Vancomycin not required if concurrently MRSA colonised</td>
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<tr>
<td>Percutaneous transhepatic cholangiogram (with or without stent placement) with expected incomplete drainage (e.g. PSC, hilar strictures) or recent ERCP (within 1 week)</td>
<td>Piperacillin / Tazobactam IV 100 mg/kg/dose (Up to 4 g Piperacillin component) as a single dose, infused over 30 minutes, before incision.</td>
<td>Substitute with Gentamicin 5mg/kg IV (infuse over 30 minutes) as a single dose (1 month to 10 years: Maximum 320 mg) (More than 10 years old: Maximum 560 mg)</td>
<td>For MRSA, VRE or Pseudomonas aeruginosa colonisation, seek ID advice</td>
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<tr>
<td>Interventional radiology (Percutaneous endoscopic gastrostomy (PEG) or jejunostomy (PEJ) or nephrostomy tube placement)</td>
<td>Cephazolin IV 30 mg/kg (up to 1 g maximum) before incision (2 g if more than 80 kg)</td>
<td>Substitute with Gentamicin 5mg/kg IV (infuse over 30 minutes) as a single dose (1 month to 10 years: Maximum 320 mg) (More than 10 years old: Maximum 560 mg)</td>
<td>For MRSA, VRE or Pseudomonas aeruginosa colonisation, seek ID advice</td>
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<tr>
<td>Tenckhoff peritoneal dialysis catheter insertion</td>
<td>Cephazolin IV 30 mg/kg (up to 1 g maximum) before incision (2 g if more than 80 kg)</td>
<td>Seek ID advice</td>
<td>For MRSA, VRE or Pseudomonas aeruginosa colonisation, seek ID advice</td>
</tr>
<tr>
<td>Urinary tract surgery</td>
<td>Nil if on-going oral prophylaxis, otherwise Gentamicin 5mg/kg IV (infuse over 30 minutes) as a single dose (1 month to 10 years: Maximum 320 mg) (More than 10 years old: Maximum 560 mg) Adjust dose if renal impairment.</td>
<td></td>
<td>For MRSA, VRE or Pseudomonas aeruginosa colonisation, seek ID advice</td>
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<tr>
<td>Micturating cystourethrogram (MCUG)</td>
<td>Trimethoprim/Sulfamethoxazole 4 mg/kg orally (160 mg Trimethoprim component) as a single dose prior to procedure/imaging. If patient is on existing antibiotic UTI prophylaxis, increase antibiotic to a therapeutic dose for a single dose prior to procedure/imaging.</td>
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| Hypospadias surgery           | Cephazolin IV 30 mg/kg (up to 1 g maximum) before incision (2 g if more than 80 kg)  
 Then   
 Oral Trimethoprim/sulfamethoxazole 2 mg/kg once daily (Maximum 80 mg Trimethoprim component) until IDC removed. | Substitute cephalozolin with Gentamicin 5mg/kg IV (infuse over 30 minutes) as a single dose (1 month to 10 years: Maximum 320 mg) (More than 10 years old: Maximum 560 mg)  
 Substitute with Lincomycin IV 15 mg/kg (600 mg if more than 12 years old) as a single dose infused over 60 minutes  
 For MRSA, VRE or Pseudomonas aeruginosa colonisation, seek ID advice | For MRSA, VRE or Pseudomonas aeruginosa colonisation, seek ID advice |
| Amputations (ischaemic limbs and lower limbs) | Benzylpenicillin IV 60 mg/kg (up to 1.2 g maximum) before incision, then every six hours for 3 further doses | Substitute with Lincomycin IV 15 mg/kg (600 mg if more than 12 years old) as a single dose infused over 60 minutes and single dose of Metronidazole IV 12.5 mg/kg (up to 500mg maximum) as slow IV infusion | For MRSA, VRE or Pseudomonas aeruginosa colonisation, seek ID advice |
| Burns                         | Antibiotic prophylaxis may be given before surgical debridement if clinical evidence of infected burns |                                                                                                                                                                                                                                                                                     | For MRSA, VRE or Pseudomonas aeruginosa colonisation, seek ID advice |
|                               | Antibiotics based on microbiological results where possible.  
 If no microbiology:  
 Flucloxacillin IV 50 mg/kg (Up to 2 g) as a single dose before incision, OR  
 If dirt contaminated wound:  
 Piperacillin/Tazobactam IV 100 mg/kg/dose (Up to 4 g Piperacillin component) as a single dose before incision.  
 Antibiotics not be continued post procedure in absence of documented infection. | Substitute with Lincomycin IV 15 mg/kg (600 mg if more than 12 years old) as a single dose infused over 60 minutes and single dose of Metronidazole IV 12.5 mg/kg (up to 500mg maximum) as slow IV infusion | For MRSA, VRE or Pseudomonas aeruginosa colonisation, seek ID advice |
### Prevention of Endocarditis

#### Endocarditis in Children with Heart Defects

- Children at risk should establish and maintain the best possible oral health to reduce potential sources of bacteraemia which includes tooth brushing and regular dental review.

- Single dose antibiotic prophylaxis (refer to “Endocarditis” antibiotic prophylaxis – Table 1) is now only recommended for children with the highest risk of adverse outcome of infective endocarditis who are undergoing certain dental or other procedures (see Table 2).

- In certain individual circumstances, medical and dental practitioners may consider giving antibiotics to patients not covered by these revised guidelines including those who have received prophylaxis over their lifetime. Recommendations for individual patients should be discussed with the treating cardiologist.

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<tr>
<td>Endocarditis prophylaxis (for at risk conditions see Table 2 and 3)</td>
<td>Oral amoxycillin 50 mg/kg (up to 2 g maximum) (2 g if more than 12 years of age) 1 hour before the procedure OR IV Ampicillin 50 mg/kg (up to 2 g maximum)</td>
<td>Substitute with Oral clindamycin 20 mg/kg (up to 600mg) 1 hour before the procedure OR substitute with Lincomycin IV 15 mg/kg (600 mg if more than 12 years old) as a single dose infused over 60 minutes</td>
<td>For MRSA, VRE or Pseudomonas aeruginosa colonisation, seek ID advice</td>
</tr>
</tbody>
</table>
Table 2: Cardiac Conditions for which endocarditis prophylaxis with dental procedures is recommended (for antibiotic choice, refer to Endocarditis antibiotic prophylaxis section- Table 1)

- Prosthetic cardiac valve or prosthetic valve material used for cardiac valve repair
- Previous episode of infective endocarditis
- Congenital heart disease (CHD) but only if it involves:
  - Unrepaired cyanotic defects, including palliative shunts and conduits
  - Repaired congenital heart defect with prosthetic material or device (surgical or catheter intervention) during the first 6 months after the procedure
  - Repaired defects with residual defect at the site or adjacent to the side of a prosthetic patch or prosthetic device
- Cardiac Transplantation recipients who develop cardiac valvulopathy
- Rheumatic heart disease in indigenous Australians
- If recommended by the Queensland Paediatric Cardiology Service Cardiologist in the most recent clinic review letter

Does the patient have any of the conditions listed in Table 2?
- If Yes, Antibiotic prophylaxis for endocarditis MAY BE required. See Table 3.
- If No, Antibiotic prophylaxis for endocarditis NOT required.
Table 3: Procedures where antibiotic prophylaxis for endocarditis may or may not be required (for antibiotic choice, refer to Endocarditis antibiotic prophylaxis section - Table 1)

<table>
<thead>
<tr>
<th>Prophylaxis ALWAYS REQUIRED</th>
<th>Prophylaxis SHOULD BE CONSIDERED</th>
<th>Prophylaxis IS NOT REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DENTAL PROCEDURES:</strong></td>
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</tbody>
</table>
| Extractions, periodontal procedures including surgery, subgingival scaling, and root planning, replanting avulsed teeth or other surgical procedures (e.g. implant placement, apicoectomy) | Consider prophylaxis for the following procedures if multiple procedures are being conducted, the procedure is prolonged, or periodontal disease is present:  
  - full periodontal probing for patients with periodontitis  
  - intraligamentary and intraosseous local and anaesthetic injection  
  - supragingival calculus  
  - removal or cleaning  
  - rubber dam placement with clamps (where risk of damaging gingiva)  
  - restorative matrix band/ strip placement  
  - endodontics beyond the apical foramen  
  - placement of orthodontic bands or interdental wedges  
  - supragingival placement of retraction cords, antibiotic fibres or antibiotic strips | **DENTAL PROCEDURES:**  
  - oral examination  
  - infiltration and block local anaesthetic injection  
  - restorative dentistry  
  - supragingival rubber dam clamping and  
  - placement of rubber dam  
  - intracanal endodontic procedures  
  - removal of sutures  
  - impressions and construction of dentures  
  - orthodontic bracket placement and adjustment of fixed appliances  
  - application of gels  
  - intraoral radiographs  
  - supragingival plaque removal |
| **RESPIRATORY PROCEDURES:** |                                  |                             |
| Any invasive procedure involving incision or biopsy of respiratory mucosa, for example:  
  - tonsillectomy/ adenoidectomy  
  - rigid or flexible bronchoscopy with incision or biopsy  
  - surgery involving bronchial, sinus, nasal or middle ear mucosa, including tympanostomy tube insertion |                             | **RESPIRATORY PROCEDURES:**  
  - endotracheal intubation  
  - rigid or flexible bronchoscopy without incision or biopsy |
| **GENITOURINARY AND GASTROINTESTINAL PROCEDURES:**  
  Any procedure where antibiotic prophylaxis is indicated for surgical reasons:  
  - lithotripsy  
  - any genitourinary procedure in the presence of a genitourinary infection unless already treating enterococci (for elective cystoscopy or urinary tract manipulations, obtain a urine culture and treat any bacteruria beforehand)  
  - any gastrointestinal procedure in the presence of an intraabdominal infection unless already treating enterococci  
  - sclerotherapy for oesophageal varices |                             | **GENITOURINARY AND GASTROINTESTINAL PROCEDURES:**  
  - urethral catheterisation  
  - vaginal delivery  
  - transoesophageal echocardiography  
  - endoscopy (with or without gastrointestinal  
  - biopsy including colonoscopy)
| **OTHER PROCEDURES:**  
  - Incision and drainage of local abscess: brain, boils and carbuncles, dacryocystitis, epidural, lung, orbital, perirectal, pyogenic liver, tooth, surgical procedures through infected skin.  
  - Percutaneous endoscopic gastrostomy |                             |                             |
Consultation

Key stakeholders who reviewed this version:

- Director of IMPS, immunology and rheumatology (CHQ)
- Infection specialist, IMPS (CHQ)
- Chief of Surgery (CHQ)
- Director- Anaesthetics (CHQ)
- Deputy Director – Anaesthetics (CHQ)
- Senior Staff Specialist Paediatric Surgeon (CHQ)
- Anaesthetist (CHQ)
- Cardiologist (CHQ)
- Pharmacist Advanced - Antimicrobial Stewardship Pharmacist (CHQ)

Definitions

- **IgE-mediated (allergic) immediate hypersensitivity** is characterised by the development of urticaria, angioedema, bronchospasm or anaphylaxis (with objectively demonstrated hypotension, hypoxia or elevated mast-cell tryptase concentration) within 1 to 2 hours of exposure to a drug. Anaphylaxis is more likely with parenteral rather than oral administration. For penicillin, anaphylaxis occurs at an estimated frequency of 1 to 4 cases per 10 000 courses, with up to 10% of these reactions being fatal. A clear history of an IgE-mediated reaction means the drug should not be administered again without appropriate precautions (eg desensitisation).

- **IgE-independent (non-allergic) immediate hypersensitivity** refers to any acute or immediate reaction that does not involve an IgE-mediated mechanism, usually caused by direct mast-cell degranulation (e.g. vancomycin infusion–related reactions such as ‘red-man’ syndrome). The reaction may be ameliorated by prophylactic antihistamines and slowing the infusion rate.

- **Delayed-type (nonimmediate) hypersensitivity reactions** are characterised by macular, papular or morbilliform rash, occurring several days after starting treatment. They are more common than immediate reactions, and may be caused by the infection or its treatment. Such reactions are usually T-cell (not IgE) mediated. Delayed-type reactions commonly occur in patients with intercurrent infection, and such reactions may not be reproducible upon a supervised challenge when the patient is well. Delayed rash due to penicillins, especially amoxy/ampicillin, is not strongly predictive of a future reaction, and repeat exposure to beta lactams is not necessarily contraindicated.
Three kinds of delayed-type reaction warrant special mention:

- **Serum sickness** — characterised by vasculitic rash, arthralgia/arthritis, influenza-like symptoms, and sometimes fever and proteinuria. Serum sickness is triggered more commonly with cefaclor than other cephalosporins, and also by sulfonamides, and commences several days after starting treatment drug rash with eosinophilia and systemic symptoms (DRESS)—characterised by peripheral blood eosinophilia, desquamative dermatitis and liver dysfunction.

- **Stevens–Johnson syndrome / toxic epidermal necrolysis (SJS/TEN)** — a very rare, acute and potentially fatal skin reaction characterised by sheet-like skin and mucosal loss.

- **DRESS** and **SJS/TEN** are contraindications to further drug exposure (including desensitisation) because this can be fatal. Patients with a known severe hypersensitivity should be strongly advised to wear an alert bracelet or necklace.

**References and suggested reading**

1. Therapeutic Guidelines (eTG 46): Antibiotic 2015 Therapeutic Guidelines Ltd. Melbourne
### Guideline revision and approval history

<table>
<thead>
<tr>
<th>Version No.</th>
<th>Modified by</th>
<th>Amendments authorised by</th>
<th>Approved by</th>
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<tr>
<td>4.0</td>
<td>Infectious Diseases Consultants- Antimicrobial Stewardship (IMPS) and Antimicrobial Stewardship Pharmacist (CHQ)</td>
<td>Medicines Advisory Committee (CHQ) Infectious Diseases Consultant team and Medical Lead - Antimicrobial Stewardship (Infection Management and Prevention Service)</td>
<td>Executive Director of Hospital Services</td>
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<td>5.0 06/03/2017</td>
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### Keywords

- Paediatric surgical antibiotic prophylaxis
- antimicrobial stewardship
- cephaezolin, vancomycin, lincomycin, teicoplanin, gentamicin, cefoxitin, piperacillin/tazobactam, trimethoprim/sulfamethoxazole, meropenem, aztreonam, liposomal amphotericin, benzylpenicillin, ampicillin, amoxicillin, clindamycin, MRSA colonisation, VRE colonisation, ENT, Head/Neck/Thoracic, Neurosurgery, Orthopaedic Surgery, cochlear implantation, laryngeal reconstruction, cardiac surgery, Abdominal Surgery, colorectal, appendicectomy, upper GIT or biliary including laparoscopic surgery, Kasai procedure, reconstructive biliary surgery, Gastro-intestinal anastomosis, Liver transplantation, Percutaneous transhepatic cholangiogram, Interventional radiology, Percutaneous endoscopic gastrostomy (PEG) or jejunostomy (PEJ) or nephrostomy tube placement, Urinary tract surgery, Tenckhoff catheter insertion, Micturating cystourethrogram (MCUG), hypospadias, Dental procedure, Amputations (ischaeamic limbs and lower limbs), burns, endocarditis prophylaxis, 01064

### Accreditation references

- National Safety and Quality Health Service Standards (1-8) –
  - **Standard 3**: Preventing and Controlling Healthcare-Associated Infection
  - **Standard 4**: Medication Safety