# Surgical antimicrobial prophylaxis

**All IV single doses unless stated**

## QUESTIONS

1. How clean is the surgery?
2. What surgical antimicrobial prophylaxis do I need to give?
3. When will I need to redose?

- Do not adjust dose for renal/hepatic impairment or weight extremes
- Continue current antimicrobial treatment regimens as scheduled peri-operatively

## MRSA colonised/infected

Add vancomycin 15mg/kg (ABW) (Max 2.5g) or clindamycin 600mg to regimen

## ESBL colonised/infected

Seek advice from Infectious Diseases or Clinical Microbiology

## Severe penicillin allergy - anaphylaxis

Intra-abdominal replace cefazolin with gentamicin 5mg/kg (LBW) (Max 400mg)

All others replace cefazolin with vancomycin 15mg/kg (ABW) (Max 2.5g) or clindamycin 600mg

### When to give

0-60 mins before knife to skin for all antibiotics except 0-120 mins for vancomycin

### When to redose (the same dose) with

Blood loss >1500mL or surgery >4 hours:

- Amoxicillin every 4 hours
- Cefazolin every 4 hours
- Cefuroxime every 4 hours
- Clindamycin every 6 hours
- Metronidazole every 7 hours
- Vancomycin every 9 hours
- Gentamicin not required

## Neurosurgery

1. Craniotomy and CSF shunt insertion
2. Deep brain or spinal cord stimulation
3. Spinal surgery with implants

### Antibiotic and dose

- Cefazolin 2g
- Cefazolin 2g then 1g q8h for up to 3 doses

## Head and neck surgery

- Thyroideotomy
- Para-thyroideotomy

### Antibiotic and dose

- None required

## Cardiothoracic Surgery

1. Cardiac surgery
2. Thoracic surgery
3. Implantable cardiac device

### Antibiotic and dose

- See cardiothoracic specific table
- Cefazolin 2g

## Breast Surgery

### Antibiotic and dose

- Cefazolin 2g

## Orthopaedics

1. Primary joint arthroplasty
2. Spinal surgery with implants
3. Open reduction internal fixation
4. Hemi-arthroplasty
5. Revision arthroplasty

### Antibiotic and dose

- Cefazolin 2g then 1g q8h for up to 3 doses

## Vascular surgery

1. Carotid endarterectomy
2. AV Fistula
3. Abdominal aorta repair
4. Graft and stent insertions

### Antibiotic and dose

- Cefazolin 2g

## Hernia repair

- Hernioplasty or herniorrhaphy

### Antibiotic and dose

- Cefazolin 2g

## Urology

1. Endoscopy (High Risk)
2. TURP
3. ESWL (High Risk)
4. Non-ESWL stone removal (High Risk)
5. Complex procedure that involves entry into the GI tract

### Antibiotic and dose

- Cefazolin 2g
- Cefazolin 2g (or amoxicillin 2g + gentamicin if IDC in situ)
- Cefazolin 2g or as per culture

## Solid organ transplantation

### Antibiotic and dose

- Unit-specific guidelines

## Upper GI/HPB/Bariatric

1. Oesophagectomy
2. Gastrectomy
3. Pancreatectomy
4. Hepatectomy
5. Splenectomy
6. Cholecystectomy (open)

### Antibiotic and dose

- Cefazolin 2g

## Trauma with laparotomy

- Cefazolin 2g and metronidazole 500mg
- Other complex procedures below the diaphragm e.g. Peritonitis, Abscess drainage, Bowel anastomotic leak

## Colorectal

1. Appendicectomy
2. Colectomy

### Antibiotic and dose

- Cefazolin 2g
- Cefazolin 2g and metronidazole 500mg

## Plastic Surgery

### Antibiotic and dose

- Cefazolin 2g

## Endoscopy

- High Risk: Positive urine culture, TRP Biopsy or placement of prosthetic material

## ESWL

- High Risk: Large stone burden, history of pyuria or pyelonephritis or adjunctive operative procedure

## References:

3. Peter MacCullum Hospital, Melbourne, Vic, Australia
# Surgical antimicrobial prophylaxis

**All IV single doses unless stated**

## QUESTIONS

### CLEAN SURGERY

<table>
<thead>
<tr>
<th>Antibiotic and dose</th>
<th>RETURN TO THEATRE OR DELAYED CLOSURE</th>
<th>CONTAMINATED/DIRTY/COMPLEX SURGERY</th>
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<tbody>
<tr>
<td><strong>Index cardiac surgery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Prior to skin incision</td>
<td>cefazolin 2g</td>
<td>Valve replacement in a patient with active endocarditis</td>
</tr>
<tr>
<td>2. Going onto bypass</td>
<td>cefazolin 1g into bypass pump</td>
<td><strong>NB:</strong> Treatment for endocarditis (e.g. streptococcal) may not provide adequate coverage for S.aureus.</td>
</tr>
<tr>
<td>3. Four hours after the first dose or on chest closure, whichever is sooner.</td>
<td>cefazolin 2g then 1g q8h for up to 3 doses postoperatively</td>
<td></td>
</tr>
<tr>
<td>For prolonged procedures (&gt;4h)</td>
<td>cefazolin 2g then 1g q8h for up to 3 doses postoperatively</td>
<td></td>
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<tr>
<td>4. Implantable cardiac device</td>
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</tbody>
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### CARDIOTHORACIC SURGERY

| **Antimicrobial Stewardship Committee** | March 2015 |

**Questions**

- Do not adjust dose for renal/hepatic impairment or weight extremes
- Continue current antimicrobial treatment regimens as scheduled peri-operatively

**MRSA colonised/infected**

**Add** vancomycin 15mg/kg (ABW) (Max 2.5g) to regimen

**Severe penicillin allergy - anaphylaxis**

**Replace** cefazolin with vancomycin 15mg/kg (ABW) (Max 2.5g) or clindamycin 600mg

**When to give**

- 0-60 mins before knife to skin for all antibiotics except 0-120 mins for vancomycin

**When to redose (the same dose)**

<table>
<thead>
<tr>
<th>Blood loss &gt;1500mL or surgery &gt;4 hours:</th>
<th>Cefazolin every 4 hours</th>
<th>Cefazolin 2g</th>
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</thead>
<tbody>
<tr>
<td>Cefazolin</td>
<td>2g</td>
<td>2g</td>
</tr>
<tr>
<td>Clindamycin</td>
<td>every 6 hours</td>
<td></td>
</tr>
<tr>
<td>Vancomycin</td>
<td>every 9 hours</td>
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</tr>
</tbody>
</table>

**Index thoracic surgery**

| 1. Lobectomy                          | cefazolin 2g |
| 2. Pneumonectomy                      |              |
| 3. Lung resection                      |              |
| 4. Thoracotomy                         |              |
| 5. Other non-cardiac procedures       |              |

<table>
<thead>
<tr>
<th><strong>Return to theatre following index surgery</strong></th>
<th><strong>if for laparotomy</strong></th>
<th><strong>Delayed chest closure &gt;24 hours after primary procedure</strong></th>
</tr>
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<tbody>
<tr>
<td>cefazolin 2g then 1g q8h for up to 3 doses</td>
<td>cefazolin 2g then 1g</td>
<td>cefazolin 2g then 1g q8h for up to 3 doses and current treatment</td>
</tr>
<tr>
<td>and current treatment</td>
<td>1g q8h for up to 3 doses</td>
<td></td>
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</tbody>
</table>

**Antibiotics deferred until after sampling then cefazolin 2g and current treatment per prescribed timing**

**Antibiotics deferred until after sampling then cefazolin 2g and current treatment per prescribed timing**

**Cardiac transplant surgery**

As per above regimen

**Lung transplant surgery**

As per above regimen and Additional agents prescribed by Respiratory Transplant Physician

**Delayed chest closure >24 hours after primary procedure**

| cefazolin 2g then 1g q8h for up to 3 doses |
| and current treatment |

**Re-exploration of wound because of suspected infection**

**Antibiotics deferred until after sampling then cefazolin 2g and current treatment per prescribed timing**

**Lung transplant surgery**

As per above regimen and Additional agents prescribed by Respiratory Transplant Physician

<table>
<thead>
<tr>
<th>Cefazolin 2g</th>
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| **Washout and debridement for proven infection** |

| **Malabsorption or hepatic disease** |

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<thead>
<tr>
<th>Cefazolin 2g</th>
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### References


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