

Surgical antimicrobial prophylaxis

All IV single doses unless stated

L4 OR & L8 OR

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

CLEAN SURGERY

Antibiotic and dose

Neurosurgery 1. Craniotomy and CSF shunt insertion 2. Deep brain or spinal cord stimulation 3. Spinal surgery with implants	cefazolin 2g cefazolin 2g <u>then</u> 1g q8h for up to 3 doses
Head and neck surgery Thyroidectomy Para-thyroidectomy	None required
Cardiothoracic Surgery 1. Cardiac surgery 2. Thoracic surgery 3. Implantable cardiac device	See cardiothoracic specific table cefazolin 2g
Breast Surgery	cefazolin 2g
Orthopaedics 1. Primary joint arthroplasty 2. Spinal surgery with implants 3. Open reduction internal fixation 4. Hemi-arthroplasty 5. Revision arthroplasty	cefazolin 2g <u>then</u> 1g q8h for up to 3 doses
Vascular surgery 1. Carotid endarterectomy 2. AV fistula 3. Abdominal aorta repair 4. Graft and stent insertions	cefazolin 2g
Hernia repair Hernioplasty or herniorrhaphy	cefazolin 2g
Solid organ transplantation	Unit -specific guidelines

CLEAN-CONTAMINATED SURGERY

Antibiotic and dose

ORL involving head and neck cancers: 1. Breach in oral cavity 2. Irradiated skin 3. Elderly patient 4. Complex or previous surgery	cefazolin 2g <u>and</u> metronidazole 500mg
Other ORL: 5. Adenoidectomy 6. Tonsillectomy 7. Septoplasty	None required
8. Functional endoscopic sinus surgery (FESS) 9. Complex rhinoplasty 10. Repair of CSF leak	cefazolin 2g
Upper GI/HPB/Bariatric 1. Oesophagectomy 2. Gastrectomy 3. Pancreatectomy 4. Hepatectomy 5. Splenectomy 6. Cholecystectomy (open)	cefazolin 2g
Trauma with laparotomy	cefazolin 2g <u>and</u> metronidazole 500mg
Colorectal 1. Appendicectomy 2. Colectomy	cefazolin 2g <u>and</u> metronidazole 500mg
Plastic Surgery	cefazolin 2g
Urology 1. Endoscopy (High Risk) 2. TURP	cefazolin 2g (or amoxicillin 2g + gentamicin if IDC in situ)
3. ESWL (High Risk) 4. Non-ESWL stone removal (High Risk)	cefazolin 2g or as per culture
5. Complex procedure that involves entry into the GI tract	cefazolin 2g <u>and</u> metronidazole 500mg

CONTAMINATED/DIRTY/COMPLEX SURGERY

Antibiotic and dose

Other complex procedures above the diaphragm	cefazolin 2g <u>and</u> metronidazole 500mg
Other complex procedures below the diaphragm e.g. Peritonitis, Abscess drainage, Bowel anastomotic leak	cefuroxime 1.5g <u>and</u> metronidazole 500mg <u>and</u> ongoing treatment
→ 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:

1. Bratzler DW, Dellinger EP, Olsen KM et al Clinical practice guidelines for antimicrobial. Am J Hosp Sys Pharm 2013; 70: 195-283.
2. Peter Mac Surgical Antibiotic Prophylaxis-Flowchart and Decision Support Poster. Antimicrobial Stewardship Committee & therapeutic Drug Committee, August 2011 Peter MacCullum Hospital, Melbourne, Vic, Australia

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CARDIOTHORACIC SURGERY

QUESTIONS	CLEAN SURGERY	RETURN TO THEATRE OR DELAYED CLOSURE	CONTAMINATED/DIRTY/COMPLEX SURGERY			
	Antibiotic and dose	Antibiotic and dose	Antibiotic and dose			
<p>Do not adjust dose for renal/hepatic impairment or weight extremes</p> <p>Continue current antimicrobial treatment regimens as scheduled peri-operatively</p> <p>MRSA colonised/infected Add vancomycin 15mg/kg (ABW) (Max 2.5g) to regimen</p> <p>Severe penicillin allergy - anaphylaxis Replace cefazolin with vancomycin 15mg/kg (ABW) (Max 2.5g) or clindamycin 600mg</p> <p>When to give 0-60 mins before knife to skin for all antibiotics except 0-120 mins for vancomycin</p> <p>When to redose (the same dose) with Blood loss >1500mL or surgery >4 hours: Cefazolin every 4 hours Clindamycin every 6 hours Vancomycin every 9 hours</p>	<p>Index cardiac surgery 1. Prior to skin incision 2. Going onto bypass 3. Four hours after the first dose or on chest closure, whichever is sooner.</p> <p>For prolonged procedures (>4h) redose at 4 hourly intervals.</p> <p>4. Implantable cardiac device</p> <p>Cardiac transplant surgery</p> <p>Lung transplant surgery</p> <p>Index thoracic surgery 1. Lobectomy 2. Pneumonectomy 3. Lung resection 4. Thoracotomy 5. Other non-cardiac procedures</p>	<p>cefazolin 2g cefazolin 1g into bypass pump cefazolin 2g <u>then</u> 1g q8h for up to 3 doses postoperatively</p> <p>cefazolin 2g</p> <p>As per above regimen</p> <p>As per above regimen <u>and</u> Additional agents prescribed by Respiratory Transplant Physician</p> <p>cefazolin 2g</p>	<p>Return to theatre following index surgery</p> <p>if for laparotomy</p> <p>Delayed chest closure >24 hours after primary procedure</p>	<p>cefazolin 2g <u>then</u> 1g q8h for up to 3 doses <u>and</u> current treatment</p> <p><u>add</u> metronidazole 500mg</p> <p>cefazolin 2g <u>then</u> 1g q8h for up to 3 doses <u>and</u> current treatment</p>	<p>Valve replacement in a patient with active endocarditis</p> <p>Re-exploration of wound because of suspected infection</p> <p>Washout and debridement for proven infection</p>	<p>cefazolin 2g <u>and</u> current treatment for endocarditis</p> <p>NB: Treatment for endocarditis (e.g. streptococcal) may not provide adequate coverage for S.aureus.</p> <p>Antibiotics deferred until after sampling <u>then</u> cefazolin 2g <u>and</u> current treatment per prescribed timing</p> <p>Continue current antimicrobial treatment and ask surgeon if antibiotics should be deferred until after sampling <u>then</u> cefazolin 2g <u>and</u> current treatment as per prescribed timing</p>

Antimicrobial Stewardship Committee
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References:
 Edwards FH, Engelman RM, Houck P, Shahian DM, Bridges CR. The Society of Thoracic Surgeons Practice Guideline Series: Antibiotic prophylaxis in cardiac surgery, Part I: duration. Ann Thorac Surg 2006; 81: 397-404
 Edwards R, Shahian D, Shemin R, Guy ST, Bratzler D, Edwards F, Jacobs M, Fernando H, Bridges C. The Society of Thoracic Surgeons Practice Guideline Series: Antibiotic prophylaxis in cardiac surgery, Part II: antibiotic choice. Ann Thorac Surg 2007; 83: 1569-76.
 Lador A, Nasir H, Mansur N, Sharani E, Biderman P, Leibovici L, Paul M. Antibiotic prophylaxis in cardiac surgery: systemic review and meta-analysis. J Antimicrob Chemother. 2012; 67: 541-50
 Kappeler R, Gillham M, Brown NM. Antibiotic prophylaxis for cardiac surgery. J Antimicrob Chemother. 2012; 67: 521-2.

