

## 6.13 Guidelines for the use of prophylactic antimicrobials

Antibiotic	Ampicillin	Ampicillin/sulbactam	Cefazolin	Cefotetan	Cefoxitin	Clindamycin	Gentamicin	Vancomycin
Pre- and intra-operative dose	50 mg/kg/dose (max 2000 mg)	50 mg/kg/dose of Ampicillin	30 mg/kg/dose (max 2000 mg for <100 kg, max 3000 mg for ≥100 kg)	40 mg/kg/dose (max 2000 mg)	40 mg/kg/dose (max 2000 mg)	10 mg/kg/dose (max 600 mg)	5 mg/kg/dose (non-urology), 2 mg/kg/dose (urology) If obese, use adj BW, If CrCl <60 or dialysis, use 2.5 mg/kg/dose	20 mg/kg/dose (max 2000 mg)
Administration	Slow IV push	Slow IV push	IV push	IV push	IV push	Not >30 mg/min	Slow IV push	IV over 60 min
<b>Re-dosing based on time</b>								
CrCl >60 mL/min/1.73m <sup>2</sup>	q2h	q2h	q3h (Cardiac q2h)	q6h	q2h	q6h	No re-dose	q6h
CrCl 30-60 mL/min/1.73m <sup>2</sup>	q4h	q4h	q6h (Cardiac q4h)	q6h	q4h	q6h	No re-dose	q8h
CrCl 10-29 mL/min/1.73m <sup>2</sup>	q6h	q6h	q8h (Cardiac q6h)	q12h	q8h	q6h	No re-dose	q12-24h
CrCl <10 mL/min/1.73m <sup>2</sup> or dialysis	q8h	q12h	q12h (Cardiac q8h)	No re-dose	q12h	q6h	No re-dose	No re-dose

**Full antibiotic dose must be completely administered 1 - 59 min before incision.  
In addition to re-dosing by time, also re-dose all antibiotics after 30% blood volume loss, or >1500 mL if >50 kg and normal renal function.**

Creatinine Clearance (CrCl) calculation		Gentamicin dosing: if obese (actual weight ≥20% over ideal body weight (IBW)), use adjusted body weight (ABW) = [IBW + 0.4 (actual weight (kg) - IBW)]		
Children (1-17 years)	CrCl = (0.413 x height in cm)/(Scr in mg/dL)	IBW calculation for children (1-17 years)	Children <5 ft tall	IBW (kg) = [(height in cm) <sup>2</sup> x 1.65]/1000
			Children ≥5 ft tall	IBW (male) = 39 + (2.27 x height in inches >60) IBW (female) = 42.2 + (2.27 x height in inches >60)
Adults (18 years and older)	CrCl = $\frac{(140 - \text{age}) (\text{weight in kg})}{72}$ (Scr in mg/dL) x 0.85 (if female)	IBW calculation for adults (18 years and older)	IBW (male) = 50 + (2.3 x height in inches >60)	
			IBW (female) = 45.5 + (2.3 x height in inches >60)	

NOTE: Neonates <30 days old are not expected to have CrCl >60 mL/min/1.73m<sup>2</sup>; therefore should use the CrCl 30-60 mL/min/1.73m<sup>2</sup> category for re-dosing frequencies unless CrCl calculation in Epic is <30 mL/min/1.73m<sup>2</sup>. If CrCl not calculated in Epic, use the above equation for children 1-17 years old to calculate CrCl for neonate.

Procedure	Prophylaxis recommendations	Penicillin allergic alternative
<b>Cardiac surgery</b>		
Median sternotomy/ uncomplicated heart transplant	Cefazolin	Vancomycin
Median sternotomy/heart transplant – previous VAD or MRSA colonization	Cefazolin <u>AND</u> Vancomycin	Vancomycin <u>AND</u> Gentamicin
Pacemaker/ICD placement	Cefazolin	Clindamycin <u>OR</u> Vancomycin
Pacemaker/ICD placement with MRSA colonization	Cefazolin <u>AND</u> Vancomycin	Vancomycin
VAD placement	Cefazolin	Vancomycin
<b>Head and neck surgery</b>		
Major procedure with incision of oral/pharyngeal/ sinus mucosa	Clindamycin or Ampicillin/ sulbactam	Clindamycin
Tonsillectomy	Not recommended	Not recommended
Adenoidectomy or tympanostomy tubes	Not recommended	Not recommended
Cochlear implant	Cefazolin	Clindamycin
Mastoidectomy or tympanoplasty	Cefazolin	Clindamycin
<b>Neurosurgery</b>		
Craniotomy/craniectomy/ ventricular shunt placement	Cefazolin	Clindamycin
Spinal cord untethering	Cefazolin	Clindamycin
Myelomeningocele	Ampicillin <u>AND</u> Gentamicin	Clindamycin <u>AND</u> Gentamicin
<b>Interventional radiology and cardiology</b>		
Biliary/GI stents	Cefotetan (Cefoxitin if <44 weeks post-menstrual age)	Clindamycin <u>AND</u> Gentamicin
Cardiac and neuro stents and coils	Cefazolin	Clindamycin

Procedure	Prophylaxis recommendations	Penicillin allergic alternative
<b>General pediatric surgery</b>		
Inguinal hernia/umbilical hernia/pyloromyotomy	Uncomplicated: Not recommended	Uncomplicated: Not recommended
	Complicated, recurrent or emergent: Cefazolin	Complicated, recurrent or emergent: Clindamycin
Congenital diaphragmatic hernia, gastroschisis/omphalocele, tracheo-esophageal fistula	Cefazolin	Clindamycin
Esophageal atresia or other esophageal surgery/PEG	Cefazolin	Clindamycin
Appendectomy, colon surgery, hepatobiliary surgery, intestinal perforation, liver transplant, penetrating abdominal trauma	Cefotetan (Cefoxitin if <44 weeks post-menstrual age)	Clindamycin <u>AND</u> Gentamicin
Kidney transplant, mediastinal mass biopsy or resection, pectus excavatum repair, sacral teratoma resection, thoracotomy for lung surgery (non-esophageal), vascular procedures	Cefazolin	Clindamycin
Mastectomy	Cefazolin	Clindamycin
Tunneled catheters or ports	Cefazolin	Clindamycin
<b>Orthopedic surgery</b>		
Arthroscopy, type I or II open fracture reduction/pinning, osteotomy	Cefazolin	Clindamycin
Type III open fracture reduction/pinning	Cefazolin <u>AND</u> Gentamicin	Clindamycin <u>AND</u> Gentamicin
Lower limb amputation	Cefotetan (Cefoxitin if <44 weeks post-menstrual age)	Clindamycin
Upper limb amputation	Cefazolin	Clindamycin

Procedure	Prophylaxis recommendations	Penicillin allergic alternative
<b>Orthopedic surgery (continued)</b>		
Spinal fusion, neuromuscular disease and negative MRSA screen	Cefazolin <u>AND</u> Gentamicin pre-/intra-op, followed by post-op Cefepime x 3-5 days	Vancomycin <u>AND</u> Gentamicin pre-/intra-op, followed by post-op Clindamycin PLUS Ciprofloxacin x 3-5 days
Spinal fusion, neuromuscular disease, and positive MRSA screen	Vancomycin <u>AND</u> Gentamicin pre-/intra-op, followed by post-op Cefepime x 3-5 days	
Spinal fusion, idiopathic, and negative MRSA screen	Cefazolin	Vancomycin
Spinal fusion, idiopathic, and positive MRSA screen	Cefazolin <u>AND</u> Vancomycin	Vancomycin
Spinal fusion, idiopathic, and no MRSA screen (but history of MRSA infection/colonization)	Cefazolin <u>AND</u> Vancomycin	Vancomycin
Laminectomy	Cefazolin	Clindamycin
<b>Plastic surgery</b>		
Cleft palate or other oral mucosal procedures	Clindamycin	Clindamycin
Cleft lip, burns, craniofacial procedures, flaps	Cefazolin	Clindamycin
<b>Urologic surgery</b>		
Cystoscopy, hypospadias	Ampicillin <u>AND</u> Gentamicin, or no antibiotic per surgeon	Clindamycin <u>AND</u> Gentamicin, or no antibiotic per surgeon
Exstrophy repair	Ampicillin <u>AND</u> Gentamicin	Clindamycin <u>AND</u> Gentamicin
Circumcision or orchiopexy	Not recommended; per surgeon for older patients	Not recommended; per surgeon for older patients
Penile prosthesis	Cefazolin	[Clindamycin <u>OR</u> Vancomycin] <u>AND</u> Gentamicin
Ureteral re-implantation	Ampicillin <u>AND</u> Gentamicin, or Cefazolin per surgeon	Clindamycin <u>AND</u> Gentamicin