

Operative Prophylactic Antibiotic Dosing

Updated 1/21/15

- **General principles**

- All dosing recommendations are for patients **with normal renal and/or hepatic function**
- All dosing recommendations are based on prophylaxis in patients **not** on antibiotic therapy for existing infection

Drug	Pre-incision Dose	Re-dose	Max Single Dose
Piperacillin-Tazobactam	100mg/kg	In 2 hrs	3,375 mg
Ampicillin	50 mg/kg	In 2 hrs	2000 mg
Ampicillin/sulbactam	75 mg/kg (a+s components)	In 2 hrs	3000 mg
Cefazolin	40 mg/kg	In 3 hrs	2000 mg (3000 mg if >100 kg)
Cefuroxime	50 mg/kg	In 3 hrs	2000 mg
Cefoxitin	40 mg/kg	In 3 hrs	2000 mg
Cefotaxime	50 mg/kg	In 3 hrs	2000 mg
Aztreonam	30 mg/kg	In 4 hrs	2000mg
Clindamycin	10 mg/kg	In 6 hrs	900 mg
Gentamicin <40kg	4.5 mg/kg	Q12H	160 mg
Gentamicin ≥40kg	4.5 mg/kg	Q24H	160 mg
Vancomycin	15 mg/kg	In 8 hrs	NO MAX
Ciprofloxacin	10 mg/kg	In 8 hrs	400 mg
Ceftriaxone	50 mg/kg	In 12 hrs	2000 mg
Metronidazole	15 mg/kg	In 12 hrs	1000 mg

Operative Prophylactic Antibiotic Dosing

Updated Dosing 1/21/15

Updated Text 2/20/15

- **General principles**

- All dosing recommendations are for patients **with normal renal and/or hepatic function**
- All dosing recommendations are based on prophylaxis in patients **not** on antibiotic therapy for existing infection
- Pre-operative and intra-operative doses may be different than doses used for treatment purposes
- *Recommend calling pharmacy (6-7222 or 6-4291) for the following circumstances:*
 - *Patients with suspected or known hepatic or renal dysfunction, including those who have required prolonged infusion times or administration intervals of vancomycin or aminoglycosides*
 - *Patients receiving ongoing antibiotic therapy initiated before surgery, especially aminoglycosides or vancomycin*

- **Pre- and intra-operative antibiotics**

- Pre-operative dose should be complete within 60 minutes prior to the incision
- **Patients receiving treatment antibiotics should generally receive routine pre-operative prophylaxis in addition to their concurrent therapy**
- **If receiving vancomycin or aminoglycosides therapeutically, consult pharmacy**
- Patients who screen positive for MRSA should be given a single pre-operative dose of vancomycin in addition to routine prophylaxis
- **Redose** prophylactic antibiotic according to times in the table or if the patient has experienced excessive blood loss
- Redosing prior to case completion should be considered if completion is anticipated within 30 minutes of the usual redosing time
- After skin incision is closed, follow post-operative guidance below.

- **Post-operative continuation** (when indicated)

- For routine prophylaxis, antibiotics should not continued after the incision is closed
- *Redosing in the OR prior to closure should be considered if closure is anticipated within 30 minutes of the usual redosing time*
- For selected procedures, prophylaxis may continue up to 48 hours post incision closure
- The first post-operative dose is timed off of last dose given prior to incision closure (may be a pre-op or intra-op dose)
- Dosing and interval are according to CCHMC formulary
- **Operative guidance table does not apply to post op dosing or intervals**

General Surgery Procedures

January 21, 2015 – Shortages of cefazolin, cefuroxime, ampicillin/sulbactam and vancomycin are anticipated for the foreseeable future. In an attempt to best preserve access to all of these agents, the following prophylactic antibiotic regimens are recommended.

For pt **MRSA** + on screening – a single dose of pre-operative vancomycin is indicated in addition to the recommended agent in the table below.

All antibiotics to be completed within 60 minutes prior to the incision time.

Procedure		Recommended prophylactic agent	Alternate for β -lactam allergic
Appendectomy			
	Uncomplicated	Cefoxitin	Clindamycin + gentamicin
	Perforated	Piperacillin/tazobactam	Clindamycin + gentamicin
Biliary tract			
	Lap-low risk	None	
	Lap-high risk or open	Ampicillin/sulbactam or ceftriaxone	Clindamycin + gentamicin
Gastroduodenal - including bariatric; anti-reflux for high risk		Cefazolin	Clindamycin + gentamicin
Small bowel			
	Non-obstructed	Cefazolin	Clindamycin + gentamicin
	Obstructed	Cefoxitin	Clindamycin + gentamicin
Colorectal		Cefoxitin	Clindamycin + gentamicin
Hernia -hernioplasty, herniorrhaphy		Cefazolin	Clindamycin
Pectus /Nuss bar		Cefazolin	Clindamycin

Cardiothoracic Surgery Procedures

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NOTE: For pt **MRSA** + on screening – a single dose of pre-operative vancomycin is indicated in addition to the recommended agent in the table below.

All antibiotics to be completed within 60 minutes prior to the incision time.

Procedure		Recommended prophylactic agent	Alternate for β -lactam allergic
Median Sternotomy			
	Uncomplicated	Cefuroxime	Clindamycin (+Aztreonam if PD cath)
	Heart transplant	Cefuroxime	Clindamycin
	Heart transplant, previous VAD	Cefuroxime + single dose vancomycin	
Cardiac device			
	Pacemaker	Cefuroxime	Clindamycin
	VAD	Cefuroxime	Clindamycin
Video-assisted thoroscopy		Ampicillin-sulbactam	Clindamycin
Thoracic, non-cardiac/vascular		Ampicillin-sulbactam	Clindamycin

Neurosurgical Procedures

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NOTE: For pt **MRSA** + on screening – a single dose of pre-operative vancomycin is indicated in addition to the recommended agent in the table below.

All antibiotics to be completed within 60 minutes prior to the incision time.

Procedure	Recommended prophylactic agent	Alternate for β -lactam allergic
Craniotomy	Cefazoin	Clindamycin or vancomycin
Craniectomy	Cefazolin	Clindamycin or vancomycin
CSF shunt placement	Cefazolin	Vancomycin
Baclofen pump insertion/revision	Cefazolin	Clindamycin or vancomycin
Meningomyelocele (neonate)	Ampicillin + gentamicin	
Meningomyelocele (non-neonate)	Cefazolin	Clindamycin + gentamicin
Spinal fusion	Cefazolin	Vancomycin or clindamycin

Orthopaedic Procedures

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NOTE: For pt **MRSA +** on screening – a single dose of pre-operative vancomycin is indicated in addition to the recommended agent in the table below.

All antibiotics to be completed within 60 minutes prior to the incision time.

Procedure	Recommended prophylactic agent	Alternate for β -lactam allergic
Arthroscopy	Cefazolin	Clindamycin
Implantation of internal fixation devices	Cefazolin	Clindamycin
Osteotomy	Cefazolin	Clindamycin
Spinal fusion (idiopathic)	Cefazolin	Clindamycin or vancomycin
Spinal fusion (neuromuscular)	Cefazolin	Clindamycin or vancomycin + gentamicin
Laminectomy	Cefazolin	Clindamycin

Otolaryngology Procedures

January 21, 2015 – Shortages of cefazolin, cefuroxime, ampicillin/sulbactam and vancomycin are anticipated for the foreseeable future. In an attempt to best preserve access to all of these agents, the following prophylactic antibiotic regimens are recommended..

NOTE: For pt **MRSA +** on screening – a single dose of pre-operative vancomycin is indicated in addition to the recommended agent in the table below.

All antibiotics to be completed within 60 minutes prior to the incision time.

Procedure		Recommended prophylactic agent	Alternate for β -lactam allergic
Head and neck			
	Clean	None	
	Clean + prosthetic material	Ampicillin-sulbactam	Clindamycin
	Clean-contaminated	Ampicillin-sulbactam	Clindamycin
	Cancer surgery	Ampicillin-sulbactam	Clindamycin

Otolaryngology – Specific Procedure Guidance

Recommended: Ampicillin-Sulbactam Alternate for β -lactam allergic: Clindamycin

MRSA + patient: single dose of pre-operative vancomycin in addition to the recommended agent.

Procedures for Which Prophylaxis Recommended			
Ear		Neck	
	Cochlear Implant		Laryngotracheoplasty (LTP)
	Tympanomastoidectomy for Chronic Ear Disease		Slide Tracheoplasty
	Stapedectomy		Graft Placement
	Ossicular Chain Reconstruction (OCR)		Open Laryngeal Cleft Repair
Larynx/Pharynx			Malignancy
	Endoscopic Cleft Repair		Lymph Node Dissection/Incision (Suspected Malignancy)
	Vocal Cord Injection		Thyroglossal Duct Cyst Excision
	Pharyngeal Flap		Drool
	Pharyngeal Injection – Add cefuroxime (CSF coverage)		Brachial Cleft Cyst Excision
Nasal/Sinus			Neck Infection
	Septorhinoplasty (SRP): Revision or grafting		
	FESS		

Procedures for Which Prophylaxis NOT Recommended			
Neck		Larynx/Pharynx	Nasal/Sinus
	Thyroidectomy	Micro-Laryngeal surgery	Septorhinoplasty
	Parotidectomy	Adenotonsillectomy/UPPP	Septoplasty
	Submandibular Gland Excision		

Urologic/Gynecologic Procedures

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NOTE: For pt **MRSA +** on screening – a single dose of pre-operative vancomycin is indicated in addition to the recommended agent in the table below.

All antibiotics to be completed within 60 minutes prior to the incision time.

Procedure		Recommended prophylactic agent	Alternate for β -lactam allergic
Urologic			
	Lower tract instrumentation with risk for infection	TMP/SMX or a fluoroquinolone	Clindamycin
	Clean without entry into urinary tract	Cefazolin +/- gentamicin	Gentamicin +/- Clindamycin
	Clean with entry into urinary tract	Cefazolin +/- gentamicin	Gentamicin or fluoroquinolone +/- clindamycin
	Clean contaminated	Cefoxitin	Clindamycin + gentamicin
Hysterectomy (abdominal or vaginal)		Ampicillin-sulbactam or cefoxitin	Clindamycin + gentamicin