

Prepared by the Antimicrobial Stewardship Program , Department of Pharmacy, and the Surgical Safety Committee

Approved by Division of Infectious Diseases, Department of Surgery, Infection Control, and P&T Committee. *Revised 11/17/17*

This tool is meant to make our Montefiore surgical prophylaxis guidelines more accessible and user-friendly. They are in compliance with national guidelines and regulatory guidance.

****This is a general guide. Use prior microbiology if available to help guide patient-specific antibiotic selection. If patients are at risk for multi-drug resistance, page ID/Stewardship**

Surgical Procedures NOT Requiring Prophylactic Antibiotics³ (clean, sterile procedures), prophylaxis is beneficial only when prosthetic material is being inserted or consequence of infection is serious.

Clean procedures that do not routinely require prophylaxis

- Breast biopsy
- Circumcision
- Elective rhinoplasty
- Elective tonsillectomy
- Elective low risk inguinal hernia repair
- Low risk gallbladder surgery (e.g.-elective laparoscopic cholecystectomy)
- Thyroidbiopsy/thyroidectomy/parathyroidectomy/lymph node biopsy
- Uncomplicated tubal ligation
- Others (colonoscopy, cardiac cath, permcath placement/removal)

Allergies

- Allergy history must be obtained or clarified **well in advance** of procedures (e.g., before administration of anesthesia).
- For **non-severe, non-type I penicillin allergy** using a **cephalosporin** is accepted practice (cross reactivity is low).²
- For **severe, immediate, type-I, IgE mediated reactions** (angioedema, anaphylaxis, bronchospasm, urticaria) an **alternative regimen** is recommended
- Quinolones are NOT part of our routine prophylaxis regimens due to high rates of resistance in Gram negatives and C. difficile colitis.³

Timing, Re-dosing, and Duration

- Administer within 60 minutes prior to the first incision [<30 minutes is ideal, except vancomycin and ciprofloxacin - both need to be infused over at least 60 minutes].
- The antibiotic dose given must be charted in the medication administration
- If procedures are **≥ 4 hours or there is large volume of estimate blood loss (i.e. EBL >1500 ml)**, beta-lactam antibiotics should be re-dosed.⁴

Dose for Patient BMI >30 kg/m²

- Higher dose is needed to ensure adequate serum concentration of antibiotic during surgery (see table for specific dosing).

Restrictions Policy

- Most regimens are NOT restricted to assure timely delivery.
- For IV vancomycin, IV quinolones or other uncommon agents, these should be **approved by I.D. prior to the procedure** in order to avoid delays or “*my patient is on table now*” scenarios.

Make Sure to Document ****IC/CMS measures require that documentation must reflect the prophylaxis choice (whether to give, what is given and the length of prophylaxis) and the reason.**

- Compliance is assessed by documentation in the EMR
- Must document drug, dose, route, date and time

Document rationale for:

- No prophylaxis
 - Procedure doesn’t require prophylaxis
 - Pt. on antibiotic for a known/suspected infection
 - TAH/GYN surgery after emergent OB condition/complication
- Variation from MMC surgical prophylaxis guidelines:
 - Non protocol drug choice such as Vancomycin:
 - Severe penicillin, cephalosporin allergy
 - MRSA colonization/infection
 - Acute hospitalization w/in 1 yr.
 - LTCF stay
 - Hemodialysis as risk factor for MDRO
 - Surgery during an inpatient stay > 3 days (at MMC or transfer facility)
- Other antibiotics: Infection (or asymptomatic bacteruria for urological procedures)
 - Culture/susceptibility used for antibiotic selection
- Extending prophylaxis beyond peri-op period (i.e. CABG/ cardiac surgery > 48 hrs.):
 - Suspected/known surgical or other infection
 - Antibiotics used for non- surgical indication

Notes:

- The Joint Commission and other regulatory agencies state that medication compounding must be performed by pharmacists, not in the OR
- Because vancomycin, quinolones and aminoglycosides have long half-lives, no re-dosing is needed.
- If infection (or asymptomatic bacteruria for urological procedure) use culture/susceptibility for antibiotic selection.
- Gentamicin vials come in 80 mg; max dose 240 mg.

Antibiotic Wash*

- Because of increased bacterial resistance to commonly used antimicrobials, Montefiore has removed all antibiotic washes, irrigations and soaks from the OR and procedure suites since there are no efficacy data to support their use.
- Antibiotic washes, irrigations, soaks are prohibited for wound cleaning and sterile device insertion (e.g., penile implant).

*Please note: this does not apply to cement impregnated with antibiotic for infected joints, ophthalmology procedures, or mupirocin decolonization for CT surgery where data exists.

*References available upon request from stewardship

Type of Surgery	Antibiotic and Dose ⁵	Severe Penicillin Allergy ^{2,3}	Re-Dosing Schedule (based on normal renal function; redose for any case with EBL >1.5L)
Cardiac/Non-cardiac thoracic Prosthetic valve insertion, coronary artery bypass, other open heart surgery, or pacemaker insertion	Adult: Cefazolin 2 g IV (1g if <60kg, CrCl < 30 or HD, OR age ≥80) Pediatric: Cefazolin 30 mg/kg IV	Adult: Vancomycin 1 g IV Pediatric: Vancomycin 15 mg/kg IV	Cefazolin: 4 hours Vancomycin: only 1 peri-operative dose (long half life)
Vascular Arterial surgery involving the abdominal aorta, a prosthesis, or a groin incision; leg amputation for ischemia			
Orthopedic Hip and knee surgery (i.e. fracture repair), total joint replacement, implantation of internal fixation devices (i.e. nails, screws, plates, wires) and tendon/bone			
Neurologic Craniotomy, spinal surgery, or others (e.g., VP shunt)	Adult: Oxacillin OR Cefazolin 2 g IV (1g if <60kg, CrCl < 30 or HD, OR age ≥80) Pediatric: Oxacillin 50 mg/kg IV	Adult: Vancomycin 1 g IV Pediatric: Vancomycin 15 mg/kg IV	Oxacillin or Cefazolin: 4 hours Vancomycin: only 1 peri-operative dose (long half life)
Urologic Transurethral surgery ⁵ (e.g. TURP) , transrectal biopsy (<1hr before), urologic procedure with history prosthetic joint Penile Implant	Adult: Cefoxitin 2 g IV (1g if <60kg, CrCl < 30 or HD, OR age ≥80) OR Gentamicin 1.5 mg/kg IV or IM ⁶ Pediatric: Cefazolin 30 mg/kg IV Gentamicin 1.5 mg/kg IV ⁶ + Cefazolin 1-2gm IV (see above)	Gentamicin 1.5 mg/kg IV ⁶ Gentamicin 1.5 mg/kg IV ⁶ + Clindamycin 10 mg/kg IV	Cefoxitin: 4 hours Gentamicin: only 1 peri-operative dose (long half life) Clindamycin: 6 hours
Plastic Implementation of permanent prosthetic material, or entering the oral cavity of pharynx	Adult (Clean with Foreign Body): Cefazolin 2 g IV (1g if <60kg, CrCl < 30 or HD, OR age ≥80) Adult (Head & Neck Cancer OR Clean Contaminated): Cefoxitin 2 g IV OR [Cefazolin 2 g IV + Flagyl 500 mg IV] (1g Cephalosporin if <60kg, CrCl < 30 or HD, OR age ≥80) Pediatric: Cefazolin 30 mg/kg IV	Adult (Clean with Foreign Body): Clindamycin 600 mg IV Adult (Head & Neck Cancer OR Clean Contaminated): Clindamycin 600 mg IV +/- Gentamicin 1.5 mg/kg IV ⁶ Pediatric: Clindamycin 10 mg/kg IV + Gentamicin 2 mg/kg IV ⁶	Cefoxitin or Cefazolin: 4 hours Gentamicin: only 1 peri-operative dose (long half life) Clindamycin: 6 hours
Head and Neck or ENT Involving oral cavity or pharynx			
Abdominal and Gynecological (see GYN specific guidelines): High-risk gastroduodenal, high-risk biliary tract, colorectal, appendectomy, hysterectomy, bariatric surgery, etc.	Adult: Cefazolin or Cefoxitin 2 g IV (1g if <60kg, CrCl < 30 or HD, OR age ≥80) Pediatric: Cefoxitin 40 mg/kg IV; *Piperacillin/tazobactam 100mg/kg IV if perforated viscus and sepsis	Adult: Metronidazole 500 mg IV + Gentamicin 1.5 mg/kg IV ⁶ Pediatric: Clindamycin 10 mg/kg IV + Gentamicin 2 mg/kg IV ⁶	Cefoxitin or Cefazolin: 4 hours Gentamicin: only 1 peri-operative dose (long half life) Clindamycin: 6 hours Metronidazole: 8 hours
LVAD	Adult: Vancomycin 1 g q12h IV + Rifampin 600 mg q24h IV + Ciprofloxacin 400 mg q12h IV + Fluconazole 100 mg q24h IV for 48 hours ONLY	Consult Transplant ID; Regimens in OR Pyxis	All have long half life ≥ 8 hours, re-dosing in OR generally not needed
Liver Transplant	Adult: Ampicillin/sulbactam 3 g IV (1.5g if <60kg, CrCl < 30, HD or CVVH) Pediatric: Ampicillin/sulbactam 50 mg/kg IV (based on ampicillin component)	Adult: non-severe reaction - Cefoxitin 1-2 g IV (BMI >30 kg/m ² , give 2 g IV); Severe reaction (anaphylaxis) - Levofloxacin 500 mg IV + Metronidazole 500 mg IV (requires ID approval) Pediatric: non-severe reaction – Ceftriaxone 50 mg/kg IV + Metronidazole 10 mg/kg; Severe reaction (anaphylaxis): call peds ID	Amp/Sulbactam or Cefoxitin: 4 hours for normal GFR, 8-12 hours if diminished GFR or CVVH