

**Northwestern Medicine West Region
Kishwaukee Hospital and Valley West Hospital
Surgical Antibiotic Prophylaxis Pharmacy Protocol
Rev. February 2019**

- I. Approval
 - a. This protocol is subject to approval from the respective Pharmacy and Therapeutics committees (P&T), and ultimately the Medical Executive Committees, from the West Region hospitals of Northwestern Medicine.
 - b. Subsequent changes to this protocol (and appendices) must be approved by the facility P&T committee prior to implementation at that site. Each facility will maintain its own protocol based on changes approved at the local P&T.
- II. Process
 - a. Scheduling through Pre-Admission Testing (PAT) office

If a patient is scheduled for a surgery via paper orders sent to the PAT office, the surgeon or his/her designee will specify on the paper order if the patient will need pre-operative antibiotics.

 - i. Prophylactic Antibiotics per Pharmacy—patients will receive antibiotics per the West Region Surgical Prophylaxis Spreadsheet (Appendix A) per protocol if indicated.
 - ii. No Antibiotics Needed—this box will be checked if the surgeon does not want any antibiotics ordered for the surgical case.
 - iii. Other—the surgeon may specify antibiotics for the case on this line if he/she prefers a different antibiotic than the approved standard per the pharmacy protocol (due to patient-specific factors, etc.). The antibiotic will be entered into Epic by the PAT nurse with the other pre-operative medication orders.
 - b. Electronic Scheduling

Until Electronic Scheduling has been well-established, the pharmacy will follow the process for scheduling through the Pre-admission Testing office. A new process will be determined once Electronic Scheduling has been broadly implemented throughout the surgical groups of the hospital.

 - i. If a surgeon's office uses the Electronic Case Request form prior to review of this protocol, the surgeon may order a pharmacy consult for pre-op antibiotic dosing and sign/hold the order for pharmacy to order pre-operative antibiotics for that case. The order would be subject to other guidelines in this protocol.
 - c. Add-on and Emergent Cases
 - i. The surgeon will be responsible for ordering the surgical prophylaxis antibiotic(s) if the case is scheduled after the cutoff times on the business day prior to the procedure. The patients must appear on the OR Pharmacy Schedule – Status Board. Cutoff times are as follows:
 - 1. Kishwaukee Hospital: 1500 on day prior to procedure
 - 2. Valley West Hospital: 1500 on day prior to procedure

- ii. The surgical team may contact pharmacy to request help with ordering surgical prophylaxis at any time and the pharmacist will make an attempt to provide guidance and/or aid in order entry if the current situation allows for it.
- d. Delayed Cases and Intra-Operative Antibiotic Redosing
 - i. Decisions on re-administration of antibiotics in the case of a delay in surgery time or the need to re-dose the antibiotic due to a longer procedure will be made at the discretion of the anesthesiologist and/or surgeon in the operative area.
- e. Inpatients Scheduled for a Surgical Procedure
 - i. If an inpatient is scheduled for a surgical procedure, pharmacy will order pre-op antibiotics if the patient is on the OR Pharmacy Schedule prior to the cutoff time listed above.
 - 1. If the antibiotic is needed emergently, the pharmacy will need to be notified of the consult for it to be processed as a “Stat” order.
 - ii. If an inpatient is on antibiotics prior to the procedure, the patient will still require the appropriate surgical prophylaxis according to the West Region Surgical Prophylaxis Spreadsheet (Appendix A) per protocol. The surgical prophylaxis needs to be infused within one hour of surgical incision time.
- f. Allergy Clarification
 - i. PAT nurses will gather allergy history information from the patient at the time of other pre-operative information gathering from the patient.
 - ii. If the patient reports an allergy to a penicillin or other beta-lactam antibiotic, the PAT nurse will continue to the NM West Region Penicillin Allergy Questions (Appendix B).
 - 1. The nurse will ask the patient the questions listed in Appendix B.
 - 2. The nurse will document the patient’s (or patient representative’s) responses in Epic.
 - iii. If the pharmacist is unclear about the nature of the patient’s allergy at the time of surgical prophylaxis ordering, he/she may contact the surgeon’s office or the patient at the pharmacist’s discretion to further clarify the information. The pharmacist will document any updated allergy information in the Allergy section of the patient’s medical record in Epic.
- g. Antibiotic Dose Clarification
 - i. For all antibiotic orders for pre-operative patients (pharmacy-ordered or surgeon-ordered), the pharmacist will automatically adjust the antibiotic to the appropriate evidence-based dose per the West Region Surgical Prophylaxis Spreadsheet (Appendix A). [e.g., cefazolin dose for patients >120kg, gentamicin 5mg/kg, etc.]
- h. Methicillin-Resistant *Staphylococcus aureus* (MRSA) Screening for Orthopedic Patients
 - i. Patients undergoing procedures considered joint replacements or revisions fall under a different protocol for pre-operative antibiotic selection based on the presence of MRSA (or lack thereof). Procedures with the following included in their name will fall under this process:
 - 1. Hip arthroplasty, revision, or open reduction-internal fixation (ORIF)

2. Knee arthroplasty, revision, or ORIF
 3. Ankle arthroplasty or revision
- ii. When a patient with one of the above procedures is identified, the pharmacist will review the chart for the result of the most recent MRSA screen. The MRSA is valid for the procedure if it is dated within 30 days of the procedure date. This information is available in “Chart Review” under the “Microbiology” tab.



- iii. If there is no MRSA result in the Chart Review → Microbiology tab, there may be outside MRSA information either scanned in via the “Media” tab or via “Care Everywhere” from an outside lab.
- iv. Antibiotics will be ordered based on the result of the MRSA screen per the top of the ortho section of the NM West Region Surgical Prophylaxis Spreadsheet (Appendix A). If no MRSA screen information is available, the patient is treated as if he/she is MRSA-positive (see “Unscreened” option in screenshot below). **The following tables are examples—please refer to Appendix A for most current recommendations.**

Table 1 Pre Op Prophylactic Antibiotics Hip/Knee/Ankle/Elbow (Primary & Revisions)

MRSA Screening	Recommended Medication	Recommended Medication if PCN Allergy
Negative Culture	Cefazolin (Ancef) 2 or 3g IV	Vancomycin 15mg/kg
MRSA Positive	Vancomycin 15 mg/kg <u>and</u> Cefazolin (Ancef) 2 or 3g IV	Vancomycin 15mg/kg <u>and</u> Gentamicin 5mg/kg
MSSA Positive	Cefazolin (Ancef) 2 or 3g IV	Vancomycin 15mg/kg <u>and</u> Gentamicin 5mg/kg
Unscreened	Vancomycin 15mg/kg <u>and</u> Cefazolin (Ancef) 2 or 3g IV	Vancomycin 15mg/kg <u>and</u> Gentamicin 5mg/kg

** Dosing: Cefazolin (Ancef) IVPB 2g weight ≤ 120 kg; 3g weight > 120 kg

Appendix B

NM West Region Penicillin Allergy Questions

What to ask the patient with a penicillin allergy

Only 10 – 20% of patients reporting a penicillin allergy are truly allergic. Many of these patients have experienced an adverse reaction or side effect, or may have taken a beta-lactam (cephalosporin) antibiotic without adverse effects. A detailed history of the patient's reaction to penicillin may allow healthcare providers to exclude a true penicillin allergy, allowing the patient to be treated with a beta-lactam antibiotic.

1. How long ago did you have a reaction to penicillin? _____
2. Do **YOU** recall the reaction..... Or did someone tell you about it? _____
3. How long after you took penicillin did the reaction start? _____
4. What happened when you took penicillin? (Check all that apply)
 - IMMEDIATE reactions
 - Angioedema (**ACUTE** swelling of face, tongue, neck, lips, throat, hands, feet)
 - Shortness of breath, wheezing
 - Urticaria/hives (well defined skin wheals, NOT just a rash)

DO NOT ADMINISTER penicillin or other beta-lactam antibiotics (e.g. cephalosporins or carbapenems) to patients who describe an immediate reaction (angioedema, shortness of breath, true urticaria) to penicillin

- OTHER reactions
 - Other skin reaction: _____
 - Pruritis (itching)
 - GI symptoms (e.g. nausea/vomiting/diarrhea): _____
 - Other reaction: _____
5. Since you had a reaction, have you taken other beta-lactam antibiotics (Ampicillin, Amoxicillin, Ancef, cefazolin, Ceftin, cefuroxime, Keflex, cephalexin, Rocephin, Augmentin) without reaction? Yes No

Cephalosporins (e.g. cefazolin, ceftriaxone or cefepime) can be safely administered to penicillin-allergic patients who DO NOT have a history of an immediate reaction to penicillin OR who have received a cephalosporin or carbapenem WITHOUT REACTION

Once the patient's antibiotic reaction has been assessed, please document this assessment in patient's electronic medical. This will communicate to all healthcare providers the nature of the antibiotic reaction and allow for the most cost- and clinically-effective antimicrobial treatment.

Penicillin Allergy Algorithm

