

## IREDELL HEALTH SYSTEM

<b>Beta-Lactam Antibiotic Use in Patients with Reported Allergic Reactions to Beta-Lactam Agents</b>	
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Antimicrobial Stewardship Committee P&T Committee	Date: 12/2020 Date: 02/2021

**Purpose:** To provide a guideline for the safe use of antimicrobial agents in patients presenting with a penicillin or other beta-lactam allergy.

**Background:** Beta-lactam antibiotics are often recognized for causing hypersensitivity reactions. In patients with a history of penicillin allergy, use of cephalosporins and carbapenems is often replaced by second-line alternatives that unnecessarily contribute to the production of multidrug-resistant organisms and are less effective. However, evidence of true allergy, combined with the low cross-reactivity rates between particular cephalosporin generations, makes accurate assessment and management of reported beta-lactam allergies a high priority.

### Definitions:

<b>Severe Allergic Reactions</b>	Immediate (within 1 hour of administration) or Life-threatening: Anaphylaxis Bronchospasm Hypotension Laryngeal edema Wheezing / bronchospasm Angioedema / facial swelling Urticaria
<b>Mild-to-Moderate, Non-Severe Allergic Reactions or Intolerance</b>	Rash (local, not spreading to other areas of the body) Delayed hives Itching Mild GI upset Red / watery eyes Runny nose
<b>Beta-Lactam Antibiotics</b>	Penicillins Cephalosporins Carbapenems

### Procedure:

- 1) Medical and nursing staff are responsible for updating patient medication allergies and intolerances in the medical record. Whenever possible, the documentation should include the drug, reaction description, severity, and who provided the report.
- 2) If an order for a beta-lactam antibiotic is received in a patient with a documented allergic reaction to penicillin or other beta-lactam agent, the pharmacist shall contact the nurse to clarify the type and severity of reaction (allergic vs intolerance vs unknown) if not

recorded in the medical record. The nurse will complete this documentation in the medical record.

- 3) If the patient has had a severe allergic reaction to beta-lactam agents, the medication order will be held regardless of the beta-lactam agent ordered. The pharmacist shall contact the prescriber for further orders.
- 4) If the patient has had a non-severe allergic reaction, the action will be based on the beta-lactam allergy and the beta-lactam ordered:
  - a) **Penicillin allergy (non-severe) with a penicillin ordered:** Medication shall be held and pharmacist shall contact the prescriber for further orders.
  - b) **Penicillin allergy (non-severe) with either a cephalosporin or carbapenem ordered:** Nurse shall administer the medication with caution and monitor the patient for signs of allergic reaction or other intolerance.
  - c) **Cephalosporin or carbapenem allergy (non-severe) with a penicillin ordered:** Nurse shall administer the medication with caution and monitor the patient for signs of allergic reaction or other intolerance.
  - d) **Cephalosporin allergy (non-severe) with cephalosporin ordered:** Medication shall be held and pharmacist shall contact the prescriber for further orders.
  - e) **Carbapenem allergy (non-severe) with carbapenem ordered:** Medication shall be held and pharmacist shall contact the prescriber for further orders.

\*If there is a concern or question about whether to hold the medication, the provider shall be contacted.

\*A test dose of a beta-lactam agent is not recommended

Medication ordered	Allergy history/severity			
	Penicillin (severe/unknown)	Penicillin (non-severe)	cephalosporin or carbapenem (severe/unknown)	cephalosporin or carbapenem (non-severe)
Penicillin	hold	hold	hold	administer with caution
Cephalosporin or carbapenem	hold	administer with caution	hold	hold

**References:**

1. DePestel D, Benninger M, Danziger L, et al. Cephalosporin use in treatment of patients with penicillin allergies. *J Am Pharm Assoc* 2008 July-Aug; 48(4): 530-540
2. CDC Website <http://www.cdc.gov/STD/treatment/2010/penicillin> allergy. Management of Persons Who have a History of Penicillin Allergy. Accessed January 23, 2015

INITIAL EFFECTIVE DATE: 01/1992

DATES REVISIONS EFFECTIVE: 10/2010, 03/2012, 06/2015, 02/2021

DATES REVIEWED (no changes):