

# Pharmacy assessment of penicillin allergies finds safe, less-expensive options

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A pharmacy-driven assessment found more than half of patients with reported penicillin allergies were able to take antibiotics from the same drug class rather than resorting to substitutes that may be more costly, have more side effects and have other downsides, according to research presented at the ASHP (American Society of Health-System Pharmacists) 54th Midyear Clinical Meeting and Exhibition. The substitution saved one hospital nearly \$21,500 by switching 43 patients in just three months.

Penicillin allergies, reported by up to 10 percent of the population, are the most common drug [allergy](#), but researchers believe that true [penicillin](#) allergies are actually rarer, with an overall estimated frequency of less than 1 percent.

"The prevalence of this perceived allergy makes our study particularly useful to hospitals and healthcare systems as they look at better [patient care](#) and cost reductions. Working together, pharmacists and other [medical professionals](#) can find alternatives that work for some patients. A multi-disciplinary approach is key to optimizing therapy in patients with a reported penicillin allergy," said Rita Chamoun, Pharm.D., Clinical Staff Pharmacist at Baptist Hospital of Miami and lead author of the study.

For the study, Baptist Hospital pharmacists interviewed patients with reported allergies and then carefully reviewed their medication history prior to verifying orders for substitute antibiotics. Penicillin is among a

variety of antibiotics in a class known as beta-lactams, and patients who report allergies to penicillin are often treated with broad-spectrum non-beta-lactam alternatives. These alternatives are often more expensive and associated with more [side effects](#), factors that potentially limit the advantages of antimicrobial stewardship.

In reviewing patient histories during a three-month span, researchers found that 68 percent, or 43 out of 63 patients, with reported penicillin allergies had previously successfully used other beta-lactams, most often cephalosporins. Pharmacists recommended switching to a beta-lactam antibiotic with 100 percent prescriber acceptance. Aztreonam and levofloxacin were the most commonly prescribed non-[beta-lactam antibiotics](#) prior to the allergy assessment. Clinicians prefer to save these [broad-spectrum antibiotics](#) for situations where standard treatments are not effective to ensure the bacteria do not become resistant to this next line of defense.

"By improving penicillin allergy documentation and encouraging both pharmacists and prescribers to thoroughly evaluate allergies and prior cephalosporin use, the use of non-beta-lactam alternatives can be reduced significantly," Chamoun said.

Authors noted that the study does not suggest that every patient with a penicillin allergy can take cephalosporins, but instead concluded that it is important to thoroughly evaluate allergy documentation and prior beta-lactam use.

"While our study focused on the use of a pharmacy-driven allergy assessment to reduce non-beta-lactam antibiotic use, we also aimed to improve allergy documentation," Chamoun said. "We found that improving allergy documentation goes hand-in-hand with optimizing selection of antibiotic therapy."

Provided by ASHP (American Society of Health-System Pharmacists)

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