Pharmacist-Led Delabeling Protocol Aims to Determine Penicillin Allergies

Key Takeaways

- Incorrect penicillin allergy labels (PALs) can lead to increased healthcare costs and contribute to antibiotic resistance.
- A pharmacist-led pilot program at Vanderbilt University Medical Center aimed to reduce incorrect PALs through controlled penicillin exposure.
- The program showed a decrease in PALs among medical intensive care unit (MICU) patients, promoting better antibiotic stewardship.
- Past studies support that such programs reduce broad-spectrum antibiotic use and increase penicillin use, enhancing patient outcomes.

A pharmacist-led program effectively reduces incorrect penicillin allergy labels, promoting better antibiotic use and enhancing patient care in intensive care units.

One in 10 individuals in the United States reports an allergy to penicillin, yet only 1% to 5% of these individuals have a confirmed penicillin allergy. Most of these patients received a penicillin allergy label (PAL) in childhood, which has remained with them into adulthood. Incorrect PALs can increase health care costs by necessitating the use of broad-spectrum antibiotics and undermine antibiotic stewardship practices, potentially contributing to antibiotic resistance.1,2

New data suggest that low-risk PAL patients with mild skin reactions, gastrointestinal sensitivity, or remote allergic symptoms could undergo controlled penicillin exposure to confirm their penicillin allergy. Hospital Pharmacy recently reported on a pharmacist-led penicillin allergy delabeling pilot program of patients admitted to the medical intensive care unit (MICU) at Vanderbilt University Medical Center.1

The objective of the PAL delabeling protocol was to evaluate if pharmacist intervention and drug challenge would have any effect on reducing the number of incorrect PALs. The program examined changes in the numbers of PALs in hospital admission and readmission to the MICU before and after pharmacist interventions. Low-risk patients with PALs were selected according to institutional review board and hospital protocols. Table 11 lists the protocol's inclusion criteria.1

Patients who fit the program criteria were asked to give clinical consent for a MICU pharmacist-ordered 1-time challenge dose of amoxicillin 250 mg and observed for 60 minutes after the dose.1

From March 2019 to March 2023, nearly 400 patients in the MICU were tested and their PALs removed. The incidence of PALs upon MICU admissions decreased; prior to the intervention, 14% (605/4313) of patients reported PALs, whereas following the intervention, this figure decreased to 12.8% (1356/10598). The percentage of PALs in non-medical ICUs did not change

significantly during the period: 7.7% (1380/17883) pre-intervention and 7.8% (4509/57251) post-intervention.1

When the researchers evaluated patients who were readmitted to the MICU during the study period, PALs decreased from 21.4% (120/560) before to 15.9% (276/1374) after the protocol. Additionally, when patients were readmitted to non-medical ICUs, PALs before and after the protocol fell from 13.8% (275/1991) to 11.1% (1196/10780). Despite not fully controlling for patient cross-over between MICU and non-medical ICU patients, the program's results remain valuable.1

Past studies indicate that when pharmacist-led delabeling programs are implemented, pronounced reductions in the use of broad-spectrum antibiotics such as vancomycin, carbapenems, fluoroquinolones, clindamycin, and aztreonam result. Additionally, the use of penicillin antibiotics increases considerably, helping to promote antibiotic stewardship. The decrease in the prevalence of patients with PALs, especially those with frequent hospitalizations, leads to increased beneficial antibiotic use in the acute phase and all subsequent patient hospitalizations.

About the Author

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REFERENCE

1. Mahmud M, Kokoy SR, Stollings JL, et al. Impact of a pharmacist driven penicillin allergy de-labeling protocol on rates of reported allergy in the intensive care unit. Hosp Pharm. 2025;00185787251337625. doi:10.1177/00185787251337625
2. Chapman A. 95 percent of penicillin allergy diagnoses are wrong. A new test could help. Scientific American. October 5, 2023. Accessed June 24, 2025. https://www.scientificamerican.com/article/95-percent-of-penicillin-allergies-are-wrong-a-new-test-could-help/

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