

New mobile tool determines if a patient is low risk for true allergy to penicillin

Is your patient *truly* allergic to penicillin? Or is it a misdiagnosed allergy that prevents you, their doctor, from providing them with first-tier care?

Created and developed in BC, the new Penicillin Allergy De-labeling Tool will help doctors determine the legitimacy of a patient's penicillin-allergy claim. This free point-of-care assessment tool is quick, efficient, and mobile, accessible on a cellphone or computer.

As an allergist working at BC Children's Hospital, I have treated many young patients who thought they had this beta-lactam allergy, which is often incorrectly diagnosed in childhood. One study that my team conducted revealed that 93% of over 100 participating outpatients at BC Children's who believed they were allergic to penicillin did not have a true allergy.

When a patient claims to have an allergy to penicillin, busy doctors don't always have the time or resources to confirm if they do. So we err on the side of safety and look for antibiotic alternatives; however, they are often less effective, associated with increased risk of adverse effects, and more costly. Throughout that patient's life, the label gets perpetuated by the patient and multiple types of health care providers. On the basis of an erroneous allergy label, the patient may be denied first-line medications and optimal care. You'll find further details on this topic in an article I co-wrote for the March 2021 issue of the *BCMJ*, "Empowering community physicians to remove erroneous labels of childhood allergy."¹

This article was submitted by the Specialist Services Committee and has not been peer reviewed by the BCMJ Editorial Board.

For me, de-labeling penicillin allergies has become a career focus. I've collaborated with several multidisciplinary teams on Drop the Label, a multifaceted project to de-label penicillin allergies in this province. While doing so, it occurred to me that disproving the existence of an erroneous penicillin allergy should be an easier process. So I assembled a group of doctors and pharmacists and Firstline (an antimicrobial stewardship mobile application) to create this tool, which we launched in June 2021. After multiple rounds of feedback and collegial fine-tuning to adjust the algorithm, the first-ever Penicillin Allergy De-labeling Tool is available on Firstline (<https://app.firstline.org/en/clients/39-bc-womens-hospital/steps/40356>). The Firstline mobile platform is used by BC Women's and Children's Hospital and many other institutions worldwide.

The tool leads the health care provider to a real-time questionnaire. Physicians can take a history and enter the patient's responses on the spot and receive both a risk category and recommendations for management. If, for example, a patient is at low risk for penicillin allergy, the tool provides instructions for an in-office oral challenge. If the patient is at high risk, the tool will recommend referring them to an allergist for an assessment based on urgency and provide links to cross-reactivity tables for the safe selection of alternative antibiotics.

The Penicillin Allergy De-labeling Tool is being launched across BC first, with a cross-Canada debut expected later.

Our Drop the Label project (www.dropthelabel.ca) has many components. In 2019 and 2020, I was on a multidisciplinary team that shared resources with the BC Centre for Disease Control and BC Women's Hospital to study falsely identified penicillin allergies, which, in addition to children, particularly affect

people with sexually transmitted diseases and women who've just given birth. Our teams created penicillin allergy de-labeling systems that include a targeted assessment based on patient history, skin testing, and oral drug challenges. In the summer of 2021, I worked with a second-year UBC medical student (a summer student from the BC Patient Safety and Quality Council internship program) to develop patient facing resources designed to raise awareness about erroneous penicillin allergy labeling and encourage patients to seek assessment. We are expanding our reach to include community physicians, pharmacists, and nurse practitioners across the province.

Penicillin allergy de-labeling is an established public health challenge whose solution requires a concerted effort by health care providers in a variety of settings. Removing erroneous penicillin allergy labels will be a boon to patients and the doctors treating them, and we encourage physicians to use this powerful new assessment tool. ■

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Reference

1. Duke S, Wong T, Toma W. Empowering community physicians to remove erroneous labels of childhood allergy. *BCMJ* 2021;63:56-61.