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## Is penicillin allergy de-labelling about to find its place in UK antimicrobial stewardship strategy?

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## **Is penicillin allergy de-labelling about to find its place in UK antimicrobial stewardship strategy?**

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### **Abstract**

Penicillin allergy records are common, often incorrect, limit antibiotic treatment options and associated with patient and health system harm. The large numbers of patients with penicillin allergy records and the paucity of allergists have led researchers to explore non-allergist delivered assessment of penicillin allergy records and removal of those inconsistent with allergy (called de-labelling). A recent systematic review and meta-analysis of the literature concludes non-allergist delivery of penicillin allergy de-labelling to be safe and effective. Several countries outside Europe have endorsed non-allergist de-labelling and produced national guidelines and toolkits for de-labelling, but until recently the UK lacked such guidance. In September 2022 the British Society of Allergy and Clinical Immunology (BSACI) produced their guidelines endorsing non-allergist delivered penicillin allergy de-labelling. These BSACI guidelines, coupled with the ongoing NIHR funded penicillin allergy de-labelling studies, will enable this important patient safety and antimicrobial stewardship intervention to become standard of care for NHS patients.

Penicillin allergy records are common, often incorrect and limit antibiotic treatment options for patients.<sup>1</sup> Moreover, there are several patient and health system harms associated with penicillin allergy records which include increased length of hospitalisation, higher rates of ICU admission and hospital readmission, higher risk of multidrug-resistant or opportunistic infection, increased mortality risk, higher drug and/or hospital-related costs.<sup>2</sup>

Penicillin allergy assessment has traditionally been a role of allergists/immunologists and involves an accurate clinical history, serum testing for specific IgE to penicillin and penicillin skin testing. If these tests are negative then an oral penicillin challenge test dose is prescribed and the patient observed for an hour.<sup>3</sup> The paucity of allergy services globally vs the prevalence of penicillin allergy labels has led to exploration of non-specialist means of 'de-labelling' (assessing penicillin allergy and removing incorrect labels where appropriate). Relatively recently it has been recognised that undertaking a 'direct oral challenge' i.e a drug provocation test without prior skin testing, can be carried out for low-risk patients and is a safe and effective de-label strategy. Recognition of the associated harms of incorrect penicillin allergy records for patients and healthcare systems has driven researchers to explore the safety of non-allergist delivered penicillin allergy de-labelling interventions.

A new systematic review of the literature included sixty-nine studies from around the world with the majority from the USA (70%) and Australia / New Zealand (16%) and relatively few from Europe (5.8%) and the UK (2.9%).<sup>4</sup> The dominance of USA and Australian studies may be due to the early

recognition of penicillin allergy de-labelling as an antibiotic stewardship priority by authorities in these countries and subsequent publication of guidelines for non-allergists to deliver penicillin allergy assessment services.<sup>1,5</sup> In 2021 the World Health Organisation published their endorsement of antibiotic allergy assessment as an effective antimicrobial stewardship strategy providing a global position statement for other countries to follow.<sup>6</sup>

While the UK recognised the importance of removing incorrect penicillin allergy records in the context of antibiotic stewardship and medication safety in 2015, and the UK antimicrobial stewardship guidelines alluded to direct de-label when the allergy history is not consistent with allergy, there was an absence of guidance on how it should be done.<sup>7,8</sup> Moreover, the current European Academy of Allergy and Clinical Immunology (EAACI)<sup>9</sup> and previous British Society of Allergy and Clinical Immunology (BSACI) penicillin allergy guidelines<sup>3</sup> did not endorse non-allergist allergy assessment and de-label. However, there have been recent developments in the UK with Scotland publishing their non-allergist de-label toolkit aimed at hospital physicians in 2021<sup>10</sup> and BSACI publishing guidelines for non-allergist de-labelling in hospitals. Both these publications provide toolkits for non-allergy healthcare workers to undertake penicillin allergy de-labelling in the UK.<sup>11</sup>

Although behind in guidance, the UK's NIHR have recognised the importance of this topic and funded several studies exploring how to embed penicillin allergy assessment into the NHS, exploring the resource implications and the potential barriers and enablers to implementing penicillin allergy de-labelling patient pathways, as well as quantifying the patient and healthcare benefits of penicillin allergy de-labelling.<sup>12-15</sup>

The early adoption of penicillin allergy assessment by non-allergists in the USA, Australia and New Zealand and the provision of toolkits to enable non-allergists to deliver this service has facilitated early adoption in these countries. The publication of the recent BSACI guidelines will empower non-allergists to design penicillin allergy assessment interventions and NIHR funded studies will assess how best to implement such interventions in the context of the NHS. Together, these new activities will enable the UK health-system to engage in this important patient safety and antibiotic stewardship priority and facilitate widespread adoption of penicillin allergy assessment and de-label as a standard of care for NHS patients.

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