

Penicillin Allergy Recording and Prescribing Errors

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Rationale

This audit addressed two observations from clinical practice:

1. The prescription of penicillin to a patient who has a recorded penicillin allergy is a **common drug error**.
2. Patients are labelled as having a penicillin allergy when they do not have a true allergy.
 - ↳ This leads to inappropriately prescribed second line, broad spectrum antibiotics which are more toxic, more expensive and potentially exert a selection pressure for antimicrobial resistance.

What is a true allergy?

A true penicillin allergy is mediated by IgE and results in either:

- Rash or
- Anaphylaxis

According to the BNF 1-10% of patients have a true IgE mediated allergy to penicillin.

Audit Standards and Method

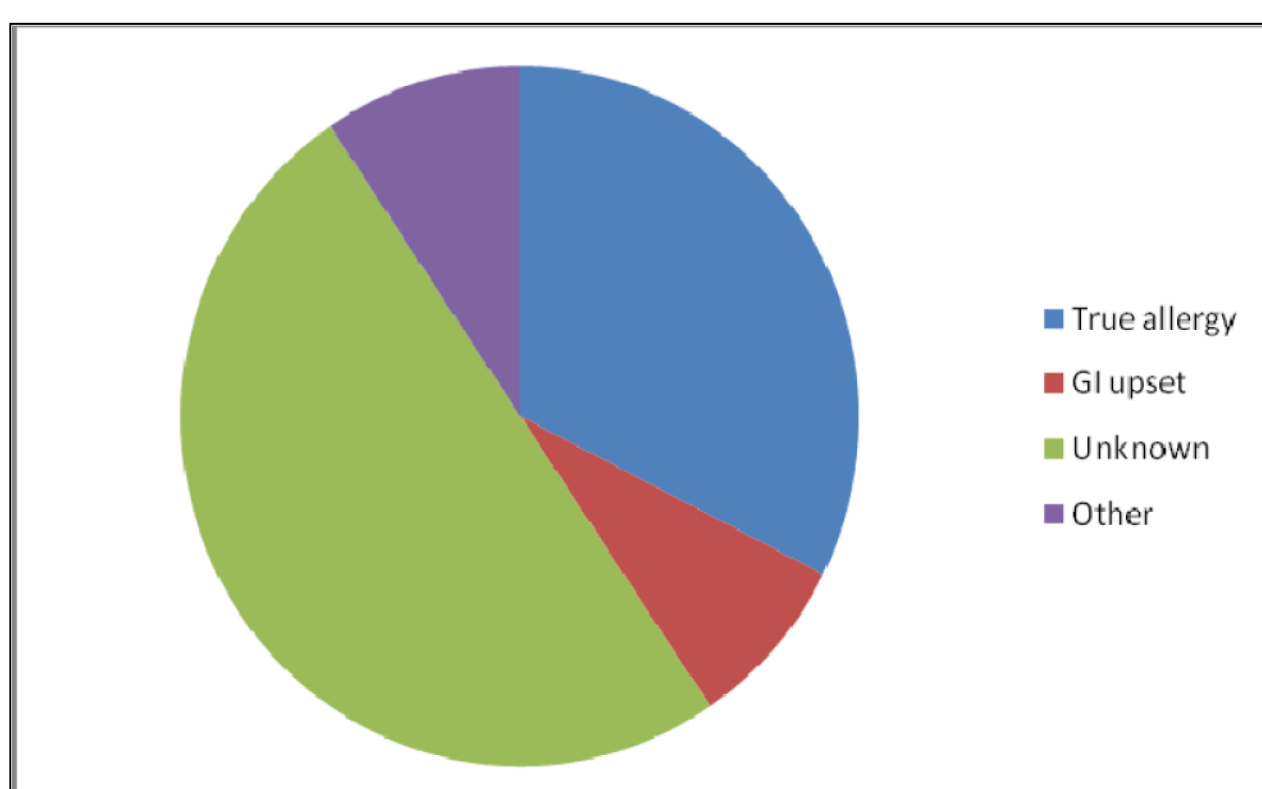
1. **Are drug allergies recorded?** – standard: 100% should be recorded on the drug chart and 100% should be wearing an allergy band.
2. **What is the background rate of true penicillin allergy?** – standard: 1%-10%.
3. **Has a penicillin been prescribed to a patient with a penicillin allergy?** – standard: 0%.

Method:

All inpatients (**sample size 435**) at Frimley Park Hospital were audited over a 7 day period. A proforma was used and data entered and analysed using Excel.

Results

1. **99.5% of patients had their allergy status recorded.** Of 74 patients with penicillin allergy, **98.5% were wearing a wrist band**.
2. **17% of patients were recorded as penicillin allergic, however only 5.5% of patients had a true penicillin allergy.** Of those recorded as penicillin allergic **32% had a true allergy, 50% had an 'unknown' allergy, 8% had a gastrointestinal (GI) upset and 10% had 'other' allergies.**



Other 'allergies':
Dizziness
Eyes watering
Fever
Ulcers
'Feeling unwell'

3. **10.8% of patients who were recorded as penicillin allergic were administered penicillin. 25% of these patients had an adverse reaction.**

THIS PATIENT HAS AN ALLERGY TO ANTIBIOTICS

Check the front of the drug chart for details

Final Recommendations

- **Continue education** of doctors, nurses and pharmacists.
- **Educate patients** as to what is meant by a true allergy.
- Introduce a **red allergy sticker** onto the page of the drug chart where antimicrobials are prescribed.
- Introduce **electronic prescribing** to reduce prescription errors.
- **Re-audit** to ensure that standards are maintained and to ascertain if the allergy sticker prevents prescription errors.

Repeat Audit

Purpose:

To see if the educational measures improved the accuracy of allergy recording and prevented prescription errors.

Results:

- **Education alone did not reduce prescription errors as 10% of those known to be truly allergic were still prescribed penicillin, however there was no harm as the drug was not administered.**
- **Accuracy of allergy recording improved:**
 - 18% of patients were recorded to have a penicillin allergy and **90% of these had a true allergy.**
 - No patients were recorded as having an unknown allergy.
 - **True penicillin allergy was more common** than the expected standard of 1%-10%.
- **100% of allergies were recorded and 100% of patients were wearing a wrist band.**

Recommendations

Educational programme for doctors, nurses and pharmacists.

Raise awareness of prescription errors and stress the importance of accuracy when recording the nature of penicillin allergy.

Presentation of findings at the following groups:

- Drugs and Therapeutics committee
- Antibiotic subgroup
- Safe Medicines committee
- Consultant committee
- Patient Safety committee
- Grand Round
- Junior doctors' briefing

Publish article in the junior doctors' newsletter.

Emphasise allergies in safe medicines update for nurses.

Conclusions

- There were a **significant number of drug errors**. In all cases the allergy was recorded and the patient was wearing a wrist band.
- We are over recording penicillin allergy as **65% did not have a true allergy.**
- **5.5% of the population had a true penicillin allergy which is in line with the standard.**
- We are good at documenting allergy status and applying wrist bands.