

Penicillin Allergy Labels

Pathways Forward in Patient Care

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Penicillin Allergy Labels: *Disclosures*



No financial or conflicts
of interest to disclose

Penicillin Allergy Labels: *Agenda*



- Brief overview of PCN allergy labels
- Describe UW's Current Initiatives
 - ✓ Decision tools
 - ✓ Pre-op
- Vision for Primary Care

Penicillin Allergy Labels: *A Hot Mess*

“I’m allergic to penicillin”

- 10% of Americans report a “penicillin allergy”
- **> 90% of these are bogus! (nausea, yeast infxn....)**
- **Beta-lactams are generally safe, effective, well-tolerated**
- **50% increase in surgical site infections and adverse reactions with second-line abx (vanco alone, clinda, FQ)**



Penicillin Allergy Labels: *Opportunity!*

“History is key”

- **WHAT?** (Airway? Intubation? Itching? “Hives” used differently by folks)
- **WHEN?** (Relation to dose? >10 years ago?)
- **WHO?** (Witnessed, recorded, historical?)
- Beware of bad info in the **EMR!**
- Patient need elective surgery? Often on abx? You have time to **get this right!**
- Start thinking about abx allergies **before** abx are needed



Penicillin Allergy Labels: A Way Forward!

Penicillin Allergy Decision Rule (PEN-FAST)



Identifies low-risk penicillin allergies.

INSTRUCTIONS

Apply this calculator to patients who have reported a penicillin allergy.

When to Use ▾

Five years or less since reaction

No 0

Yes +2

Anaphylaxis or angioedema
OR

No 0

Yes +2

Severe cutaneous adverse reaction

Treatment required for reaction

No 0

Yes +1

2 points

PEN-FAST Score

5 %

Low risk of positive penicillin allergy test

Copy Results 📄

Next Steps »»

PEN-FAST tool

- Predicts risk of patient having a positive penicillin skin test
- Does not address cephalosporin cross-reactivity or ceph allergies

JAMA Internal Medicine

RCT: Efficacy of a Clinical Decision Rule to Enable Direct Oral Challenge in Patients With Low-Risk Penicillin Allergy

POPULATION

130 Men, 247 Women



Adults ≥18 y old with a low-risk penicillin allergy
Median age, 51 y

INTERVENTION

377 Participants analyzed



190 Control
Skin prick and intradermal penicillin testing, followed by oral challenge if skin testing results are negative



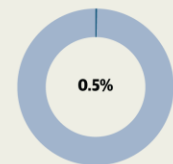
187 Intervention
Direct oral penicillin drug challenge

FINDINGS

The intervention was found to be noninferior to the control for the primary outcome in adults with low-risk penicillin allergy

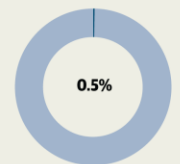
Proportion of participants with a positive oral penicillin challenge

Control



1 of 190 participants

Intervention



1 of 187 participants

Risk difference, 0.0084 (90% CI, -1.22 to 1.24) percentage points, which is less than the noninferiority margin

SETTINGS / LOCATIONS

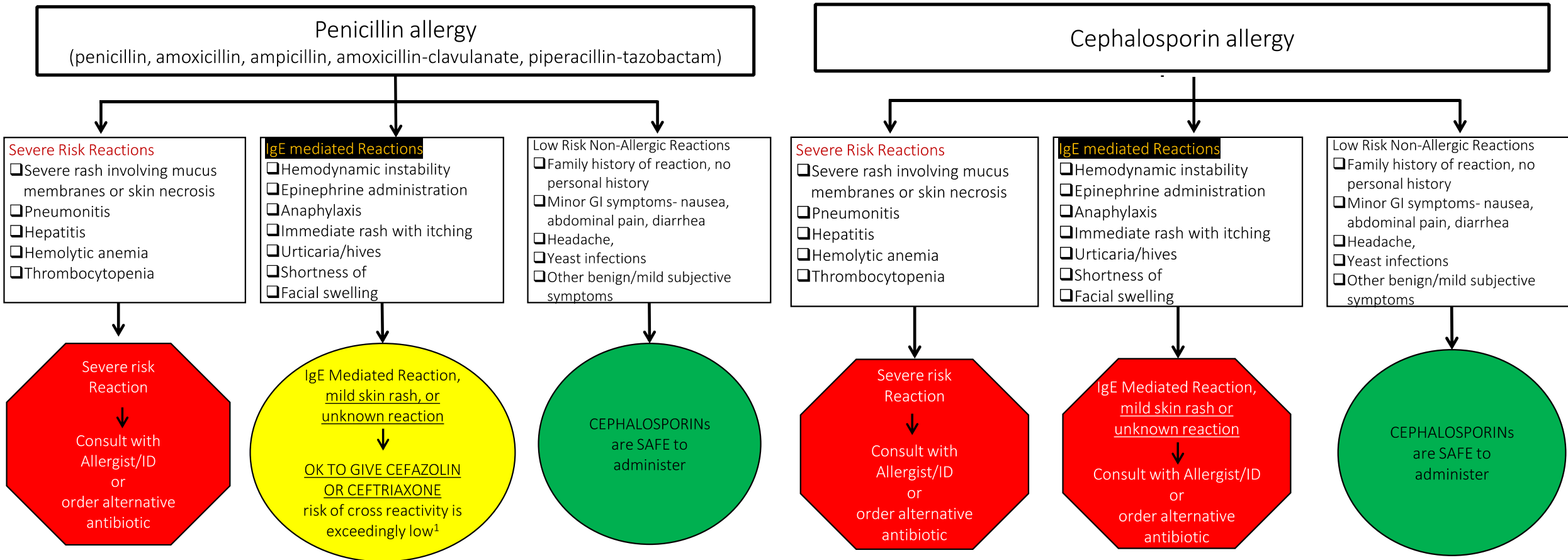


6 Hospitals in North America and Australia

PRIMARY OUTCOME

Between-group difference in the proportion of participants with a physician-verified immune-mediated positive oral penicillin challenge (percentage points); noninferiority margin was set at 5 percentage points

Antibiotic Allergies: A Way Forward 🙌



¹Pichichero, ME (2007) Use of selected cephalosporins in penicillin-allergic patients: a paradigm shift. *Diagnostic Microbiology and Infectious Disease*. 57: 13S – 18S.

¹Kurvuvilla, M (2020) A Streamlined Approach to Optimize Perioperative Antibiotic Prophylaxis in the Setting of Penicillin Allergy Labels. *JACI* 8(4):1316-1322

<https://www.allergyparameters.org/published-practice-parameters-guidelines/alphabetical-listing/drug-allergy-download/>

Contact UW Antimicrobial Stewardship
(UWmedASP@uw.edu) with any questions.

For automated tool to assist in risk stratification, go to:
<https://tinyurl.com/UWPreOpAbx>



“Got Antibiotic Allergies? There’s an App for That!”

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Penicillin Allergy Labels: *Periop Prophylaxis*

4/1/23: Email reminder to UWMC surgeons & anesthesiologists

- Use cefazolin for periop ppx whenever possible
- This includes most PAL patients
- PAL assessment guidance online
- UPDATED ordersets to allow for correct ordering

Penicillin Allergy Assessment Tool



This clinical decision support tool will assist with assessing penicillin allergies. As you answer the questions, the tool will direct you about antibiotic options for your patient.

This tool is not intended to assess cephalosporin allergies. If your patient has only a cephalosporin allergy, please see beta-lactam allergy guidelines or refer to allergy.

UW Beta-lactam Allergy Guidelines are available on OCCAM: <https://occam.uwmedicine.org/antibiotic-reference-kit/penicillin-allergy/assessment-of-penicillin-allergy/>

Please select "Submit" when complete.

Thank you!

MRN

What penicillin antibiotic is the patient allergic to?

- amoxicillin (Amoxil), amoxicillin/clavulanate (Augmentin), ampicillin, and/or ampicillin/sulbactam (Unasyn)
- piperacillin/tazobactam (Zosyn)
- other penicillin (penicillin, dicloxacillin, nafcillin, oxacillin, etc)
- patient had POSITIVE penicillin skin test, but has never taken a penicillin antibiotic

Follow-up Questions

In which clinic/facility/hospital is the patient being evaluated?

- Hall Health
- Sexual Health Clinic
- Outpatient HMC
- Inpatient UWMC-Montlake
- Inpatient UWMC-Northwest
- Inpatient HMC
- Other

Assessment of Penicillin and Cephalosporin Allergy

80-90% of patients who report a penicillin (PCN) allergy do not have a true allergy that would preclude the use of other beta-lactam antibiotics.

General Approach to Allergy Assessment in OCCAM:

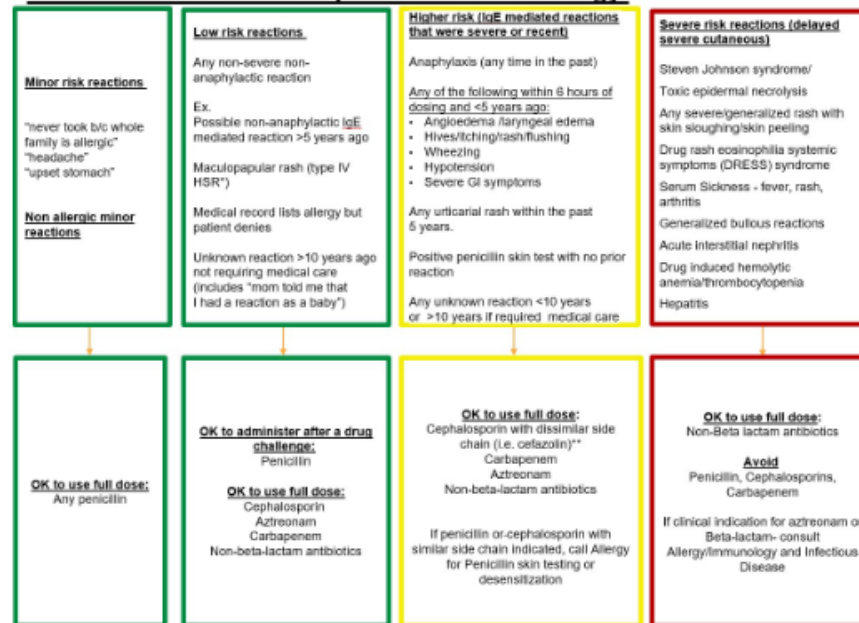
1. For patients with penicillin allergy history, use Penicillin Allergy Assessment Tool (see link below) to assess your patient's prior specific reactions in addition the algorithm below.
2. For cephalosporin allergies, use the algorithm and then refer to the beta-lactam cross-reactivity chart if the algorithm indicates. (DO NOT go directly to the Cross-reactivity chart to assess cephalosporin allergies.)
3. For pre-op assessment of allergies, follow [this link](#) to the algorithm located in OCCAM. Administering test doses in the pre-op setting is not feasible, therefore a simpler algorithm was developed.

Penicillin Allergy Assessment Tool

****Page the on-call Allergy Fellow if assistance is needed with the evaluation or if any clarification to the procedure is needed. If the beta-lactam pathway was not used on a patient, please place a referral for allergy clinic.****

[Full Document PDF](#)

Assessment of Patient Reported Penicillin Allergy



*HSR: Hypersensitivity reaction. **See below for inpatient drug challenge procedure. For outpatient skin testing and drug challenge, refer to allergy clinic.
** Please see below for beta lactam cross-reactivity chart

▼ Medications

If patient reports penicillin allergy:

1. Assess allergy using the [Penicillin Allergy Assessment](#) on OCCAM.
2. Choose appropriate antibiotic prophylaxis. **Note that cefazolin and ceftriaxone are safe in patients with hives, rash, or anaphylaxis to penicillin.**

Per P&T approval, pharmacist to adjust weight-based antibiotics according to dosing listed in the order set

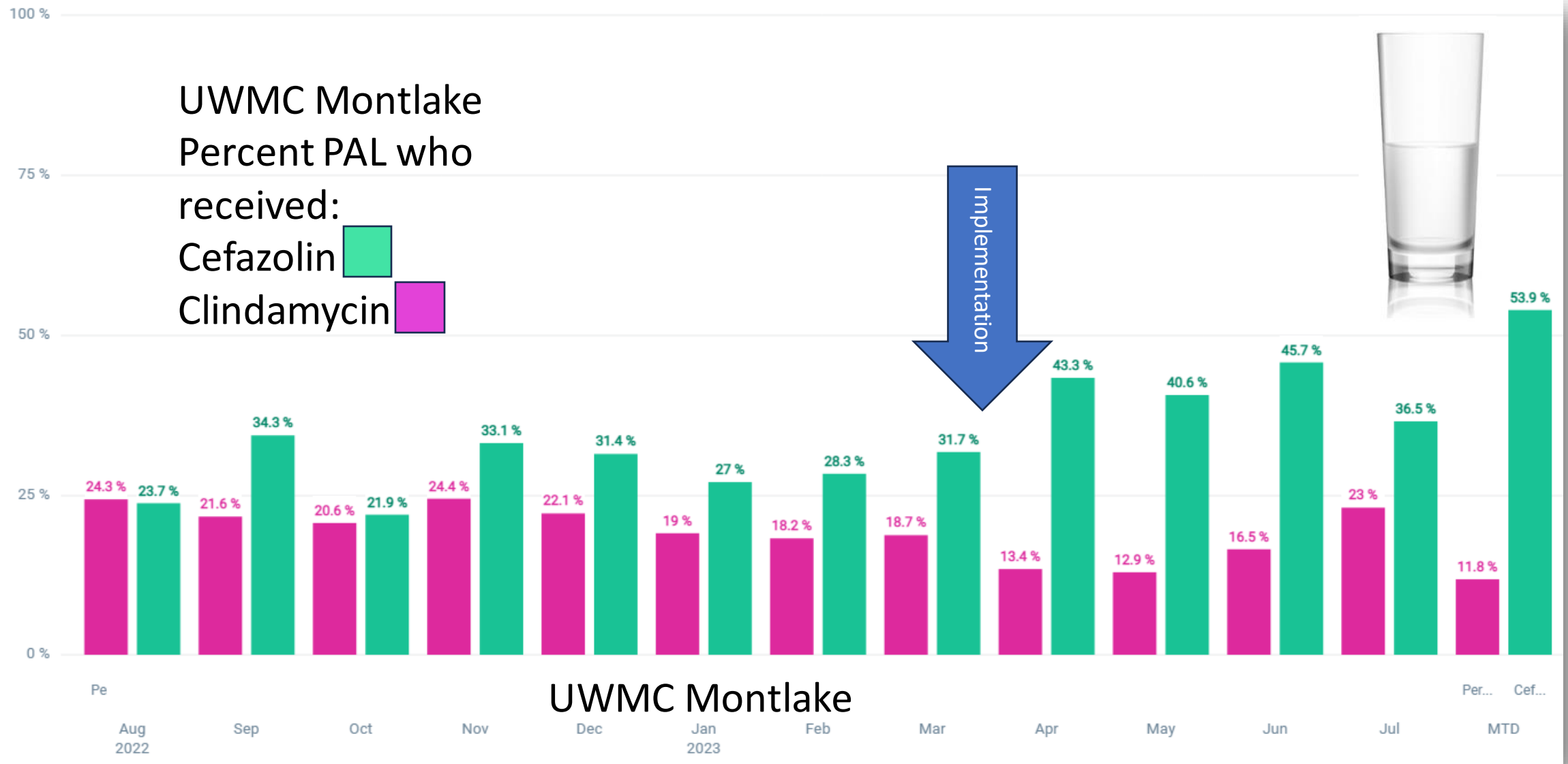
Pre Op Antimicrobials STANDARD

For Penicillin Allergies with Delayed Severe Cutaneous Reactions (DRESS, SJS) or Any Cephalosporin Allergies

For more information, please refer to the [Penicillin Allergy Assessment](#) on OCCAM.

- GI/Colorectal/GYN-ONC
- GYN/OB
- GU Surgery
- Head/Neck
- ORTHO/Thoracic/VASC/NSURG/Burns-Plas/CLEAN procedures
- ORTHO Shoulder
- H/O MRSA within the last ONE year or Positive MRSA screen

Penicillin Allergy Labels: *Periop Prophylaxis*



Penicillin Allergy Labels: *Alerts*

Upcoming updates!

You have ordered a cephalosporin in a patient with a penicillin allergy

ASSESS NOW for History of cutaneous reactions related to penicillin (Steve Johnson's, TEN or DRESS)

YES

If the patient had this type reaction, REMOVE and choose an alternative antibiotic.

Review OCCAM for alternatives.

NO

If not, KEEP and proceed.

This cephalosporin is SAFE in patients with hives, rash, or anaphylaxis to penicillin.

Penicillin Allergy Labels: *Pharmacy Alerts*

Upcoming updates!

BestPractice Advisory - McBoatface Jr., Boaty

BestPractice Advisories (1)


Cephalexin, Cefadroxil, Cefprozil and Cefaclor are structurally similar to penicillin and your patient may have a reaction.

ASSESS the allergy to penicillin OR select an alternative antibiotic.

Penicillin Allergy Assessment Tool (<https://redcap.iths.org/surveys/?s=7HJ8HMY87A7C7NRJ>)

Remove

Keep

 cephalexin (Keflex) capsule
Oral, Starting today at 1506

DEFAULT to Remove

✓ Accept

Dismiss

Penicillin Allergy Labels: *Primary Care*

Pilot Options: Things to Try in Primary Care for 3 Months

- ✓ Keep labels on the agenda, regardless of visit diagnosis
- ✓ MA confirms allergy labels at check-in asks pt if they want to discuss their allergies. If so, chart flagged for you
- ✓ PCP / UC provider discuss allergy label, or if too busy ask MA to schedule pt for a non-urgent telemed visit
- ✓ Outreach to patients across the practice, alerting them to importance of discussing this with PCP

Penicillin Allergy Labels: *Conclusions*



Try Me!

- Bogus labels are common, and bad for pts—and doctors
- PAL-ergy tool is free & open source
- Primary Care can address this relatively painlessly: Time to deal with labels is before pt needs antibiotics



THANK YOU