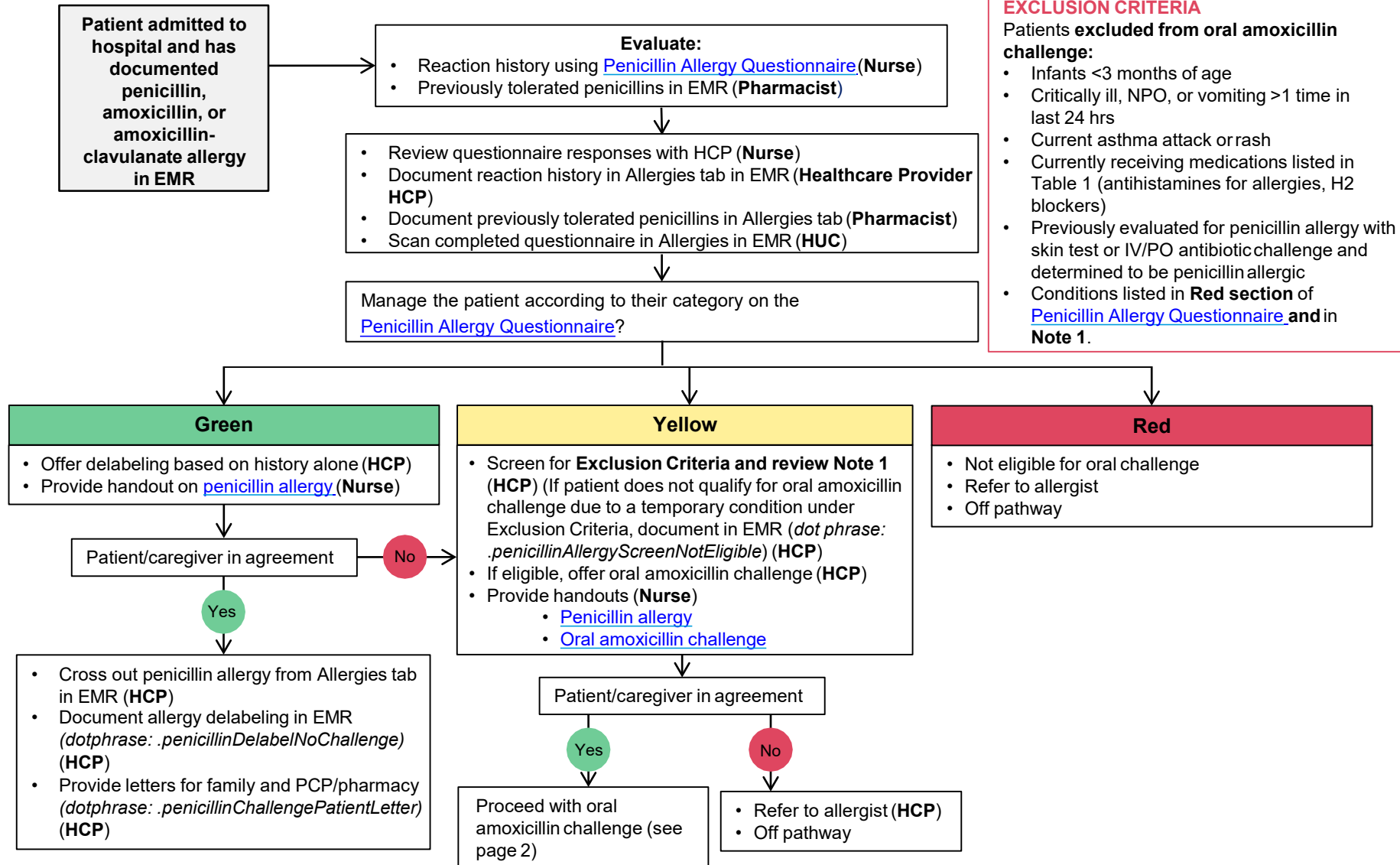


# Penicillin Allergy Delabeling Guideline

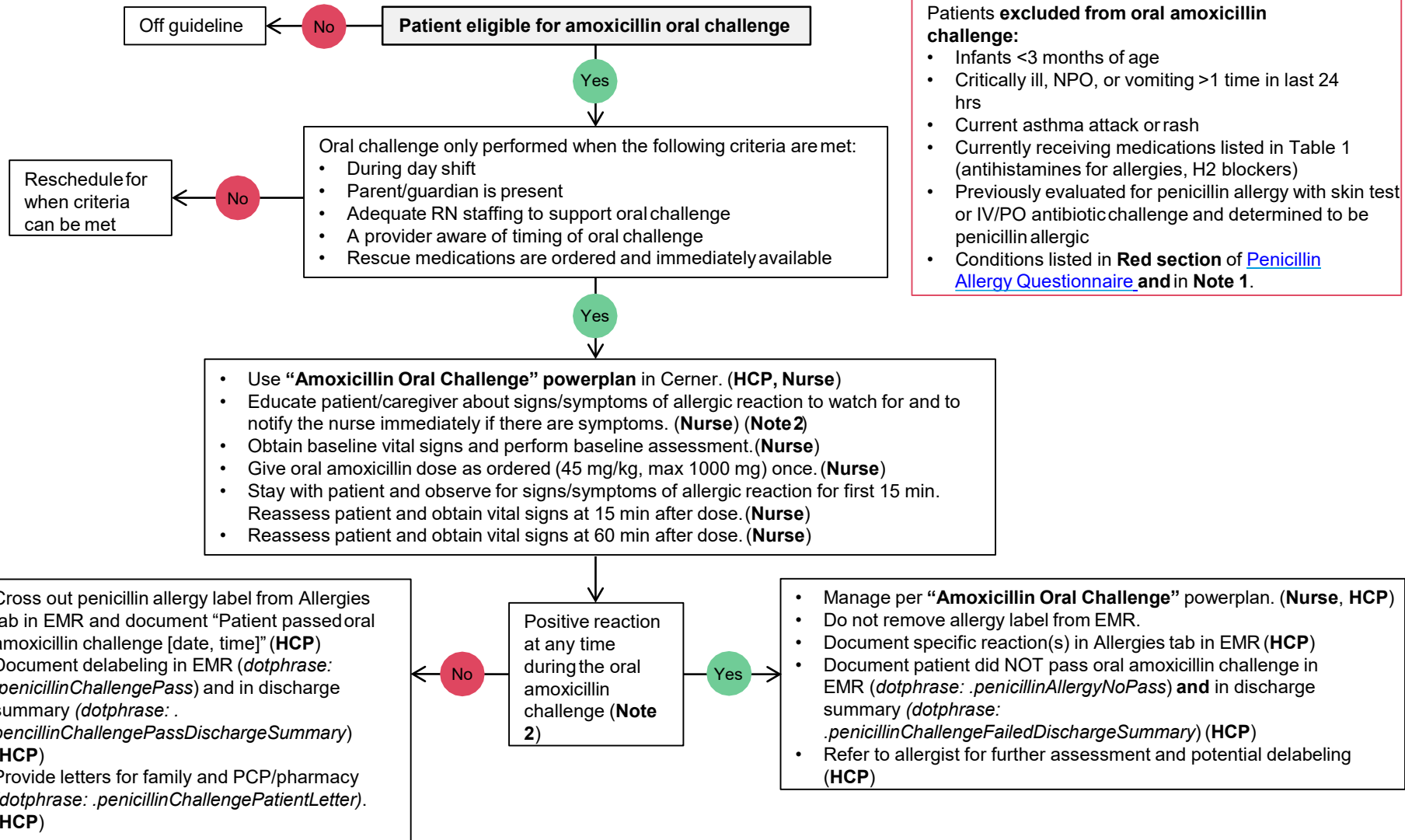
Age: 3 months to < 18 years of age

**Aim:** To identify and delabel patients who are incorrectly labeled as penicillin-allergic



# Penicillin Allergy Delabeling

Age: 3 months to &lt; 18 years of age

**Aim:** To identify and delabel patients who are incorrectly labeled as penicillin-allergic

# Penicillin Allergy Delabeling Guideline

Age: 3 months to < 18 years of age

**Aim:** To identify and delabel patients incorrectly labeled as penicillin-allergic

**Table 1. Patients are excluded if they received any of the following antihistamines within the specified timeframe prior to the anticipated oral amoxicillin challenge.**

|   |  |         |
|---|--|---------|
| Azelastine Nasal Spray (Astelin™, Astepro™)               |  | 12 days |
| Cetirizine (Zyrtec™)                                      | Hydroxyzine (Atarax™)  | 5 days  |
| Chlorpheniramine (Chlortimeton™)                          | Levocetirizine (Xyzal™)  |         |
| Desloratadine (Clarinet™)                                 | Loratadine (Claritin™)   |         |
| Diphenhydramine (Benadryl™)                               | Promethazine (Phenergan™)  |         |
| Fexofenadine (Allegra™)                                   | Cyprohepatadine (Periactin™)                                       |         |
| Over the counter cold & cough medications                 |  |         |
| Cimetidine (Tagamet™)                                     | Ranitidine (Zantac™)   | 2 days  |
| Famotidine (Pepcid™)                                      | Nizatidine (Axiid™)  |         |
| Ketotifen Eye Drops (Alaway™, Eye Itch Relief™, Zaditor™) | Olopatadine Nasal Spray or Eye Drops (Patanase™, Patanol™, Pazeo™) |         |

**Note 1:** Other contraindications to oral amoxicillin challenge that should be excluded prior to oral challenge **in addition to the Red category criteria** are (**HCP**):

- Drug-induced neutrophilic dermatosis (Sweet's syndrome)
- Drug-induced autoimmune diseases (bullous pemphigoid, pemphigus vulgaris, linear IgA bullous disease, drug-induced lupus)
- Organ-specific drug-induced reactions (cytopenias, drug-induced liver injury, nephritis, pneumonitis, meningitis, pancreatitis)
- Drug-induced vasculitis (leukocytoclastic vasculitis, eosinophilic granulomatosis with polyangiitis)

**Note 2.** Positive reactions that are **consistent** with allergy include:

Anaphylaxis (**Table 2**) OR any of the following reactions by organ system:

- **Skin:** Urticaria (hives), flushing, exanthem, angioedema, mouth or eye soreness, persistent pruritus ( $\geq 3$  min)
- **Cardiovascular:** Hypotension, syncope
- **Gastrointestinal:** Repetitive vomiting, abdominal cramping
- **Musculoskeletal:** Hypotonia
- **Respiratory:** Dyspnea, wheezing, hypoxia, repetitive coughing, stridor, vocal changes (dysphonia, aphonia)

Positive reactions that are **doubtful** for presence of allergy and/or require **further assessment** by an allergist include: headache, diarrhea, nausea, single episode of vomiting, transient pruritus without rash, mild self-limited rash (not hives), persistent rhinorrhea ( $\geq 3$  min), persistent rubbing of nose or eyes ( $\geq 3$  min).

**Table 2. Anaphylaxis is highly likely when any one of the following 2 criteria are fulfilled:**

1. **Acute onset\* of an illness with involvement of the skin, mucosal tissue, or both (e.g. generalized hives, pruritus or flushing, swollen lips-tongue-uvula) AND  $\geq 1$  of the following:**
  - a. Respiratory compromise (e.g. dyspnea, wheeze-bronchospasm, stridor, reduced peak respiratory flow (PEF), hypoxemia)
  - b. Reduced blood pressure\*\* or associated symptoms of end-organ dysfunction (e.g. hypotonia [collapse], syncope, incontinence)
  - c. Severe gastrointestinal symptoms (e.g. severe crampy abdominal pain, repetitive vomiting)
2. **Acute onset of hypotension or bronchospasm or laryngeal involvement (stridor, vocal changes, odynophagia) even in the absence of typical skin involvement**

Refer to [Anaphylaxis Clinical Guideline](#)

\*Minutes to several hours from exposure. Most immediate reactions occur within the 1st hour following drug administration.

\*\*Hypotension defined as systolic blood pressure (mm Hg):

- < 12 months of age: < 70
- 1-10 years of age:  $< 70 + (2 \times \text{age in years})$
- > 10 years of age: < 90

**Aim:** To identify and delabel patients who are incorrectly labeled as penicillin-allergic

## References

1. Khan DA, Banerji A, Blumenthal KG, et al. Drug Allergy: A 2022 Practice Parameter Update. J Allergy Clin Immunol. 2022 Sep 16:S0091-6749(22)01186-1.
2. Shenoy ES, Macy E, Rowe T, et al. Evaluation and Management of Penicillin Allergy: A Review. JAMA. 2019 Jan 15;321(2):188-199.
3. Savic L, Ardern-Jones M, Avery A, et al. BSACI guideline for the set-up of penicillin allergy de-labelling services by non-allergists working in a hospital setting. Clin Exp Allergy. 2022 Oct;52(10):1135-1141.
4. Bird JA, Leonard S, Groetch M, et al. Conducting an Oral Food Challenge: An Update to the 2009 Adverse Reactions to Foods Committee Work Group Report. J Allergy Clin Immunol Pract. 2020 Jan;8(1):75-90.
5. Cardona V, Ansotegui IJ, Ebisawa M, et al. World Allergy Organization anaphylaxis guidance 2020. World Allergy Organ J. 2020 Oct 30;13(10):100472.
6. Mori F, Liccioli G, Barni S, et al. Management of Suspected Antibiotic Reactions in Children. Pediatr Infect Dis J. 2019 Jul;38(7):e149-e152.
7. Bauer ME, MacBrayne C, Stein A, et al. Multidisciplinary Quality Improvement Initiative to Facilitate Penicillin Allergy Delabeling Among Hospitalized Pediatric Patients. Hosp Pediatr. 2021 May;11(5):427-434.
8. Mill C, Primeau MN, Medoff E, et al. Assessing the Diagnostic Properties of a Graded Oral Provocation Challenge for the Diagnosis of Immediate and Nonimmediate Reactions to Amoxicillin in Children. JAMA Pediatr. 2016 Jun 6;170(6):e160033.
9. Stone CA Jr, Trubiano J, Coleman DT, et al. The challenge of de-labeling penicillin allergy. Allergy. 2020 Feb;75(2):273-288.
10. Vyles D, Chiu A, Routes J, et al. Oral amoxicillin challenges in low-risk children during a pediatric emergency department visit. J Allergy Clin Immunol Pract. 2020 Mar;8(3):1126-1128.
11. Steenvoorden L, Bjoernestad EO, Kvesetmoen TA, et al. De-labelling penicillin allergy in acutely hospitalized patients: a pilot study. BMC Infect Dis. 2021 Oct 20;21(1):1083.
12. Cooper L, Harbour J, Sneddon J, et al. Safety and efficacy of de-labelling penicillin allergy in adults using direct oral challenge: a systematic review. JAC Antimicrob Resist. 2021 Jan 27;3(1):dlaa123.
13. Livirya S, Pithie A, Chua I, et al. Oral amoxicillin challenge for low-risk penicillin allergic patients. Intern Med J. 2022 Feb;52(2):295-300.

**Workgroup:** Ullman (previously Koutsari), Pomputius, Abdalgani, Morhack, Weyandt.