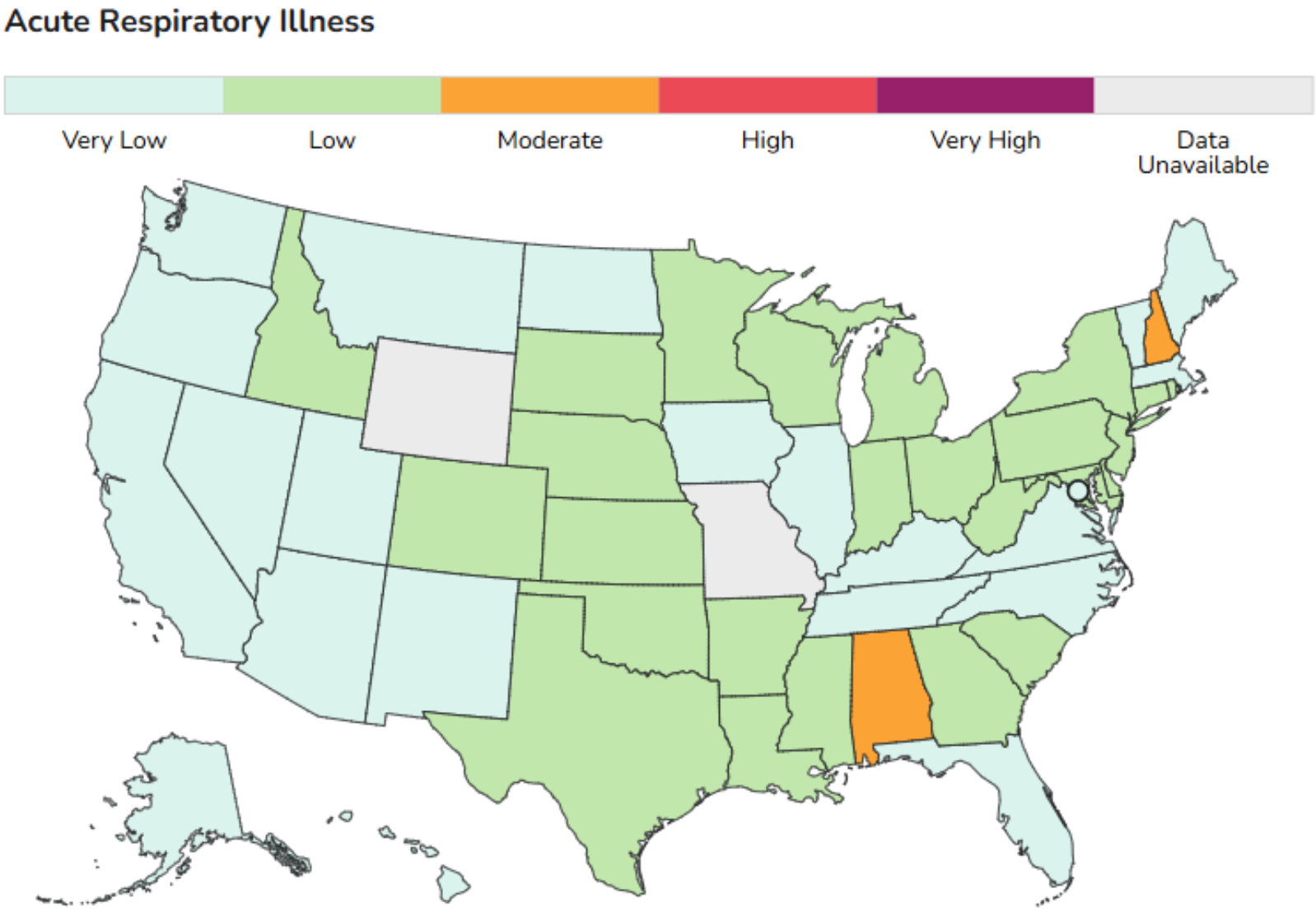
PDPH/LTCF Conference Call
Friday, 11/21/25

Agenda

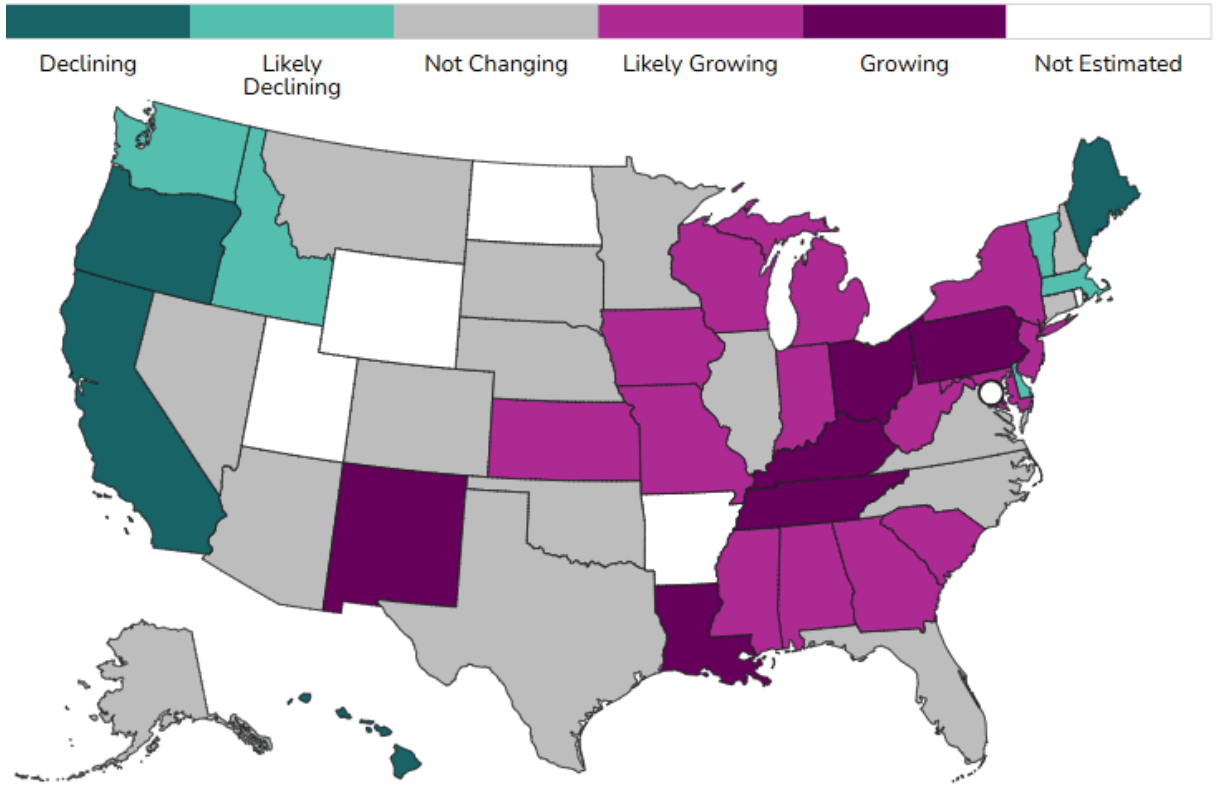
- Respiratory Virus Surveillance Update
- **U.S. Antibiotic Awareness Week, November 18-24**
  - **The Discovery of Penicillin: A Brief History**
  - **Penicillin Allergy Delabeling in Long-Term Care – Guest Speaker, Dr. Jerry Jacob, MD**
- PDPH Resources and Services Reminders

Current Respiratory Illness Activity, US

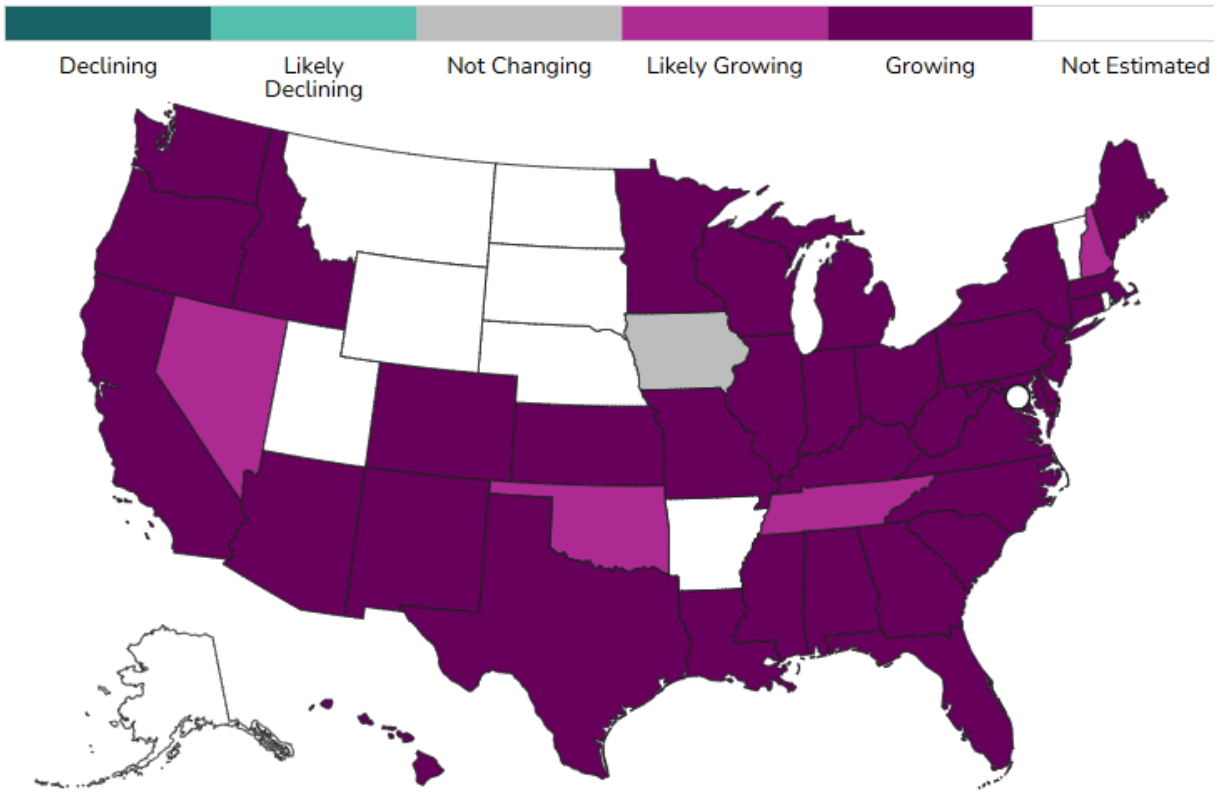


Epidemic Trends

COVID-19



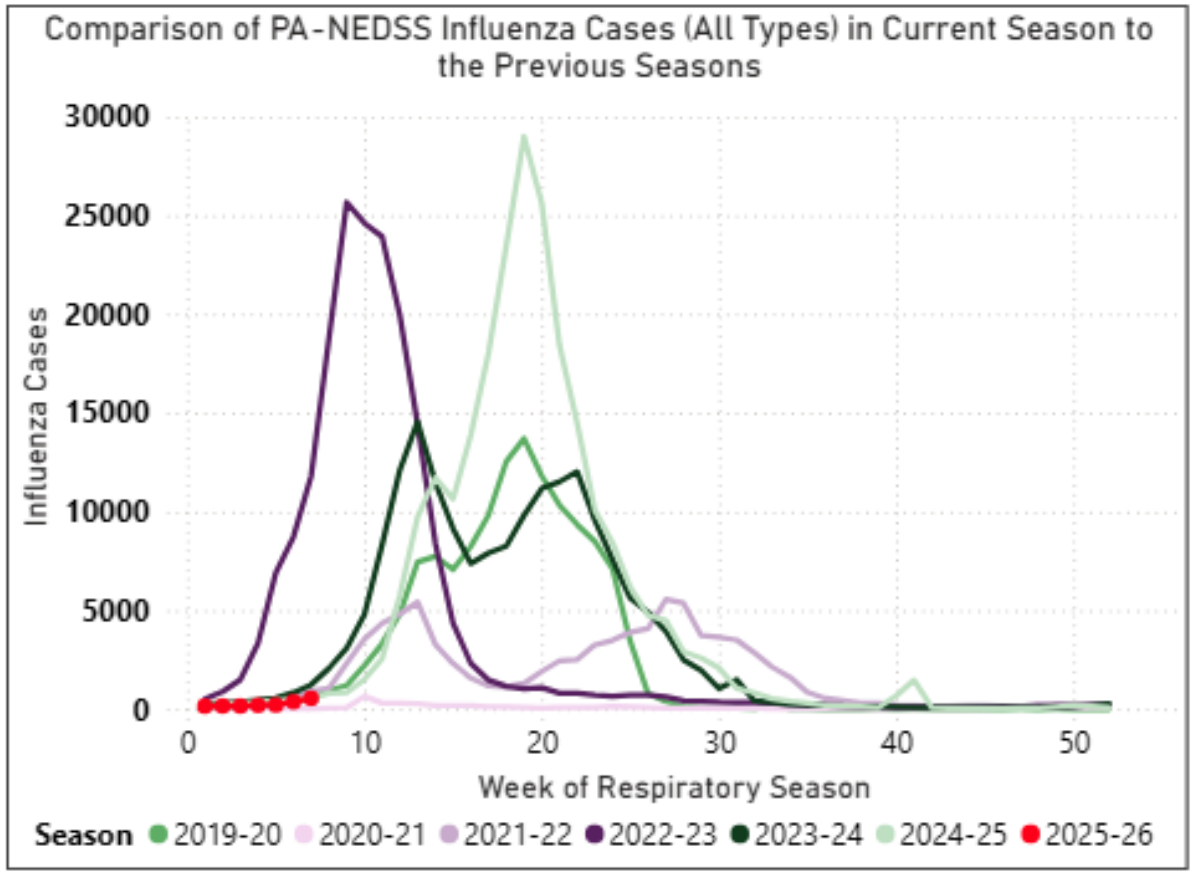
Influenza

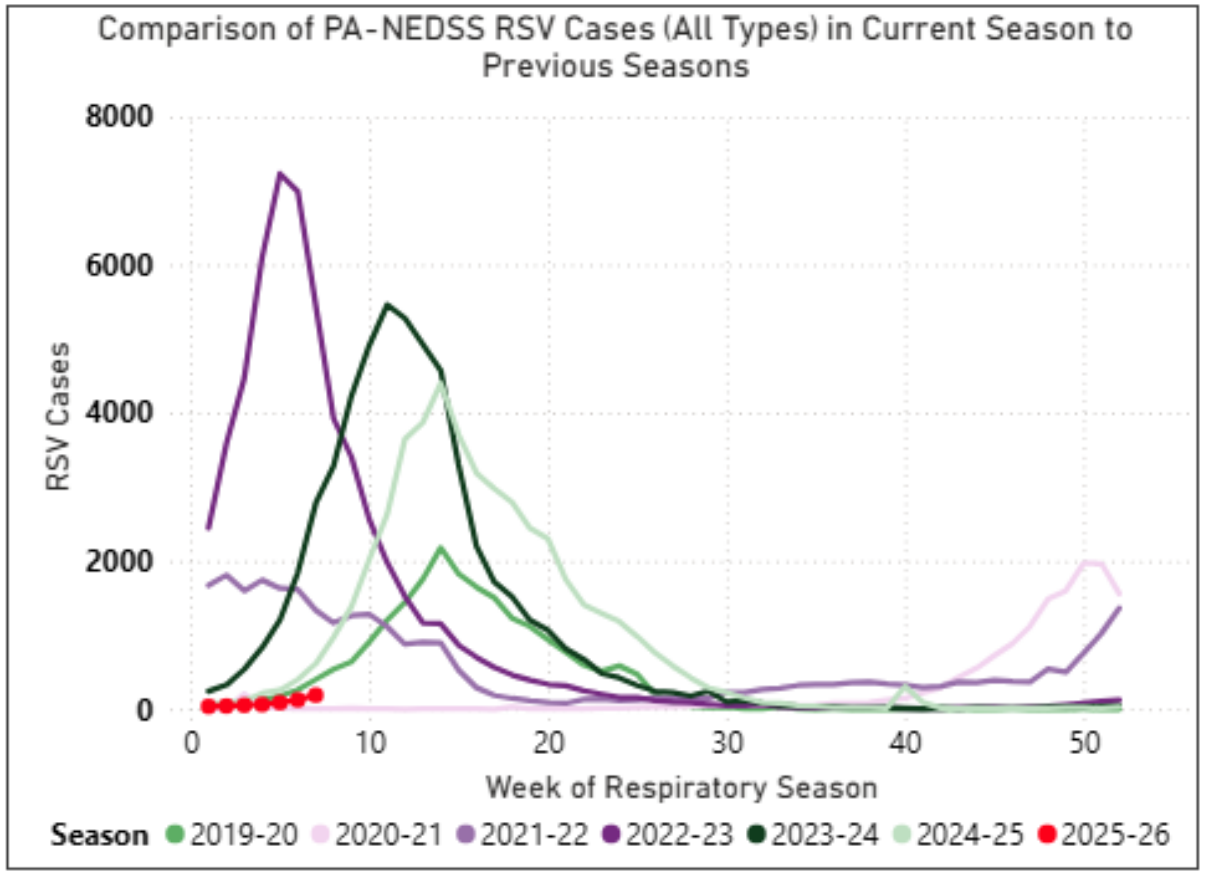


Current Respiratory Virus Activity in PA: 2025-2026 Season

Seasonal Comparisons for Influenza and RSV

Pennsylvania Department of Health





U.S. Antibiotic Awareness Week

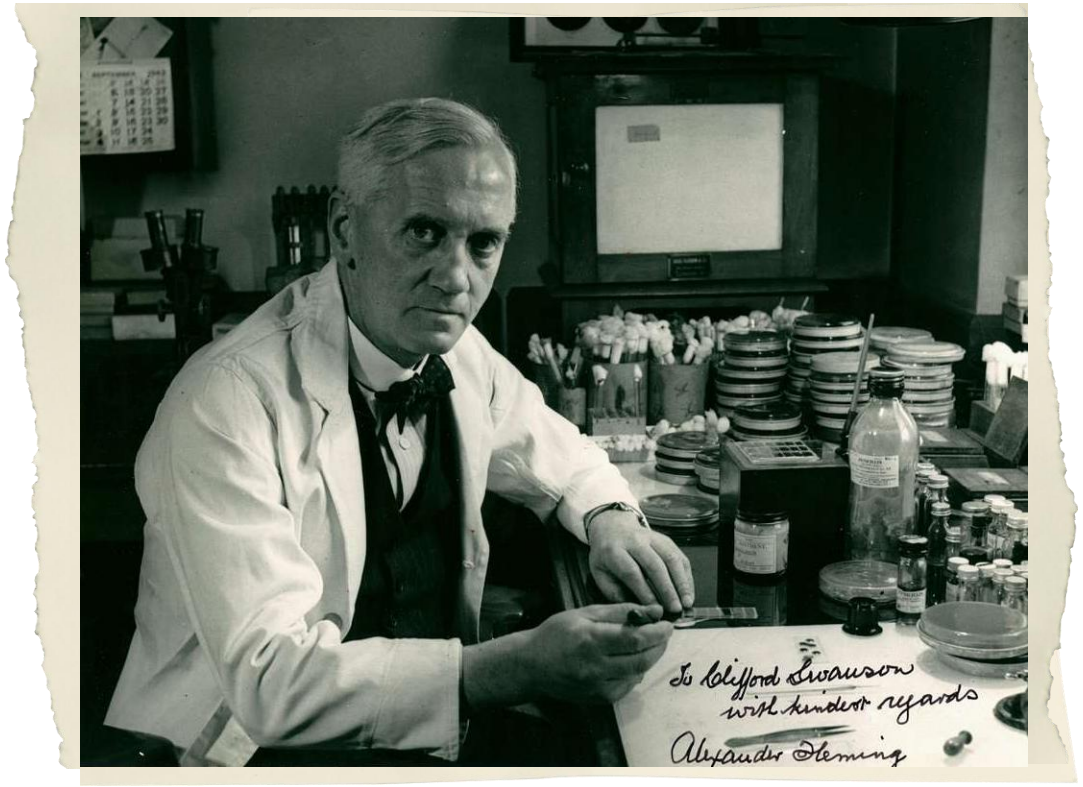
November 18-24, 2025 | bit.ly/USAAW2025

The Discovery of Penicillin: A Brief History

Lea Widemann, MS

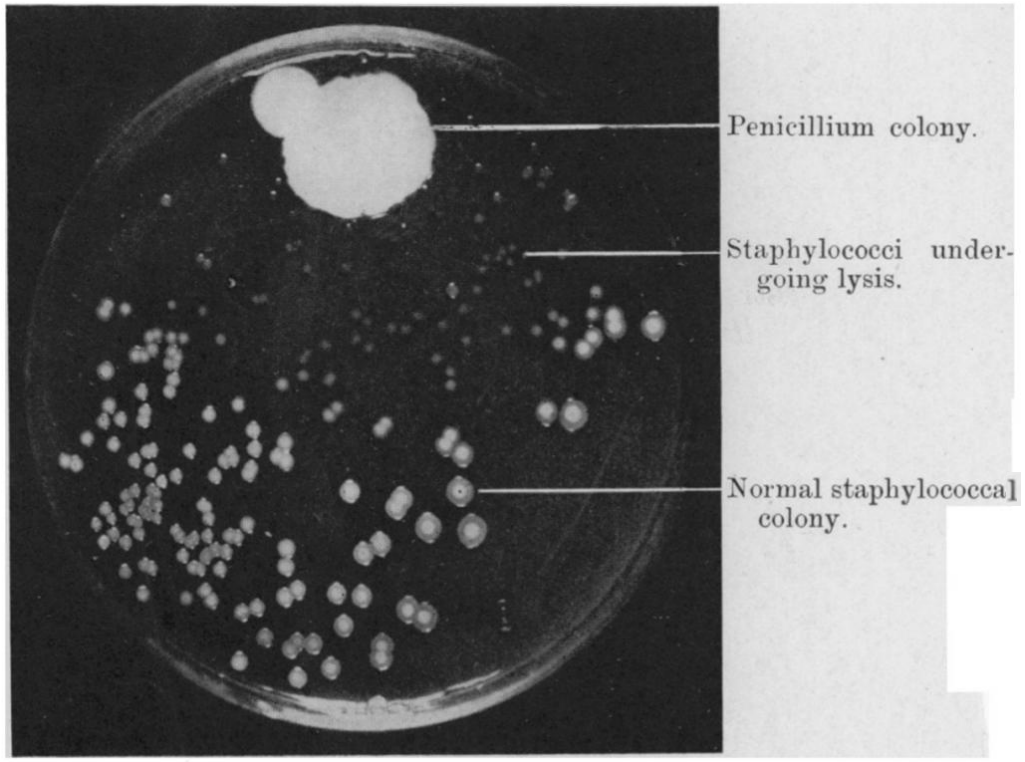
Healthcare Associated Infections/Antimicrobial Resistance (HAI/AR) Program

England, 1928: Accidental Discovery of Penicillin



Dr. Alexander Fleming

Source: National Institutes of Health



Culture plate showing dissolution of staphylococcal colonies neighboring a *Penicillium* colony

Source: A. Fleming, British Journal of Experimental Pathology, Vol X, No. 3, 1929

United States, 1940s: Scaling Up Production

Penicillin was incredibly difficult to mass produce, with 2,000 liters of mold culture fluid needed to treat a single case of sepsis.

Did You Know?

The species of mold found to yield enough penicillin for mass production came from a cantaloupe picked up at a grocery store.

Equipment used to make early forms of penicillin

Source: Wellcome Collection

France, 1944: Critical Role of Penicillin in WWII

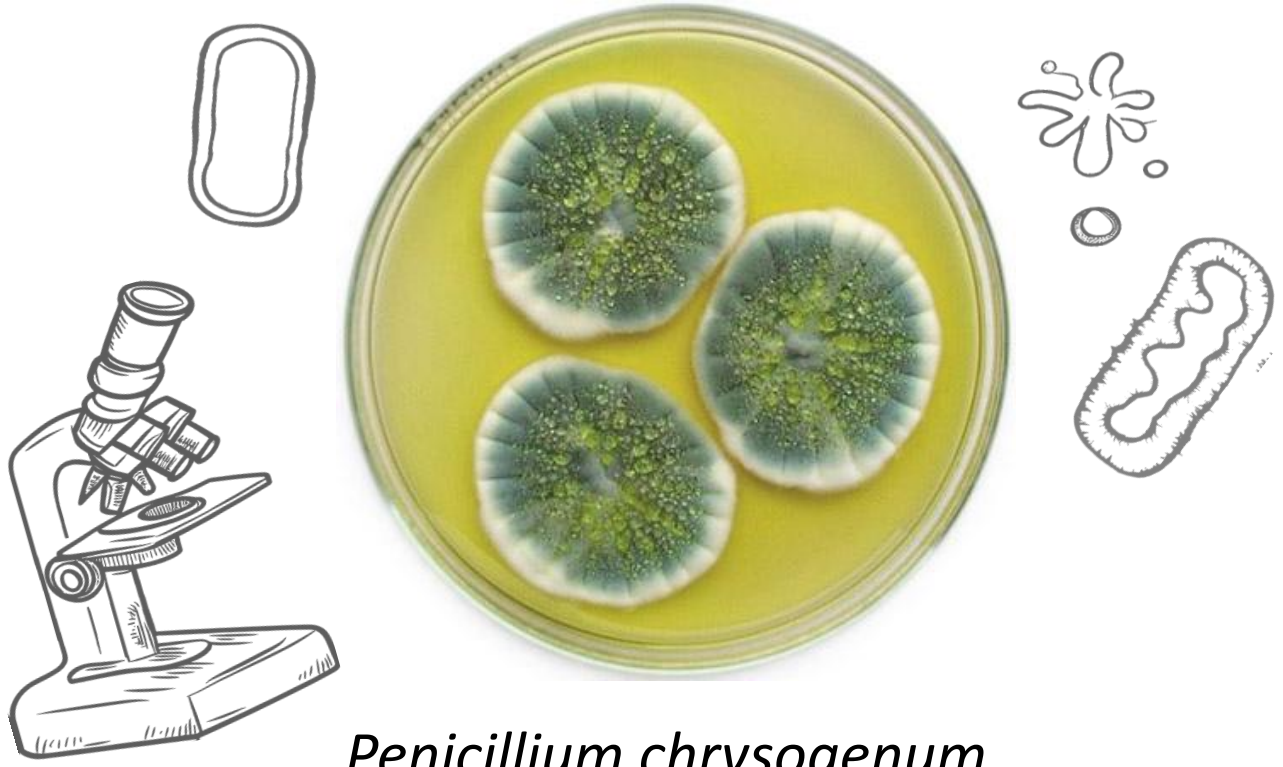
Thousands of doses of penicillin were sent with U.S. troops to support the D- Day invasion.

- The death rate from bacterial pneumonia in World War I was 18%. During World War II it, dropped to 1%.

Source: Research and Development Division, Schenley Laboratories Inc., Lawrenceburg, Indiana, USA

U.S. & Worldwide, 1945: Penicillin Becomes Widely Available

In less than 20 years, penicillin went from being a relatively unknown substance to a medicine that transformed deadly infections into easily treatable conditions.



Penicillium chrysogenum

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PHILADELPHIA DEPARTMENT OF PUBLIC HEALTH LONG-TERM CARE COLLABORATIVE CALL

Penicillin Allergy Delabeling in Long-Term Care

Jerry Jacob, MD, MS
Associate Professor of Clinical Medicine
Division of Infectious Diseases, Penn Medicine
Senior Physician Advisor, Penn-Temple LTC-RISE Program

November 21, 2025

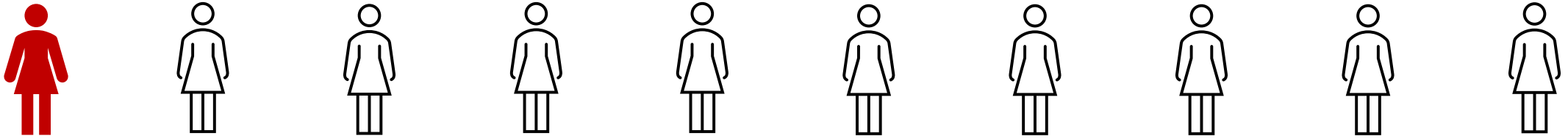
Objectives

I. Describe the burden of unverified penicillin allergy “labels” and potential impact on health outcomes

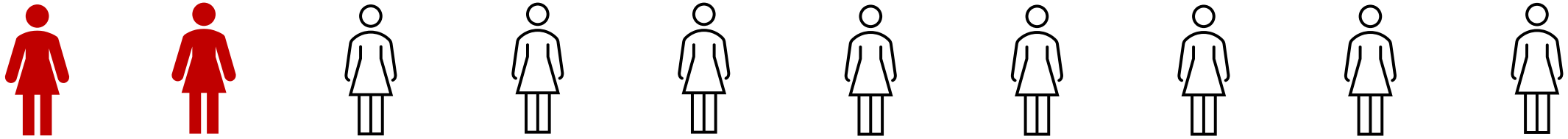
II. Highlight the unique opportunity for “delabeling” in post-acute settings

III. Provide practical resources for implementing a delabeling protocol

Penicillin allergies are reported by 10% of the population



Among hospitalized patients, the proportion increases to 20%



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The actual prevalence of penicillin allergies is <1 %

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>95% of patients with a penicillin allergy "label" are actually able to tolerate penicillins.

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Penicillins and related antibiotics are part of the “beta-lactam” family.

Examples:

- Amoxicillin
- Amoxicillin-clavulanate (Augmentin)
- Cephalexin (Keflex)
- Cefuroxime (Ceftin)
- Cefpodoxime (Vantin)
- Cefazolin (Ancef)
- Ceftriaxone
- Meropenem

Beta-lactams are first-line antibiotic choices for many infections.

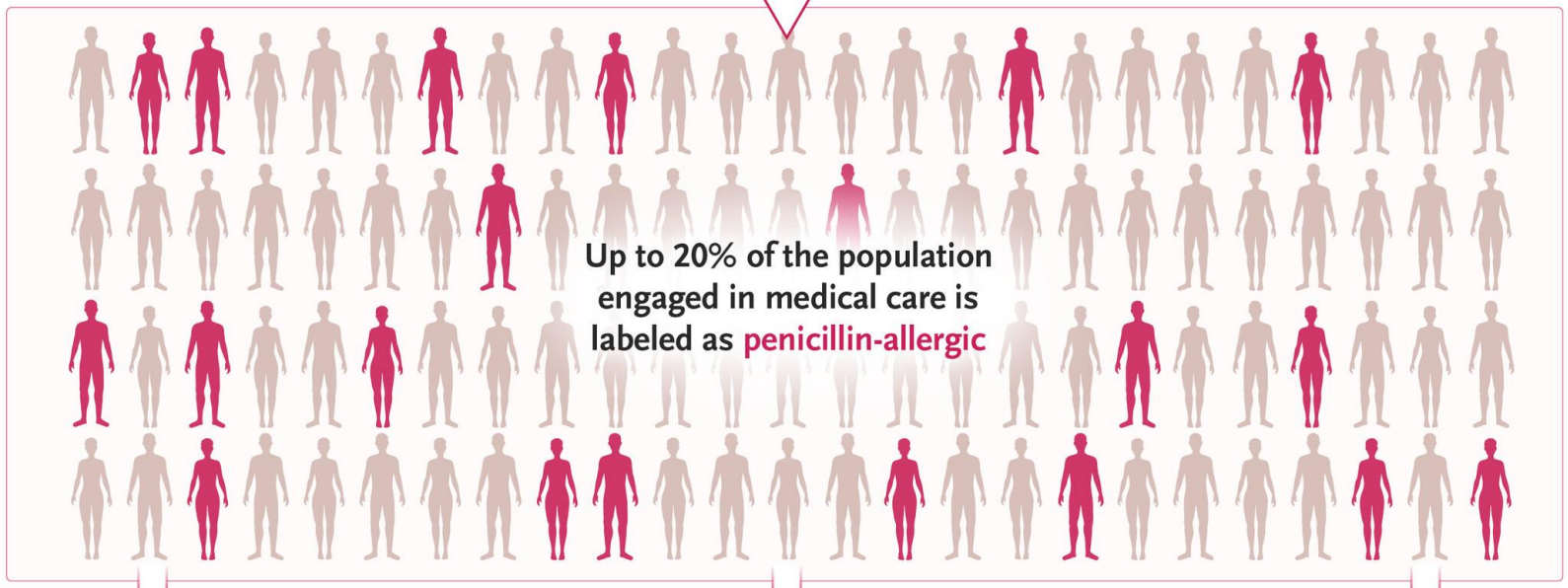
Examples:

- Strep infections
- Skin infections
- Respiratory tract infections (pneumonia)
- Dental infections
- Syphilis

Penicillin allergy “labels” are associated with negative health outcomes

- Longer hospital stays
- *C. difficile* infection
- Treatment with less effective, more toxic antibiotics
- Increased risk of drug-resistant germs

A **penicillin-allergy label** is usually acquired in childhood



Personal Health Implications

- Fewer efficacious antibiotic choices
- More toxic effects associated with alternative antibiotics
- Use of broad-spectrum antibiotics
- More postoperative surgical-site infections

Public Health Implications

- Antibiotic resistance
- Higher rates of *C. difficile* infection
- Use of more costly antibiotics
- Increased length of hospital stays

Formal Allergy Assessment

- <5% Labeled as allergic to penicillin are truly allergic

Longo. N Engl J Med, 2019.

Quiz

Which of the following is NOT a common myth about penicillin allergies?

a. Penicillin allergies last throughout a person's life

b. Penicillin allergies are harmless

c. The large majority of patients with a reported penicillin allergy are able to tolerate a penicillin.

d. Patients with penicillin allergies can always receive a different but equally effective and safe antibiotic

Penicillin allergy labels in LTCFs

Survey of 20 LTCFs in Massachusetts:	23.1% of residents reported penicillin allergies.
	Significant documentation gaps were noted, with up to 92.8% of allergy documentation records found to be incomplete
	Among patients who received antibiotics in the past 30 days, 34.7% had a documented penicillin allergy.
	Residents with penicillin allergies were 95% less likely to receive beta lactam antibiotics for any infection.

Foong. Antimicrob Stewardship Healthcare Epidemiol 2024.
Foong. Ann Allergy Asthma Immunol 2024.

Case

79 yo male with heart failure and recent hip fracture develops cough, rigors, and fever to 101 ºF. Other vital signs, including pulse, respiratory rate, and O2 saturations are normal. CXR suggests a pneumonia.

- After reviewing the **R-FAST tool**, the clinical team identifies that the patient has met **minimum criteria** for initiating antibiotics.
- Although **amoxicillin-clavulanate** is preferred first-line therapy, the resident has a **penicillin allergy** listed on the chart.
- Details of the reaction to penicillin are currently unknown. Therefore, second-line therapy with **levofloxacin** is started.

What are the potential risks with using levofloxacin instead of amoxicillin-clavulanate?

- 48 hours after levofloxacin is started, an antibiotic timeout is performed. Fever is resolved and cough is stable to improving, but patient appears **confused**.
- Levofloxacin is continued for 5 days. On day 4, patient develops diarrhea and tests positive for ***C. difficile***. He is subsequently started on a course of oral vancomycin for ***C. difficile*** infection

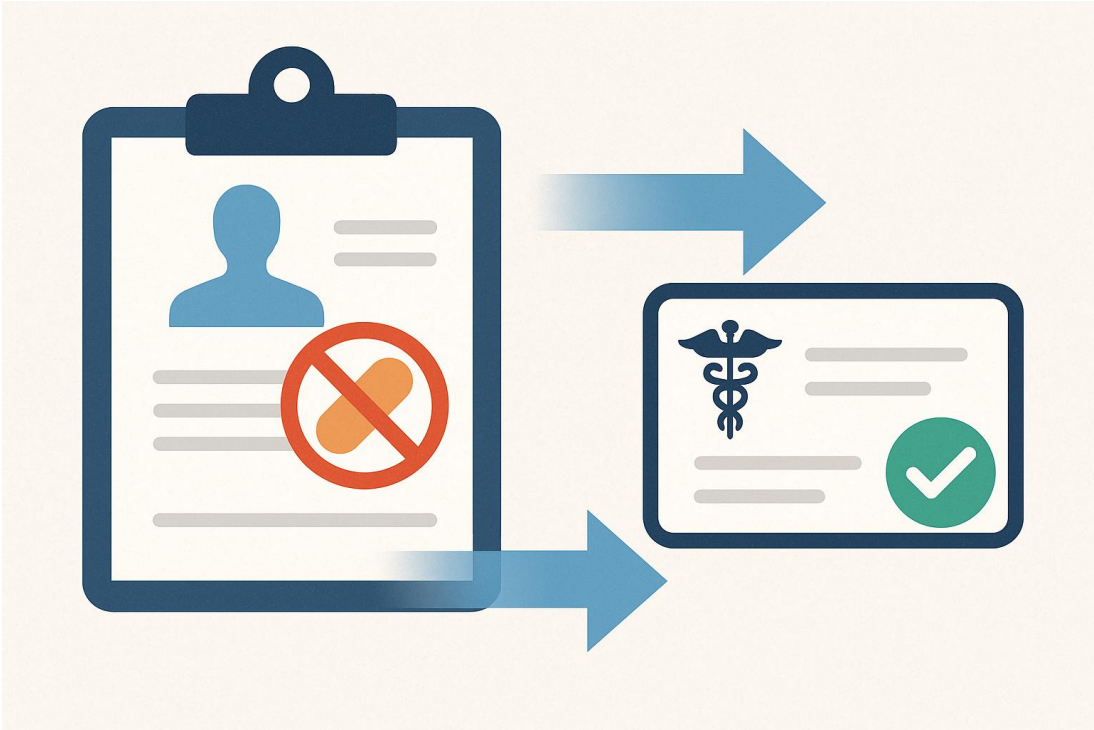
Terminology

Penicillin allergy delabeling

Process of removing a penicillin allergy label from a patient's medical record after an evaluation confirms that they are not allergic

Relabeling or updating a penicillin allergy

Process of clarifying an existing label (e.g., clarifying allergy to another beta-lactam antibiotic)



Post-acute care delabeling opportunity

Increased risk of antibiotic utilization and adverse outcomes

Supervised care setting for prolonged period

Generally no acute medical issues to supersede delabeling efforts

Impact:

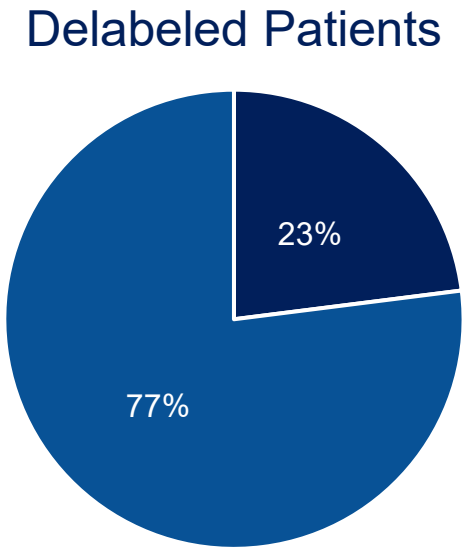
- Over a year, ~1328 residents admitted to Phila SNFs may be falsely labeled as PCN allergic
- Among older adults with low-risk histories, 45-64% can be delabeled based on history alone

Shah. J Am Geriatic Soc, 2025.

Penicillin Delabeling at Penn Rehab

145 patients evaluated for PCN allergy delabeling (8/2020-10/2023)

30 patients (21%) delabeled by history alone



Galipean. Infect Control Hosp Epidemiol, 2024.

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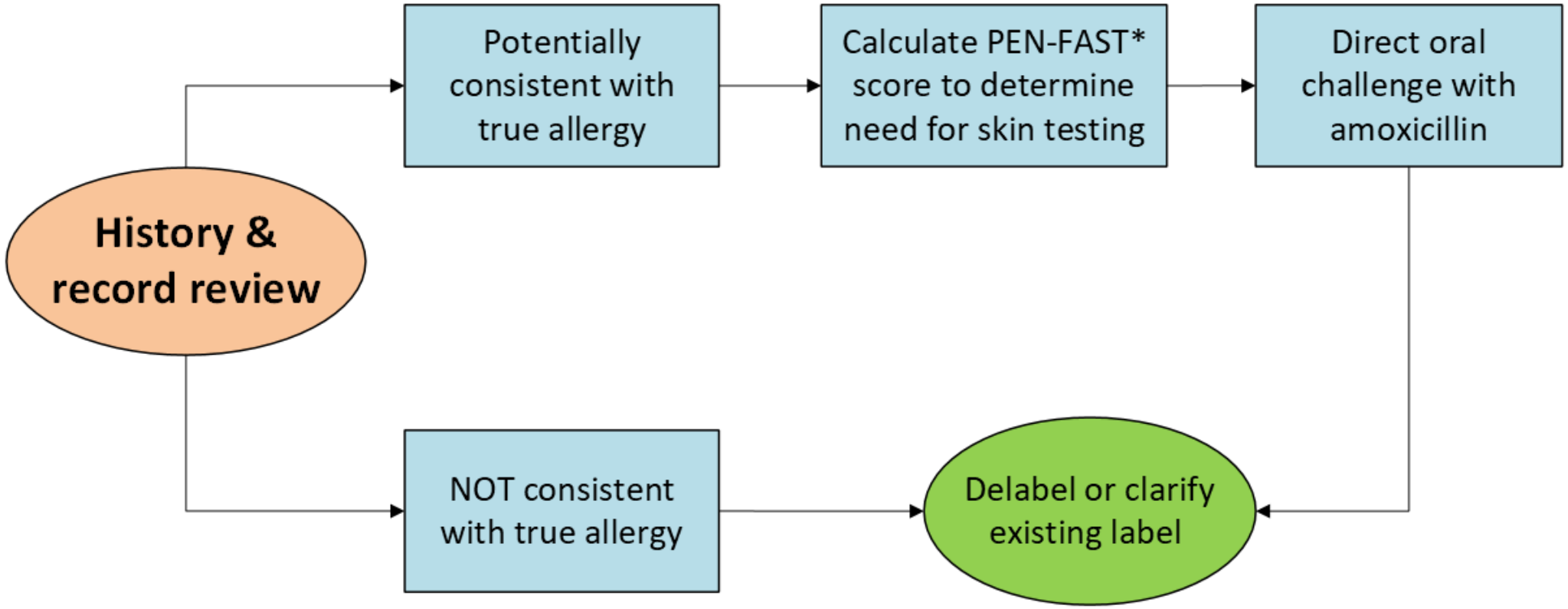
How to Delabel



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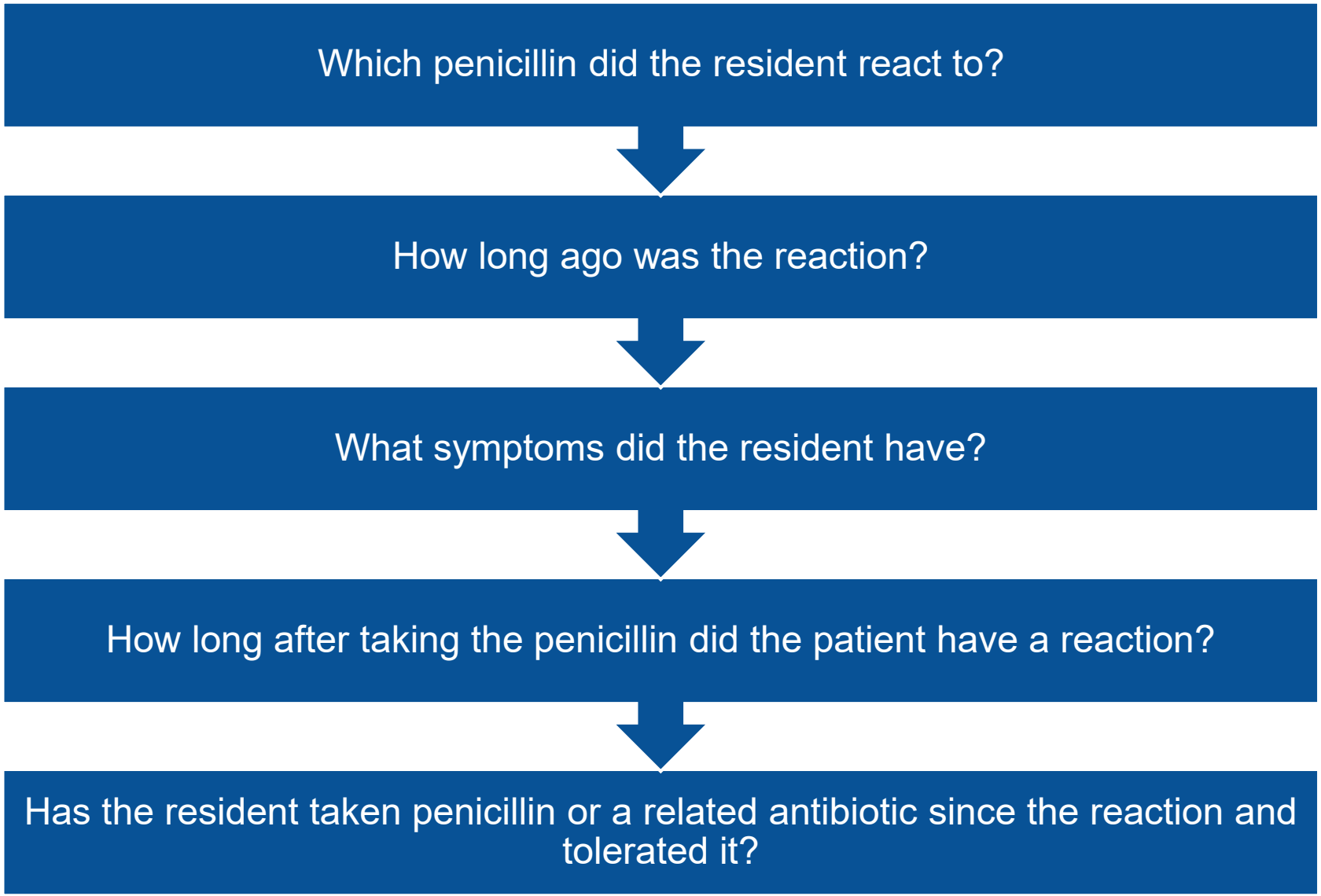
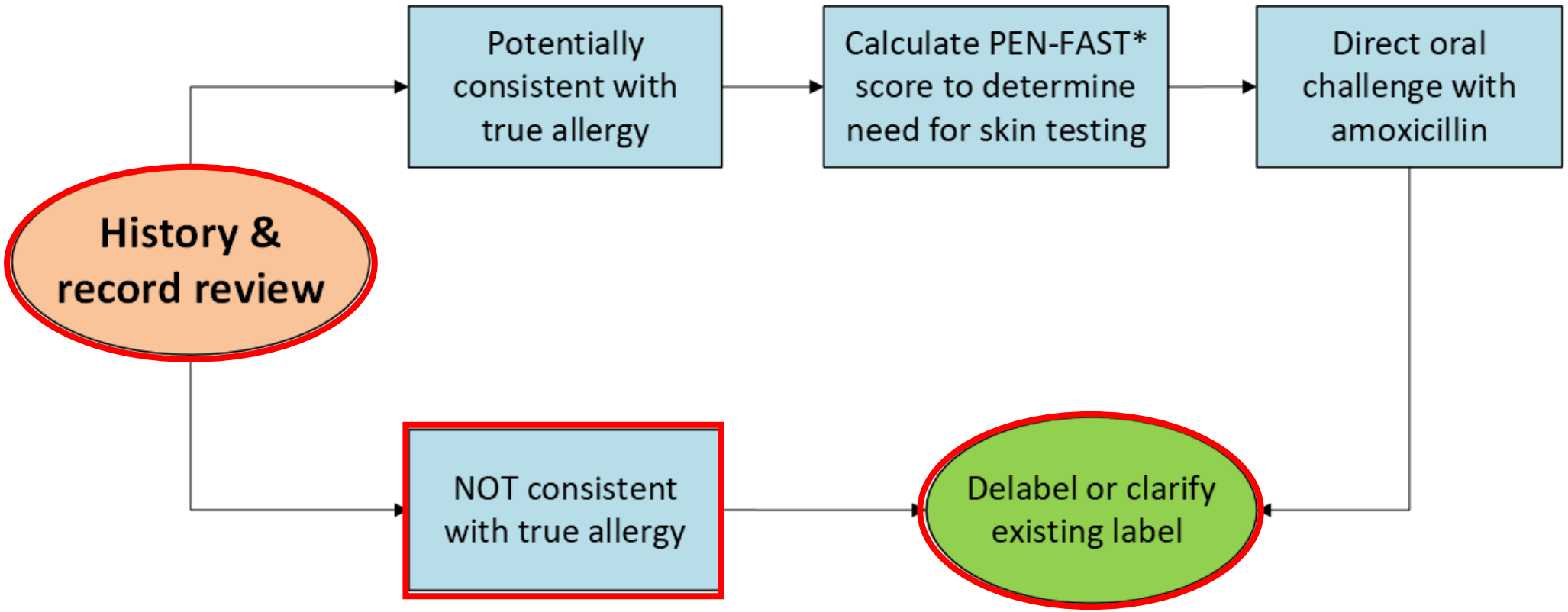
History Questions



How to Delabel



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Implementing a delabeling program in your facility

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Long Term Care RISE
Penn Medicine | TEMPLE HEALTH

Penicillin Allergy Delabeling **SBAR**

Date: _____

Nursing Home Name: _____

Resident Name: _____ Date of Birth: _____

Completed by: _____ Title/Role: _____

Phone: _____ E-mail: _____

Reviewed by: _____ Title/Role: _____

Phone: _____ E-mail: _____

Situation

This is a request to assess the above resident for penicillin allergy delabeling based on history alone.

Background

Reason(s) for assessment:

- ☐ Routine intake assessment
- ☐ Antibiotic stewardship or quality improvement initiative
- ☐ Resident has a condition for which a beta-lactam is the preferred treatment *(describe below)*:

_____

Resident has an active diagnosis or symptoms (e.g., dementia, cognitive deficiency, altered mental status) that interferes with the ability to provide an accurate medical history:

☐ No ☐ Yes → *do not proceed with assessment*

Resident relies on a healthcare proxy to make healthcare decisions and/or report medical history:

☐ No ☐ Yes → *do not proceed with assessment*

Assessment

Use the assessment algorithm on the following page. Record the resident's responses by selecting the corresponding boxes. When complete, indicate the result of the assessment below:

- ☐ Resident is eligible to have penicillin allergy removed or updated based on history alone
- ☐ Resident consents to have penicillin allergy removed or updated
- ☐ Resident is not eligible to have penicillin allergy removed or updated based on history alone

Recommendation

- ☐ Consider removing penicillin allergy from medical record or updating allergy status
- ☐ Refer resident to specialist for direct oral challenge and/or skin testing
- ☐ Do not remove penicillin allergy label from medical record

Assessment algorithm

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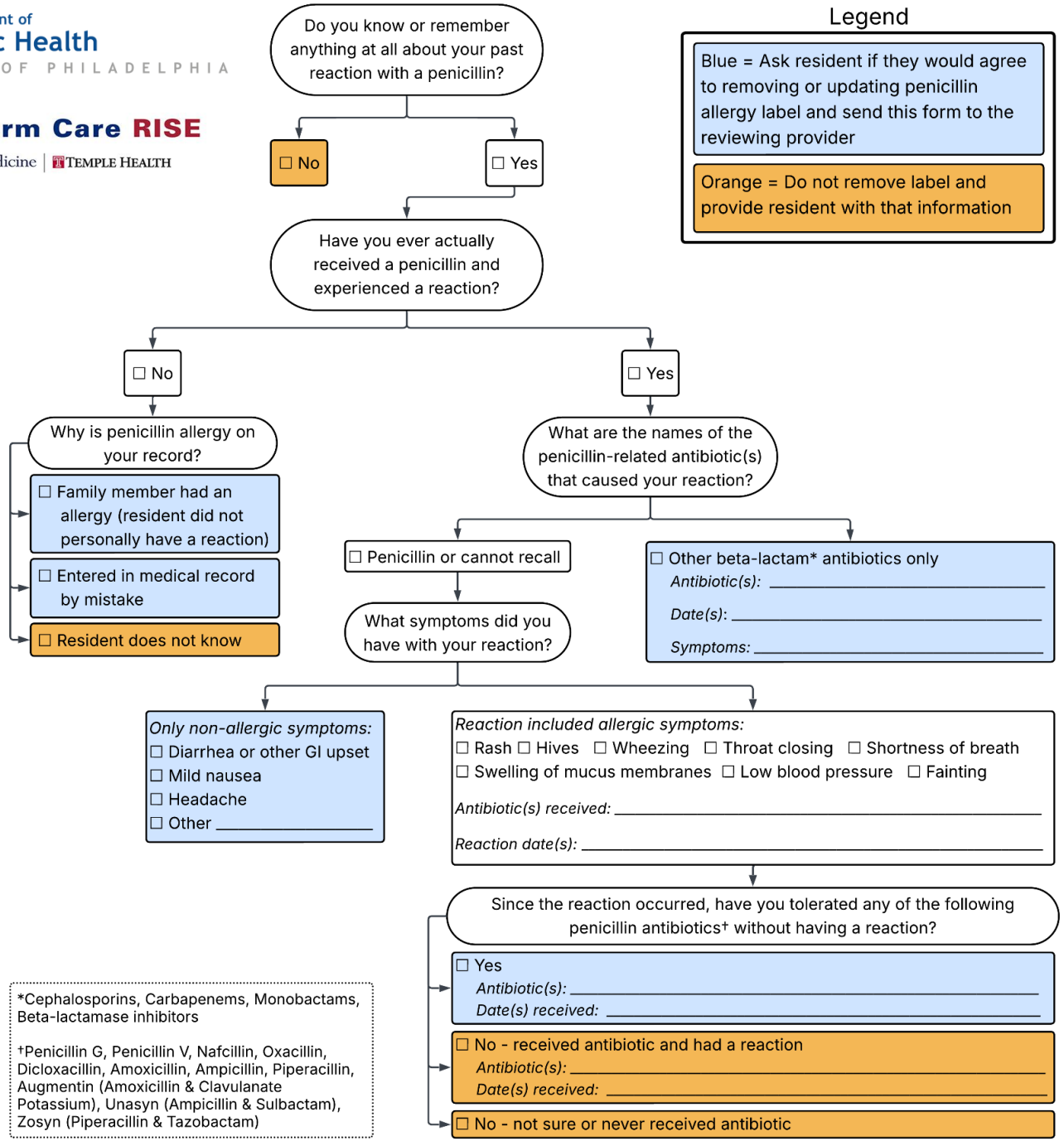


Bediako, Antimicrob Steward Healthc Epidemiol, 2022.

How to use the SBAR

Identify	Identify patients who are eligible to have their penicillin allergy labels removed based on history alone.
Administer	Be administered by a consultant pharmacist or nurse.
Review	Be reviewed by/escalated to a physician (e.g., medical director) for final decision on delabeling
Document	Become part of the resident's medical record

Planning your efforts

- Penicillin allergy delabeling programs can qualify as an antibiotic stewardship quality assurance and performance improvement (QAPI) program.

- Consider initiating a Plan, Do, Study, Act (PDSA) cycle to measure the success of your delabeling program and to identify areas for improvement.

PDSA Cycle: **Plan**

- ❑ **Define the intervention, establish a goal, identify steps needed to execute intervention and data to be collected.**

Brief example:

- *We plan to test an SBAR protocol for removing penicillin allergy labels from residents' medical records based on medical history alone.*
- *Our goal is to complete and document the SBAR for every resident on ward ____ with a penicillin allergy listed on their medical record.*
- *We will collect data on the number of residents evaluated using the SBAR, the number of residents with penicillin allergies removed, and the number of resident with penicillin allergies updated.*
- *SBAR will be implemented and data will be measured with the following steps: ******

PDSA Cycle: **Do**

- **Carry out the program and document your results**

Example:

- *First cycle of SBAR protocol was started on **** and completed on ****
- *Data was collected*
- *Feedback was obtained from staff and patients.*

PD**S**A Cycle: **Study**

- **Analyze the results collected during the ‘Do’ phase and determine whether you met the goals defined during the ‘Plan’ phase.**

Example:

Of __# of patients evaluated by SBAR protocol for penicillin allergy delabeling, ___% of patients were successfully delabeled based on history alone.

PDS**A** Cycle: **Act**

- ❑ **Draw conclusions about the results of your program and use these to inform future actions**

Example:

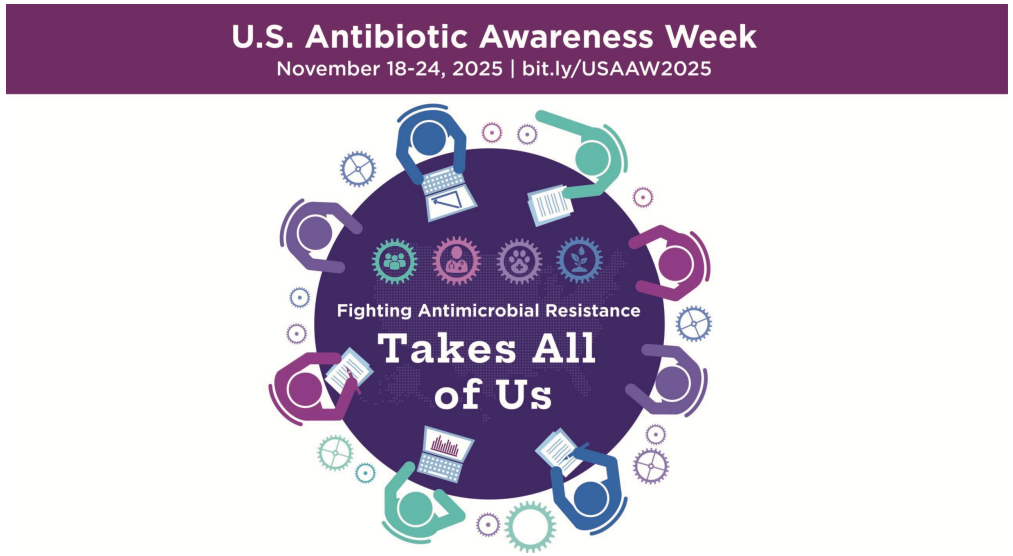
- *Implementing a penicillin allergy delabeling program was feasible and improved care.*
- *Based on feedback, we identified one area where implementation of the program could be improved.*
- *We plan to expand use of the program to all resident admissions with a reported penicillin allergy.*

Takeaways

- Penicillin allergy labels are quite common, especially among residents who have been hospitalized.
- Penicillin allergy “labels” are associated with negative health outcomes.
- The overwhelming majority of residents labeled with a penicillin allergy are not truly allergic, and can safely receive penicillins.
- Significant number of penicillin allergies can potentially be removed through history & record review alone.
- New resources are available to support QAPI projects for penicillin allergy delabeling in LTC communities.

Acknowledgements

- Lea Widemann, MSc
- Tiina Peritz, MS, BSN, CIC
- Jane Gould, MD
- Olajumoke Fadugba, MD
- Keith W. Hamilton, MD



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Penicillin Allergies:
What You Need to Know

Penicillins are common medicines that fight bacterial infections. Many people think they are allergic to penicillin, but over **9 out of 10** are not truly allergic when evaluated.[1]

WHY ARE INACCURATE PENICILLIN ALLERGIES COMMON?[2]

Mild symptoms or side effects, such as nausea and rash, are often confused with a real allergy.

People often grow out of penicillin allergies.
8 out of 10 people stop reacting to penicillin within 10 years.

People incorrectly assume they can't take penicillin because a family member is allergic.

WHY SHOULD FALSE PENICILLIN ALLERGIES BE REMOVED?[1]

- Penicillins are the best and safest treatment for many types of infections. Avoiding penicillins may lead to using drugs that do not work as well and have worse side effects.
- Penicillin allergy labels have been linked to longer hospital stays and an increased risk of becoming infected with dangerous, difficult to treat bacteria.

HOW DO I FIND OUT IF I'M ACTUALLY ALLERGIC TO PENICILLIN?

A healthcare professional can safely and easily evaluate you for an allergy to penicillin.

- First, you will be asked a few questions about your medical history. Your medical record will also be checked to see which medications you have taken in the past. Many people can safely have their allergy removed after this step.[3,4]
- Depending on your medical history, you may need testing before the allergy can be removed. This may include taking a small dose of penicillin at a doctor's office, and/or a skin test.[1]

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Educational Resource for Residents

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Long Term Care RISE
Penn Medicine | Temple Health

Penicillin Allergy Delabeling **SBAR**

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☐ Do not remove penicillin allergy label from medical record

Penicillin Allergy Delabeling Evaluation Tool

Available online

Partner with PDPH on Antibiotic Stewardship (AS)

Support for Data Analysis

Submit penicillin allergy evaluation data to PDPH and receive customized data dashboards in return.

Antibiotic Stewardship Focus Group

Learn about AS topics and discuss logistics of implementing AS programs in a collaborative environment.

Help Improve Antibiotic Stewardship in Philly

Calling consultant pharmacists serving skilled nursing facilities in Philadelphia! Take our **brief, anonymous survey**.

- Help us develop resources that address real needs identified by pharmacists.
- Contribute to improved antibiotic stewardship practices at Philadelphia skilled nursing facilities.
- Support citywide efforts to reduce antibiotic resistance and improve patient outcomes.

Questions?

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Resources and Services

Reminder: HAI/AR Services

- Infection Control Assessment and Response (ICAR) visit
- Onsite Education
  - Onsite Education Topics:
    - Hand Hygiene
    - Environmental Services
    - Personal Protective Equipment
    - *C. auris*
    - Injection Safety
    - Escape Room
    - **NEW - Hand hygiene training for EVS**
  - Virtual Education Topics:
    - Injection Safety
    - *C. auris*
- N95 Qualitative Fit Test Train-the-Trainer
- Quarterly newsletter

- Sign-Up Form for HAI/AR Services

APIC Membership

For SNF Infection Preventionists

Connecting LTCF IPs to a professional organization offers:

- Online educational resources
- Online peer community and support
- Local chapter networking opportunities and LTC Focus Group support

PDPH Organizational Membership (annual):

- One membership per facility
- Can be transferred to a new IP
- Link to sign up:

https://app.smartsheet.com/b/form/3e8cffae22f84c2692ee614321f816f0

Over $200 in value!

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Thank you, and Happy Thanksgiving!

PEN-FAST Score

PEN	*Penicillin allergy reported by patient*	☐ *If yes, proceed with assessment*
F	*Five years or less since reaction*[a]	☐ **2 points**
A	*Anaphylaxis or angioedema*	
	OR	☐ **2 points**
S	Severe cutaneous adverse reaction[b]	
T	*Treatment required for reaction*[a]	☐ **1 point**
		☐ **Total points**

Interpretation

Points	
0	**Very low risk** of positive penicillin allergy test <1% (<1 in 100 patients reporting penicillin allergy)
1-2	**Low risk** of positive penicillin allergy test 5% (1 in 20 patients)
3	**Moderate risk** of positive penicillin allergy test 20% (1 in 5 patients)
4-5	**High risk** of positive penicillin allergy test 50% (1 in 2 patients)

→ Proceed directly to oral challenge

→ Perform allergy skin testing

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