

Background

- Antibiotics are a common cause of drug allergic reactions in adults and children.
- Up to 25% of patients who require antimicrobial therapy report allergic reactions to at least one agent.
- Approximately 10% of patients report penicillin allergy, but up to 90% of these patients tolerate penicillin (PCN) and are unnecessarily designated as "allergic".
- Misconceptions about the definition of **true antibiotic allergy** among patients and prescribers are common and often lead to the use of alternative antimicrobial therapy with the potential for: suboptimal efficacy, increased healthcare costs, and adverse events (including potential selection for antimicrobial resistance).

Objectives

To describe how infectious diseases physicians (ID) identify and manage patients with reported antibiotic allergy and availability of penicillin allergy skin testing.

Methods

- Instrument:**
- 10- item web-based survey developed by the University of Miami in collaboration with the University of Iowa and Emerging Infections Network (EIN) staff.
 - January 18 –February 17, 2012
 - Two e-mail reminders were sent to non-responders at 1-week intervals.
- Participants:**
- 1,411 adult and pediatric infectious disease (ID) physicians who are members of the Infectious Diseases Society of America (IDSA) EIN in the USA and Canada.
 - The EIN is funded by the CDC and sponsored by IDSA.

Results

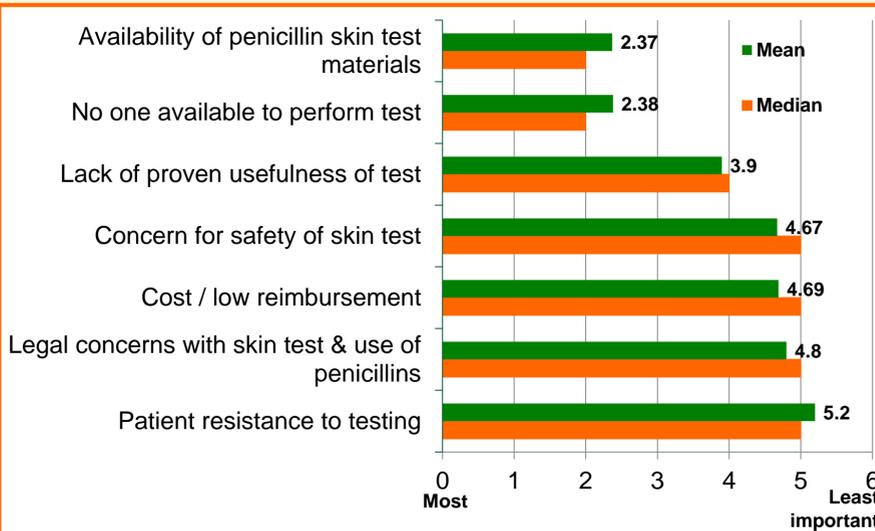
744/1411 (53%) respondents

- 537 (72%) respondents practiced ID in adult patient settings, 170 (23%) in pediatric settings and 37 (5%) in both.
- 582 (78%) had been consulted at least once in their past month of clinical service about the antibiotic management of patients with reported antimicrobial allergy.**
- Most useful questions for identifying a patient with an antimicrobial allergy when taking a medical history: (1) if the patient had previously taken the same antibiotic or a different agent from the same class, and (2) characteristics of the reaction.

•405 (60%) reported that PCN skin testing was available at their practice setting. Skin testing was performed by allergy/ immunology [362 (90%) respondents].

•268/357 (75%) reported that, despite availability, PCN skin testing was not routinely performed for elective surgical cases.

Figure 1: Reported Barriers* to the Implementation of B-lactam Allergy Testing. (No= 402)**



***No barriers reported by 209 (31%) respondents.

Clinical Vignettes

1. 44-year-old man recently diagnosed with HIV is hospitalized with severe *Pneumocystis jiroveci* pneumonia and a history of sulfa allergy (mild rash) at age 12.

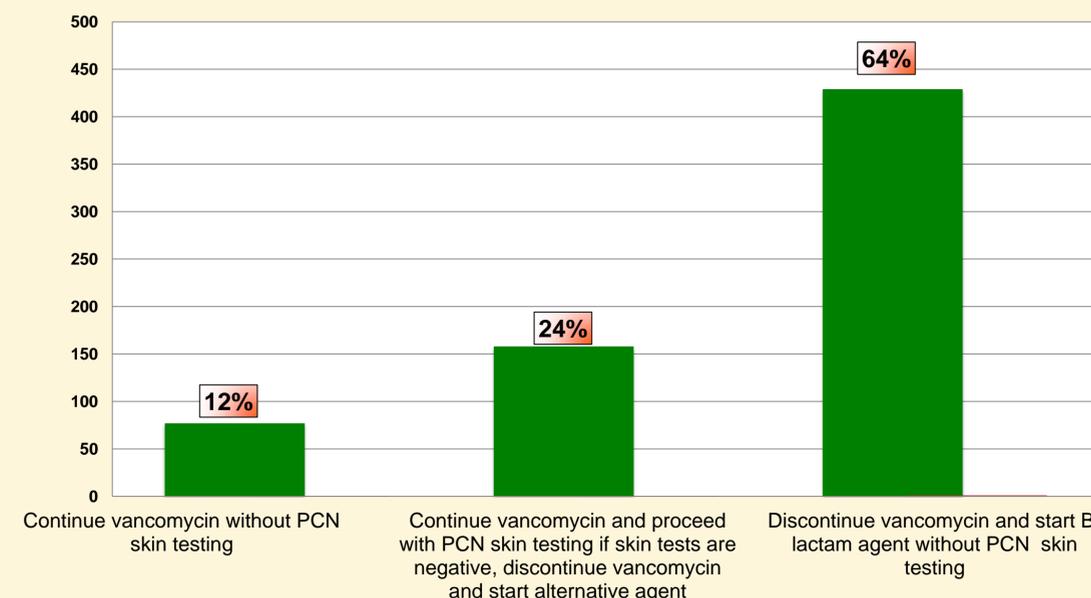
Prescribe trimethoprim/sulfamethoxazole (TMP/SMX)	235 (35%)
TMP/SMX desensitization/ alternative agent until desensitization completed	210 (32%)
Use an alternative agent to avoid TMP/SMX	220 (33%)

2. In a patient with a reported B-lactam allergy (mild, non-anaphylactic) and MSSA bacteremia, which of the following option(s) would you select (all that apply)? (No= 668)**

Cephalosporin	543 (81%)
Vancomycin	132 (20%)
Daptomycin	81 (12%)
Skin testing to confirm the history	77 (12%)
Carbapenem	42 (6%)
Other	48 (7%)

**119 respondents each selected more than one antibiotic option

3. 70-year-old woman with a Hx of PCN allergy hospitalized with a line infection, and started on vancomycin. Diagnosed with methicillin susceptible *S. aureus* (MSSA) bacteremia. 30 years previously the patient had a generalized pruritic rash 6 hours after she took the first tablet of PCN for a "sore throat" and resolved a day later. No other medications were taken at that time. The patient has thereafter avoided all β-lactams.



•628/670 (94%) not familiar with the guideline "Joint Task Force on Practice Parameters. Drug Allergy" Published in Oct 2010. *Annals of Allergy, Asthma and Immunology*.

Most useful sources of information for management of patients with antibiotic allergies. (No= 659)*

IDSA guidelines	606 (92%)
Online training course	246 (37%)
Education campaign for patients	216 (33%)
Other (educate providers, experience)	43 (6%)

*check all that apply; numbers add to more than 100%

Conclusions

- Infectious diseases physicians are frequently consulted for the management of patients with suspected or proven antimicrobial allergies.
- Better education about the importance of a detailed medical history and definitions of true antibiotic allergy could improve antimicrobial use and avoid misconceptions about allergic reactions.
- There is limited availability of PNC skin testing and allergy/ immunology specialists to test for allergies.
- Vancomycin continues to be inappropriately used in clinical practice, particularly for patients reporting an allergy only to PCN.
- Further studies are needed to evaluate the impact of antimicrobial allergies on antimicrobial stewardship.
- According to almost all respondents IDSA guidelines focused in this topic could be an important resource to guide the management of patients with antibiotic allergies.