

## 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

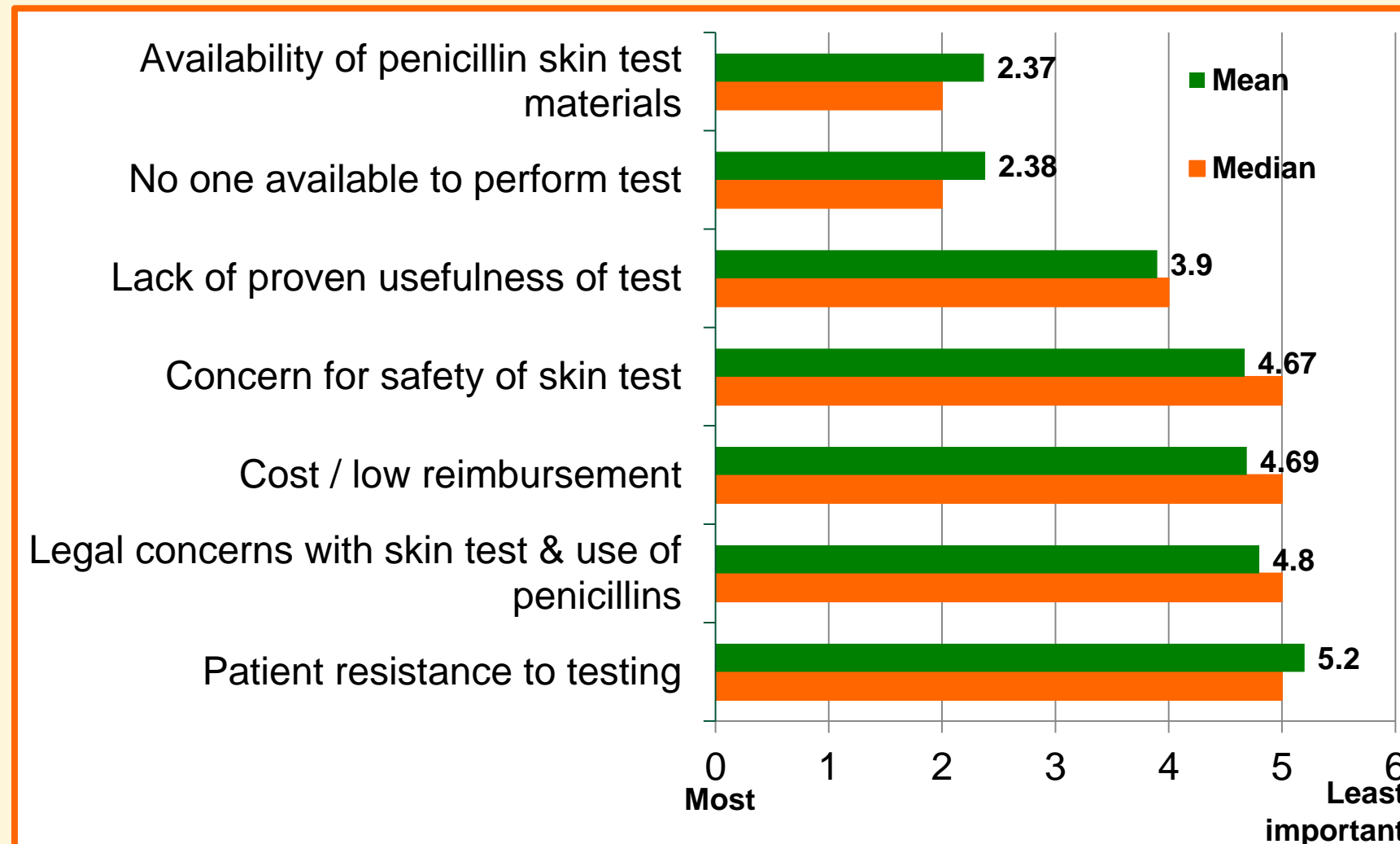
### 744/1411 (53%) respondents

- 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.

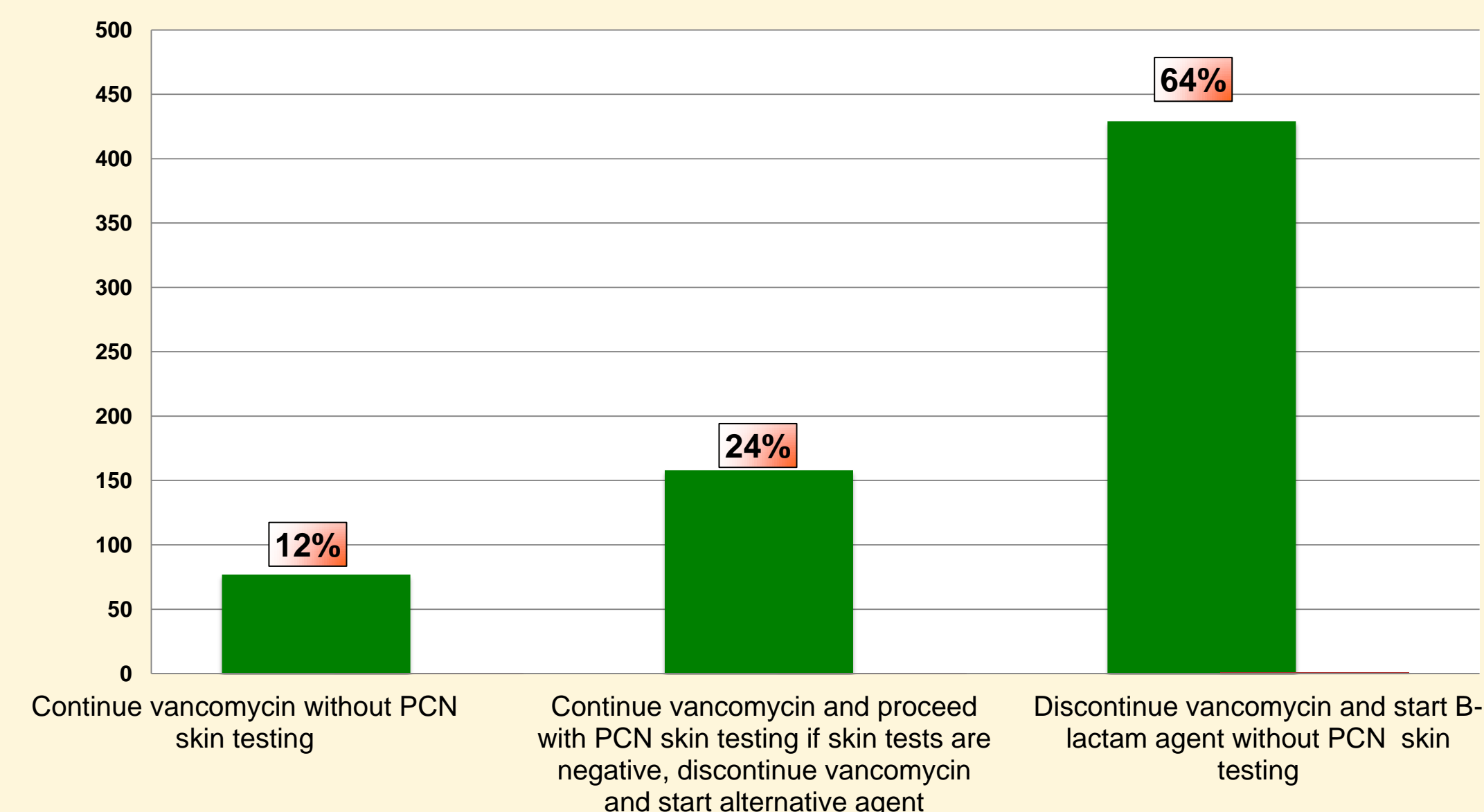
Prescribe trimethoprim/sulfamethoxazole (TMP/SMX)	235 (35%)
TMP/SMX desensitization/ alternative agent until desensitization completed	210 (32%)
Use an alternative agent to avoid TMP/SMX	220 (33%)

### 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.