Background

- Although 8-20% of the population is labeled penicillin allergic, >95% will tolerate penicillins after validated testing.
- Penicillin allergy labels (PAL) are associated with adverse outcomes, including nosocomial infections, surgical site infections, and increased time to receiving emergent antibiotics.
- Patient perception of their own PAL that could impact effectiveness of testing and their likelihood to undergo PA delabeling is unknown.

Objectives

- To ascertain beliefs, perceptions, and antibiotic utilization experiences of a current self-reported PA patient population.
- To identify potential barriers to PA delabeling.

Methods

Population
18,943 adult patients who have volunteered to receive IRB-approved recruitment emails.

Study Design
A single survey was emailed to potential participants with three biweekly reminder emails from October to December 2019.

Outcomes
- Differential antibiotic utilization between those reporting penicillin allergy and no penicillin allergy.
- Proportion of penicillin allergic who believed their penicillin allergy to be permanent, and who increased time to receiving emergent antibiotics.

Analysis
For continuous variables, median and interquartile range were calculated. For categorical variables, Fisher’s exact test or Pearson’s chi-squared statistic was used. Wilcoxon rank-sum test was used to compare continuous variables (Stata 15.0).

Results

<table>
<thead>
<tr>
<th>No Penicillin Allergy (n=4091)</th>
<th>Current Penicillin Allergy (n=1047)</th>
<th>Removed Penicillin Allergy (n=146)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender No. (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1599 (39)</td>
<td>275 (26)</td>
<td>45 (31)</td>
</tr>
<tr>
<td>Female</td>
<td>2464 (60)</td>
<td>769 (73)</td>
<td>99 (68)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (0)</td>
<td>0 (0)</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Declined to answer</td>
<td>26 (1)</td>
<td>3 (0)</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Race No. (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>3720 (92)</td>
<td>972 (93)</td>
<td>136 (93)</td>
</tr>
<tr>
<td>African American</td>
<td>167 (4)</td>
<td>44 (4)</td>
<td>3 (2)</td>
</tr>
<tr>
<td>Other</td>
<td>177 (4)</td>
<td>26 (2)</td>
<td>7 (5)</td>
</tr>
<tr>
<td>Declined to answer</td>
<td>27 (1)</td>
<td>5 (0)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

Conclusions

In the largest survey of penicillin allergic patients to date (penicillin allergic n= 1047):

Educational points for patients and providers necessary to upscale penicillin testing programs included:

Most adult penicillin allergic patients:

1) Have discussed at some point their penicillin allergy with their primary care provider
   - But didn’t discuss the negative consequences of a penicillin allergy
2) Believe their penicillin allergy to be permanent
   - But would take penicillin if tested by an allergist and deemed it to be safe and were interested in testing.

Penicillin allergic patients recalled:

- Having a markedly lower frequently of receiving penicillins (after index reaction), amoxicillin, amoxicillin/clavulanate
- More frequently receiving fluoroquinolones, macrolides, tetracyclines, clindamycin, sulfa antimicrobials, and vancomycin.

Delabeled patients recalled:

- More frequently receiving penicillin (after index reaction), amoxicillin, and amoxicillin/clavulanate compared to penicillin allergic participants.