

post-intervention group (4 [3–6] vs. 3 [2–6]  $P = 0.04$ ). Within the post-intervention group, 34 pharmacist interventions were attempted, with 83% of those interventions being accepted. Of these patients, 50% had antibiotics discontinued, 43% were switched to a third or fourth-generation cephalosporin, and 7% were switched to a carbapenem. None of these patients experienced hypersensitivity when challenged with an alternative  $\beta$ -lactam.

**Conclusion.** Implementation of a pharmacist-driven  $\beta$ -lactam allergy evaluation increased the appropriate use of  $\beta$ -lactams. Of the patients given an alternative  $\beta$ -lactam during their admission, none experienced a hypersensitivity reaction, which suggests their safe utilization in patients with reported penicillin hypersensitivity.

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### 1003. Impact of a Standardized Pharmacist-led $\beta$ -lactam Allergy Interview on the Quality of Allergy Documentation

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**Session:** 129. Antibiotic Stewardship: Allergy Evaluation

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**Background.** Reported  $\beta$ -lactam allergies are common and are associated with inappropriate antibiotic therapy, poor clinical outcomes, and increased hospital costs. Documentation of  $\beta$ -lactam reactions is often incomplete and many patients with a reported allergy can tolerate a  $\beta$ -lactam antibiotic. This study aims to evaluate the impact of a standardized interviewing tool used by pharmacists on the quality of  $\beta$ -lactam allergy documentation.

**Methods.** This is a single-center, prospective, quasi-experimental study of adult inpatients. Patients were included if they had a documented  $\beta$ -lactam allergy, were interviewed by a pharmacist utilizing a standardized tool, and had the  $\beta$ -lactam allergy updated in the electronic medical record. The primary outcome was the percentage of patients with a complete allergy history documented. A complete allergy history was defined as including a description of the type of reaction, time of the reaction, and timing of the reaction. Secondary endpoints included the documentation of individual allergy history components, including if interventions were required to manage the reaction, tolerance of other  $\beta$ -lactams and receipt of penicillin skin testing in the past. A subgroup analysis was also performed among patients who received antibiotics during the admission evaluating antibiotic use, length of stay, mortality, and readmission.

**Results.** The study included 107 patients. The average time to complete an interview was 14.8 minutes. After the interview, 11 (10%) patients had the  $\beta$ -lactam allergy label removed. Consequently 107 allergy labels were evaluated in the pre-interview arm and 96 allergy labels in the post-interview arm. More patients had a documented complete allergy history after pharmacist intervention (39% vs. 0%,  $P < 0.001$ ). Documentation of all components of the allergy history improved after the interview (Table 1). Additionally, the amount of patients with an unknown reaction significantly declined (21% vs. 6%,  $P = 0.004$ ).

**Conclusion.** The use of a standardized  $\beta$ -lactam allergy interview tool improved the quality of allergy documentation, led to de-labeling of  $\beta$ -lactam allergies, and reduced the amount of unknown reactions.

Table 1. Components of documented beta-lactam allergy before and after standardized interview

	Pre-interview N=107	Post-interview N=96	P-value
Complete allergy history	0	37 (39)	<0.001
Type of reaction	85 (79)	88 (92)	0.017
Time of reaction	4 (4)	84 (88)	<0.001
Timing of reaction	5 (5)	85 (89)	<0.001
Interventions received	5 (5)	36 (38)	<0.001
Tolerance of other beta lactams	12 (11)	50 (52)	<0.001
Receipt of penicillin skin testing	0	2 (2)	0.222
Beta-lactam allergy label removed	NA	11 (10)	NA

Data are described as number (%)

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### 1004. Interactive Dashboards for Antimicrobial Usage and Standardized Antimicrobial Administration Ratio Data

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**Background.** Antimicrobial stewardship (AMS) programs can report to the NHSN Antimicrobial Usage and Resistance (AU) module and receive Standardized Antimicrobial Administration Ratios (SAARs) to allow for inter- and intra-facility benchmarking. Output from NHSN for antimicrobial usage is a line listing, rate table, pie chart, or bar chart showing one location at a time, and a line listing for SAAR data. We aimed to create interactive data visualization dashboards for end-user's consumption and for the AMS program staff to identify potential areas of intervention.

**Methods.** A multidisciplinary work group consisting of data analysts, infectious diseases physicians, and infectious diseases pharmacists determined dashboard content, layout, and comparison charts. Graph types were tested to determine the best

visual output for antimicrobial usage data and SAAR. Patient-days and antimicrobial usage data based on bar-code administration were captured from the electronic medical record and imported into the NHSN platform for analysis. Analyzed data were then exported from the NHSN site for building the dashboards.

**Results.** A multi-faceted dashboard was developed in Tableau® to view antimicrobial usage data and SAAR. Dashboard capabilities include the option to view as facility wide, location type, or at a specific unit level for comparison of the usage of antimicrobial classes, specific agents, or SAARs for multiple locations. It can be visualized as a monthly or quarterly display. This allows for quick direct comparison of antimicrobial usage on the same graph by unit to determine outliers (Figure 1). The dashboard allows visualization of all SAAR types by location and unit level on one page showing the entire picture for the location type or unit (figures 2,3). These dashboards give the ability to trend antimicrobial usage and SAARs across units easier than reviewing a line listing or graph of each unit individually.

**Conclusion.** We developed interactive antimicrobial usage and SAAR dashboards. These dashboards can be used by hospitals reporting to NHSN for informing front line staff and for decision-making at the AMS program level.



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