patients had tolerated a β-lactam agent since the listed allergy. Overall, 70% of patients were hospitalized from the ED. Similar trends in antibiotic use were observed at admission – decreased FQs (38% pre vs. 27% post, $P = 0.059$), increased cephalosporins (24% pre vs. 38.4% post, $P = 0.021$). Two patients (1.6%) experienced a nonsevere reaction within 24 hours of β-lactam administration post-allergy assessment.

Conclusion. Pharmacist-driven PCN allergy assessment at the point of prescription in the ED was safe and effective at improving the use of guideline-preferred antibiotics and reducing FQ use.

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994. Effect on B-lactam Usage Following Implementation of Clinical Pharmacy Services to Improve B-lactam Allergy History Documentation

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Background. The purpose of this study was to implement a pharmacy-initiated β-lactam allergy assessment and to determine its impact on antibiotic prescribing patterns. Avoiding the use of β-lactams due to a documented allergy may lead to inferior treatment outcomes, particularly for indications where β-lactams are preferred.

Methods. This performance improvement study was conducted at a large community-based academic healthcare system in Delaware. A β-lactam allergy algorithm was developed to guide allergy assessments and categorize patients as low risk for possible reaction, possible type 1 reaction or insufficient information. Pharmacy residents and clinical pharmacists were educated on how to conduct the assessments, which were then performed on inpatients with a β-lactam allergy that were prescribed a non-β-lactam antibiotic from December 2018 through March 2019. The primary outcome of this study was the percentage of patients ordered a β-lactam antibiotic pre- and post-implementation of the assessment. Secondary outcomes included: allergy assessment classifications, number of patients with an allergy discrepancy, percentage of patients switched to a β-lactam antibiotic, development of a reaction, and the number of allergy consultations ordered. The primary endpoint was analyzed using a Chi-square test.

Results. The percentage of patients prescribed a β-lactam pre- and post-implementation was 59% and 63%, respectively ($P = 0.055$). A total of 101 patients had an allergy assessment performed. Assessments resulted in 45% of patients categorized as low risk, 45% as possible type 1 reaction and 10% as insufficient information. In summary, 33% of patients were changed to a β-lactam following completion of an assessment and zero patients experienced a reaction. Additionally, 69% of patients had an allergy discrepancy in their electronic medical record, and four patients received an allergy consultation.

Conclusion. The use of clinical pharmacy services to perform β-lactam allergy assessments was successful, as the majority of patients with a low-risk allergy classification were changed to a β-lactam antibiotic. The next steps for this project include engagement of infectious diseases and allergy specialists to further optimize clinical practice.

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995. A quality improvement initiative to increase penicillin allergy clarification and decrease aztreonam usage

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Background. Penicillin (PCN) allergy is a serious adverse reaction that prevents the use of first-line therapy. 10% of the population reports a PCN allergy; however, less than 1% is truly allergic. Elimination of false allergies significantly impacts patient's lives and decreases antimicrobial resistance and cost. Inova Mount Vernon Hospital (IMVH) has reported lack of pharmacist's interventions in allergy clarification and counseling thus leading to an increase in aztreonam usage.

The primary objective of the study was to increase pharmacist's interventions in patient allergy clarification and counseling. The secondary objective was to decrease aztreonam duration of therapy (DOT) by 10%.

Methods. This project was conducted and monitored M-F on the pharmacy true north board March-December 2018. The initial step was to create a standard work and educate pharmacists on individualized PCN allergy patients interviewing and counseling. Pharmacist's interventions tracking were made using the electronic reporting system. To quantify aztreonam usage, duration of therapy (DOT/1000) was collected during the study period and compared with data from 2017.

Results. During the study implementation, a total of 551 interventions pertaining to PCN allergy were documented by pharmacists between March-November 2018, compared with only 72 interventions made in March-November 2017 (7x increase, $P < 0.005$). Pharmacists while intervening clarified the allergy added the severity of the reaction, documented whether patients recently tolerated any PCN-based antibiotics, and de-labeled patients when appropriate. Allergy assessments lead to a decrease in aztreonam DOT/1000 by 12% in 2018 compared with 2017 and the overall antimicrobial stewardship goal was achieved.

Conclusion. Pharmacists interventions in allergy clarification helped with antibiotic de-escalation, improved safety, and de-labeled patients when appropriate. This initiative also increased physician and nursing awareness of the importance of clarifying PCN allergies. After successfully hardwiring this practice the pharmacy is partnering with nursing to implement PCN skin testing service at IMVH.

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996. Impact of Penicillin Allergy Labels on Carbapenem Use in a Multi-Center Study

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Background. Antibiotic allergy labels lead to excess exposure to broad-spectrum antibiotics and can result in patient harm. We aimed to describe the prevalence of penicillin allergy labels (PAL) across a variety of hospital settings and its association with carbapenem exposure.

Methods. We performed a retrospective cohort analysis of inpatient admissions from 14 hospitals in the Duke Antimicrobial Stewardship Outreach Network (DASON) and Duke Health System from 2016 to 2018. Data were collected from the DASON central database which is derived from electronic health record extracts. PAL was defined from drug allergy documentation indicating any reaction to penicillin or its related agents, but did not include labels for other β-lactam agents (e.g., cephalosporin). Carbapenem exposure was defined as a binary variable indicating receipt of at least one dose of meropenem, ertapenem, doripenem or imipenem on an inpatient unit. The association between PAL and carbapenem exposure was assessed using multivariable logistical regression with candidate covariates including age, gender, comorbidity score, and exposure to intensive care or hematology/oncology unit. Hospital-level PAL prevalence was defined as the percentage of inpatient admissions. Hospital-level carbapenem use rates were assessed as days of therapy (DOT) per 1000 patient-days and stratified by PAL to understand the portion of use associated with PAL.

Results. Of the 727,168 admissions included in this study, 84,033 (11.6%) patients had a PAL. The majority of admissions with documented PAL were in patients >65 years old (47.9%, $n = 40,240$) and female (57.8%, $n = 418,472$). PAL was associated with a 2-fold higher risk of receipt of carbapenem (adjusted odds ratio 2.13, 95% CI 0.89–2.40, $P < 0.0001$). PAL prevalence varied among hospitals (median 14%, range 5–20%). Hospitals with antibiotic allergy-focused stewardship programs (ASP) had a similar PAL prevalence (median 13.8 vs. 15.9%, $P = 0.08$), but the percent of carbapenem DOT used in patients with PAL was similar (median 23% vs. 24%, $P = 0.6$).

Conclusion. PAL was associated with increased carbapenem exposure on the patient level. Allergy-focused ASP activities may affect PAL but it is unclear whether it reduces carbapenem use based on these observational data.

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997. Practical partnering of Antibiotic Stewardship and Allergy to address referrals to Penicillin allergy debunking clinic at a VA Medical Center

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Background. The majority of Penicillin (PCN) allergies can be "debunked." During acute medical care, opportunities to refer for formal evaluation are often overlooked, hampered by medication-interactions and lack of time and resources for bedside testing. Frequently, inpatients are not referred for PCN debunking evaluations (PCN-DE). Antimicrobial Stewardship Teams (ASTs) who partner with Allergy Clinical Teams (ACTs) can work collaboratively to target those who would benefit from de-labeling and are unlikely to otherwise be referred for formal evaluation.

Methods. The DCVAMC is an urban 240 bed 1a complexity acute and LTC teaching hospital with both on-site AST and well-established ACT. β-lactam allergy was tracked by the AST in inpatient, outpatient and long-term care setting utilizing a clinical surveillance system (TheraDoc, DSS Inc.) and allergy education was incorporated into prospective auditing rounds. PCN-DE involved face-face visit with an Allergist and careful history, chart/medication review. Option for skin testing (Pre-Pen, ALK Abello) with/without oral challenge performed at the discretion of ACT. EMR was altered to reflect results.

Results. We collaborated to develop a PCN-DE outpatient Allergy Clinic on the hospital campus. 2,564 designed β-lactam allergy alerts were identified as part of routine AST workflow prior to the initiation of the clinic in October 2017. Referrals resulted from AST prospective audits, consults to ACT and by surveillance of historical allergy history among acute and LTC admissions. Providers, including trainees, were engaged through education and encouraged to place outpatient referrals at the time of discharge or upon follow-up. ACT evaluated patients in groups of 2–3/session, roughly one clinic/month. Mean age of patients tested 56.3y (24–80y) with 35% >65yo; to date, (19/26) 73% have been successfully de-labeled