

Figure 1: Flow chart of Penicillin Allergy Outcome After Removal

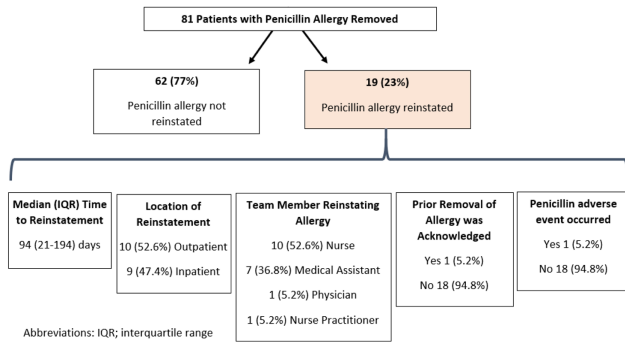


Table 1: Comparison of Patients Who Had Penicillin Allergy Reinstated Versus Those Who Did Not

Characteristics	Total (n=81)	Allergy Not Reinstated (n=62)	Penicillin Allergy Reinstated (n=19)	P value
Male Sex, n (%)	36 (44)	27 (43)	9 (47)	0.797
Age years median (IQR)	60 (49–68)	59 (48-68)	61 (52-69)	0.482
Age ≥65, n (%)	31 (38)	24 (39)	7 (37)	0.884
Self-Reported Race/Ethnicity, n (%)				
Black	38 (47)	27 (44)	11 (58)	0.273
White	38 (47)	30 (48)	8 (42)	0.631
Other	3 (3.7)	3 (5)	0 (0)	0.329
Unknown	2 (2.5)	2 (3)	0 (0)	0.428
Comorbidities				
Coronary Artery Disease or MI, n (%)	25 (31)	19 (31)	6 (32)	0.939
Congestive Heart Failure, n (%)	19 (24)	14 (23)	5 (26)	0.762
COPD, n (%)	25 (31)	16 (26)	9 (47)	0.075
Chronic Kidney Disease, n (%)	40 (49)	30 (48)	10 (53)	0.851
Diabetes	63 (78)	47 (76)	16 (84)	0.606
Solid Organ Cancer, n (%)	7 (9)	14 (23)	4 (21)	0.960
Leukemia or lymphoma, n (%)	8 (10)	6 (10)	2 (11)	0.588
Liver Disease, n (%)	15 (19)	9 (15)	6 (32)	0.105
Dementia, n (%)	0 (0)	0 (0)	0 (0)	NA
Solid Organ Transplant, n (%)	7 (9)	6 (10)	1 (5)	0.549
Psychiatric History, n (%)	22 (27)	16 (26)	6 (32)	0.621
Charlson Comorbidity Index, median (IQR)	6 (3–9)	6 (3–9)	6 (4.5–9)	0.344
Allergy Delabeling Mechanism				
Via History, n (%)	30 (37)	18 (29)	12 (63)	0.013
Skin Test and oral challenge, n (%)	51 (63)	44 (71)	7 (34)	0.013
Readmitted subsequently, n (%)	49 (61)	33 (53)	16 (84)	0.017

Abbreviations: IQR: interquartile range, MI: myocardial infarction, COPD: Chronic Obstructive Pulmonary Disease.

prior removal. Patients who undergo skin testing may be less likely to continue to report a penicillin allergy to medical staff compared to those whose allergy is removed based on history. Increased interactions with the health-care system may have contributed to having the allergy reinstated.

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Racial and ethnic differences in penicillin allergy reporting and allergist referral

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Background: Antimicrobial resistance (AMR) is a global public health crisis. A key strategy to combat AMR is to use targeted antibiotics, which is difficult in patients who report an allergy to penicillin. Increased risk for resistant infections, mortality, and healthcare costs are associated with penicillin allergies; however, up to 90% of those with a reported penicillin allergy do not have a true allergy. We investigated racial and ethnic differences related to penicillin allergy delabeling by analyzing rates of penicillin allergy reporting and referral for allergist consultation. **Methods:** Tufts Medical Center is a teaching medical center in Boston, Massachusetts. This study cohort contains all patients seen in 2019 by

Table 1A: Factors Associated with Penicillin Allergy Reporting

Characteristic	PCN Allergy (N=21,918)		OR	Univariate		Multivariable		
	No (n=19,527)	Yes (n=2,391)		95% CI	P-Value	OR	95% CI	P-Value
Mean Age, (SD)	50 (18)	53 (19)	1.11	(1.09, 1.14)	<.0001	1.06	(1.04, 1.09)	<.0001
Sex (%)					<.0001			<.0001
Male	8,767 (92)	768 (8)	Ref			Ref		
Female	10,760 (87)	1,623 (13)	1.72	(1.57, 1.88)		1.58	(1.44, 1.74)	
Race (%)					<.0001			<.0001
White	11,982 (87)	1,744 (13)	Ref			Ref		
Black	3,216 (90)	371 (10)	0.79	(0.70, 0.89)		0.77	(0.69, 0.87)	
Asian	4,329 (94)	276 (6)	0.44	(0.38, 0.50)		0.47	(0.41, 0.53)	
Hispanic (%)					0.08			-
No	18,756 (89)	2,314 (11)	Ref			-	-	-
Yes	771 (91)	77 (9)	0.81	(0.64, 1.03)		-	-	-
Median Allergy Count, (Range)	0 (0-29)	1 (0-34)	1.35	(1.31, 1.38)	<.0001	1.28	(1.25, 1.31)	<.0001

Table 1B: Factors Associated with Allergist Referral in People with Penicillin Allergy

Characteristic	Referral Allergy (N=2,391)		OR	Univariate		Multivariable		
	No (n=2,142)	Yes (n=249)		95% CI	P-Value	OR	95% CI	P-Value
Mean Age, (SD)	53 (19)	52 (17)	0.95	(0.89, 1.02)	0.171	-	-	-
Sex (%)					<0.001			0.009
Male	715 (93)	53 (7)	Ref			Ref		
Female	1,427 (88)	196 (12)	1.85	(1.35, 2.54)		1.52	(1.10, 2.10)	
Race (%)					0.033			0.013
White	1,582 (91)	162 (9)	Ref			Ref		
Black	315 (85)	56 (15)	1.74	(1.25, 2.41)		1.74	(1.25, 2.43)	
Asian	245 (89)	31 (11)	1.23	(0.82, 1.86)		1.35	(0.89, 2.05)	
Hispanic (%)					0.994			-
No	2,073 (90)	241 (10)	Ref			-	-	-
Yes	69 (90)	8 (10)	1	(0.47, 2.10)		-	-	-
Median Allergy Count, (Range)	1 (0-34)	1 (0-22)	1.17	(1.12, 1.22)	<.0001	1.16	(1.11, 1.21)	<.0001

clinicians at Primary Care Boston, the main primary care practice at Tufts Medical Center. Demographic data, documented allergies, and referral history were collected from the electronic medical record. We performed univariate and multivariable analyses using logistic regression models. Covariates found to be statistically significant ($P < .05$) in the univariate analyses were included in the multivariable model. **Results:** In total, 2,391 (11%) patients reported a penicillin allergy, but only 249 (10%) were referred to an allergist (Table 1). Black patients and Asian patients were less likely to report a penicillin allergy than White patients. We detected no differences related to Hispanic ethnicity. Black patients with penicillin allergy were more likely to be referred to an allergist. **Conclusions:** There were low rates of allergist referral for penicillin allergy delabeling in this cohort. We identified racial differences in both penicillin allergy reporting and allergist referral. Allergist consultation is an important opportunity to combat AMR and should be considered for all patients reporting a penicillin allergy. Future work should evaluate equitable access to allergy delabeling resources.

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Antimicrobial use patterns during the COVID-19 pandemic at an academic medical center

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Background: The COVID-19 pandemic has made a significant impact on antimicrobial use patterns across health systems. We have described antibiotic use patterns at an academic medical center in Richmond, Virginia, before and after the onset of COVID-19. We also examined the impact on the proportional consumption of carbapenems (PoCC) metric. PoCC represents meropenem utilization relative to the narrower-spectrum antipseudomonal agents cefepime and piperacillin-tazobactam. Our institution practices antimicrobial restriction for meropenem. All other antibiotics included in the study data can be freely ordered by any provider. **Methods:** We evaluated antimicrobial use data from September 2018 through August 2021 using days of therapy (DOT) per 1,000 patient days. We included 18 months of data before and after the first recorded COVID-19 admission at our institution in March 2020. Mean comparisons were performed using the Welch 2-sample *t* test. The Bonferroni correction