TABLE I. Characteristics of Patients Discharged While Neutropenic and Risk Factors for Subsequent Readmission and Serious Infection

	<200	(200-500)	>500	P-value*
N= 391	102 (26)	111(28)	178(45)	
Age (median)	9	10	12	0.3
Gender (%) M	61(60)	72 (65)	101 (57)	0.51
F	51(40)	39(35)	77 (43)	
Diagnosis N (%)	46(46)	44 (40)	49 (28)	0.01
ALL 139(35)	7(6)	17 (16)	21 (13)	
AML 45 (12)	10 (10)	15 (14)	33 (17)	
Lymphoma 58 (15)	39 (38)	34(30)	75 (42)	
ST 149 (38)				
Duration FNE(LOT) (median,SD)	4 (2-6)	6 (2-8)	8 (3-13)	0.03
(last fever-AC) (median Days)	2 (1-4)	4(2-7)	6 (4-9)	0.02
AMC values				
<100 mm 101(25%)	35(34%)	39 (35)	27 (15)	<0.01
>100 mm 290 (75%)	67(66%)	72 (65)	151 (85)	
Median Days (AMC100-AC)_	2 (1-3)	3(2-6)	5 (2-7)	<0.01
Median Days (APC300-AC)	1 (0-2)	2 (1-4)	5(2-7)	<0.01
Recurrent fever 29 (7.4)	12(11.7)	7(6.3)	10 (5.6)	0.08
AMC≤100 mm3 18 (18%)	9(25)	5 (12.8)	4 (15)	<0.001
AMC>100 mm3 11 (3.7%)	3 (4.4)	2(2.8)	6 (3.9)	
Readmission 10 d, 22(5.6)	10(10)	5(4.5%)	7 (4%)	0.07
AMC≤100 mm3	8(23)	4(10)	4 (14)	<0.001
AMC>100 mm3	2 (3)	1(1.3)	3(1.9)	
New BSI 5, (1%)	2 (1.9)	1(1)	2(1.1)	0.1
AMC≤100 mm3	2(2.8)	1(2.5)	1(3.7)	0.01
AMC>100 mm3	0 (0)	0(0)	1(0.6)	
New MDI (N=12, 1%)	5 (4.9)	3(2.7)	4(2.2)	0.58
AMC≤100 (9	4 (11.4)	2(5.1)	3(11)	0.01
AMC>100 (3	1(1.4)	1(1.3)	1(0.6)	
AdE (N=5, 0.5%)	2(1.9)	1(1)	2(1.1)	0.6
AMC≤100	2 (2.8)	1(1.3)	1(3.7)	0.05
AMC>100	0	0	1(0.6)	

Solid tumor, APC: absolute phagocyte count= APC, defined as ANC + AMC+ bands, MDI=microbiologically documented infection. Adverse events: vital signs changes require IVF, Pressors, or PICU admission. AC antibiotics cessation

* if there are 2 P values for each outcomes. First compare between ANC groups, and second compare between AMC<100 vs AMC>100 for same outcome.

Results. A total of 928 FN episodes (FNEs) were identified. 391 eligible FNEs occurred in 235 patients. Three groups were compared based on ANC (cells/μL) at the time of AC : < 200 in 102 (26%), 200-500 in 111 (28%), and >500 /uL in 178 (46%) (Figure1) with an overall ten-day recurrent fever rate 7.4% (29/391) and readmission rate of 5.6% (22/391). No significant differences in recurrent fever rates were identified among 3 ANC groups (11.7%,, 6.3% and 5.6% respectively, P=0.08) and readmission (10%,4.5%, 4%, respectively; P=0.07)(Table 1).In subset analysis of AMC for each ANC group, patients with AMC >100 at AC have favorable outcomes, regardless ANC threshold (P< 0.01) (Table 1). Median of length of stay of FN was 3 days shorter using AMC >100/uL for BMR compared with any threshold of ANC (P< 0.01) and decrease overall FN cost stay (P< 0.01) (Table 2). Similar analysis show APC >300/uL at time of AC has favourable outcomes and decrease LOS regardless ANC threshold (data not shown here).

Table 2: Cost-effectiveness analysis used AMC and APC as bone marrow recovery and for discharge

	(AMC<100vs 100)	P-value	(APC<300vs>300)	P-value
Ad-LOTD (ANC<200)	**83**	**0.02**	**23**	**0.03**
Ad-LOTD ANC(200-500)	**192**	**0.001**	**139**	**0.01**
Ad-LOTD ANC>500	**385**	**<0.001**	**353**	**<0.001**
Total Saving LOTD	**660**	**<0.001**	**515**	**0.001**
Total cost (1748$/day)	**1.153.680$**	**<0.001**	**990.220$**	**0.001**
DOT/1000 patient day	**314**	**0.01**	**245**	**0.03**

Ad-LOTD: Sum of cumulative additional days for all FNEs for specific category. Defined from day AMC>100 till AC, or APC>300 till AC. DOT: *Antibiotic* days of **therapy**,

Conclusion. Our results suggest that a AMC > 100 /uL regardless of ANC/uL, is a safe threshold value for empiric AC and discharge. This approach may shorten length of stay, reduce burden of cost of febrile neutropenia cost and potential long term antibiotics side effects.

Disclosures. **Lara Danziger-Isakov, MD, MPH**, Ansun (Individual(s) Involved: Self): Scientific Research Study Investigator; Astellas (Individual(s) Involved: Self): Scientific Research Study Investigator; Merck (Individual(s) Involved: Self): Consultant, Scientific Research Study Investigator; Pfizer (Individual(s) Involved: Self): Scientific Research Study Investigator; Shire (Individual(s) Involved: Self): Consultant, Scientific Research Study Investigator; Viracor: Grant/Research Support

65. Impact of an Antibiotic Side-Chain-Based Cross-Reactivity Chart on Antibiotic Use in Patients With β-lactam Allergies and Pneumonia

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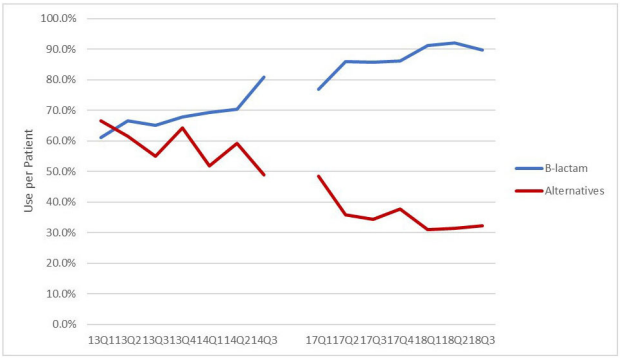
Session: P-04. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background. β-lactam antibiotics with dissimilar R-group side chains are associated with low cross-reactivity. Despite this, patients with β-lactam allergies are too often treated with alternative antibiotic therapy. An institutional β-lactam side-chain-based cross-reactivity chart was developed and implemented to guide in antibiotic selection for β-lactam allergies patients.

Methods. This single center, retrospective, cohort study analyzed the impact of the implementation of the cross-reactivity chart for patients with documented β-lactam allergies with pneumonia. Study time periods were defined as January 2013 to October 2014 prior to implementation of the chart (historical cohort) and January 2017 to October 2018 (intervention cohort) following institutional implementation and adoption. The primary outcome was the incidence of β-lactam utilization between time periods. Propensity-weighted scoring and interrupted time-series analyses compared outcomes across time periods.

Results. A total of 341 and 623 patient encounters were included in the historical and intervention cohorts, respectively. There was a significant increase in the use of β-lactams for treatment of pneumonia (70.4% vs 89.3%; p < 0.001) and the use of any alternative therapy decreased between cohorts (58.1% vs. 36%; p < 0.001) (Figure 1). β-lactam use per patient significantly improved between cohorts in patients with mild, Type 1 IgE-mediated hypersensitivity reactions (HSRs) and in patients with unknown reactions. There was no difference in overall HSRs between cohorts (2.4% vs. 1.45; p = 0.628), or in patients who received β-lactam antibiotics (1.3% historical group vs 1.1% intervention group; p = 0.467). Median alternative antibiotic days of therapy (3 vs. 2; p = 0.027) and duration of therapy per patient (3 days vs. 2 days; p = 0.023) decreased between cohorts. There was a significant increase in mortality while healthcare facility-onset *Clostridioides difficile* infections decreased between cohorts.

β-Lactam vs. Alternative Therapy Use per Patients by Calendar Quarter



Conclusion. Implementation of a β-lactam side-chain-based cross-reactivity chart significantly increased the utilization of β-lactams in patients with pneumonia without increasing HSRs.

Disclosures. **All Authors**: No reported disclosures

66. Improving Antimicrobial Stewardship through Allergy Testing Referrals

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Session: P-04. Antimicrobial Stewardship: Outcomes Assessment (Clinical and Economic)

Background. Penicillins and cephalosporins (PCN/CEPH) are considered first-line antibiotics for numerous infections for their efficacy, tolerability, and cost effectiveness. Unfortunately, their use may be precluded in approximately 10% of the general adult population who self-report 'allergy'. As a result, suboptimal antimicrobials are substituted which may increase toxicities, length of hospitalizations, and antimicrobial resistance with subsequent expense and morbidity. Multiple organizations endorse beta-lactam allergy skin testing (BLAST) as an essential component of antimicrobial stewardship programs. In an attempt to better describe this patient population as well as to protocolize and improve rates of referral to allergy/immunology clinic, a quality initiative was undertaken at our institution.

Methods. Adult inpatients for whom an infectious disease consult was placed over a 6-month period were chart-reviewed for PCN/CEPH allergy. Inappropriately charted allergies were reconciled and patients were recommended referral to allergy/immunology for formal evaluation with BLAST when appropriate. Referrals were placed for agreeable patients who were then evaluated for appropriateness through history and then scheduled for BLAST. Patients who tolerated oral exposures without adverse effects had the allergy removed from their chart and were educated.

Results. 322 patients met inclusion criteria for allergy referral. Of those, 103 agreed to further evaluation, and referrals were placed for 100%. Unfortunately, 7 patients died before referrals could be completed, and 88 referred patients did not complete BLAST for other reasons. In total 8 patients completed BLAST, and allergy was de-labeled in 75% (N= 6) of those cases.

Conclusion. Our data indicated similar prevalence of reported PCN/CEPH allergy between our institution and the general population. We achieved our aim of improving allergy referral rates among this population, however there was a high rate of attrition in the transitions of care. Qualitative review of selected patients highlights common thematic barriers including the COVID-19 pandemic, fiscal concerns, and acuity of condition. Future directions should include BLAST at the point of care or making referrals from the primary care setting.

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67. Transitioning from Permissive to Restrictive Urine Reflex Criteria: Compiling the Data

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Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Reflex urine cultures (UCx) are a diagnostic stewardship practice that limit the progression of UCx to specimens that meet pre-defined urinalysis criteria, but there is no widely recommended threshold for culture. At our institution, urinalyses (UAs) are reflexed to UCx for positive nitrites, leukocyte esterase, presence of bacteria, or ≥5 white blood cells per high powered field (WBC/hpf). Our aim is to assess if a more restrictive criteria of >10 WBC/hpf would result in missed UTI diagnoses.

Methods. We performed a retrospective chart review of a systematic sampling of urine specimens collected from July 2018 to June 2019 in the emergency department and adult inpatient units. Inclusion criteria were UA with a WBC/hpf of 5-10 – samples that would not reflex to culture under our proposed criteria – and a UCx. We recorded signs, symptoms and antibiotic use via chart review. Positive UCxs were defined as ≥10e5 CFU/mL of bacterial growth (BG) and these cases were assessed using standardized CDC UTI definitions.

Results. 486 urine specimens with < 10e5 CFU/mL BG and 96 with ≥10e5 CFU/mL BG met inclusion criteria. Chart review was performed on 99 cases. 81 (82%) specimens had negative UCxs and 18 (18%) were positive. 45% had documented localizing UTI symptoms. 26% of all urine studies were sent for an indication of fever, 15% for altered mental status (AMS), and 8% for malaise. Among the 18 patients with positive UCxs, 11 (61%) met UTI criteria. Among the 81 patients with negative UCxs, 33/81 (41%) had a local symptom compatible with UTI. 7/81 (9%) patients had positive tests from other body sites; all 7 of these UCxs were sent for a new or worsening fever.

Conclusion. Of the 99 UCxs reviewed, less than half had a urinary symptom consistent with UTI, and almost half of studies were sent for non-specific indications such as fever, which suggests reflex UCxs are overutilized at our institution. However, our data demonstrate that a more restrictive UCx criteria may not be the solution, as at least 11 clinically significant UTIs would have been missed under the new criteria. We recommend improved clinical decision support tools and more data to validate restrictive reflex UCx criteria before their implementation.

Disclosures. **All Authors**: No reported disclosures

68. Impact of *Streptococcus pneumoniae* Urinary Antigen Testing in Patients with Community-Acquired Pneumonia Admitted within a Large Academic Medical System

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Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Limited data support the use of pneumococcal urinary antigen testing (PUAT) for patients admitted with community-acquired pneumonia (CAP) as a stewardship tool to curtail the use of broad-spectrum antimicrobials. At NYULH, CAP guidelines and admission order set were developed to standardize diagnostic testing, including PUAT. In this study we describe patients with positive versus negative PUAT and evaluate de-escalation and patients' outcomes.

Methods. This was a retrospective study of adults admitted with diagnosis of CAP between January-December 2019 who had a PUAT performed. The primary outcome was incidence and timing of de-escalation of antimicrobials following PUAT result. Among patients with a positive PUAT we compared hospital length of stay (LOS), incidence of Clostridioides difficile infection (CDI), infection-related readmission within 30 days, and in-hospital mortality among those who were de-escalated versus those who were not de-escalated/required escalation.

Results. We evaluated 910 patients, of which 121 (13.3%) were PUAT positive. No difference in baseline characteristics, including severity of illness as represented by the Pneumonia Severity Index (97 [IQR 76-117] vs 89 [IQR 67-115], p=0.083) and Charlson Comorbidity Index, were observed between PUAT positive and negative groups. Time to PUAT testing occurred shortly after presentation to the hospital in both cohorts (16h [IQR 16-27] vs 13h [IQR 8-22], p=0.140). Initial de-escalation occurred in 97/117 (82.9%) and 629/775 (81.2%) of PUAT positive and negative patients, respectively (p = 0.749). Median time to de-escalation was shorter in the PUAT positive cohort (1 [IQR 0-2] vs 1 [IQR 1-2] day, p = 0.01). Among the PUAT positive group, hospital LOS stay was shorter in patients who were de-escalated compared to those who were not de-escalated/required escalation (6 days [IQR 4-10] vs 8 days [IQR 7-12], p=0.0005) with no difference in the incidence of CDI (2 [2.1%] vs 1 [3.7%], p=0.535), in-hospital mortality (4 [4.3%] vs 3 [11.1%], p=0.185), or 30-day infection-related readmission (2 [2.1%] vs 1 [3.7%], p=0.535).

Conclusion. PUAT positivity resulted in quicker time to targeted therapy for CAP. Among patients with a positive PUAT, initial de-escalation of antimicrobials did not lead to worse patient outcomes.

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69. Implementation of a Pharmacist-Driven Blood Culture Communication Process in a Non-Profit Community Hospital

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Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Rapid diagnostic testing allows for faster identification of culture results and quicker time to targeted antimicrobial therapy. For this to be effective, however, the clinician needs to understand its capabilities and limitations. Pharmacists are well-positioned to assist providers in interpreting rapid diagnostic test results and in the selection of optimal antimicrobial therapy. This study aims to determine if implementing a process in which pharmacists communicate positive blood culture and rapid diagnostic test results improves time to optimal antimicrobial therapy in a community-based hospital.

Methods. In November 2020, Mercy Medical Center implemented a new process in which positive blood culture and rapid diagnostic test results are communicated to a pharmacist instead of a nurse on the patient care unit. The pharmacist is responsible for interpreting the results, assessing patient information, and providing the culture results along with drug therapy recommendations to the appropriate licensed independent practitioner. This study was a single-center, pre-post, quasi-experimental study (Pre: November 2019-March 2020; Post: November 2020-March 2021). The electronic medical record was used to identify admitted patients 18 years and older with positive blood cultures in which treatment was provided. Time from culture positivity to optimal antimicrobial therapy was collected and compared pre-post intervention. Secondary outcomes included hospital length of stay and mortality.

Results. A total of 480 patients were identified during the study period, of which 247 met inclusion criteria (n = 125 in 2019-2020; n = 122 in 2020-2021) with comparable baseline characteristics. There was no statistical difference in time to appropriate therapy between the groups (p = 0.796). Time to optimal therapy was 6.12 hours shorter in the post-intervention cohort (p = 0.0492). No difference was found for both secondary outcomes of hospital length of stay and inpatient mortality (p = 0.2958, p = 0.096, respectively).

Conclusion. A pharmacist-led blood culture communication process improved the care of hospitalized patients in a non-academic, community-based hospital by shortening time to optimal antimicrobial therapy.

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70. Impact of the Accelerate Pheno™ System on Clinical and Antimicrobial Outcomes among Inpatients with Gram-Negative Bacteremia at a 528-bed Community Teaching Hospital

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Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Traditional methods in blood culture analysis require 24-72 hours to yield identification (ID) and antimicrobial susceptibility testing (AST) results, which may contribute to the use of empiric broad-spectrum antibiotic therapy. Hence, the primary objective of this study was to determine the impact of rapid blood culture analysis with the Accelerate Pheno™ system (AXDX) on time to antibiotic de-escalation.

Methods. This was a single center, case-control analysis of adult inpatients with *E. coli* or *Klebsiella* spp. bacteremia. Cases were prospectively identified by the antimicrobial stewardship team between August and October 2020 after the implementation of AXDX in July 2020. Subjects were matched to historical controls (July 2018-July 2020) based on age (± 3 years), gender, source of infection, and identified organism. The primary outcome was time to antibiotic de-escalation and time to oral antibiotic therapy from the time of positive blood cultures. Secondary outcomes included hospital length of stay, 30-day mortality, 30-day readmission, and 60-day *C. difficile* infection. Outcomes were compared using descriptive and inferential statistics.

Results. Of 33 cases identified, 30 (91%) were matched with historical controls. *E. coli* bloodstream infection was identified in 24 (80%) subjects while *Klebsiella* spp. was identified in 6 (20%) subjects. The average age was 66 years (SD ± 19) and there was an even distribution of males and females in both groups. Other demographics were similar between groups. The median time to species identification [14 hours (IQR 13 – 18) vs 34 hours (29 – 39), p< 0.001) and AST [20 hours (19 – 37) vs 45 hours (38 – 51), p< 0.001] from laboratory registration was significantly shorter in cases. The average time to antibiotic de-escalation was 1.7 (±1.2) days for cases compared to 2 (±1.3) days for controls (p=0.460). Median time to oral antibiotic therapy from positive blood cultures was 2.9 (1.8 – 4.7) days for cases and 3.4 (2.5 – 5.1) days for controls (p=0.166). There were no significant differences in the secondary outcomes.