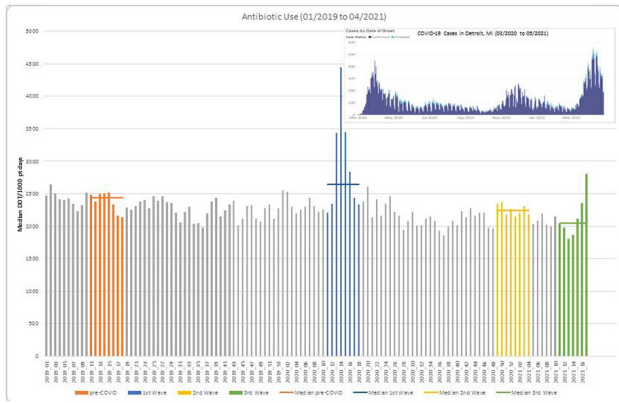


Figure 1. Antibiotic Use 01/2019 to 04/2019



**Conclusion.** Antibiotics used to treat bacterial pneumonia during the 1st wave of the pandemic increased and there was a shift to broader spectrum agents during that period. The increased use was not sustained during the 2nd and 3rd waves of the pandemic, possibly due to the increased awareness of the differences between patients who present with COVID-19 pneumonia and bacterial pneumonia.

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**155. Antimicrobial Resistance Patterns as a Predictor of Standardized Antimicrobial Administration Ratio: A National Correlation Study**

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**Session:** P-09. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

**Background.** Data on antimicrobial usage (AU) and antimicrobial resistance (AR) is submitted to the National Healthcare Safety Network (NHSN) from facilities monthly. Bacterial proportion resistant (%R) from the AR option reports proportion of isolates resistant to specific antimicrobial categories. Standardized Antimicrobial Administration Ratio (SAAR), generated under the AU option, compares observed to predicted days of antimicrobial therapy. The purpose of this study was to evaluate the association between %R and SAAR for broad-spectrum antibacterial agents predominantly used for hospital-onset infections (BSHO) and antibacterial agents predominantly used for resistant gram-positive infections (gram-pos) in adult intensive care units (ICUs) and medical-surgical wards (M/S).

**Methods.** This retrospective observational review utilized data reported to NHSN to examine the association of BSHO and gram-pos SAARs with %R for various phenotypic categories by quarter from 2017 through the second quarter of 2020. Phenotypic categories included methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococcus faecalis* and *faecium* (VRE), extended-spectrum cephalosporin-resistant *Escherichia coli* and *Klebsiella* spp. (ESBL), and multi-drug resistant *Pseudomonas aeruginosa* (MDR PSA). Pearson correlations were used to quantify the associations between SAARs and %R.

**Results.** A total of 182 institutions were included for analysis. Weak, positive correlations were observed between SAAR for BSHO in ICU and M/S for MDR PSA %R and also for ESBL %R ( $r = 0.14$  to  $0.22$ , all  $p < 0.0001$ ). For the gram-pos SAAR in ICU and M/S, there were weak positive correlations between MRSA %R and VRE %R ( $r = 0.20$  to  $0.31$ , all  $p < 0.0001$ ).

**Conclusion.** SAARs are multifactorial, yet these results highlight that more resistant organisms may possibly be contributing to higher use of antimicrobials for facilities. Future SAAR calculations could consider incorporating resistance trends from %R within the institution for increases in AU and adjusting SAARs accordingly. Comprehension of the relationship between %R and SAAR can aid facilities with stewardship programs and understanding how resistance contributes to antibiotic usage.

**Disclosures.** Julia Moody, MS, Medline (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product) Molnlycke (Other Financial or Material Support, Conducted studies in which participating hospitals received contributed antiseptic product)

**156. Evaluation of Trends in Antimicrobial Use and Proportion of Culture Positive Gram-Negative/Gram-Positive Pathogens Comparing Prior to and During the SARS-CoV-2 Pandemic: A Multicenter Evaluation**

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**Session:** P-09. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

**Background.** Increased risk for bacterial co-infections has been described in the pathogenesis of primary viral infections. We evaluated trends in incidence of antibiotic

use (abx) and culture positive Gram negative/Gram positive (GN/GP) pathogens in US hospitalized patients prior to and quarterly during the SARS-CoV-2 pandemic.

Table. Trends in antimicrobial use, duration, and positive GN/GP pathogen results.

	SARS-CoV-2 positive (n = 125, 303)		SARS-CoV-2 negative (n = 1,294, 444)		Not tested (n = 3,457,275)		Total Admissions (n = 4,877,022)	
	ABX ≥ 24 hrs	GN/GP positive culture	ABX ≥ 24 hrs	GN/GP positive culture	ABX ≥ 24 hrs	GN/GP positive culture	ABX ≥ 24 hrs	GN/GP positive culture
<b>Total 7/1/19-5/15/21</b>	<b>66.2%</b>	<b>8.4%</b>	<b>36.7%</b>	<b>6.8%</b>	<b>27.5%</b>	<b>4.5%</b>	<b>31.0%</b>	<b>5.2%</b>
Median ABX duration (days)	3.5	4.0	2.9	3.4	2.8	3.2	2.8	3.3
7/19-2/20 Pre-pandemic					30.0%	5.3%	30%	5.3%
Median ABX duration (days)					2.8	3.2	2.8	3.2
3/20-5/20	66.2%	8.8%	43.8%	7.9%	27.8%	4.9%	32.0%	5.4%
Median ABX duration (days)	3.6	3.9	2.9	3.3	2.8	3.5	2.9	3.5
6/20-8/20	65.1%	9.0%	36.9%	7.1%	21.4%	2.9%	30.6%	5.2%
Median ABX duration (days)	3.6	4.1	2.9	3.4	2.5	3.0	2.9	3.3
9/20-11/20	67.0%	7.6%	36.5%	6.7%	23.2%	3.1%	31.8%	5.1%
Median ABX duration (days)	3.4	3.9	3.0	3.4	2.8	3.1	3.0	3.5
12/20-2/21	66.7%	8.3%	35.3%	6.4%	23.7%	2.9%	33.6%	5.3%
Median ABX duration (days)	3.4	3.9	3.0	3.4	2.8	3.1	3.0	3.5
3/21-5/21	65.4%	8.4%	35.0%	6.3%	21.7%	2.9%	30.3%	4.9%
Median ABX duration (days)	3.6	4.0	2.9	3.4	2.6	3.1	2.9	3.4

**Methods.** We conducted a multi-center, retrospective cohort analysis of all hospitalized patients from 241 US acute care facilities with >1-day inpatient admission between 7/1/19-5/15/21 in the BD Insights Research Database (Franklin Lakes, NJ USA). SARS-CoV-2 infection was defined as a positive PCR during or ≤7 days prior to hospitalization. Admissions with abx prescribed ≥24 hrs and a GN/GP non-contaminant, positive culture were evaluated.

**Results.** During the pre-pandemic period (7/19 - 2/20) 30% (600,116/2,001,793) admissions were prescribed abx ≥ 24 hrs and 5.3% were positive for a GN/GP pathogen (Table 1). During the SARS-CoV-2 pandemic, abx use ≥ 24 hrs (66.2%) and positive GN/GP culture (8.4%) was highest in SARS-CoV-2 positive patients followed by patients negative for SARS-CoV-2 (abx ≥ 24 hrs 36.7%; GN/GP pathogens 6.8%), and SARS-CoV-2 not tested (abx ≥ 24 hrs 27.5%; GN/GP pathogens 4.5%). GN/GP positive culture was consistent by quarter during the pandemic for SARS-CoV-2 positive patients, whereas SARS-CoV-2 negative and not tested patients had the highest proportion of antibiotics received and positive pathogens in the first three months of pandemic. SARS-CoV-2 positive patients with positive GN/GP culture had the longest median abx duration. (Table 1) The prevalence of abx usage was highest in all groups for all abx during the early pandemic and then declined over time with the largest declines in SARS-CoV-2 positive patients. (Table 2)

**Conclusion.** This study highlights the impact of viral infections on both prescribing practices and prevalence of bacterial pathogens. Approximately two-thirds of SARS-CoV-2 positive patients received an antibiotic despite a low percentage of positive cultures, however aggregate antimicrobial use overall was similar prior to compared to during the SARS-CoV-2 pandemic. These data may inform opportunities for stewardship programs and antibiotic prescribing in the current and future viral pandemics.

**Disclosures.** Laura A. Puzniak, PhD, Merck & Co., Inc. (Employee) Karri A. Bauer, PharmD, Merck & Co., Inc. (Employee, Shareholder) Kalvin Yu, MD, BD (Employee) Vikas Gupta, PharmD, BCPS, Becton, Dickinson and Company (Employee, Shareholder)

**157. A Multicenter, Mixed-Method Evaluation of Delayed Hospital Discharge in Patients with Invasive Candidiasis Receiving Echinocandins**

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**Session:** P-09. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

**Background.** Patients with systemic candidiasis often receive prolonged echinocandin therapy in the inpatient or outpatient setting. Rezafungin is a novel echinocandin currently in clinical trials characterized by once-weekly dosing interval. In order to understand the potential benefit of rezafungin to facilitate earlier hospital discharge, the purpose of this project was to better understand barriers to discharge in patients with proven or suspected invasive candidiasis.

**Methods.** Electronic health records from two large health systems (20+ hospitals) were reviewed to identify patients given an echinocandin. Patients given an echinocandin until hospital discharge were evaluated for outpatient use as well as barriers that prevented earlier discharge. Identified barriers were developed into a quantitative framework and a qualitative interview guide. Using a constant comparative method, the framework for hospital discharge barriers was constructed using a series of open-ended questions and axial coding to identify discharge barrier themes. Results were integrated to produce a mixed-method model.

**Results.** A total of 1,665 echinocandin courses were evaluated. Five hundred and thirty-four patients (32%) received echinocandin therapy until at least the day of