severely ill patients (AOR = 11.7;95%CI:4.5–30.1) and those who received antibiotics within 24 h before hospital admission (AOR = 1.6;95%CI:1.0–2.5).

Antimicrobials *	Suspected COVID-19 Patients (n = 1188) n(%)	Within 24 h before Admission			On Admission		
		SARS-CoV-2 Positive (n = 257) n(%)	SARS-CoV-2 Negative (n = 931) n(%)	p-Value	SARS-CoV-2 Positive (n = 257) n(%)	SARS-CoV-2 Negative (n = 931) n(%)	p-Value
Antibiotic							
Antibiotics used in total	1090 (91.7%)	562 (47.3%)			1057 (89.0%)		
Cephalosporin	761(64.1)	25(9.7)	161(17.3)	0.003	127(49.4)	600(64.4)	<0.001
First-generation	4(0.3)	1(0.4)	3(0.3)	0.870	0	0	
Second-generation	69(5.8)	5(2)	13(1.4)	0.523	7(2.7)	47(5.1)	0.113
Third-generation	708(59.6)	19(7.4)	145(15.6)	0.001	120(46.7)	554(59.5)	<0.001
Fourth-generation	1(0.1)	0	0	0	0	1(0.1)	0.599
Macrolide	481(40.5)	104(40.5)	223(24.0)	<0.001	85(33.1)	180(19.3)	<0.001
Penicillin	200(16.8)	6(2.3)	27(2.9)	0.625	38(14.8)	140(15.0)	0.920
Aminoglycoside	114(9.6)	1(0.4)	6(0.6)	0.636	7(2.7)	102(11.0)	<0.001
Quinolones	63(5.3)	3(1.2)	8(0.9)	0.648	11(4.3)	41(4.4)	0.932
Tetracycline	76 (6.4)	10(3.9)	14(1.5)	0.016	17(6.6)	39(4.2)	0.104
Carbapenems	45(3.8)	0	3(0.3)	0.362	11(4.3)	33(3.5)	0.580
Oxazolidinone	12(1.0)	0	0		3(1.2)	9(1.0)	0.776
Glycopeptides	10(0.8)	0	0		2(0.8)	8(0.9)	0.900
Nitroimidazoles	13(1.1)	0	1(0.1)	0.599	3(1.2)	9(1.0)	0.776
WHO AWaRe classification antibiotics							
Access	370 (31.1)	68 (5.7)			329 (27.7)		
Watch	1016 (85.5)	514 (43.3)			949 (79.9)		
Reserve	12 (1.0)	0			12 (1.0)		
Antiviral drug							
Antiviral used in total	16 (1.4)	0			16 (1.4)		
Acyclovir	3 (0.3)	0	0	-	0	3 (0.3)	0.362
Adefovir	1 (0.1)	0	0	-	0	1 (0.1)	0.599
Zidovudine	1 (0.1)	0	0	-	0	1 (0.1)	0.599
Valacyclovir	3 (0.3)	0	0	-	1 (0.4)	2 (0.2)	0.622
Favipiravir	8(0.7)	0	0	-	1 (0.4)	7 (0.7)	0.529
Antiparasitic drug							
Antiparasitic drug used in total	33(2.8)	3 (0.3)			30 (2.5)		
Ivermectin	33(2.8)	1 (0.4)	2(0.2)	0.622	9(3.5)	21(2.7)	0.260

*Multiple response

Antimicrobials used among suspected COVID-19 patients and SARS-CoV-2 positive and negative patients 24 h before and on hospital admission at 12 selected hospitals in Bangladesh, March–August 2020

Antimicrobials	Disease Severity				
	Mild (n = 436) n(%)	Moderate (n = 389) n(%)	Severe (n = 326) n(%)	Critical (n = 37) n(%)	Total (n = 1188) n(%)
Antibiotic	334(76.6)	367(94.3)	321(98.5)	35(94.6)	1057(89.0)
Cephalosporin	197(45.2)	259(66.6)	250(76.7)	21(56.8)	727(61.2)
First-generation	0	0	0	0	0
Second-generation	10(2.3)	30(7.7)	10(3.1)	4(10.8)	54(4.6)
Third-generation	187(42.9)	231(59.4)	239(73.3)	17(46.0)	674(56.7)
Fourth-generation	0(0)	0(0)	1(0.3)	0(0)	1(0.1)
Macrolide	88(20.2)	98(25.2)	74(22.7)	5(13.5)	265(22.3)
Penicilin	48(11)	59(15.2)	63(19.3)	8(21.6)	178(15.0)
Aminoglycoside	15(3.4)	37(9.5)	51(15.6)	6(16.2)	109(9.2)
Quinolones	27(6.2)	11(2.8)	13(4)	1(2.7)	52(4.4)
Tetracycline	18(4.1)	16(4.1)	16(4.9)	6(16.2)	56(4.7)
Carbapenems	17(3.9)	6(1.5)	18(5.5)	3(8.1)	44(3.7)
Oxazolidinones	4(0.9)	3(0.8)	2(0.6)	3(8.1)	12(1.0)
Glycopeptides	4(0.9)	2(0.5)	2(0.6)	2(5.4)	10(0.8)
Nitroimidazoles	9(2.1)	2(0.5)	0(0)	1(2.7)	12(1.0)
WHO AWaRe classification antibiotics					
Access	82(18.8)	106(27.2)	122(37.4)	19(51.3)	329(27.7)
Watch	287(65.8)	341(87.7)	293(89.9)	28(75.7)	949(79.9)
Reserve	4(0.9)	3(0.8)	2(0.6)	3(8.1)	12(1.0)
Antiviral drug					
Acyclovir	2 (0.5)	0	0	1 (2.7)	3 (0.2)
Adefovir	0	1 (0.3)	0	0	1 (0.1)
Zidovudine	1 (0.2)	0	0	0	1 (0.1)
Valacyclovir	3 (0.7)	0	0	0	3 (0.2)
Favipiravir	2 (0.5)	0	6 (1.8)	0	8 (0.7)
Antiparasitic drug					
Ivermectin	3(0.7)	6(1.5)	16(4.9)	5(13.5)	30(2.5)

Antimicrobials used on admission among suspected COVID-19 patients according to disease severity at 12 selected hospitals in Bangladesh, March–August 2020

Conclusion. Antimicrobial use was highly prevalent among suspected COVID-19 in-patients in Bangladesh. Initiating treatment with Watch group antibiotics like third-generation cephalosporin and azithromycin among mild to moderately ill patients were common. Promoting antimicrobial stewardship with monitoring is essential to prevent blanket antibiotic use, thereby mitigating antimicrobial resistance.

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153. Utilization of Post-Exposure Prophylaxis to Prevent Lyme Disease in a Large US Healthcare Database

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

Background. In the United States, at least 50,000 emergency department visits for tick bite and an estimated 476,000 Lyme disease diagnoses occur annually, with incidence of both high among children. The majority of these healthcare visits occur in the northeastern and midwestern states having high Lyme disease incidence and during the summer and fall months, corresponding to peak opportunities for exposure to blacklegged ticks. Post-exposure prophylaxis (PEP) with a single dose of doxycycline can effectively prevent Lyme disease after a tick bite that is high risk for transmission of Lyme disease. We describe characteristics of patients with dispensings of single-dose doxycycline in a large US-based system that includes patients enrolled in private and public health insurance plans.

Methods. Single-dose doxycycline (≤200 mg) dispensings during January 2009 – February 2020 were identified for patients enrolled in seven Data Partners that contributed electronic healthcare data to the Food and Drug Administration Sentinel Distributed Database, including large national insurers, an integrated delivery care network, a state Medicaid, and the 100% Medicare fee-for-service plan. We examined patient and PEP dispensing characteristics by patient age, state of residence, and month of dispensing.

Results. We identified 408,897 patients with PEP (n=474,414 total dispensings) with a mean age of 60 years at first dispensing. Overall, there were 21 patients per 10,000 eligible members with PEP dispensings. Dispensings were less common in children (< 1 and 4 patients per 10,000 eligible members aged < 8 and 8-18 years, respectively). Most dispensings (72%) occurred in states with high incidence of Lyme disease. Seasonality of dispensings was bimodal, with most occurring during April – July and October – November (71 – 83%, by year).

Conclusion. Lyme disease PEP was relatively common and mirrored geographic and seasonal trends observed for ED visits for tick bites and Lyme disease diagnoses. However, we observed more PEP among older adults, and few dispensings among children. Despite healthcare visits for tick bites and Lyme disease occurring disproportionately among pediatric age groups, PEP appears to be underutilized in children.

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154. Antibiotic Use During Three Separate Waves of the COVID-19 Pandemic at a Large Academic Medical Center in Detroit, MI

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

Background. Inpatient antibiotic use early on in the COVID-19 pandemic may have increased due to the inability to distinguish between bacterial and COVID-19 pneumonia. The purpose of this study was to determine the impact of COVID-19 on antimicrobial usage during three separate waves of the COVID-19 pandemic.

Methods. We conducted a retrospective review of patients admitted to Detroit Medical Center between 3/10/19 to 4/24/21. Median days of therapy per 1000 adjusted patient days (DOT/1000 pt days) was evaluated for all administered antibiotics included in our pneumonia guidelines during 4 separate time periods: pre-COVID (3/3/19-4/27/19); 1st wave (3/8/20-5/2/20); 2nd wave (12/6/21-1/30/21); and 3rd wave (3/7/21-4/24/21). Antibiotics included in our pneumonia guidelines include: amoxicillin, azithromycin, aztreonam, ceftriaxone, cefepime, ciprofloxacin, doxycycline, linezolid, meropenem, moxifloxacin, piperacillin-tazobactam, tobramycin, and vancomycin. The percent change in antibiotic use between the separate time periods was also evaluated.

Results. An increase in antibiotics was seen during the 1st wave compared to the pre-COVID period (2639 [IQR 2339-3439] DOT/1000 pt days vs. 2432 [IQR 2291-2499] DOT/1000 pt days, p=0.08). This corresponded to an increase of 8.5% during the 1st wave. This increase did not persist during the 2nd and 3rd waves of the pandemic, and the use decreased by 8% and 16%, respectively, compared to the pre-COVID period. There was an increased use of ceftriaxone (+6.5%, p=0.23), doxycycline (+46%, p=0.13), linezolid (+61%, p=0.014), cefepime (+50%, p=0.001), and meropenem (+29%, p=0.25) during the 1st wave compared to the pre-COVID period. Linezolid (+39%, p=0.013), cefepime (+47%, p=0.08) and tobramycin (+47%, p=0.05) use remained high during the 3rd wave compared to the pre-COVID period, but the use was lower when compared to the 1st and 2nd waves.