Table: Risk factors for bacteremic UTI in hospitalized older adults without definitive signs or symptoms of UTI, Multivariable Model*					
Variable (n=11,793)	N (%) unless specified	OR/RR	95% Confidence Interval		P€
Age (Median IQR)	78.2 (67.7-86.6)	1.01	1.00	1.03	0.07
Male sex	3114 (26.4%)	**1.45**	1.02	2.07	0.04
Hypotension (SBP<90)	888 (7.5%)	**1.79**	1.14	2.82	0.01
Heart rate >90 beats per minute	5407 (45.8%)	**1.68**	1.19	2.37	0.003
No AMS or Dementia	5299 (44.9%)	REF			
AMS (with or without dementia)	4932 (41.8%)	1.31	0.92	1.87	0.14
Dementia without AMS	997 (8.5%)	0.56	0.25	1.27	0.16
Change in urine color/character	2233 (18.9%)	1.42	0.97	2.10	0.07
Fatigue	3176 (26.9%)	**1.47**	1.04	2.08	0.03
Functional decline	947 (8.0%)	1.28	0.76	2.16	0.34
Urinary retention	927 (7.9%)	**1.79**	1.11	2.90	0.02
Indwelling catheter	1835 (15.6%)	0.93	0.61	1.43	0.75
Complicated urologic history**	6440 (54.6%)	1.26	0.86	1.85	0.24
UA WBC/hpf 0-5	1441 (12.2%)	REF			
UA WBC/hpf 6-10	1263 (10.7%)	0.78	0.28	2.22	0.65
UA WBC/hpf 11-25	1765 (14.9%)	0.66	0.25	1.73	0.40
UA WBC/hpf >25	6577 (55.8%)	**2.47**	1.23	4.96	0.01
Log serum WBC***		**3.88**	2.90	5.19	<.0001

Abbreviations: UA: Urinalysis, WBC: white blood cells, hpf: high-powered field, SBP: systolic blood pressure, OR: Odds Ratio, RR: Relative Risk, AMS: Altered mental status
***Definitive signs or symptoms of a UTI:** Dysuria, urgency, frequency, fever, rigors, suprapubic pain, flank pain, spasticity, hematuria
****Complicated urologic history:** was defined as a history of nephrolithiasis (kidney stones), urologic surgery (ureteral stents, cystoscopy, suprapubic catheter, lithotripsy, ureteroscopy, percutaneous nephrostomy tube), urinary obstruction, urinary retention or neurogenic bladder, urinary incontinence in the 30 days prior to the hospital encounter.
*****Log serum WBC:** 1 unit increase in log Serum WBC = Serum WBC X 2.718
€P <0.05 was considered significant

field (WBC/hpf) on urinalysis were associated with bacteremic UTI (Table). Older age, presence of an indwelling catheter, complicated urologic history, functional decline, AMS, dementia, and change in urine were not associated with higher odds for bacteremic UTI (Table). Of patients with AMS and no definitive signs or symptoms of a UTI, only 89 (1.8%) of 4,932 developed a bacteremic UTI. **Conclusions:** Bacteremic UTI is relatively rare in hospitalized inpatients presenting with bacteriuria without symptoms of UTI. Predictors of bacteremic UTI included male sex, hypotension, tachycardia, urinary retention, fatigue, serum leukocytosis, and higher levels of pyuria (>25 WBC/hpf) on urinalysis. Our findings provide stewards a framework to risk stratify inpatients of older age who present with positive urine cultures but without (or are unable to express) signs or symptoms of UTI.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s27–s28
doi:10.1017/ash.2023.251

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Antibiotic Stewardship

Antibiotic use among SARI patients according to the AWaRe classification before and during the COVID-19 pandemic in Bangladesh

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Background: Irrational antibiotic use among hospitalized patients can lead to antibiotic resistance. For rational use, the WHO introduced the Access, Watch, and Reserve (AWaRe) classification of antibiotics. We explored antibiotic use according to the AWaRe classification among patients hospitalized with severe acute respiratory infection (SARI) between the prepandemic and COVID-19 pandemic periods in Bangladesh. **Methods:** From June 2017 to November 2022, we analyzed SARI inpatient data from the hospital-based influenza surveillance platform at 9 tertiary-level hospitals in Bangladesh. We defined June 2017–February 2020 as the prepandemic period and March 2020–November 2022 as the pandemic period. Physicians identified inpatients meeting the WHO SARI case definition and recorded patient demographics, clinical characteristics, and antibiotics

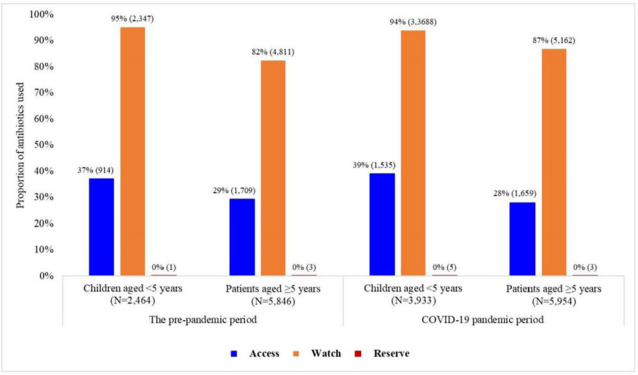

Figure: Antibiotic use among SARI patients according to the AWaRe classification during the pre- and COVID-19 pandemic periods in Bangladesh

received during hospitalization. We used descriptive statistics to summarize the data. **Results:** We enrolled 20,640 SARI patients (median age, 20 years; IQR, 1.6–50; 63% male); and among them, 18,197 (88%) received antibiotics (26% of those received >1 different course of antibiotics). Compared to the prepandemic period, the proportion of antibiotic use among SARI patients was higher during the pandemic: 93% (9,887 of 10,655) versus 83% (8,310 of 9,985) ($P < .001$). According to AWaRe classification, Access, Watch, and Reserve groups accounted for 32% (n = 2,623), 86% (n = 7,158), and 0.05% (n = 4), respectively, before the pandemic and 32% (n = 3,194), 90% (n = 8,850), and 0.08% (n = 8), respectively, during the pandemic (Fig.). The most common antibiotic prescribed for children aged <5 years during the prepandemic was ceftriaxone (n = 1,940, 74%), followed by amikacin (n = 325, 13%) and flucloxacillin (n = 300, 12%); similarly, during the pandemic, most common antibiotic prescribed was ceftriaxone (n = 3,097, 79%), followed by amikacin (n = 723, 18%) and flucloxacillin (n = 348, 9%). The most common antibiotic prescribed for patients aged ≥5 years during the prepandemic period was ceftriaxone (n = 3,174, 54%), followed by amoxicillin-clavulanic acid (n = 1,304, 22%) and azithromycin (n = 1,038, 18%). During the pandemic, the most common antibiotic prescribed for patients aged ≥5 years was ceftriaxone (n = 3,793, 64%), followed by amoxicillin-clavulanic acid (n = 1,327, 22%) and clarithromycin (n = 797, 13%). Among children aged <5 years, use of the Watch group of antibiotics during the prepandemic and pandemic periods was similar: 94% (n = 3,688) versus 95% (n = 2,347) ($P = .099$). However, among patients aged ≥5 years, the use of Watch antibiotics was higher during the pandemic compared to the prepandemic period: 87% (n = 5,163) versus 82% (n = 4,811) ($P < .001$). **Conclusions:** Use of antibiotics in the Watch group was predominant among SARI patients both before and during the COVID-19 pandemic, and it increased among SARI patients aged ≥5 years during the pandemic period in Bangladesh. Promoting antibiotic stewardship programs for physicians, including in-service training on antibiotic use, could reduce irrational antibiotic use, which might contribute to mitigating antibiotic resistance in the country.

Financial support: This study was funded by the CDC.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s28
doi:10.1017/ash.2023.252

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Antibiotic Stewardship

Electronic health record–based identification of inpatients receiving antibiotic treatment for community-acquired pneumonia

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Background: Inappropriate antibiotic use for community-acquired pneumonia (CAP) is common. Although antibiotic stewardship activities require real-time, accurate identification of patients being treated for

Table 1

Test	Reference Standard	Sensitivity (%) (95% CI)	Specificity (%) (95% CI)	PPV (%) (95% CI)	NPV (%) (95% CI)
Provider-selected antibiotic indication for CAP	Provider intention to treat pneumonia (HAP/VAP terminology excluded)	64.4 (59.9 – 68.9)	96.3 (94.6 – 98.1)	73.1 (68.9 – 77.2)	94.6 (92.5 – 96.7)
Provider-selected antibiotic indication for CAP	Provider intention to treat pneumonia (any terminology)	64.1 (59.6 – 68.6)	97.1 (95.5 – 98.7)	78.9 (75.0 – 82.7)	94.1 (91.9 – 96.3)
Presence of pneumonia ICD-10 code	Provider intention to treat pneumonia with HAP/VAP terminology excluded	61.0 (56.5 – 65.6)	95.3 (93.3 – 97.3)	66.7 (62.3.- 71.1)	94.0 (91.8 – 96.3)

CAP, community-acquired pneumonia; HAP, hospital-acquired pneumonia; VAP, ventilator-associated pneumonia; PPV, positive predictive value; NPV, negative predictive value

CAP, there are few reliable methods to identify such patients using the electronic health record (EHR). We conducted a retrospective study to assess the performance of provider-selected antibiotic indication in identifying patients being treated for CAP among a cohort of hospitalized adults. **Methods:** We randomly selected 440 patients from a cohort of patients who received at least 1 systemic antibiotic within 48 hours of admission between January 1, 2019, and December 31, 2021, at 3 acute-care hospitals. The reference standard for treatment of CAP was defined as intention to treat for pneumonia by inpatient provider(s) within 48 hours of admission, as assessed by chart review of provider notes. Treatment for pneumonia using any terminology except with "hospital-acquired pneumonia" (HAP) or "ventilator-associated pneumonia" (VAP) were counted. Provider-selected indication of CAP (in an antibiotic order) was compared against this reference standard; sensitivity, specificity, and positive and negative predictive values were calculated. Performance characteristics of *International Classification of Disease, Tenth Revision* (ICD-10) codes for pneumonia in identifying CAP patients were assessed against the same reference standard. A secondary analysis including terms HAP and VAP in the reference standard was performed. **Results:** Provider-selected antibiotic indication for CAP had a sensitivity of 64.4%, specificity of 96.3%, positive predictive value (PPV) of 73.1%, and negative predictive value (NPV) of 96.1%, giving comparable performance to ICD-10 codes (Table 1). Of those with 21 false-negative results, 13 (61.9%) had a healthcare-associated lower respiratory tract infection and 14 (66.7%) had sepsis indicated in at least 1 antibiotic order. **Conclusions:** Provider-selected antibiotic indication showed moderate sensitivity and high specificity for identifying CAP-treated cases. Importantly, use of this method can be deployed for real-time antibiotic stewardship interventions for CAP.
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s28–s29
doi:10.1017/ash.2023.253

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Antibiotic Stewardship
Sources of antibiotics for acute respiratory infection in children aged <5 years children in South Asia: A multicountry study
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Background: In South Asia, a region of almost 2 billion people across 8 countries, acute respiratory infections (ARIs) are associated with significant morbidity and mortality in children aged <5 years. Although ~80% of ARIs are due to viral etiology and are often self-limiting, they remain the single largest reason for antibiotic use in children aged <5 years in South Asia. We investigated the sources and dispensing pattern of antibiotics for ARIs in children aged <5 years in South Asia. **Methods:** We analyzed nationally representative, population-based, publicly available household survey data from 6 South Asian countries' Demographic and Health Surveys (DHS): Afghanistan, Bangladesh, India, Maldives, Nepal, and Pakistan. The outcome of interest was the source of antibiotics for children aged <5 years who reportedly had symptoms compatible with ARI (cough, fever, and runny nose) and had received antibiotics for the ARI episode in the 2 weeks preceding the survey. We used a generalized estimating equation with an exchangeable correlation structure to account for country-specific cluster-level correlation to estimate the odds of sources of antibiotics usage. Models were adjusted for age, sex, type of place of residence, wealth index, and parents' education. To analyze the data, we used the sample weight supplied by the DHS to ensure that our results appropriately reflect the target population in each of the countries studied. **Results:** In total, across the 6 South Asian countries, 24,104 children aged <5 years had symptoms of ARI, 7,587 (31%; 95% CI, 30–33) from received antibiotics. A higher proportion of antibiotic usage for ARIs episodes occurred in Afghanistan (66%), followed by Maldives (53%), Pakistan (45%), and Nepal (43%). Regarding the source of antibiotics, a higher proportion of antibiotics was obtained from the private medical sector in India, followed by unqualified sources in Bangladesh, and the public sector in Afghanistan. Our adjusted multivariable analysis revealed that, in comparison to the public sector, participants were 2.6 times (aOR, 2.6; 95% CI, 1.6–4.3) more likely to receive antibiotics from private medical sector drug sources in Nepal and 1.3 times more likely (aOR, 1.3; 95% CI, 1.1–1.5) in Afghanistan. **Conclusions:** In South Asian countries, the private medical sector was the most common primary source of antibiotics for children with ARIs. Targeted efforts to create awareness around antibiotic dispensing and guidelines to improve practices may curtail the use of antibiotics for ARIs in children aged <5 years in South Asia.
Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2023;3(Suppl. S2):s29
doi:10.1017/ash.2023.254

Presentation Type:
Poster Presentation - Poster Presentation
Subject Category: Antibiotic Stewardship
Fluconazole resistance in non-*albicans Candida* species in the United States, 2012-2021
Emily Jenkins; Meghan Lyman; Brendan Jackson; Shawn Lockhart; Hannah Wolford; Sujan Reddy and James Baggs

Background: *Candida* spp can cause a variety of infections known as candidiasis, ranging from severe invasive infections to superficial mucosal infections of the mouth and vagina. Fluconazole, a triazole antifungal, is commonly prescribed to treat candidiasis but increasing fluconazole resistance is a growing concern for several *Candida* spp. Although *C. albicans* has historically been the most common cause of candidiasis, other species

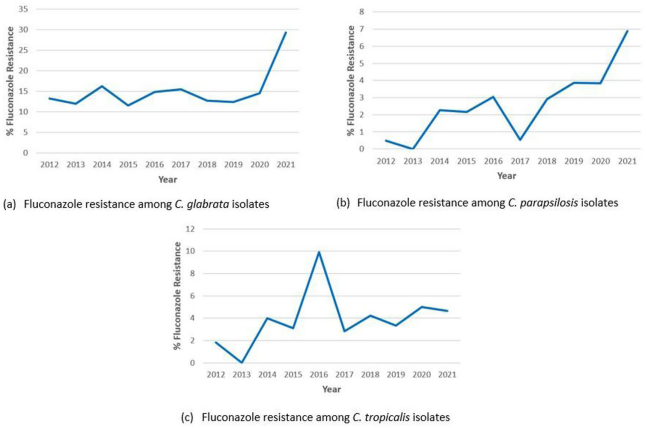

Figure 1. Fluconazole resistance among various *Candida* species isolates, 2012-2021