

SHEA Spring 2022 Abstracts

Presentation Type:

Poster Presentation - Top Poster Award

Subject Category: Antibiotic Stewardship

Perceptions toward and practices regarding antibiotic stewardship and use among physicians at tertiary-care public hospitals in Bangladesh

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Background: The emergence of antimicrobial resistance (AMR) is affecting public health management in developing countries, including Bangladesh. Irrational and inappropriate use of antibiotics in healthcare settings has led to widespread drug resistance. To optimize antimicrobial usage to combat AMR and enhance infection treatment, the competence of healthcare workers in antibiotic prescribing is indispensable. We sought to determine the perceptions about antimicrobial resistance, antibiotic stewardship programs (ASPs), and antibiotic prescribing approaches among physicians at tertiary-care public hospitals in Bangladesh. **Methods:** From September to December 2020, we conducted a mixed-methods study in 9 tertiary-care public hospitals. Using a self-administered, semistructured questionnaire, we collected data on antibiotic stewardship and prescribing practices from 452 on-duty physicians. In addition, we conducted 16 key-informant interviews to explore AMR perceptions and determinants. **Results:** Only 43.8% of physicians were aware of the ASP, and none of the hospitals had any ASP initiative in place. Most of the participants (70.6%) recommended tailored training and antibiotic prescribing guidelines (63.7%) for effective ASP initiatives. More than half of the physicians (54.7%) preferred to receive regular monitoring and feedback on their routine antibiotic prescriptions from the stewardship program. In terms of the antibiotic prescribing approach, only 25.9% of physicians relied on microbiology lab findings, whereas 69.5% routinely employed oral or intravenous antibiotics. Also, 40.0% of physicians considered the patient's ability to afford the antibiotic cost when recommending antibiotics. The qualitative investigation identified the use of broad-spectrum antibiotics, absence of guidelines, and inadequate laboratory support as factors contributing to AMR in the healthcare setting. Self-medication, over-the-counter dispensing, and patients' economic instability to complete the dosage were also attributed to the irrational use of antibiotics. As a priority step, physicians advocated for intensive training on antibiotic advising, mass awareness campaigns on safe antibiotic usage and dispensing, and a restriction on the widespread sale of antibiotics from pharmacies. **Conclusions:** Despite favorable perceptions, the fundamental understanding of physicians regarding ASPs and rational prescribing of antibiotics

needs to be improved through context-specific educational interventions and capacity building. In addition, a coherent and comprehensive policy is required for the development and implementation of antibiotic usage guidelines along with integrated ASP initiatives to combat AMR.

Funding: None

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2022;2(Suppl. S1):s1

doi:10.1017/ash.2022.56

Presentation Type:

Poster Presentation - Top Poster Award

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Outpatient antibiotic use for common infectious diagnoses: Patterns in telehealth during the emergence of COVID-19

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Background: The Veterans' Affairs (VA) healthcare system has had established telehealth programs for several years. Even so, the COVID-19 pandemic led to an expansion of and changes in these services. Little is known about the influence of the increased use of telehealth due to the COVID-19 pandemic on antibiotic prescriptions in outpatient settings. Here, we report on changes in visit modality and antibiotic prescribing at primary care clinics at a large VA medical center after the emergence of the COVID-19 pandemic. **Methods:** Using VA administrative databases, we identified primary care visits from March 2018 to November 2019 (before the COVID-19 pandemic) and March 2020 to November 2021 (during the COVID-19 pandemic), which permitted us to account for seasonality while analyzing visit modality and antibiotic trends. For primary care visits during the pre-COVID-19 and COVID-19 periods, we have described the type of visit (in-person or telehealth), diagnostic codes for any infection, and antibiotic prescriptions. **Results:** The patient population was primarily men (89%) with a mean age of 62.9 years (SD, ± 15.3) at first visit. The most common medical conditions were diabetes mellitus (26%) and chronic lung disease (17%). Comparing visits during the pre-COVID-19 and the COVID-19 periods, the proportions of telehealth visits were 20% (17,708 of 88,565) and 74% (69,891 of 94,937), respectively (Fig. 1).

Figure: Physicians' approach towards antibiotic prescribing and recommendation for ASP initiatives

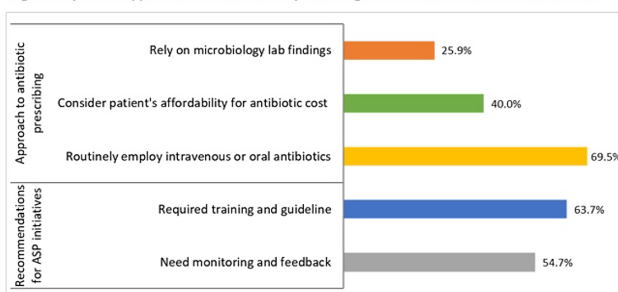


Figure 1. The number of in-person (light blue) and telehealth (dark blue) primary care visits at a large VA medical center from March 2018 through November 2021.

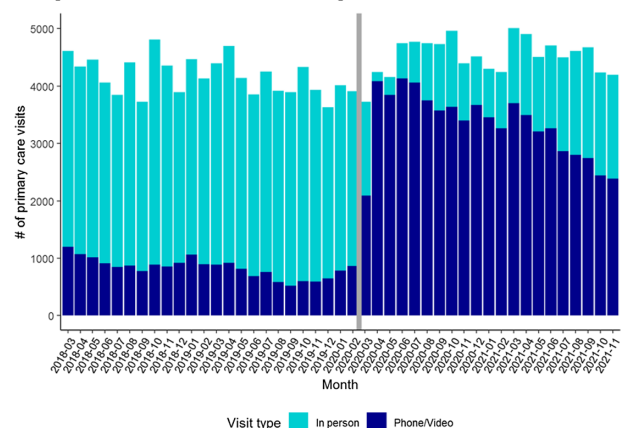
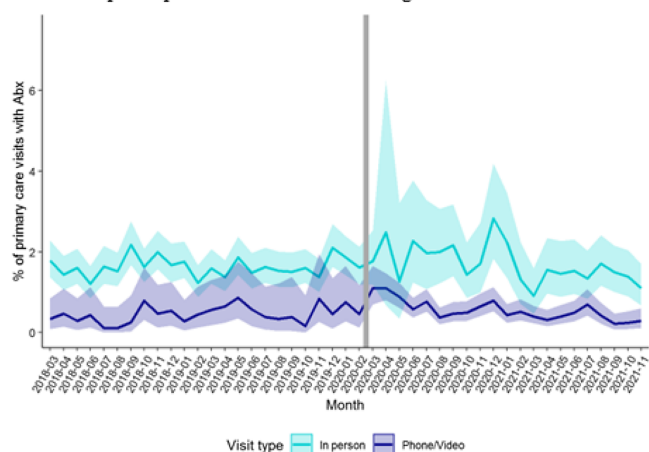


Figure 2. Percentage of in-person (light blue) and telehealth (dark blue) primary care visits at a large VA medical center accompanied by an antibiotic prescription from March 2018 through November 2021.



The proportions of visits with an antibiotic prescription were 1.4% (1,212 of 88,565) and 0.8% (798 of 94,396), respectively. When considered by the type of visit, the rates of antibiotics prescribed were consistent during the pre-COVID-19 and COVID-19 periods, with a lower rate for telehealth visits (Fig. 2). In both periods, >50% of antibiotic prescriptions occurred during visits without an associated infectious disease diagnosis. **Conclusions:** Compared to the pre-COVID-19 period, primary care providers at a large VA medical center prescribed fewer antibiotics during the COVID-19 period, and they saw most of their patients via telehealth. These results suggest that some aspects of telehealth may support clinical practices consistent with antibiotic stewardship. The prescription of an antibiotic without an associated diagnostic code also suggests opportunities to improve implementation of antibiotic stewardship principles in primary care settings.

Funding: This work was supported by the Merck Investigator Studies Program (grant no. MISP 59266 to F.P. and R.J.) and by funds and facilities provided by the Cleveland Geriatric Research.

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2022;2(Suppl. S1):s1-s2

doi:10.1017/ash.2022.57

Presentation Type:

Poster Presentation - Top Poster Award

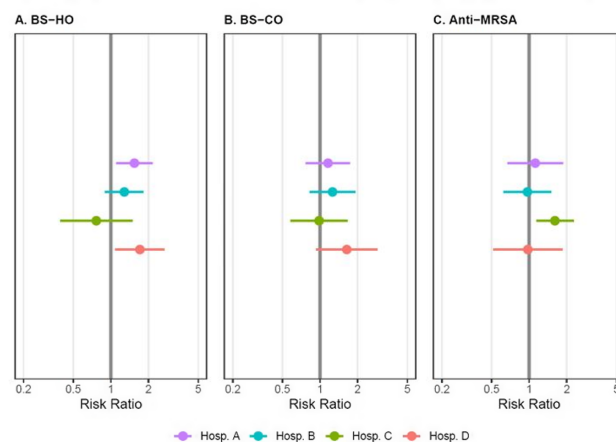
Subject Category: Antibiotic Stewardship

Do hospitalists who prescribe high (risk-adjusted) rates of antibiotics do so repeatedly?

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Background: Provider-specific prescribing metrics can be used for benchmarking and feedback to reduce unnecessary antibiotic use; however, metrics must be credible. To improve credibility of a recently described risk-adjusted antibiotic prescribing metric for hospital medicine service (HMS) providers, we assessed whether providers who initially prescribed excess antibiotics continued to prescribe antibiotics excessively. **Methods:** We linked administration and billing data among patients at 4 acute-care hospitals (1,571 beds) to calculate days of therapy (DOT) ordered by individual hospitalists for each of 3 NHSN antibiotic groupings: broad-spectrum hospital onset (BS-HO), broad-spectrum community-onset (BS-CO), or anti-MRSA for each patient day billed from January 2020 to June 2021. To incorporate repeated measures by provider, mixed models adjusted for patient-mix characteristics (eg, % encounters with urinary tract infection, etc) were used to calculate serial, bimonthly, provider-specific,

Figure: Risk Ratios (circle) and 95% confidence Intervals (line) between high initial antibiotic usage and subsequent high usage among hospitalists in four facilities in an academic healthcare system, Atlanta, Georgia. (Jan. 2020-Jun 2021)



observed-to-expected ratios (OERs). An OER of 1.25 indicates that the prescribing rate observed was 25% higher than predicted, adjusting for patient mix. We then used log binomial generalized estimating equations to assess whether a high prescribing rate (defined as an OER ≥ 1.25) for an individual provider in an earlier bimonthly period was associated with a persistent high rate for that provider in the following period. **Results:** Overall, 975 bimonthly periods were evaluated from 136 hospitalists. Most (58%) contributed data the entire 18-month study period. Median OERs were similar between hospitals: 0.94 (IQR, 0.65–1.28) for BS-HO antibiotic use, 0.99 (IQR, 0.73–1.24) for BS-CO antibiotic use, and 0.95 (IQR, 0.65–1.28) for anti-MRSA antibiotic use. At the individual prescriber level, roughly one-quarter of bimonthly OERs (range varied by group and hospital from 21% to 31%) were categorized as high. At 3 of the 4 hospitals, a provider with a high OER for either BS-HO or BS-CO antibiotic use in any bimonthly period was more likely to have a high OER in the subsequent period (Fig. 1). These observed risk ratios were statistically significant for BS-HO antibiotic use at only 2 hospitals: hospital A risk ratio (RR) was 1.54 (95% CI, 1.10–2.16); hospital B RR was 1.28 (95% CI, 0.90–1.82); hospital C RR was 0.76 (95% CI, 0.39–1.48); and hospital D RR was 1.71 (95% CI, 1.09–2.68). **Conclusions:** Our findings suggest that hospitalists with a higher than expected 2-month period of antibiotic prescribing are likely to continue to have elevated prescribing rates in the following period, particularly for BS-HO antibiotics. These findings increase the credibility of using a 2-month prescribing metric for BS-HO antibiotic stewardship efforts; further work is needed to evaluate utility for other antibiotic groupings.

Funding: None

Disclosures: None

Antimicrobial Stewardship & Healthcare Epidemiology 2022;2(Suppl. S1):s2

doi:10.1017/ash.2022.58

Presentation Type:

Poster Presentation - Top Poster Award

Subject Category: Antibiotic Stewardship

Outpatient antibiotic prescribing during the COVID-19 pandemic—United States, January 2019–October 2021

Destani Bizune; Sharon Tsay; Sarah Kabbani and Lauri Hicks

Background: Improving antibiotic use is a key strategy to combat antimicrobial resistance. Here, we have described national outpatient antibiotic prescribing trends during the COVID-19 pandemic. We compared the monthly numbers of prescriptions in 2020–2021 to those from 2019 to describe the impact of the pandemic and to highlight areas for improvement. **Methods:** We used the IQVIA National Prescription Audit