

Figure 1. Community-acquired pneumonia antibiotics per 100 COVID-19 positive patients



using Poisson distribution. **Results:** During the study period, 814 unique patients had COVID-19 infection: 182 (22.4%) patients admitted to the acute-care center, 66 (8.1%) long-term care residents, and 566 (69.5%) were managed outside the hospital. Of these 814 patients, 211 (25%) were prescribed a CAP antibiotic. Of the antibiotics prescribed, 223 (61%) were ceftriaxone, cefpodoxime, amoxicillin-clavulanate, or ampicillin-sulbactam; 123 (34%) were azithromycin; and 16 (4.4%) were levofloxacin. We observed a decrease in the frequency of all antibiotic prescriptions after intervention B was added: 32% (86 of 273) vs 23% (125 of 541) ($P = .01$). Decreases in antibiotic prescriptions were observed in all locations: acute care (57% vs 44%), long-term care (53% vs 41%) and outpatient care (19% vs 15%). The rates of CAP antibiotic prescribing per 100 COVID-19-positive patients were 114 in the preintervention period and 45 in the postintervention period, a rate difference of -70 antibiotics per 100 COVID-19-positive patients ($P < .001$). **Conclusions:** Curbing antibiotic use for CAP indication during the COVID-19 pandemic was a challenge. A multifaceted approach focusing on education was an impactful intervention leading to significant decreases in antibiotic prescribing despite COVID-19 cases increasing.

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Impact of different COVID-19 encounter definitions on antibiotic prescribing rates in urgent care

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Background: Billing data have been used in the outpatient setting to identify targets for antimicrobial stewardship. However, COVID-19 ICD-10 codes are new, and the validity of using COVID-19 ICD-10 codes to accurately identify COVID-19 encounters is unknown. We investigated COVID-19 ICD-10 utilization in our urgent care clinics during the pandemic and the impact of using different COVID-19 encounter definitions on antibiotic prescribing rates (APRs). **Methods:** We included all telemedicine and office visits at 2 academic urgent-care clinics from January 2020 to September 2021. We extracted ICD-10 encounter codes and testing data from the electronic medical record. We compared encounters for which COVID-19 ICD-10 codes were present with encounters for which SARS-CoV-2 nucleic acid amplification testing (NAAT) was performed within 5 days of and up to 2 days after the encounter (Fig. 1). We calculated the sensitivity of the use of COVID-19 ICD-10 codes against a positive NAAT. We calculated the APR as the proportion of encounters in which an antibacterial drug was prescribed. This quality improvement project

Table 1. Overall agreement in use of COVID-19 ICD-10 codes and NAAT

	NAAT positive	NAAT negative	Total
COVID ICD-10 present	1,154 (63%)	159 (1%)	1,313
COVID ICD-10 not present	686 (37%)	12,826 (99%)	12,826
Total	1,840	12,985	14,825

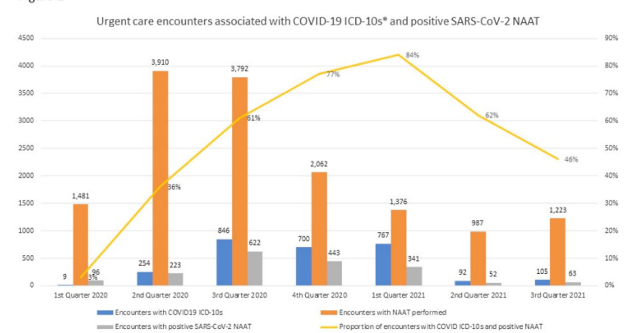
*COVID-19 ICD-10 codes included U07.1, J12.81 and J12.82

Table 2. Antibiotic prescribing rate (APR) for different COVID-19 encounter definitions

Encounters	N	APR n (%)
Z20.822 Contact with and (suspected) exposure to COVID-19	1,211	6 (0.5%)
U07.1 COVID-19	2,773	40 (1.4%)
J12.81 Pneumonia due to SARS-associated coronavirus	0	0
J12.82 Pneumonia due to COVID-19*	117	6 (5.1%)
NAAT performed	14,831	766 (5.1%)
Positive NAAT	1,840	37 (2.0%)
Positive NAAT or U07.1 OR J12.81 OR J12.8	3,459	62 (1.8%)

*All J12.82 encounters also had U07.1

Figure 1



*COVID-19 ICD-10 codes included U07.1, J12.81 and J12.82

was deemed non-human-subjects research by the Stanford Panel on Human Subjects in Medical Research.

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Tier-based antimicrobial stewardship metrics for genitourinary-related antibiotic use in Veterans' Affairs outpatient settings

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Background: Tracking antibiotic use is a core element of antimicrobial stewardship. We developed a set of metrics based on electronic health record data to support an outpatient stewardship initiative to improve management of urinary tract infections (UTIs) in Veterans' Affairs (VA) emergency departments (EDs) and primary care clinics. Because UTI diagnostic codes only capture a portion of genitourinary (GU)-related antibiotic use, a tier-based approach was used to evaluate practices. **Methods:** Metrics were developed to target practices related to antibiotic prescribing and diagnostic testing (Table 1). GU conditions were divided into 3 categories: tier 1, conditions for which antibiotics are usually or always indicated; tier 2, conditions for which antibiotics are sometimes indicated; and tier 3, conditions for which antibiotics are rarely or never indicated (eg, benign prostatic hypertrophy with symptoms). Patients with visits related to urological procedures, nontarget providers, and concomitant non-GU