

who may require antibiotics but do not require hospital admission. In this study, we described the characteristics and proportion of antibiotic prescription in patients evaluated in and discharged from the ED with ARI. **Methods:** We performed a retrospective chart review of patients diagnosed with ARI and discharged from a single academic ED between January 2018 and January 2020. We compared those for whom a PCT test was ordered to those without a PCT test ordered at ARI diagnosis. Charts were reviewed until there were 110 subjects in each of the 2 study groups. The main outcome variable was receipt of an antibiotic prescription. The χ^2 test was used to compare the proportion of patients who received an antibiotic prescription, demographics, and clinical characteristics between the 2 groups. The Mann-Whitney *U* test was used to compare the distribution of ages between the 2 groups. **Results:** Among patients in the PCT group, 87 (79.0%) received antibiotics versus 69 (62.7%) in the non-PCT group ($P \pm 18.8$ vs 52.7 years ± 17.6 ; $P = .0002$); more likely to have preexisting heart and lung disease (28.2% vs 15.5%; $P = .02$); more often male (58.2% vs 40%; $p < 0.01$); had more subjective fevers (47.3% vs 33.6%, $p = 0.04$), sputum production (49.1% vs 28.2%, $p < 0.01$), and nausea (17.3% vs 8.2%, $p = 0.04$). PCT results were low (≤ 0.25) in 82.7% (91) of patients, of whom 70.3% (64) received antibiotics. **Conclusions:** Patients for whom PCT testing was ordered were older, had more underlying conditions and increased severity of illness. This finding may reflect that PCT testing was more likely to be ordered in patients at risk of severe infection but not requiring admission. The proportion of antibiotics prescriptions was higher for patients who had a PCT test. For patients with a low PCT result, the proportion of patients prescribed antibiotics was high. This finding may suggest that clinical characteristics were more influential than PCT result in the decision to prescribe antibiotics. More research is needed on the role of PCT testing in antibiotic prescription decisions for patients presenting to the ED with ARI.

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Analysis of Recurrent Urinary Tract Infection Management in Outpatient Settings Reveals Opportunities for Antibiotic Stewards

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Background: Studies of antibiotic prescribing choice and duration have typically excluded women with recurrent UTI (rUTI), yet the Infectious Disease Society of America (IDSA) UTI treatment guidelines are applicable to recurrent and sporadic cystitis. We sought to better understand prescribing practices among uncomplicated rUTI patients in terms of choice of drug, duration of therapy, and the risk factors for receiving guideline-discordant therapy. **Methods:** We performed a retrospective database study by extracting electronic health record data from adults seen at academic primary care, internal medicine, or urology practices between November 2016 and December 2018. Inclusion criteria included having ≥ 2 or ≥ 3 *International Classification of Diseases Tenth Edition* (ICD-10) cystitis codes recorded within a 6- or 12-month period, respectively. We excluded patients with ICD-10 codes indicating any structural or functional genitourinary comorbidities, interstitial cystitis, vaginosis, compromised immune systems, or pregnancy in the prior year. Patients were also excluded if they had signs or symptoms of pyelonephritis at presentation. **Results:** Overall, 232 patients presented for 597 outpatient visits. Most were married (52.2%), non-Hispanic white (62.9%), and female (92.2%), with a median age of 58 years (IQR, 41–68). Only 21% of visits with an antibiotic prescribed for treatment consisted of a first-line therapy agent prescribed for the recommended duration. In terms of antibiotic choice, these agents were prescribed in 58.4% of scenarios, which primarily included nitrofurantoin (37.8%) and trimethoprim-sulfamethoxazole (TMP-SMX) (20.3%). Guideline-discordant choices of fluoroquinolones (28.8%), and β -lactams (11.2%) were the

second and third most commonly prescribed drug categories, respectively. Multinomial logistic regression identified age (OR, 1.02; 95% CI, 1.002–1.04) or having a telephone visit (OR, 3.17; 95% CI, 1.54–6.52) as independent risk factors for receiving a β -lactam. The duration exceeded the 3-day guideline recommendation in 87.6% of fluoroquinolones and 73% of TMP-SMX (73%) prescriptions, and 61% of nitrofurantoin prescriptions exceeded the recommended 5-day duration. Multiple logistic regression analysis revealed that seeking care at a urology clinic (OR, 2.81; 95% CI, 1.59–5.17) served as an independent factor for therapy duration exceeding guideline recommendations. **Conclusions:** This retrospective study revealed shortcomings in prescribing practices in the type and duration of therapy for rUTI. rUTI as well as sporadic UTI are important targets for outpatient antibiotic stewardship interventions.

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Blood Culture Utilization at Six Southeastern US Hospitals

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Background: Blood cultures are an essential diagnostic test, but over- and underutilization may cause harm. **Methods:** We analyzed blood culture utilization at 6 hospitals in the southeastern United States including 1 academic hospital (A) and 5 community hospitals (B–F) from May 2019 to April 2020. We measured blood culture utilization rate (BCUR) per 1,000 patient days and blood cultures per encounter. We counted blood cultures by laboratory accession number and measured utilization per 1,000 patient days and encounter. A likely contaminant was defined as 1 of 2 blood cultures collected in the same calendar day positive for a common skin commensal (CSC), as defined by the NHSN, and not identified from subsequent cultures. A likely pathogen was defined as a culture with a pathogen not on the CSC list or a CSC not meeting the contaminant definition. Hospital-level BCUR included samples for culture collected in the emergency department (ED) and inpatient areas divided by inpatient days. **Results:** The analysis included 117,897 blood cultures and 662,723 patient days with a median BCUR of 209.7 per hospital and median blood culture per encounter of 2 (Table 1). One community hospital (C) demonstrated a substantially higher BCUR than others. Cultures were frequently collected in the ED (54%; range, 36%–78%); most encounters with cultures in the ED

Table 1.

Hospital	A	B	C	D	E	F
BCUR per 1000 patient days	150.1	199.2	534.8	237	117.1	220.1
BCUR by Inpatient Unit Type						
Intensive Care	221	128.8	NA	108.7	137.4	156.5
ONC/Transplant	134.2	66.2	NA	NA	114.1	NA
Medical/Surgical	69.9	47.2	203.7	66	62.5	56.6
Pediatric Intensive Care	82.6	NA	NA	NA	1.6	1.3
Mixed Acuity	NA	45.9	105.9	51.5	40.8	23.6
Pediatric Medical/Surgical	35.5	46.2	NA	56.7	NA	NA
Labor and Delivery	8.1	19.6	155.7	5.4	2.6	6
Other	184.5	NA	NA	NA	NA	NA
N Blood Cultures	46453	7631	14624	13600	17164	18425
Percent in ED	35.7%	70.6%	63.3%	73.9%	46.3%	78.0%
Median Blood Cultures Per Encounter (IQR)	2 (2-2)	2 (2-3)	4 (3-4)	2 (2-2)	2 (2-2)	2 (2-2)
Percent with likely pathogen	8.2%	4.5%	7.0%	9.0%	9.1%	5.9%
Percent with likely contaminant	1.6%	1.9%	3.1%	3.2%	1.3%	2.5%
Percent of first blood cultures drawn after antibiotics	6.1%	5.3%	3.4%	5.9%	9.0%	5.8%