Table 1: Baseline Characteristics, Inpatient Treatment, and Results

	Oral Beta-lactam (n=115)	Oral Alternative (n=73)	p-value
Baseline Characteristics			
Mean age, years (SD)	39 (17)	44 (19)	0.04
Male, n (%)	11 (10)	5 (7)	0.52
Mean weight, kg (SD)	79 (27)	76 (23)	0.36
Mean baseline WBC X10^3/mcL (SD)	14.4 (5.3)	13.5 (4.7)	0.22
Mean baseline temperature, ^{0}F (SD)	100.9 (2)	101 (1.8)	0.90
Inpatient Treatment			
Treated with ceftriaxone inpatient, n (%)	55 (48)	45 (62)	0.06
Mean duration of IV therapy, days (SD)	3 (1.6)	3 (1.5)	0.85
Results			
Treatment success, n (%)	113 (98)	70 (96)	0.38
Mean length of stay, days (SD)	3 (1.6)	3 (1.3)	0.18
Mean duration of oral therapy, days (SD)	8.2 (2.7)^	9.5 (3.7)+	0.02

+Data not available for 4 patients
^Data not available for 14 patients

Disclosures. **All Authors:** No reported Disclosures.

966. A Closer Look at Antibiotic Prescribing for Upper Respiratory Illnesses (URI) in People with HIV Compared with People Without HIV

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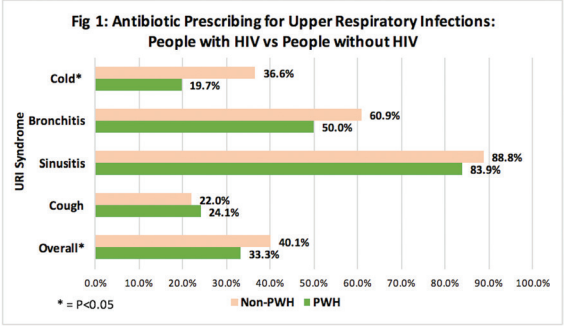
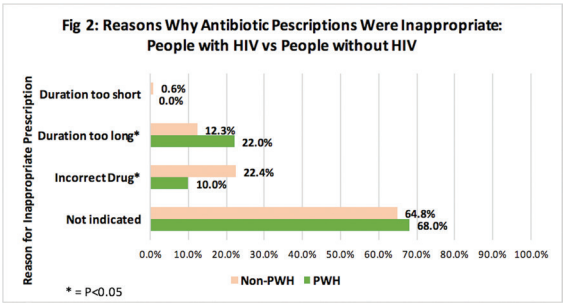
Background. Antibiotic overuse is widespread, increasing healthcare cost and promoting antimicrobial resistance. People with HIV (PWH) who develop URIs may be assumed "higher risk," compared with non-PWH, but comparative antibiotic use evaluations have not been performed. We evaluated antibiotic prescribing patterns for URI diagnoses (cough, sinusitis, bronchitis, and cold) in PWH and non-PWH.

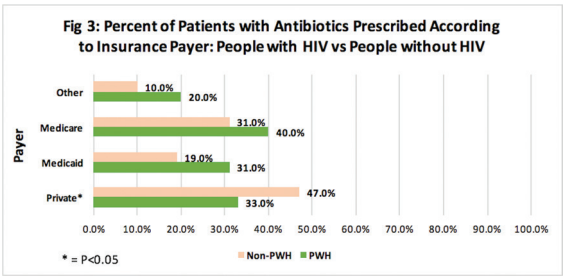
Methods. This was an observational, single-center study comparing PWH and non-PWH diagnosed with URI (using ICD 10 codes for URI syndromes: cough, sinusitis, bronchitis, and cold) between January 1, 2014 and April 30, 2018. Patients were empaneled in an outpatient primary care clinic or specialty care clinic in one healthcare system. Appropriateness of antibiotic prescribing was defined based on published guidelines. Fisher's exact test compared categorical variables with antibiotic prescribing patterns. Each encounter was considered an independent event.

Results. The two groups (PWH and non-PWH) were similar, with 34% of subjects in both groups being female. PWH had median CD4+ count of 610 cells/mm^3 with 91% on antiretrovirals and 77% with HIV RNA < 20 copies/mL. Overall, 37% of visits resulted in antibiotic prescriptions, 92% of which were inappropriate (discordant with guidelines). Antibiotics were prescribed slightly more frequently in non-PWH (40% vs. 33%, $P = 0.056$; Figure 1) and inappropriate more often in non-PWH (37% vs. 30%, $P = 0.029$). Over 20% of PWH antibiotic prescriptions were too long, and 22% of non-PWH received the wrong drug (Figure 2; $P = 0.011$). 47% of the non-PWH receiving antibiotics for URI had private insurance (compared with other payers; $P < 0.0001$) vs. 33% in PWH ($P = 0.32$) (Figure 3).

Conclusion. Outpatient antibiotic overuse remains prevalent among patients evaluated for URIs. This is the first study, to our knowledge, comparing antibiotic use for URIs in PWH compared with non-PWH. Counterintuitively, we found less-frequent inappropriate antibiotic use in PWH. We speculate that PWH are more likely to be evaluated by infectious disease/HIV specialists, possibly explaining the lower rate of antibiotic prescriptions for URIs in this population. Future analyses will evaluate the association between provider specialty and inappropriate antibiotic use.







Disclosures. **All Authors:** No reported Disclosures.

967. Concordance of Antibiotic Prescribing with the Proposed American Dental Association Acute Oral Infection Guidelines within Veterans Affairs (VA) Dentistry

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Background. US dentists prescribe 10% of outpatient antibiotics. However, assessing the appropriateness of dental antibiotic prescribing has been challenging due to a lack of guidelines for common infections. In 2019, the American Dental Association proposed clinical practice guidelines (CPG) on the management of common acute oral infections for the first time. Our objective was to describe national baseline antibiotic prescribing for the treatment of irreversible pulpitis, apical periodontitis, and acute apical abscess prior to the release of the proposed CPG.

Methods. We performed a cross-sectional analysis of national VA data from January 1, 2017 to December 31, 2017. We identified cases of irreversible pulpitis, apical periodontitis, and acute apical abscess using ICD-10-CM codes. Patient demographics, facility location, medical conditions, dental procedure codes ("CDTs"), and diagnostic (ICD-10-CM) codes were extracted from the VA Corporate Data Warehouse. Antibiotics prescribed by a dentist within 7 days of a visit were included. Multivariable logistic regression identified variables associated with antibiotic prescribing for each infection.

Results. Of the 470,039 VA dental visits with oral infections coded, 25% of irreversible pulpitis, 41% of apical periodontitis, and 61% of acute apical abscess visits received antibiotics. Amoxicillin was prescribed most frequently. Although the median days' supply was 7 days, prolonged use of antibiotics was frequent (9.2% of irreversible pulpitis, 17.8% of apical periodontitis, 28.7% of acute apical abscess received antibiotics for ≥8 days). Of the irreversible pulpitis visits with antibiotics prescribed, 20.0% received ≥2 antibiotics. Patients with high-risk cardiac conditions, prosthetic joints, and certain dental procedures were associated with receipt of antibiotics (table).

Conclusion. Prior to the release of the ADA guidelines, 75.8% and 59.4% of irreversible pulpitis and apical periodontitis were concordant with proposed recommendations. These data identify opportunities to improve prescribing and serve as a benchmark for future outpatient antimicrobial stewardship efforts. Future work should assess definitive dental treatment and populations without access to oral health care.

Table. Descriptive characteristics and variables associated with antibiotic prescribing

Variable	Irreversible Pulpitis (N=385,040 visits)	Apical Periodontitis (N=33,938 visits)	Acute Apical Abscess (N=51,061 visits)
Age, Mean±SD (range)	61.8±13.6 (19-103)	60.7±13.0 (20-98)	61.6±12.8 (20-102)
Male, % (No.)	90.8%	89.2%	90.5%
Visits that received ≥1 antibiotic, % (No.)	24.9% (93,309)	40.6% (13,777)	61.2% (31,226)
Amoxicillin, % (No.)	55.9% (62,566)	55.3% (9,627)	53.2% (22,039)
Clindamycin, % (No.)	12.5% (14,026)	14.1% (2,449)	17.6% (7,311)
Penicillin, % (No.)	4.4% (4,959)	6.5% (1,140)	8.4% (3,464)
Cephalexin, % (No.)	2.7% (3,007)	1.8% (318)	1.8% (739)
Azithromycin, % (No.)	4.1% (4,581)	3.7% (651)	2.6% (1,095)
Doxycycline, % (No.)	3.9% (4,394)	3.2% (556)	2.4% (1,003)
Other, % (No.)	16.5% (18,427)	15.4% (2,683)	14% (5,790)
Days' supply, Median (IQR)	7 (6-10)	7 (7-10)	7 (7-10)
US Census Bureau Region			
Northeast, % (No.)	13.7% (52,813)	14.1% (4,796)	15.8% (8,063)
Midwest, % (No.)	17.5% (67,304)	15.8% (5,346)	17.7% (9,018)
South, % (No.)	45.6% (175,472)	43.3% (14,687)	43.4% (22,138)
West, % (No.)	21.9% (84,253)	26.1% (8,858)	21.7% (11,095)
Other/missing, % (No.)	1.3% (5,198)	0.7% (251)	1.5% (747)
Variables associated with antibiotic prescribing*	**Irreversible Pulpitis (aOR, 95% CI)**	**Apical Periodontitis (aOR, 95% CI)**	**Acute Apical Abscess (aOR, 95% CI)**
Charlson Comorbidity Index			
Score of 1	1.55 (1.04-2.3)	*NS*	*NS*
Score of 2+	1.58 (1.31-1.91)	*NS*	*NS*
Medical history			
Cardiac condition	1.43 (1.38-1.48)	1.39 (1.22-1.58)	1.18 (1.05-1.32)
Prosthetic joint	1.73 (1.67-1.78)	1.5 (1.33-1.7)	1.43 (1.28-1.59)
CDT dental procedure categories			
Endodontics	2.13 (2.05-2.22)	1.49 (1.36-1.64)	1.58 (1.46-1.7)
Implant	2.57 (2.39-2.76)	2.97 (2.35-3.76)	1.59 (1.27-1.98)
Oral Maxillofacial Surgery	2.82 (2.74-2.89)	2.2 (2.02-2.41)	1.47 (1.39-1.56)
Periodontics	0.75 (0.73-0.78)	0.57 (0.53-0.61)	*NS*
Preventative	0.59 (0.57-0.61)	0.83 (0.76-0.92)	0.86 (0.8-0.93)
Prosthodontics, removable	0.85 (0.81-0.89)	0.69 (0.59-0.82)	*NS*
Prosthodontics, fixed	1.13 (1.05-1.21)	1.48 (1.18-1.87)	*NS*

aOR = adjusted odds ratio; NS = not significant.
*Variables were removed from the model using a backwards selection process until the most parsimonious model was achieved.

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968. Effect of Outpatient Antibiotic Ordering Restrictions on Antibiotic Prescribing Patterns at a State-wide VA Healthcare System

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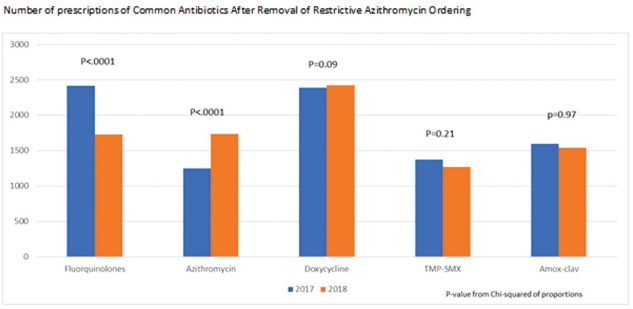
Background. Approximately 30% of antibiotics prescribed in the outpatient setting are inappropriate, mostly due to unnecessary prescriptions (Rx) for upper respiratory infections. Ordering restrictions is one approach to curtail inappropriate use. However, this approach may cause unintended consequences, such as increases in Rx of higher level antibiotics. This study evaluated the downstream effect of an azithromycin (AZM) ordering restriction.

Methods. This was a pre–post evaluation of the impact of an AZM removal (October 2017) on prescribing patterns of common outpatient antibiotics at the VA Maryland Healthcare System. AZM restriction was placed >10 years ago for concerns of emerging AZM resistance and overuse. During the study period, fluoroquinolone (FQ) use was scrutinized due to increasing toxicity risk. The proportion of several outpatient antibiotic Rx were compared between October 2017 and September 2018 (FY17) and October 2018 and September 30, 2018 (FY18) using χ^2 and logistic regression. FQ and AZM Rx were also stratified by location of prescribing clinic (urban vs. rural) and duration (≤14 days vs. >14 days).

Results. There were 15,972 and 14,451 prescriptions in FY17 and FY18, respectively. AZM Rx increased from 1,247 (7%) Rx in FY17 to 1,734 (11%) in FY18 ($P < 0.0001$) with an OR of 1.8 (95% CI 1.65–1.94). There was a greater effect on shorter than longer duration (OR 1.9 vs. 1.3, $P < 0.0001$), but no significant effect difference for urban and rural clinics (OR 1.8 vs. 1.9, $P = 0.6$). Conversely, FQ Rx decreased from 2,414 (15%) in FY17 to 1,731 (11%) in FY18 ($P < 0.0001$) with an OR of 0.7 (95% CI 0.66–0.76). There was a greater effect on shorter than longer duration (0.6 vs. 1.2, $P < 0.0001$) and also a greater effect on urban than rural clinics (OR 0.6 vs. 0.97, $P < 0.0001$). Doxycycline, amoxicillin–clavulanate and trimethoprim–sulfamethoxazole did not change significantly.

Conclusion. Removal of AZM restriction led to a significant decrease in FQ Rx, with greater effect in shorter duration and urban clinics, and an increase in AZM Rx, with greater effect in shorter duration, but no difference in clinic setting. Disparity of rural prescribers needs further exploration, as do other interventions outside of restrictive ordering, which needs periodic evaluation of risk and benefit if implemented.



Disclosures. **All Authors:** No reported Disclosures.

969. Antibiotic Prescribing in a Large Retail Health Clinic Chain: Opportunities for Stewardship

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Background. Retail health is a growing outpatient setting. Research using claims data found that antibiotics were linked with 46% of urgent care, 17% of medical office, and 14% of retail health visits for acute respiratory infections (ARIs) for which antibiotics are not needed. We aimed to quantify antibiotic prescribing rates to adult patients in a large retail health clinic chain using electronic health records and to identify future stewardship targets.

Methods. We included visits by adults ≥18 years to network retail health clinics from 2012 to 2016. We classified diagnoses by ICD codes. We calculated the percent of visits with systemic antibiotics prescribed among all visits, by individual diagnosis, and for ARIs as a group (e.g., pneumonia, sinusitis, pharyngitis, acute otitis media [AOM], bronchitis, and viral upper respiratory infections [URI]). We also assessed the percent of visits for sinusitis and pharyngitis with first-line antibiotics prescribed.

Results. Of 2,893,413 visits by adults during 2012–2016, 1,866,145 (66%) resulted in antibiotic prescriptions. ARIs accounted for 2,039,423 (72%) of visits and 1,475,069 (79%) of antibiotic prescriptions. The most common diagnoses regardless of antibiotic prescription were sinusitis (31% of visits), pharyngitis (15%, of which 81% were coded as streptococcal pharyngitis), urinary tract infection (9%), viral URI (8%), AOM (7%), and bronchitis (5%). Antibiotics were frequently prescribed for sinusitis, urinary tract infection, pharyngitis, and AOM but not for viral URI and bronchitis (Figure 1). First-line antibiotics were prescribed in the majority of sinusitis and pharyngitis visits (Figure 2).

Conclusion. ARIs are major drivers of visits by adult patients and of antibiotic prescribing to adults in this retail clinic network. Inappropriate antibiotic use was low in this setting for viral URI and bronchitis and first-line antibiotic selection was high for sinusitis and pharyngitis, although additional opportunities for improvement exist. Future antibiotic stewardship efforts may target examining adherence to guideline-recommended diagnostic criteria for sinusitis, AOM, and pharyngitis and increasing use of watchful waiting for sinusitis and AOM.

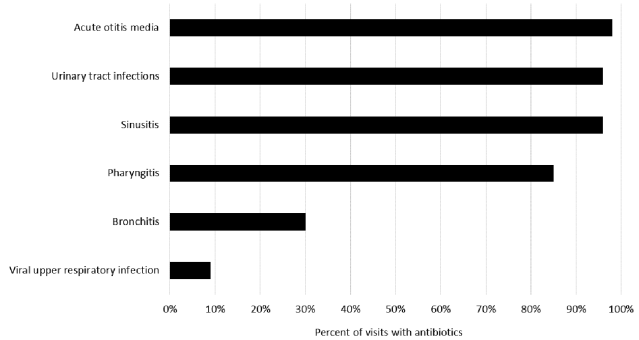

Figure 1. Percent of visits with antibiotics prescribed for most common diagnoses.