

A Retrospective Analysis of Dental Prescribing Trends at a Federally Qualified Health Center

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Background

- Dental prescribers account for approximately half of antibiotics prescribed in the United States.¹
- Dental providers primarily prescribe about a dozen different antibiotics and approximately half of the prescriptions are amoxicillin.²
- The important factors in determining proper prescribing according to guidelines involve the appropriate medication, dose, frequency, and duration.³

Purpose

- The purpose of this study is to evaluate the prevalence of antibiotic prescribing aligned with American Dental Association (ADA) guidelines among dental providers at a Federally Qualified Health Center (FQHC).
- Specific Aim: To determine the appropriateness of antibiotic prescribing amongst dental prescribers at an FQHC.
 - Objective 1: Determine the prevalence of prescribed antibiotics that do not meet ADA guidelines
 - Objective 2: Identify if certain antibiotics have a higher prevalence of inappropriate prescribing according to ADA guidelines when compared to other antibiotics used by dental providers

Methods

- This study used a retrospective chart review of patients who were prescribed an antibiotic for dental prophylaxis from January 2018 to December 2018
- Data collection was performed by El Rio's Program Analyst of Operations via their electronic health record, Nextgen
- Approx. 10,000 medical charts were reviewed
- Data collection was restricted to patients who were at least 18 y.o. and seen by a dental provider within the timeframe of 1/01/18–12/31/18
- Demographic data collected including patient's age, race, ethnicity, height, weight, allergies to medications, comorbidity status, prescribed antibiotic and indication, strength, quantity were collected
- The data was then used to evaluate the patient population based on whether the medication, dose, and frequency align with ADA guidelines
- Only patients using El Rio's pharmacies to fill the dental medication(s) were included in the analysis

Results

Table 1: Patient Encounter and Treatment Data

Variable	Frequency (n)	%
Appointment Event		
New patient exam	23	12.9
Toothache	20	11.2
Dental walk-in	19	10.7
Dental extraction	11	6.2
Dental exam/eval	9	5.1
Dental recall	9	5.1
Dental restoration	9	5.1
Periodontal scaling/maintenance	8	4.5
Crown prep/delivery	6	3.4
Other	6	3.4
Unreported	58	32.6
Encounter Diagnosis		
Dental caries extending into dentin	13	7.3
Dental caries extending into pulp	13	7.3
Exam/cleaning w/abnormal findings	11	6.2
Chronic periodontitis	5	2.8
Periodontal disease, unspecified	4	2.3
Dental root caries	3	1.7
High risk of dental caries	3	1.7
Cracked tooth	3	1.7
Deposits	2	1.1
Acute apical periodontitis	1	0.6
Chronic gingivitis	1	0.6
Embedded teeth	1	0.6
Horizontal alveolar bone loss	1	0.6
Other specified dental disorder	20	11.2
Other dental procedure status	38	21.4
Unreported	58	32.6
Prescribed Antibiotic		
Amoxicillin	136	76.4
Clindamycin	38	21.3
Penicillin	2	1.1

Table 3: Appropriateness of the Antibiotic

Variable	n (%)
Received pre-procedure antibiotic prophylaxis	178/10,082 (1.7)
Antibiotic agent selection consistent w/ ADA guidelines	176/178 (98.9)
Prescribed dose and duration consistent w/ ADA guidelines	176/178 (98.9)

Results Cont.

Table 2: Demographics of Study Sample

Variable	Frequency (n)	%
Patient Age (average =61 y.o.)		
Race		
White	129	72.5
Black/African American	9	5.1
Asian	2	1.1
American Indian /Alaska Native	2	1.1
Unreported	36	20.2
Ethnicity		
Hispanic or Latino	68	38.2
Not Hispanic or Latino	65	36.5
Unreported	45	25.3
Comorbidities		
Hypertension	49	27.5
Dyslipidemia	49	27.5
Diabetes	22	12.4
Asthma	7	3.9
HIV	5	2.4
Antibiotic Allergies		
Penicillin	15	8.4
Sulfas	10	5.6
Tetracycline	2	1.1
Quinolones	2	1.1
Macrolide	1	0.6

Conclusion

- 178/10,082 (1.7%) patients reviewed for the study were prescribed an antibiotic for dental prophylaxis by an El Rio dental provider
- 176 patients receiving dental prophylaxis were prescribed antibiotics in compliance with the ADA guidelines (n=176, 98.9%).
- The majority of patients prescribed an antibiotic were new patients (n = 23, 12.9%) and had an unreported appointment event (n=58, 32.6%)
- The total number of antibiotic types was 2: amoxicillin (n=136, 76.4%) and penicillin (n=2, 1.1%), and clindamycin (n=38, 21.3%).

Conclusion Cont.

- The prescribing practices at the El Rio Health Center are consistent with the ADA guidelines for dental prophylaxis in terms of agent used, dose, and duration, which is necessary to help reduce antibiotic resistance in the dental field.
- To conclude, this study shows that El Rio providers are using appropriate dental prophylaxis prescribing practices in terms of agent used, dose, and duration, however, improvements in the way the dental field documents cases of antibiotic prophylaxis are needed to fully assess appropriateness in such, that appointment events and encounter diagnosis should be documented.
- Limitations: Percent of unreported appointment types (32.6%) and encounter diagnosis (32.6%). The demographics of patients with endocarditis was also undetermined.
- Future directions: Report the appointment type and the encounter diagnosis
- The authors have nothing to disclose.

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