

Emergence of *emm11.10* in Colorado

	<i>Emm11.10</i>		Non- <i>Emm11.10</i>	
	NH	Non-NH	NH	Non-NH
2015	1	0	13	180
2016	2	0	13	203
2017	10	12	31	246
2018	13	7	14	132

Disclosures. All Authors: No reported Disclosures.

1895. Serious Antibiotic-Related Adverse Effects Following Unnecessary Dental Prophylaxis in the United States

Alan E. Gross, PharmD¹; Katie J. Suda, PharmD, MS²; Jifang Zhou, MD, MPH³; Gregory Calip, PharmD, MPH, PhD⁴; Susan A. Rowan, DDS⁵; Ronald Hershov, MD⁶; Rose Perez⁷; Charlesnika T. Evans, PhD, MPH⁷ and Jessina C. McGregor, PhD, FSHEA⁸

¹College of Pharmacy, University of Illinois at Chicago, Chicago, Illinois; ²Center of Innovation for Complex Chronic Healthcare (CINCCCH), Hines VA Hospital and College of Pharmacy, University of Illinois at Chicago, Hines, Illinois; ³College of Pharmacy, Univ of Illinois at Chicago, Chicago, Illinois; ⁴University of Illinois at Chicago, Chicago, Illinois; ⁵College of Dentistry, University of Illinois at Chicago, Chicago, Illinois; ⁶School of Public Health, University of Illinois at Chicago, Chicago, Illinois; ⁷Northwestern University, Chicago, Illinois; ⁸Oregon State University/Oregon Health & Science University, Portland, Oregon

Session: 201. SHEA Featured Oral Abstract

Friday, October 4, 2019: 4:45 PM

Background. Dentists prescribe 10% of outpatient antibiotics in the United States, with a significant portion of these being for prophylaxis. We previously found that 80% of prescriptions for prophylaxis prescribed prior to dental visits are unnecessary; however, the sequelae of these unnecessary antibiotics have not been characterized. Our objective was to assess the harms of unnecessary antibiotic prophylaxis using Truven, a national health claims database.

Methods. This was a retrospective cohort study of patients with dental visits from 2011 to 2015 linked to medical and prescription claims. Patients with commercial dental insurance without a hospitalization or extra-oral infection 14 days prior to antibiotic prophylaxis (≤ 2 days supply dispensed within 7 days before a dental visit) were assessed for inclusion. Patients with unnecessary antibiotic prophylaxis (defined as antibiotic prophylaxis in patients who both did not undergo a procedure that manipulated the gingiva/tooth periapex and did not have an appropriate cardiac diagnosis) were included and assessed for serious antibiotic-related adverse effects (AAE). The primary endpoint was the cumulative incidence of any AAE within 14 days post-prescription (composite of allergy, anaphylaxis, *C. difficile* infection, or ED visit). The secondary analyses were the cumulative incidence of each individual AAE and the risk difference of the primary endpoint between amoxicillin and clindamycin.

Results. Of the 168,420 dental visits with antibiotic prophylaxis, 136,177 (80%) were unnecessary and included for analysis. 3.8% of unnecessary prescriptions were associated with an AAE; primary and secondary endpoints are listed in the Table. ED visits (1.2%) and new allergies (2.9%) were most frequent. Clindamycin was associated with more AAE than amoxicillin (risk difference 322.1 per 1000 person-years, 95% CI: 238.5 - 405.8).

Conclusion. Even though antibiotic prophylaxis is prescribed for a short duration (≤ 2 days), it is not without risk. Since most AAE are diagnosed in medical settings, dentists may not be aware of these adverse effects. These data provide further impetus to decrease unnecessary prescribing of antibiotic prophylaxis prior to dental procedures.

Table. Adverse effects among patients with unnecessary dental prophylaxis (n = 136,177)

	Number of events	Total follow-up time in years**	Incidence rate Per 1000 person-years	95%CI	
Any Adverse Effect*	5260	5120.6	1027.2	999.5	1055.0
New Allergy	3912	5146.7	760.1	736.3	783.9
Any Anaphylaxis	0	5223.2	N/A		
<i>C. difficile</i> infection	9	5223.1	1.7	0.60	2.85
ED visit	1568	5193.4	301.9	287.0	316.9

*Primary endpoint defined as an adverse event occurring within 14 days post-prescription (composite endpoint of allergy, anaphylaxis, *C. difficile* infection, or ED visit).

**Subjects were censored at the occurrence of event of interest, lost-to-follow-up and end of enrollment.

Disclosures. All Authors: No reported Disclosures.

1946. An Exploratory Study of the Therapeutic Reasoning Underlying Antimicrobial Selection

Emily Abdoler, MD¹; Bridget O'Brien, PhD²; Brian Schwartz, MD² and Brian Schwartz, MD²; ¹University of Michigan, San Francisco, California; ²University of California, San Francisco, San Francisco, California

Session: 226. Advances/in/ID/Med/Ed

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Background. Clinical reasoning research has helped illuminate how clinicians make diagnoses but offers less insight into management decisions. The need to understand therapeutic choices is particularly salient within infectious diseases (ID), where antimicrobial prescribing has broad implications given increasing rates of resistance. Researchers have examined general factors underlying antibiotic prescribing. Our study advances this work by exploring the factors and processes underlying physician choice of specific antimicrobials.

Methods. We conducted individual interviews with a purposeful sample of Hospitalists and ID attendings. Our semi-structured interview explored the reasoning underlying antimicrobial choice through clinical vignettes. We identified steps and factors after 12 interviews then conducted 4 more to confirm and refine our findings. We generated a codebook through an iterative, inductive process and used Dedoose to code the interviews and facilitate analysis.

Results. We identified three antibiotic reasoning steps (*Naming the Syndrome, Delineating Pathogens, Antimicrobial Selection*) and four factors involved in the reasoning process (*Host Features, Case Features, Provider and Healthcare System Factors, Treatment Principles*) (Table 1). Participants considered host and case features when determining likely pathogens and antimicrobial options; the other two factors influenced only antimicrobial selection. From these data, we developed an antimicrobial reasoning framework (Figure 1). We also determined that participants seemed to have a "script" with specific content for each antimicrobial they considered, functioning much like the illness scripts common to diagnostic reasoning (Table 2).

Conclusion. Our antimicrobial reasoning framework details the cognitive processes underlying antimicrobial choice. Our results build on general therapeutic reasoning frameworks while elaborating factors specific to ID. We also provide evidence of the existence of "therapy scripts" that mirror diagnostic reasoning's "illness scripts." Our framework has implications for medical education and antimicrobial stewardship.

Table 1: Factors involved in the antimicrobial reasoning process

HOST FEATURES
Age
Allergies
Exposures
Medical History
-Current Conditions
-Ability to take Oral Medications
-Past Infections
Medications
-Prior Exposure to Antimicrobials
-Current Medications
-Existing Pill Burden
Social Factors
-Ability to Adhere
-Financial Factors
-Likelihood of Follow-Up
Preferences
CASE FEATURES
Differentiating Features of the Case
Microbiologic Data
Severity of Illness
Illness Trajectory
PROVIDER & HEALTHCARE SYSTEM FACTORS
Antibiogram
Clinical Experience
Consulting Colleagues
Consulting Resources
Institution-Specific Practices
Supporting Trainee Choices
TREATMENT PRINCIPLES
Pathogen-Based Treatment
Evidence-Based/Guideline-Supported Decisions
Narrow Coverage
Parsimony

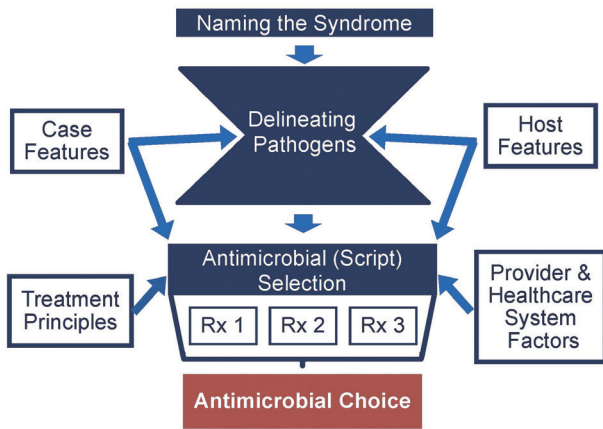


Figure 1: Conceptual framework of the therapeutic reasoning underlying antimicrobial choice.

Table 2: Therapeutic (antimicrobial) script content

Adverse Effects
Cost & Pharmacy Considerations
Dosing
Duration of Therapy
Drug-Drug Interactions
Evidence of Efficacy/Guideline Support
Monitoring for Adverse Effects
Pharmacodynamics
Pharmacokinetics
-Bioavailability
-Drug Distribution
-Clearance/Metabolism
Route of Delivery
Safety in Pregnancy
Spectrum

Disclosures. All Authors: No reported Disclosures.

1947. Educational Impact of a Hybrid Infectious Diseases Rotation for Internal Medicine Residents

James B. Cutrell, MD¹; James B. Cutrell, MD¹; Binh-Minh Le, MD²; Heather R. Wolfe, MD¹; Helen King, MD¹; Reuben J. Arasaratnam, MD MPH¹; Ank E. Nijhawan, MD, MPH¹; Ank E. Nijhawan, MD, MPH¹; Megan McKenna, MD¹ and Francesca Lee, MD¹; ¹UT Southwestern Medical Center, Dallas, Texas; ²Texas Health Physicians Group, Dallas, Texas

Session: 226. Advances/in/ID/Med/Ed
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Background. Traditional infectious diseases (ID) rotations for internal medicine (IM) residents focus on inpatient consultation, potentially skewing trainees' perspectives on ID. We report our experience with a hybrid inpatient-outpatient ID rotation which provides broader ID clinical exposure and an effective venue for educational innovation.

Methods. We included all IM residents completing an assigned ID rotation in the UT Southwestern IM residency since July 2013. From July 2013 to June 2017, a 4-week ambulatory ID (Amb ID) rotation, consisting of general and subspecialty ID clinics and weekly teaching sessions focused on ID board review, was offered in parallel to traditional inpatient ID consult rotations. From July 2017 to present, all assigned residents complete up to a 4-week ID hybrid rotation, consisting of 2 weeks of ambulatory

ID and 2 weeks of inpatient ID consults, with all residents receiving weekly teaching sessions; in some cases, the 4 weeks were not completed sequentially. Data were collected on resident numbers and training level, quantitative and qualitative course evaluations, and program in-training examination scores in ID content areas.

Results. From July 2013 to June 2019, IM residents completed a total of 626 ID rotations, an average of 104 per year (Table 1). A sample ID hybrid schedule is shown in Table 2. Overall resident satisfaction with the ID hybrid rotation was 4.7 (std. dev. 0.7) on a 5-point Likert scale. This rotation has consistently been among the highest rated rotations by residents. In-training examination ID scores increased significantly with creation of the Amb ID rotation in 2013 and further increased since 2017 with creation of the ID hybrid, in which both inpatient and ambulatory residents receive the weekly teaching sessions (Figure 1). Pilot educational innovations through this rotation include an online web-based antibiotic stewardship curriculum (2014-2015) and a mobile app-based ID board review platform utilizing spaced interval learning (2018-2019).

Conclusion. A hybrid inpatient-outpatient ID rotation for IM residents has proven to be a highly effective platform for ID education and curriculum innovation at our institution. This concept could be exported to other institutions and increase IM resident interest and breadth of clinical exposure in ID.

Table 1. Infectious Diseases Rotations Completed By Resident Level, 2013-2019

Academic Year	PGY-1 Residents	PGY-2 Residents	PGY-3 Residents	Total Residents
2013-2014				
ID Inpatient Consults	5	17	27	49
Ambulatory ID	1	22	17	40
2014-2015				
ID Inpatient Consults	0	12	21	33
Ambulatory ID	0	18	25	43
2015-2016				
ID Inpatient Consults	28	25	35	88
Ambulatory ID	0	18	17	35
2016-2017				
ID Inpatient Consults	25	28	37	90
Ambulatory ID	0	12	34	46
2017-2018				
ID Hybrid Rotation	4	44	53	101
2018-2019				
ID Hybrid Rotation	1	36	64	101

Table 2. Sample ID Hybrid Rotation Schedule

Rotation Week	Monday		Tuesday		Wednesday		Thursday		Friday	
	AM	PM	AM*	PM	AM	PM	AM	PM	AM	PM
Week 1	Inpatient ID		Inpatient ID		Inpatient ID		Inpatient ID		Inpatient ID	
Week 2	Inpatient ID		Inpatient ID		Inpatient ID		Inpatient ID		Inpatient ID	
Week 3	ID OPAT clinic	Wound care rounds	ASP/micro lab didactics	HIV clinic	University ID Clinic	Cystic Fibrosis ID clinic	Heart/Lung Tx ID clinic	ID OPAT clinic	IPC Walk rounds	VA ID/HIV clinic
Week 4	ID OPAT clinic	Derm walk rounds	ASP/micro lab didactics	Wound care rounds	University ID Clinic	VA ID/HIV clinic	ID OPAT clinic	ID OPAT clinic	IPC Walk rounds	Liver/Kidney Tx ID clinic

ASP: Antimicrobial stewardship program; IPC: infection prevention and control; OPAT: outpatient parenteral antimicrobial therapy; Tx ID: transplant ID; VA: Veterans Affairs

* All residents participate in didactic ID board review teaching session weekly on Tuesday AM (1 hour).

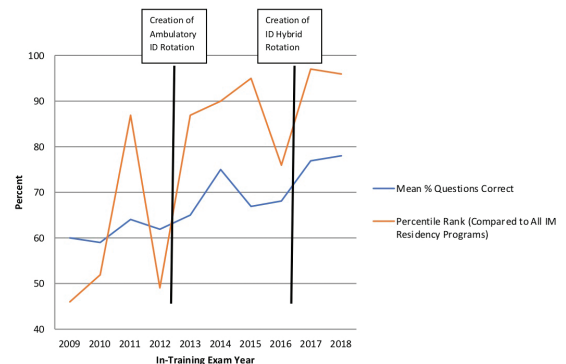


Figure 1. IM Residency In-Training Exam Scores in ID Content Area, 2009-2018

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1948. Impact of @WuidQ, a Free Open-access Medical Education Twitter Resource, on Infectious Disease Learning and Teaching

Gerome V. Escota, MD¹; Ige George, MD² and Emily Abdoler, MD²; ¹Washington University in Saint Louis School of Medicine, St. Louis, Missouri; ²University of Michigan, San Francisco, California

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