Table: Comparison of Enterovirus A71 and Enterovirus D68-Associated Acute Flaccid Myelitis Cases Presenting to Children's Hospital Colorado 2013-2018

		Enterovirus A71 AFM Cases (n=10)	Enterovirus D68 AFM Cases 2013-2018 (n=8)	p-value
Demographics	Age (median months; IQR)	19.3 (12.9-22.9)	100.2 (41.6-74.8)	0.033
	Male sex	10 (100%)	6 (75%)	0.18
	White Race	8 (80%)	6 (75%)	1.00
	Hispanic Ethnicity	1 (10%)	2 (25%)	0.56
Prodromal Illness	Fever	10 (100%)	7 (88%)	0.44
	Irritability	8 (80%)	1 (13%)	0.015
	Hand, Foot, or Mouth Lesions	6 (60%)	0 (0%)	0.013
	Respiratory Illness	3 (30%)	8 (100%)	0.004
	Vomiting	8 (80%)	3 (38%)	0.14
	Days from Symptom Onset to Neurologic Onset (median, IQR)	1 (0 - 3)	5.5 (3 – 6)	0.011
Associated Neurologic Signs and Symptoms	Cranial Nerve Dysfunction	1 (10%)	3 (38%)	0.27
	Myoclonus	9 (90%)	0 (0%)	0.0004
	Ataxia	9 (90%)	1 (13%)	0.0029
	Autonomic Instability	3 (30%)	1 (13%)	0.59
	Urinary Retention	6 (60%)	5 (63%)	1.00
Limb Findings	Hyperreflexia/Hypertonia at Presentation	1 (10%)	0 (0%)	1.00
	Hyporeflexia/Hypotonia at Presentation	3 (30%)	6 (75%)	0.15
	Limbs with Weakness (median, IQR)	2.5 (1 - 4)	3 (1.5 – 4)	0.71
	Sensory Findings	0 (0%)	1 (13%)	0.44
Laboratories	CSF Pleocytosis (WBC>10)	10 (100%)	8 (100%)	1.00
	WBC (median, IQR)	125 (84 – 430)	59.5 (49 – 86.5)	0.093
	EV Detected in Cerebrospinal Fluid	1/10 (10%)	0/5 (0%)	1.00
	EV Detected in Oropharyngeal Swab	9/9 (100%)	1/6 (17%)	0.002
	EV Detected in Nasopharyngeal Specimen	4/9 (44%)	8/8 (100%)	0.029
	EV Detected in Rectal Swab	10/10 (100%)	0/6 (0%)	<0.0001
Magnetic Resonance Imaging	Supratentorial Lesion	3 (30%)	1/7 (14%)	0.60
	Cranial Nerve Enhancement	4 (40%)	1/7 (14%)	0.34
	Cerebellar Lesion	8 (80%)	3/7 (43%)	0.16
	Brainstem Lesion	10 (100%)	7/7 (100%)	1.00
	Pons	2 (20%)	6/7 (86%)	1.00
	Midbrain	2 (20%)	1/7 (14%)	1.00
	Medulla	7 (70%)	7/7 (100%)	0.23
	Cervical Spinal Cord Lesion	10 (100%)	7 (88%)	0.44
	Thoracic Spinal Cord Lesion	5/9 (56%)	7 (88%)	0.29
	Lumbar Spinal Cord Lesion	4/9 (44%)	6 (75%)	0.33
	Spinal Cord Nerve Root Enhancement	6/10 (60%)	4 (50%)	1.00
Course	Intubation	0 (0%)	2 (25%)	0.18
	Supplemental Feeding Support	3 (30%)	4 (50%)	0.63
	Length of Stay (median, IQR)	5.5 (5 – 12)	32 (11 – 58.5)	0.023
	Full Recovery of Limb Strength at 1-2 Month Followup	9 (90%)	1 (13%)	0.0029
	Death	0 (0%)	0 (0%)	1.00

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

1890. Missed Clinical Opportunities to Prevent Infections and Treat Substance Use Disorder (SUD) in People Who Inject Drugs (PWID)

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Session: 199. What's New and Happening in Public Health
Friday, October 4, 2019: 4:00 PM

Background. The age-adjusted rate of drug overdose deaths in the United States tripled from 1999 to 2016. Public health surveillance data indicate that an increasing proportion of infections due to bacterial and fungal pathogens is associated with injection drug use (IDU). We describe healthcare encounters (HCEs) of PWID as potential opportunities to prevent infections related to IDU by identifying risks and treating SUD, including with medication-assisted treatment (MAT) for opioid use disorder.

Methods. At six hospitals in western New York, we abstracted medical records from hospital admissions and emergency department (ED) visits for PWID (i.e., IDU in the preceding year) who had positive cultures for Staphylococcus aureus (any clinical specimen, April–July 2017), group A Streptococcus (invasive specimens, all of 2017) or *Candida* spp. (blood specimens, all of 2017). We reviewed hospital admission and ED records for 1 year preceding the positive culture to identify visits during which opportunities to prevent infection and treat SUD by addressing SUD and IDU were missed.

Results. We identified 99 PWID with positive cultures. The median age was 33 years (range 19–68) and 61 were female. Sixty-nine had a skin and soft-tissue infection, 44 had a bloodstream infection, and 20 had both. Thirty-one PWID left against medical advice during a hospital admission or an ED visit. Seventy-nine PWID were hospitalized, of whom 4 died. Ninety-five used opioids and 71 used cocaine in the preceding year. Seventy-five PWID had an HCE in the 12 months prior to the index visit, with a median of two HCE per person (interquartile range 1–4); 53 of PWID had a previous HCE for infection and 28 for opioid overdose. SUD was documented during a prior HCE at the same hospital for 61 PWID, but only 10 (16%) were offered MAT during any prior HCE and for 24 (39%) there was no documentation that any form of treatment for SUD was offered.

Conclusion. In this cohort, PWID frequently had one or more healthcare encounters documented at the same hospital in the year prior to a serious bacterial or fungal infection. These prior HCEs were often for infections or overdose that signaled the need for MAT, demonstrating that there are critical missed opportunities to identify risks, prevent infection, and treat SUD.

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

1891. Invasive Group A Streptococcus Infections Among Residents of Multiple Nursing Homes—Denver, Colorado, 2017–2018

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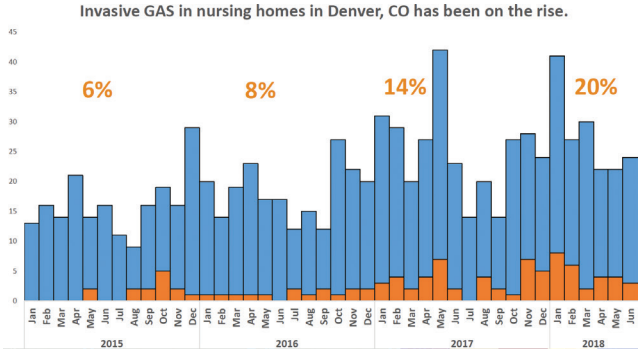
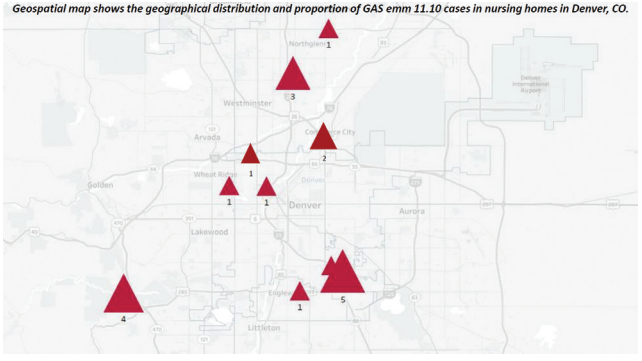
Background. Older adults residing in nursing homes (NH) are at increased risk for invasive group A *Streptococcus* (GAS) infections due to advanced age, presence of wounds, and comorbidities; approximately one-third of infected patients die. Beginning in 2015, increasing numbers of GAS infections in NH residents and several NH clusters were reported from the Denver metropolitan area. Colorado Department of Public Health and Environment (CDPHE) and CDC investigated to characterize cases and assess if outbreaks resulted from interfacility transmission.

Methods. We reviewed data from Active Bacterial Core surveillance (ABCs) in the 5-county Denver area from January 2017 to June 2018. We defined a case as isolation of GAS from a normally sterile site in an NH resident. GAS isolates underwent whole-genome sequencing (WGS) at CDC's *Streptococcus* Laboratory to determine *emm* types for genotyping. Among isolates with the same *emm* type, pairwise single-nucleotide polymorphism (SNP) distances were calculated using Nucmer software. In October 2018, a CDPHE-CDC team assessed infection control at NHs with cases of the most common *emm* type.

Results. Over 18 months, among >100 NHs in the Denver area, ≥1 GAS case was identified in 29 NHs, with 6 having ≥3 cases. During this period, 68 cases in NH residents were identified. WGS identified 17 emm types among isolates from these cases; most common was emm11.10 (34%, n = 22), a rare subtype in ABCs. All emm11.10 isolates had nearly identical genomes (average pairwise SNP distance: 3.2), and were isolated from 10 NHs, with 2 NHs having ≥ 4 cases. Multiple infection control lapses were noted during site visits to 8 NHs.

Conclusion. Multiple outbreaks due to GAS were noted in 5-county Denver area NHs in 2017–2018. WGS of surveillance isolates identified a rarely seen emm subtype 11.10 from multiple facilities with temporal and genomic clustering suggesting interfacility GAS transmission.





Emergence of *emm11.10* in Colorado

	Emm11.10		Non-*Emm11.10*	
	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

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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		
***C. difficile* 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

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Session: 226. Advances/in/ID/Med/Ed
Saturday, October 5, 2019: 10:30 AM

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