Results. A larger proportion of children seen in the ED (27.9%) and UCC (25.2%), then PMD (sick) visits (6.1%), were diagnosed with respiratory infections (P <0.001). PNA specifically was diagnosed in 8% (71/945) of all ED visits. When parenteral agents were given in the ED for PNA, ceftriaxone was most frequent: 58% (10/17) vs. 35% for ampicillin. In PMD and UCC, azithromycin was given in 50% of treated cases (6/12), amoxicillin in 25%, and amoxicillin/clavulanate in 17%. Across the 3 settings, 25% (73/291) of URI received antibiotics; 27% (20/73) did not have a documented co-infection (e.g., otitis media).

Conclusion. Despite general awareness of existing PNA guidelines, non-first-line antibiotics are still frequently used across outpatient settings in our area. Also, antibiotics are often given in cases where URI is the primary diagnosis, when a bacterial etiology is unlikely. Pediatric stewardship efforts should further promote available PNA guidelines and avoiding antibiotics for URI, and create educational activities tailored to their local providers.

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284. Antibiotic Usage in the First Year of Life in HIV-Exposed, Uninfected Infants in Malawi: Results From the Breastfeeding, Antiretrovirals and Nutrition (BAN) Study

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Session: 53. Pediatric Antimicrobial and Diagnostic Stewardship
Thursday, October 4, 2018: 12:30 PM

Background. Antibiotic resistance is a serious health hazard driven by overuse. Antibiotic usage in low-income countries is poorly studied. HIV-exposed, uninfected (HEU) infants are a growing population at high risk for infection and resulting antibiotic use.

Methods. We described antibiotic usage among 2,152 HEU infants in the Breastfeeding, Antiretrovirals and Nutrition (BAN) Study in Lilongwe, Malawi, 2004–2010. Factors were tested for associations with antibiotic prescription using a repeated-measures Cox proportional hazards model and included cotrimoxazole preventive therapy (CPT) exposure, malaria season, antiretroviral (ARV) treatment, receipt of maternal nutritional supplement, maternal $CD4^+$ T-cell count, HIV viral load, maternal age, infant sex and birthweight.

Results. Overall, 80% of HEU infants in the BAN study received an antibiotic prescription during follow-up (median length: 336 days). The majority (67%) of the 5,107 antibiotic prescriptions were for respiratory indications. Penicillins (43%) were the most commonly prescribed type of antibiotics, followed by sulfonamides (23%). The median number of prescriptions received per infant-month was 0.2 (interquartile range (IQR): 0.1, 0.3). Factors associated with lower hazard of antibiotic prescription included CPT exposure (hazard ratio (HR): 0.57 [95% confidence interval (CI): 0.52, 0.61]), maternal ARV (HR: 0.85, 95% CI: [0.78, 0.93]), and infant ARV (HR: 0.90, 95% CI: [0.82, 0.98]). Hazard of antibiotic prescription also decreased as participants aged (HR for ages 6–12 months vs. 0–1 month: 0.48, 95% CI: [0.40, 0.58]). Male sex (HR: 1.09, 95% CI: [1.02, 1.17]) and log maternal viral load (copies/mL) (HR: 1.02, 95% CI: 1.003, 1.04) were associated with increased hazard of antibiotic prescription.

Conclusion. This study provides an estimate of antibiotic use by HEU infants in a low-income country and evidence that CPT may lead to reduced antibiotic use.

Disclosures. **All authors:** No reported disclosures.

285. Challenging the Dogmas of Outpatient Parenteral Antimicrobial Therapy Through a Randomized Controlled Trial

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Session: 54. Bone and Joint Infections
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Background. Outpatient parenteral antimicrobial therapy (OPAT) has shifted from being a novel concept to an accepted model of care for some conditions. However, concerns remain that have limited its broader roll out: the use of daily ceftriaxone regarding its efficacy and impact on antibiotic resistance, intravenous (IV) catheter complications, risk of treating an acute infection directly from the emergency room (ER), and concern that OPAT has shifted the burden of cost from hospitals to patients. We aimed to address these questions with the first randomized controlled trial (RCT) of OPAT efficacy in children: comparing OPAT directly from the ER using IV ceftriaxone with hospitalization using IV flucloxacillin for moderate/severe cellulitis.

Methods. The RCT was set at a tertiary pediatric hospital from January 2015 to June 2017. Inclusion criteria: children 6 months–18 years with uncomplicated cellulitis needing IV antibiotics. Patients were randomized to ceftriaxone via OPAT at home or flucloxacillin in hospital, using a peripheral catheter. Primary outcome: treatment failure within 48 hours due to lack of improvement or adverse events. Secondary outcomes: complications, readmission, acquisition of nasal and stool-resistant bacteria and costs.

Results. A total of 188 children were randomized: 93 to OPAT and 95 to hospital. In the intention-to-treat population, there was no difference in treatment failure between OPAT and hospital (2% vs. 7%, P = 0.09). Per protocol, OPAT had less failure (1% vs. 8%, P = 0.03). There was no increased acquisition of MRSA, ESBL, VRE or *C. difficile* with OPAT compared with in hospital at 1 week or 3 months (P > 0.05). Complication rates were similar (6% vs. 7%, P = 0.78), and repeat IV catheterization was less with OPAT (3% vs. 15%, P = 0.002). Readmission was 1% on OPAT. The cost to families was significantly less with OPAT (AUD213 vs. AUD733, P < 0.001).

Conclusion. Despite the acuity of the infection, OPAT with IV ceftriaxone for moderate/severe cellulitis in children is efficacious with complications and readmissions no different from hospital care with IV flucloxacillin. Short-term ceftriaxone use in healthy children on OPAT is not associated with increased acquisition of resistant organisms, and has reduced burden of costs to families (ClinicalTrials.gov NCT02334124).

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286. Rapid, One-Tier Diagnosis for Lyme Arthritis

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Session: 54. Bone and Joint Infections
Thursday, October 4, 2018: 12:30 PM

Background. Lyme disease commonly present as arthritis (LA) and may mimic septic arthritis (SA). SA has worse prognosis and requires hospitalization. LA diagnosis guidelines suggest two-tiered algorithm. Results take 3–5 days to return, putting children at risk by mismanagement. For children with acute arthritis, timely recognition improves quality of care.

Methods. We retrieved charts of children with joint complaint in a Lyme endemic region (January 2011–July 2016). We identified SA and LA and characterized presentations. We reviewed all Lyme [anti-VlsE] chemiluminescent immunoassay screens, (January 2015–January 2017). The study was approved by IRB.

Results. We reviewed 705 charts. SA was found in 24 patients, including 5 with knee arthritis. Seventy-two had confirmed LA, 70 in the knee [fig 1]. Laboratory and physical findings are summarized in Table 1. 2,341 anti-VlsE screens reviewed. 92% were negative. Of the 88 patients with high levels (>8), 53% had arthritis [Figure 2].

Conclusion. In children with knee arthritis, LA is 14 times more common than SA. Delayed diagnosis put many children at risk of mismanagement. Physical and laboratory findings may direct clinical suspicion but are limited when differentiating between LA and SA. High value anti-VlsE screens suggest symptomatic disease and may confirm LA diagnosis within hours. This correlates with the hypothesis of this *B. burgdoferi's* surface protein's role in immune evasion, leading to dysregulated inflammation.

Figure 1. Study cohorts

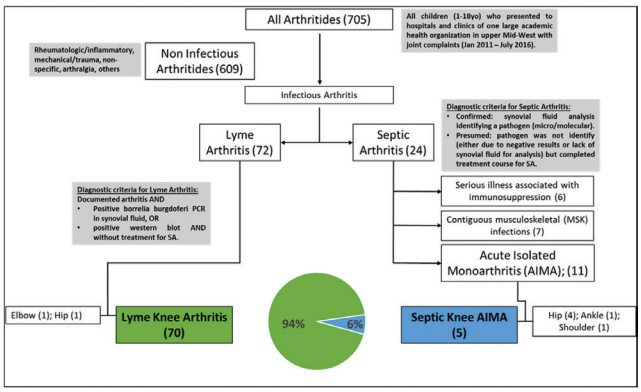

Table 1: Laboratory and Physical Findings in Children with Knee SA and Knee LA

	Lyme Arthritis–Knee (70)			Septic Arthritis–Knee (5)			
	N	Results (Average)	Abnormal (%)	*N*	Result (Average)	Abnormal (%)	*P*-Value
Peripheral WBC	58	5–15 (8.9)	0	4	12.6–15.6 (14.5)	75	0.0009
Synovial WBC	28	2–115 (37)	100	5	3–186 (69)	100	0.1171
CRP (mg/dL)	54	0–104 (19)	70	3	10–156 (72)	100	0.2558
ESR (mm/hour)	63	6–97 (33)	75	4	17–33 (24.5)	100	0.0148
Lyme screen CLIA*	15	8.43 - >12.4 (12)	100	[1]	+ 0 / - [1]	0	
EIA**	43	+ 43 / - 0	100	1	+ 0 / - 1	0	
Lyme WB IgG bands	66	5–10 (9)	100				
IgM bands	65	0–3 (1)	41				
Synovial Culture	26	+ 1 / - 25	4	5	+ 3 / - 2	60	
Synovial PCR	21	+ 11 / - 10	54	2	+ 2 / - 0	100	
Fever	64	+ 10 / - 54	16	4	+ 3 / - 1	75	
Non weight bearing	70	+ 21 / - 49	30	4	+ 3 / - 1	75	

*Chemiluminescent immunoassay.

**Enzyme-linked immunoassay.