admission, mechanical ventilation (MV), parenteral/tube feeding, inpatient rehab, or intracranial pressure monitoring. Single variable and multivariate analyses were performed to determine factors predictive of disease severity.

Results. Of the 140 patients, 76 (54%) males with a median age of 8 years [10 months-16 years], were identified with LACV-ND. Symptoms at presentation, laboratory abnormalities, EEG, radiography, and outcomes are shown in Table 1. Fifty-seven (41%) patients met criteria for severe disease, notably for PICU admission (n = 41), status epilepticus (n = 35), MV (n = 13), and inpatient rehab (11). No in-patient deaths were observed. Exploratory analysis revealed that patients with severe disease were often younger at presentation, had higher rates of altered mental status (AMS), and seizures. Elevated serum white blood cell counts (WBC) and polymorphonuclear cell (PMN) predominance in serum and cerebrospinal fluid (CSF) were observed more frequently in severe disease. Multivariate analysis revealed presentation with seizures (OR 4.7 [95% CI 1.7–12.6], P = 0.001), elevated serum WBC (OR 1.7 [95% CI 1.2–2.5], P = 0.004), and a higher CSF PMN% (OR 1.03 [95% CI 1.01–1.06, P = 0.003) to be independent predictors of severe disease.

Conclusion. At presentation, patients with severe disease tended to be younger, have greater rates of neurologic symptoms, and leukocytosis with PMN predominance in blood and CSF. These clinical and laboratory findings may serve as useful biomarkers to predict disease severity.

Table 1: Clinical, Laboratory, Radiographic Findings, and Outcomes with Pediatric La Crosse Virus Neuroinvasive Disease

	Cohort (n=140)	Severe (n=57)	Non-severe (n=83)	P-value
Clinical Findings At Presentation				
Age, in days, median [IQR]	8 [6-11]	7 [4-11.5]	8 [6-11]	0.44
Age ≤ 5 years, n (%)	34 (24%)	19 (33%)	15 (18%)	**0.046**
Age > 5 years, n (%)	106 (76%)	38 (67%)	68 (82%)	
Duration of symptoms, in days, median [IQR]	4 [3-5]	3 [2-4.5]	4 [3-5]	**0.0004**
Fever, n (%)	128 (91%)	49 (86%)	79 (95%)	0.056
AMS, n (%)	84 (60%)	47 (82%)	37 (45%)	**<0.0001**
Seizures, n (%)	52 (38%)	38 (66%)	14 (17%)	**<0.0001**
Abdominal pain, n (%)	43 (31%)	11 (19%)	32 (39%)	**0.016**
Laboratory Values				
Serum WBC (10^3/μL) , median [IQR]	14.0 [11.2-18.8]	17.3 [12-21.1]	13.3 [10.1-16.9]	**0.0005**
Serum ANC (10^3/μL) , median [IQR]	11.7 [8.5-15.4]	12.9 [9.9-16.6]	10.6 [8.0-13.5]	**0.011**
CSF WBC (/mm³), median [IQR]	136 [59-252]	116 [47-267]	162 [76-248]	0.25
CSF PMN (%), median [IQR]	34 [11-55]	49 [23-68]	25 [6-44]	**0.0001**
CSF Lymph (%), median [IQR]	48 [28-70]	35 [16-63]	56 [37-73]	**0.0028**
Hyponatremia at presentation, n (%)	28 (20%)	11 (19%)	17 (20%)	0.86
Hyponatremia at any time, n (%)	42 (30%)	18 (32%)	24 (29%)	0.74
Radiographic/EEG Results, n/total (%)				
Abnormal Head CT	15/108 (14%)	9/55 (16%)	6/53 (11%)	0.58
Abnormal Brain MRI	59/82 (72%)	35/42 (83%)	24/ 40 (60%)	**0.027**
Abnormal EEG	64/66 (97%)	45/46 (98%)	19/20 (95%)	0.52
Outcomes, n (%)				
Receipt of Anti-epileptic Drugs	51 (36%)	41 (72%)	10 (12%)	**<0.0001**
Seizures During Hospitalization	33 (24%)	28 (49%)	5 (6%)	**<0.0001**
Seizure at Any Time	60 (43%)	44 (77%)	16 (19%)	**<0.0001**

AMS, Altered mental status; WBC, white blood count; ANC; absolute neutrophil count; CSF, cerebrospinal fluid; IQR, interquartile range; PMN; polymorphonuclear cells; EEG: electroencephalography; CT, computed tomography; MRI, magnetic resonance imaging

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

1876. A Hepacivirus-Like Protein Is Targeted by the Antibody Response to Kawasaki Disease (KD)

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Background. Clinical and epidemiologic data support a viral cause of KD, but the etiology has eluded 50 years of study. We previously identified virus-like intracytoplasmic inclusion bodies (ICI) in ciliated bronchial epithelium of KD children but not infant controls, but the antigens within the ICI were unknown. At 1–2 weeks following infection, 75% of peripheral blood plasmablasts (PB) specifically target the infectious agent. We cloned the PB response to KD to identify KD-specific antibodies and their target antigens.

Methods. We isolated single PB from children with KD 1–3 weeks after fever onset by flow cytometry, and amplified immunoglobulin VDJ and VJ genes from each PB by RT-PCR. We sequenced the products and made monoclonal antibodies (Mab) from clonally expanded PB in individual patients. Mab were tested for binding to KD tissues and to a viral peptide array containing 29,939 peptides from known B cell epitopes of animal viruses (www.iedb.org).

Results. We sequenced 1156 PB from 11 KD patients, and identified 44 clonally expanded sets of PB. We prepared 61 Mab from clonally expanded and highly mutated IgA PB, and found that 33/61 bind to KD ICI, 10 strongly and 23 weakly. Of 10 Mab that strongly bind, 2 were VH3-33 (single patient), 2 VH3-23 (single patient), 1 VH3-15, 1 VH3-74, 3 VH1-46 (2 patients), and 1 VH4-59. These Mab CDR3s varied from 11 to 20 aacids, with 4–28 aacid mutations. Mab KD4-2H4 recognized multiple similar peptides from nonstructural protein 4A of hepacivirus C; pt KD4 sera was negative for hepatitis C by fourth-generation ELISA. Amino acid substitution analysis yielded an optimized peptide, and 6 KD Mab recognized this peptide by ELISA. These 6 Mab derived from 3 KD patients, all of whom had coronary aneurysms, and were VH3-74 (n = 1), VH3-33 (n = 2, single patient), VH1-45 (n = 1), and VH3-72 (n = 2, single patient). Strong binding of KD Mab KD4-2H4 and KD6-2B2 to ICI was totally blocked by pre-incubation with optimized peptide. KD but not control sera react with optimized peptide expressed as a glutathione *S*-transferase fusion protein by western blot.

Conclusion. Children with KD make antibodies to a hepacivirus-like protein, and KD ICI contain this protein. These results strongly suggest that a previously unidentified hepacivirus with a respiratory portal of entry is etiologically related to KD.

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

1877. Evaluation of Antibiotic Utilization After Introduction of a Dedicated Infectious Diseases-Critical Care Medicine Service in Critical Care Units

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Background. Infection is a leading cause of admission to intensive care units (ICU), with critically ill patients often receiving a high volume of empiric broad-spectrum antibiotics. Nevertheless, a dedicated infectious diseases (ID) consultation and stewardship team is not routinely implemented. An ID-Critical Care Medicine (ID-CCM) pilot program was designed at a large tertiary hospital in which an ID attending was assigned to participate in daily rounds with the ICU team, as well as provide an ID consult on select patients. We sought to evaluate the impact of this dedicated ID consultation and stewardship program on antibiotic utilization in the ICU.

Methods. This is an IRB-approved single-site retrospective study. We analyzed antibiotic utilization in the ICU during the post-intervention period from January 1, 2017 to December 31, 2017 and compared it to antibiotic utilization in the same ICU during the pre-intervention period from January 1, 2015 to December 31, 2015. Using Poisson regression analysis, we evaluated antibiotic utilization of each agent, expressed as days of therapy (DOT) per 1,000 patient-days, between the two groups.

Results. The six most commonly used broad-spectrum antibiotic agents were included in the final analysis. During the intervention period, statistically significant reductions were seen in cefepime (131 vs. 101 DOT per 1,000 patient-days, P = 0.01), piperacillin-tazobactam (268 vs. 251 DOT per 1,000 patient-days, P = 0.02) and vancomycin (265 vs. 228 DOT per 1,000 patient-days, P = 0.01). The utilization of other antibiotics including daptomycin, linezolid, and meropenem did not differ significantly (Figure 1).

Conclusion. With this multidisciplinary intervention, we saw a decrease in the use of the most frequently administered broad-spectrum antibiotics. Our study shows that the implementation of an ID-CCM service is a feasible way to promote antibiotic stewardship in the ICU and can be used as a strategy to reduce unnecessary patient exposure to broad-spectrum agents.

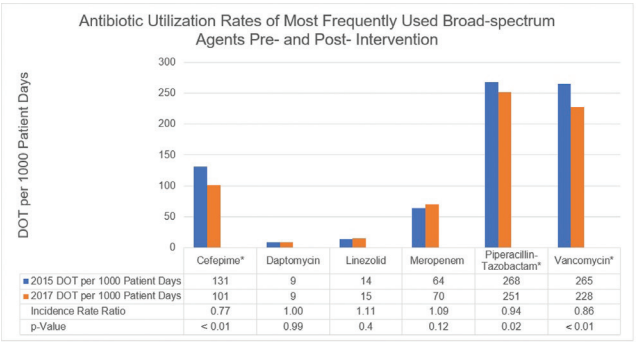

Figure 1. Antibiotic Utilization Rates of Most Frequently Used Broad-spectrum Agents Pre- and Post-Intervention. *Statistically Significant, p-Value calculated using Poisson regression analysis. DOT = Days of therapy.

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

1878. Title: Impact of Antibiotic Stewardship Rounds in the Intensive Care Setting: A Prospective Cluster-Randomized Crossover Study

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Background. The impact of formalized, interdisciplinary antimicrobial stewardship program (ASP) rounds in the intensive care unit (ICU) setting has not been well described.

Methods. We performed a two-arm, cluster-randomized, crossover quality improvement study over 8 months to compare the impact of weekly ICU rounds with an ASP team vs. usual care. The primary outcome was antibiotic use (AU) in days of therapy (DOT) per 1,000 days present during and following ICU exposure. Our cohort consisted of ICU patients in 5 ICUs in Duke University Hospital. The unit of randomization was rounding team, which corresponded to half of the ICU beds in each unit. Each team was randomized to the intervention for 4 months followed by usual care for 4 months (or vice versa). The intervention involved multidisciplinary review of eligible patients to discuss antibiotic optimization. Patients not on antibiotics, followed by infectious diseases, post-transplant, on ECMO, or with a ventricular assist device were excluded from review. Intervention impact was assessed with multivariable negative binomial regression rate ratios (RR). AU was assessed over time before and after the study period to assess global and unit-level trends.

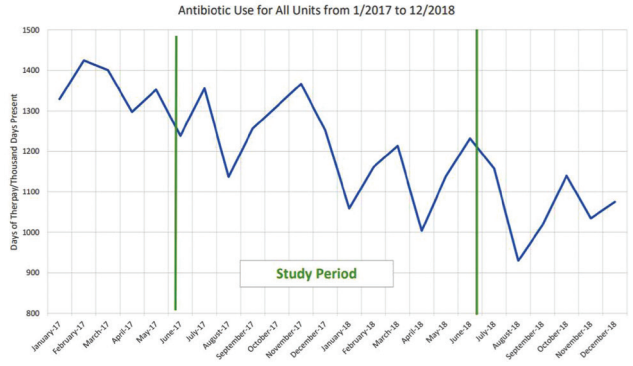
Results. We had 4,683 ICU-exposed patients. Intervention effect was not significant for the primary outcome (table). The intervention order was not significant in the model. Eligible patients were lower in the cardiothoracic ICU (CTICU) compared with other units (table); the intervention led to a significant decrease in AU when the CTICU was removed (RR = 0.93 [0.89–0.98], P = 0.0025). Intervention impact was differential among ICUs, with the greatest effect in surgical and least in CTICU (table). nit-level AU decreased in all ICUs, driven by 4 of the 5 ICUs (table, figure).

Conclusion. The effect of ASP rounds on AU was mixed for different types of ICUs. The direct effect on AU (intervention vs. control) was small because the analysis addressed the whole ICU population and thus was subject to biases from exposures after an ICU stay, ineligible patients, and lack of blinding. However, we observed an overall decline in AU during the study period, which we believe represents indirect effects of increased ASP activity and awareness. Additional ASP resources to round more than weekly may result in greater effect.

Table. ICU distribution of patients, rate ratios of antibiotic use and change in antibiotic use over time

ICU type	N patients	% Excluded from weekly rounds	RR (95% CI)	% change in AU 1/2017 to 12/2018
Surgical	992	67.6	0.87 (0.81-0.94)	-18
Cardiac	1037	66.6	0.91 (0.86-0.97)	-37
Medical	686	52.1	0.94 (0.92-0.96)	-24
Neurologic	1047	61.3	1.05 (0.93-1.18)	-43
Cardiothoracic	921	87.9	1.11 (1.04-1.19)	+25
All	4683	68.0	0.97 (0.91-1.04)	-19
All except Cardiothoracic	3762	62.7	0.93 (0.89-0.98)	-29

Figure 1. Antibiotic use (days of therapy per 1000 days present) for all five units trended over time from 1/2017 to 12/2018. Study period from 10/2017 to 6/2018



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

1879. A 20/20 Vision: Successful Integration of a Prescribing Dashboard for Outpatient Antimicrobial Stewardship to Target 20% Reduction by the Year 2020

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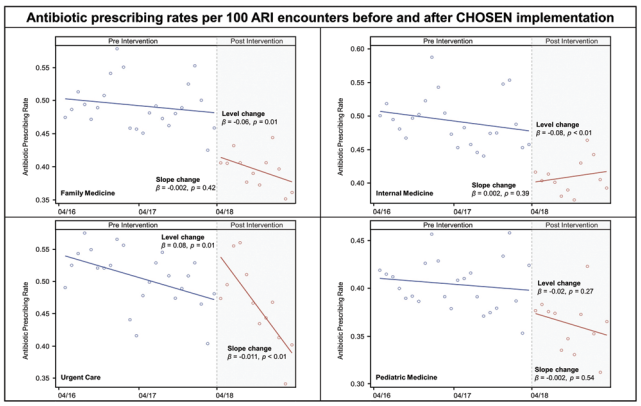
Background. At least 30% of antibiotics prescribed in the ambulatory setting are unnecessary, including high rates of overuse for acute respiratory infections (ARI). We designed and evaluated whether a multifaceted outpatient stewardship program leveraging multidisciplinary stakeholder engagement, education tools, and an innovative prescribing dashboard decreased antibiotic prescribing in ARI.

Methods. In November 2017, the Carolinas HealthCare Outpatient Antimicrobial Stewardship Empowerment Network (CHOSEN) launched an antibiotic awareness campaign in over 150 ambulatory practices in the Charlotte metropolitan area, reaching over one million patients. The campaign included online and in-person tools for patients and providers, targeted education at meetings, and social and mass media exposure. In March 2018, a provider level prescribing dashboard was introduced to target inappropriate antibiotic prescribing in ARI (acute sinusitis, nonsuppurative otitis media, nonbacterial pharyngitis, URI, cough, allergy, and influenza). Data were collected for family medicine (FM), internal medicine (IM), urgent care (UC) and pediatric medicine (PM); 10% and 20% relative reduction targets (years 2019 and 2020, respectively) were set for each service line. We compared pre (April 2016–March 2018) vs. post (April 2018–March 2019) intervention prescribing rates (calculated as the number of encounters with antibiotics vs. total) as rate ratios and used segmented regression models to assess change over time.

Results. There were 1,001,335 pre and 448,390 post-intervention encounters. Postintervention prescribing rates (antibiotics per 100 encounters) decreased for all service lines, FM (49.4 to 39.3), IM (49.7 to 41.2), UC (49.8 to 44.4), and PM (40.6 to 36.1) vs. pre-intervention (all rate ratios, $P \leq 0.01$). All service lines met the target 2019 10% reduction goals. Post-implementation, FM and IM showed immediate decreases in prescribing (figure). After an initial increase, UC showed a significant month-to-month decrease (figure).

Conclusion. Integration of a prescribing dashboard within a multifaceted antibiotic awareness campaign reduced inappropriate outpatient antibiotic prescribing for ARI and achieved interim targets consistent with 2020 reduction goals.



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

1880. Reducing Antibiotic Prescribing for Acute Bronchitis in Outpatient Settings Using a Multifaceted Approach

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Background. Nebraska (NE) ranks among the highest states for per capita antibiotic (AB) use in outpatient (OP) settings. Nebraska Medicine (NM) partnered with NE Antimicrobial Stewardship Assessment and Promotion Program (ASAP), a program funded by NE DHHS via a CDC grant, to reduce AB prescribing for acute bronchitis in OP settings.

Methods. The antimicrobial stewardship (AS) pilot program targeted NM OP clinics during winter 2018. All OP facility clinicians were notified of the availability of online AS educational videos. In addition, 5 primary care clinics (PCC) received clinician-directed interventions that included acute respiratory infection management pocket guides and posters for display in workrooms. Another 5 PCC received both clinician- and patient-directed interventions (examination room patient empowerment posters, Be Antibiotic Aware pledge cards and brochures). We compared AB prescribing rates for acute bronchitis between January and April 2017 and January and April 2018 among the 2 PCC groups and a control group of 5 immediate care clinics/emergency departments (ICC/ED). Clinicians in all 10 PCC were surveyed to assess usefulness of the AS campaign.

Results. A total of 593 acute bronchitis diagnosis encounters were included. AB prescribing rates for acute bronchitis for the 15 sites decreased from 53.7% to 43.6% (P = 0.02). Prescribing rates were unchanged in ICC/ED that received only notification of online educational videos (40.8% vs. 41.5%, P = 1.00) but were reduced in clinics that received clinician-directed (74.5% vs. 33.3%, P < 0.01) and patient-directed (61.1% vs. 48.8%, P = 0.07) interventions. Azithromycin was the most commonly prescribed AB (31.5% in 2017 and 29.8% in 2018). After the AS campaign, only the clinician-directed intervention group saw a reduction in azithromycin prescribing (33.3% vs. 13.9%, P < 0.05). Out of 51 clinicians who completed the survey, 45.1% felt campaign tools facilitated meaningful discussion with patients. Workroom posters and pocket guides were reported by 47.1% and 39.2% to be somewhat or extremely helpful, respectively.

Conclusion. This OP AS campaign led to a significant reduction in AB prescribing. Successful OP AS campaigns need multifaceted approaches but targeted clinician interventions appear most beneficial.

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