Table 1. Microbiology and resistance profile of bacteria isolated from urine cultures

Organism	n (%)	Cefazolin susceptibilities (%)		
		Susceptible	Intermediate	Resistant
Totals	51	59.6	23.1	17.3
Escherichia coli	43 (84)	62.8	27.9	9.3
Others*	8 (16)	37.5	--	62.5

Enterobacter aerogenes (2), Klebsiella pneumonia, Salmonella species, Citrobacter freundii, Proteus mirabilis, Stenotrophomonas maltophilia, Pseudomonas aeruginosa

Table 2. Empiric antibiotic regimens, including type of antibiotic and duration

Antibiotic	Number of prescriptions n (%) [N=87]	Median duration, days (IQR)
3rd generation cephalosporin	37 (42.5)	10 (3)
Cephalexin	29 (33.3)	7 (3)
Trimethoprim/sulfamethoxazole	9 (10.3)	7 (5)
Amoxicillin-clavulanate	5 (5.7)	7 (3)
Nitrofurantoin	4 (4.6)	7 (2)
Amoxicillin	2 (2.3)	8.5 (3)
Fluoroquinolones	1 (1.2)	7

Table 3. Comparison of episodes in which empiric antibiotics were active against isolated bacteria versus those in which empiric antibiotics were inactive

	Active (n=39)	Inactive (n=12)	p-value
Age, years, median (IQR)	8.2 (13)	2.2 (9)	0.07
Sex, female, n (%)	35 (89.7)	11 (91.7)	0.8
Race, white, n (%)	27 (69.2)	4 (33.3)	0.04
Ethnicity, n (%)			0.02
Hispanic	4 (10.3)	5 (41.7)	
Non-Hispanic	34 (87.2)	6 (50.0)	
Unknown	1 (2.6)	1 (8.3)	
Underlying comorbidities, n (%)	12 (30.8)	3 (25.0)	0.3
Prior UTI, n (%)	18 (46.1)	4 (33.3)	0.4
Empiric antibiotic cephalexin, n (%)	10 (25.6)	7 (58.3)	0.04
Duration of empiric antibiotics, n (%)	10 (3)	8.5 (3)	0.2
Complications, n (%)	5 (12.8)	0 (0)	0.3

Conclusion. Antibiotics are rarely adjusted after discharge from the ED. Lack of adjustment results in unnecessary total and broad-spectrum antibiotic exposures. Initiatives designed to improve antibiotic use post-discharge could result in significant decreases in unnecessary antibiotics, and ultimately reduced rates of antibiotic resistance.

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

1134. The Effect of Telehealth Antimicrobial Stewardship Program on Antimicrobial Use in a Pediatric Intensive Care Unit

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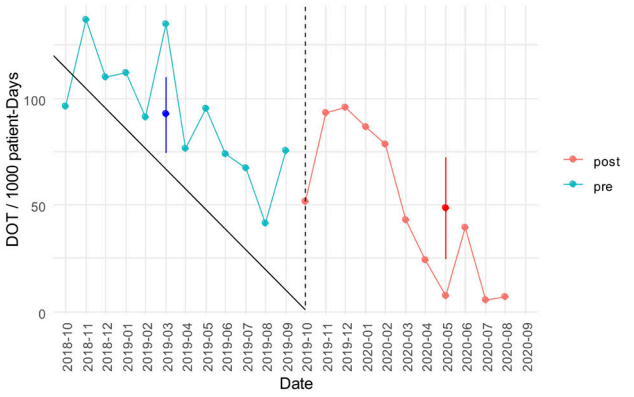
Session: P-63. Pediatric Antimicrobial Stewardship (inpatient/outpatient pediatric focused)

Background. Inappropriate antimicrobial use is common in pediatric intensive care units (PICU). We aimed to evaluate the effect of telehealth antimicrobial stewardship program (ASP) on the rate of PICU antimicrobial use in a center without a local infectious diseases consultation service.

Methods. Aretrospective cohort study was performed between October 1st, 2018 and October 31st, 2020 in Farwaniyah Hospital PICU, a 20-bed unit. All pediatric patients who were admitted to PICU and received systemic antimicrobials during the study period were included and followed until hospital discharge. Patients admitted to the PICU prior to the study period but still receiving intensive care during the study period were excluded. Weekly prospective audit and feedback on antimicrobial use was provided starting October 8th, 2019 (post-ASP period) by the ASP team. A pediatric infectious diseases specialist would join ASP rounds remotely. Descriptive analyses and a pre-post intervention comparison of days of therapy (DOT) were used to assess the effectiveness of the ASP intervention

Results. There were 272 and 152 PICU admissions before and after initiation of ASP, respectively. Bronchiolitis and pneumonia were the most common admission diagnoses, together compromising 60.7% and 61.2% pre- and post-ASP. Requirement for respiratory support was higher post-ASP (76.5% vs 91.5%, p< 0.001). Average monthly antimicrobial use decreased from 92.2 (95% CI 74.5 to 100) to 48.5 DOT/1,000 patient-days (95% CI 24.6 to 72.2, P < 0.05) (figure). A decline in DOT was observed across all antibiotic classes, except for ceftriaxone and clarithromycin. No effect on length of PICU stay, hospital length of stay, or mortality was observed. Most (89.7%) ASP recommendations were followed fully or partially changes in antimicrobial days of therapy (DOT)/1,000 patient-days over time. The dashed line represents the start of the antimicrobial stewardship program (ASP)



Conclusion. In settings where infectious diseases services are not available, telehealth stewardship can be effectively implemented and associated with a significant reduction of antimicrobial use.

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1135. The Effect of Penicillin Allergy Labels on Antibiotic Prescribing for Children Diagnosed with Upper Respiratory Tract Infections in Two Primary Care Networks

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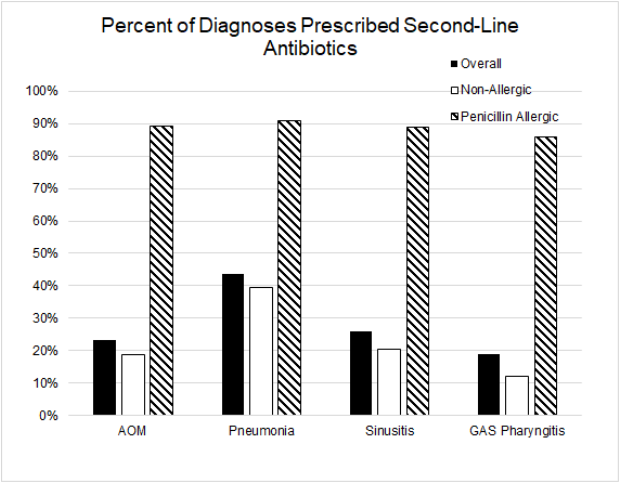
Session: P-63. Pediatric Antimicrobial Stewardship (inpatient/outpatient pediatric focused)

Background. In pediatric inpatient settings, unconfirmed penicillin allergy labels (PALs) are associated with increased broad-spectrum antibiotic use, costs, and adverse events. However, 90% of antibiotics are prescribed in the outpatient setting and 70% of these antibiotics are given for upper respiratory tract infections (URTI.) Little is known about the effect of PALs on antibiotic prescribing in the pediatric outpatient population.

Methods. A retrospective birth cohort was created of children born between January 1st 2010 and June 30th 2020 and seen at one of 91 Texas Children's Pediatrics or Children's Hospital of Philadelphia primary care clinics. Children with an ICD10 code for an URTI and an antibiotic prescription were stratified into those with or without a penicillin allergy label at the time of the infection. Rates of second-line and broad-spectrum antibiotic use were compared.

Results. The birth cohort included 334,465 children followed for 1.2 million person-years. An antibiotic was prescribed for 696,782 URTIs and the most common diagnosis was acute otitis media. Children with PALs were significantly more likely to receive second-line antibiotics (OR 35.0, 95% CI 33.9-36.1) and broad-spectrum antibiotics (OR 23.9, 95% CI 23.2-24.8.) Children with PALs received more third generation cephalosporins (60% vs. 15%) and more macrolide antibiotics (25% vs. 3%) than those without a PAL. Overall, 18,015 children (5.4%) acquired a PAL during the study period, which accounted for 23% of all second-line antibiotic prescriptions and 17% of all broad-spectrum antibiotic use for URTIs.



Multivariable logistic regression for receipt of second-line antibiotics for upper respiratory tract infections

Variable	OR (95% CI)
Allergic at Encounter	35.0 (33.9-36.1)
Age	0.99 (0.99-0.99)
Male Sex	1.02 (1.01-1.03)
Chronic Condition Present	1.04 (1.01-1.06)
Government Insurance	0.59 (0.58-0.60)
Race/Ethnicity	
Non-Hispanic White	Ref
Hispanic	1.09 (1.07-1.11)
Non-Hispanic Black	0.84 (0.82-0.86)
Asian or Pacific Islander	0.93 (0.90-0.95)
Number of Antibiotics Before Encounter	1.01 (1.00-1.01)

Conclusion. PALs are common and account for a substantial proportion of second-line and broad-spectrum antibiotic use in pediatric outpatients treated for URTIs. Efforts to de-label children with PALs are likely to increase first-line antibiotic use and decrease broad-spectrum antibiotic use for URTIs, the most common indication for antibiotic prescribing to children.

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1136. Effect of Weekly Antibiotic Rounds as a Core Strategy of the Antimicrobial Stewardship Program on Antibiotic Utilization in a Terciary-care Neonatal Intensive Care Unit, Medellin, Colombia

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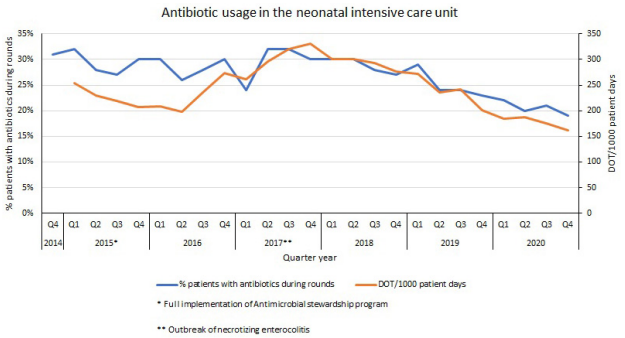
Session: P-63. Pediatric Antimicrobial Stewardship (inpatient/outpatient pediatric focused)

Background. Antibiotics are among the most prescribed drugs in the neonatal intensive care unit (NICU), but frequently are used inappropriately exposing preterm neonates to additional harm. Antibiotic stewardship programs (ASP) have demonstrated impact on antibiotic use in the hospital setting, but implementation in neonatal units is challenging. We sought to determine the effects of weekly antibiotic rounds on overall antibiotic consumption in the NICU.

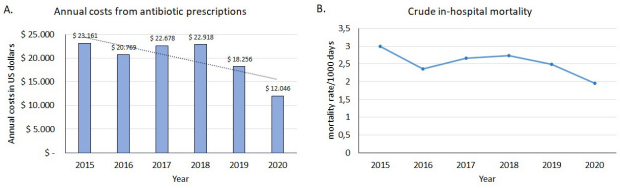
Methods. Single-center, retrospective observational study. In November 2014, we implemented weekly antibiotic rounds in a 60-bed tertiary-care NICU, led by a pediatric infectious disease physician. Antibiotic therapy decisions were made in collaboration with neonatologists. Data collected included the proportion of patients receiving antibiotics, irrespective of the indication. Multimodal ASP was implemented hospital-wide in 2015. Antibiotic consumption was measured with days of therapy (DOT). Data on costs and in-hospital mortality were obtained from pharmacy and hospital records.

Results. From November 2014 to December 2020, we evaluated 13609 neonates admitted to the NICU during rounds. Of those, 3607 (27%) were receiving at least one antibiotic. Overall, the proportion of patients with antibiotics decreased from 31% to 19% during the study period (p< 0.001). In 2017, an outbreak of neonatal necrotizing enterocolitis (NEC) occurred. Specific countermeasures as well as reinforcement of ASP were implemented. Despite Antibiotic usage by DOT increased in 2017 driven by empiric treatment with piperacillin tazobactam in patients with NEC, overall antibiotic consumption decreased from 254.4 DOT/1000 patient days (PD) to 162.4 DOT/1000 PD (Figure 1). Annual costs from antibiotic prescriptions were US$23,161 in 2015 and decreased to US$12.046 in 2020 saving over US$3,800/year (fig 2a). During the study period, we did not observe an increase in crude in-hospital mortality rate (Figure 2b).



Primary Y axis indicates the proportion of patients with at least one antibiotic prescription during rounds. Secondary Y axis indicates antibiotic consumption by days of therapy metrics.

Antibiotic prescription costs and NICU mortality rates during study period



A. Annual antibiotic prescription costs; B. NICU mortality rate

Conclusion. Weekly antibiotic rounds led to a significant decrease in antibiotic utilization in our NICU. This strategy is relatively simple and low-cost, saves hospital resources and has a large impact on antibiotic use. Hence, its implementation is encouraged as part of successful antimicrobial stewardship programs.

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1137. Effect of an Antibiotic Stewardship Program on Antibiotic Choice, Dosing, and Duration in Pediatric Urgent Care

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Session: P-63. Pediatric Antimicrobial Stewardship (inpatient/outpatient pediatric focused)

Background. Many studies have focused on decreasing inappropriate antibiotic prescriptions. In August 2018, our institution implemented an outpatient antibiotic stewardship program (ASP). We describe the impact of an outpatient ASP on the antibiotic choice, dose, and duration for common pediatric infections in a pediatric urgent care (PUC) setting.

Methods. We reviewed all encounters at 4 freestanding PUC centers within our organization of patients >60 days and < 18 years with a discharge diagnosis of acute otitis media (AOM), group A streptococcal (GAS) pharyngitis, community acquired pneumonia (CAP), urinary tract infection (UTI), cellulitis, abscess, and animal bite who received systemic antibiotics between July 2017 and December 2020. We excluded patients who were transferred, admitted, or had a concomitant diagnosis that required systemic antibiotics. We used established national guidelines to determine appropriateness of antibiotic choice, dose, and duration for each diagnosis (Table 1). Our outpatient ASP efforts included the development of an antibiotic handbook, data sharing, education, quality improvement projects, and commitment letters. Pearson's chi-square test was used to compare appropriate prescribing (choice, dose, and duration) between pre-implementation (July 2017 – July 2018) and post-implementation (August 2018 -forward). Monthly run charts evaluated improvement over time.

Table 1: Definitions of appropriate antibiotic choice, dose and duration by discharge diagnosis

Discharge Diagnosis	Antimicrobial Agent	Dose*	Duration
Acute Otitis Media	Amoxicillin	40-50 mg/kg/dose twice daily (max 2000 mg/dose)	<24 months: 10 days ≥24 months: 7 days
Group A Streptococcal Pharyngitis	Amoxicillin	50 mg/kg/dose once daily (max 1000 mg)	10 days
	Penicillin VK	<27 kg: 250 mg BID or TID ≥27kg: 500 mg BID or TID	
	Penicillin G Benzathine	≤27 kg: 600,000 units <27 kg: 1.2 million units	1 time only
Pneumonia	Amoxicillin	40-50 mg/kg/dose twice daily (max 2000 mg/dose)	5-7 days
Urinary Tract Infection	Cephalexin	17-25 mg/kg/dose TID (max 500 mg)	<24 months: 7-14 days Cystitis: 24 months - 12 years: 5-7 days Cystitis: ≥12 years: 3 days Pyelonephritis: 7-14 days
Abscess	Cephalexin	17 mg/kg/dose TID (max 500 mg)	5-7 days
	Clindamycin	10 mg/kg/dose TID (max 600 mg)	
Cellulitis (Non-facial)	Cephalexin	17 mg/kg/dose TID (max 500 mg)	5-7 days
	Clindamycin	10 mg/kg/dose TID (max 600 mg)	
Animal Bite (Prophylaxis)	Amoxicillin/clavulanate	**22.5 mg/kg/dose BID (max 875 mg)	3 days

*Allowed 10% above or below recommended dose to account for convenience dosing when no range was given

** Dose based on the amoxicillin component

Results. We included 35,915 encounters. Appropriate antibiotic agent improved in AOM (75.8% to 77.2%; p=0.03), UTI (74.9% to 89.5%; p< 0.001), cellulitis (70.5% to 75.1%; p=0.02) and abscess (53.6% to 67.7%; p< 0.001) following implementation of our ASP (Figure 1). Excluding GAS pharyngitis, all diagnoses had improvement in appropriate duration (p< 0.001) (Figure 2). Appropriate dosing improved for AOM