associated infections. Ceftaroline RS isolates were more often associated with clindamycin-resistance and age group II (Figure 2). Infections with ceftaroline RS were associated with central venous lines, recent ICU admission, preceding antibiotic exposure (specifically cephalosporins) and prior MRSA infection. One subject with MRSA CLASSI had a ceftaroline susceptible MRSA infection followed < 1 month later by a ceftaroline resistant infection (MIC=32 μg/ml); the isolates were identical by PFGE. Only 3 subjects had previously received ceftaroline, none of which subsequently developed a ceftaroline RS isolate.

Figure 1. Ceftaroline MIC Distribution

Conclusion: Ceftaroline RS occurs in 2.9% of invasive MRSA isolates in children and is most prominent among healthcare-associated infections. These isolates were associated with clindamycin resistance and age group II. While ceftaroline RS is rare among invasive MRSA infections, the lack of preceding ceftaroline exposure is concerning and warrants careful surveillance.

Disclosures. Sheldon L. Kaplan, MD; Samuel Dominguez, MD, PhD; BioFire Diagnostics, LLC (Consultant, Research Grant or Support) Darcy Velasquez, MS, MB (ASCP)CM; BioFire Diagnostics, LLC (Grant/Research Support) Stacey Hamilton, MT(ASCP)SM, BioFire Diagnostics, LLC (Grant/Research Support) Kristin Pretty, n/a, BioFire Diagnostics, LLC (Grant/Research Support) Samuel Dominguez, MD, PhD, BioFire (Consultant, Research Grant or Support)

1369. The Spectrum of Chronic Osteomyelitis in Children

Marrrita Joseph, RN1; Lauren Sommer, MS2; Jesus G. Vallejo, MD1; Jonathon C. McNeil, MD2; Baylor College of Medicine, Houston, Texas

Session: P-61. Pediatric Bacterial Studies (natural history and therapeutic)

Background. While the majority of pediatric osteomyelitis cases are acute in nature, a significant subset present with prolonged symptoms often associated with substantial morbidity. Little data exist to guide clinicians in the management of these infections. We sought to describe the epidemiology, clinical features and management of chronic osteomyelitis in children.

Methods. We reviewed hospital admissions with an ICD10 code for chronic osteomyelitis from 2011-2018 at Texas Children's Hospital. Cases were included if symptoms lasted >28 days on presentation. Patients diagnosed with chronic recurrent multifocal osteomyelitis were excluded. Cases were classified as those 1) associated with a contiguous focus (CoF), 2) penetrating or open trauma, 3) orthopedic hardware (OH), 4) post-acute chronic osteomyelitis (PACO, those occurring after >28 days of therapy for acute osteomyelitis) and 5) primary hematogenous chronic osteomyelitis (PHCO, those with >28 days of symptoms without other clear risk factors).

Results. 114 cases met inclusion criteria. The median patient age is 11.8 years and 35.9% patients had underlying comorbidities. 83% of patients underwent a surgical procedure. Cases were diverse in terms of pathogenesis (Figure 1). A microbiologic etiology was identified in 72.8% of cases and was polymicrobial in 20.2% of cases; Staphylococcus aureus was the single most common etiology (Figure 2). CeF infection was more often associated with polymicrobial etiology with or without Pseudomonas (P<0.001) and disease of the foot. PACO was caused by S. aureus in 95% of cases (P<0.001, Figure 3). The overall median duration of total therapy was 210 days. 41% were discharged from hospital on OPAT with or without later transition to oral antibiotics. 26.3% of patients had persistent functional limitations at time of last follow-up of which 46% experienced repeat hospital admission/surgery. There was no association between duration of intravenous therapy and persistent functional limitations.

Figure 1. Categories of Chronic Osteomyelitis

Figure 2. Microbiology of Pediatric Chronic Osteomyelitis

1368. The Clinical Impact of BioFire BCID2 Compared to BCID in a U.S. Pediatric Hospital

Kelly E. Graff, MD3; Claire Palmer, MS2; Toraj Anarestani, MT(ASCP)2; Darcy Velasquez, MS, MB (ASCP)CM2; Stacey Hamilton, MT(ASCP)SM2; Kristin Pretty, n/a2; Samuel Dominguez, MD, PhD3; Children's Hospital Colorado, University of Colorado School of Medicine, Aurora, Colorado; Children's Hospital Colorado, Aurora, Colorado; University of Colorado, School of Medicine, San Francisco, California

Session: P-61. Pediatric Bacterial Studies (natural history and therapeutic)

Background. Multiplex PCR panels, particularly BioFire FilmArray Blood Culture Identification (BCID), have been shown to decrease time to pathogen identification and time to effective and optimal antimicrobial therapy. BioFire Blood Culture Identification 2 (BCID2) has an additional 17 targets and resistance genes compared to BCID. There is limited data on the impact of these expanded targets in pediatric populations.

Methods. We performed a head-to-head comparison between BioFire BCID2 with BCID when compared to standard culture. From January 2020- May 2020, we ran BCID2 simultaneously as a research use only prototype with the current standard of care on all blood culture specimens at Children's Hospital Colorado. Percent agreement was calculated with BCID2 compared to standard culture and BCID2 compared to standard culture. Time to positivity, time to optimal therapy, and time to effective therapy were also calculated.

Results. We performed an interim analysis halfway through the study with 86 patients. The overall median time to positivity was 1.2 days with BCID2 compared to 4.2 days with BCID (P<0.001). The median time to optimal therapy was 2 days with BCID2 compared to 4 days with BCID (P=0.001). BCID2 had equal rates of detection when compared to BCID in pediatric patients. It has the additional advantage of detecting more organisms at the species level, with clinical significance for Enterococcus faecalis specifically. With the additional resistance genes, it also has the potential to impact care with early identification of ESBL-producing Enteric pathogens.

Disclosures. Kelly E. Graff, MD, BioFire Diagnostics, LLC (Grant/Research Support) Claire Palmer, MS, BioFire Diagnostics, LLC (Grant/Research Support) Toraj Anarestani, MT(ASCP), BioFire Diagnostics, LLC (Grant/Research Support) Darcy Velasquez, MS, MB (ASCP)CM, BioFire Diagnostics, LLC (Grant/Research Support) Stacey Hamilton, MT(ASCP)SM, BioFire Diagnostics, LLC (Grant/Research Support) Kristin Pretty, n/a, BioFire Diagnostics, LLC (Grant/Research Support) Samuel Dominguez, MD, PhD, BioFire (Consultant, Research Grant or Support)
1370. Three of Hearts: A Case Series and Literature Review of Pediatric Purulent Pericarditis
Alyssa Estes, Pediatric Resident, DO; Jonathan Crews, MD; Ethmal Appachi, Pediatric Critical Care, MD; Baylor College of Medicine, Children’s Hospital of San Antonio, San Antonio, Texas; Baylor College of Medicine, The Children’s Hospital of San Antonio, San Antonio, Texas
Session: P-61. Pediatric Bacterial Studies (natural history and therapeutic)
Background. Purulent pericarditis is rare in the pediatric population. Three children with purulent pericarditis complicated by tamponade were seen at a children’s hospital from 2018-2019. A review of the literature was conducted to investigate the clinical significance and features of purulent pericarditis.
Methods. Cases of purulent pericarditis in children (age < 18 years) published in English from 2000 to 2020 were reviewed. Patients were included if there was presence of purulent pericardial fluid or if a bacterial pathogen was isolated from pericardial fluid.
Results. Three children with purulent pericarditis and tamponade with associated pneumothorax were cared for at our institution. These infections were caused by methicillin-susceptible Staphylococcus aureus, Haemophilus influenzae, and Streptococcus pyogenes. Review of the literature identified 93 children with purulent pericarditis. The median age of the cohort is 4 years old. In 68.8% of children the etiology was identified from culture of pericardial fluid. The most common organism detected was S. aureus (38.7%) and a concurrent infection was seen in 49.4% pneumonia (36.5%), osteomyelitis (17.2%), soft tissue (7.5%), and meningitis (2.1%). In North America specifically, methicillin-resistant S aureus was most common 35% (7/20) and associated infection was seen in 80% (16/20). Clinical course was complicated by pericardial tamponade in 68.5% (37/54) of patients. 48.6% (18/37) of those children with tamponade also had pneumonia. Pericardioceintesis is the most frequent initial intervention, performed in 77.4% of cases. The mortality rate was 4.3%.
Conclusion. In pediatric purulent pericarditis, Gram-positive organisms account for 81.2% of all children with positive pericardial fluid culture, and 75% of infections in North America. A bacterial pathogen can be isolated from the pericardial fluid in a majority of patients with purulent pericarditis. There is a high rate of concurrent infection, most notably pneumonia, and there is a strikingly high percentage of tamponade in those cases.
Disclosures. All Authors: No reported disclosures

1371. Trends in Antibiotic Resistance Among Uropathogens in the Pediatric Population: A Single Center Experience in the US
Leena B. Mithal, MD, MSCF; Sebastian Otero, BA; Shan Sun, PhD; Mehran Arshad, MD; Northwestern University, Chicago, IL; Lurie Children’s Hospital of Chicago, Chicago, Illinois; Ann & Robert H. Lurie Children’s Hospital of Chicago, Chicago, IL; Northwestern University/Lurie Children’s Hospital of Chicago, Chicago, Illinois
Session: P-61. Pediatric Bacterial Studies (natural history and therapeutic)
Background. Urinary tract infections (UTIs) are common infections in children. Overuse of antibiotics has led to an increasing prevalence of antibiotic resistance among uropathogens in adults; however, data on pediatric trends have not been previously reported. Our objective was to characterize antibiotic resistance trends in uropathogens among children at a tertiary care hospital in a diverse urban US city.
Methods. Positive urine culture data (>20,000 CFU/ml) from January 1, 2010 through December 31, 2019 were obtained from the electronic medical records (in-patient and outpatient). Yearly antibiotic-agent-specific resistance rates were calculated based on culture, patient, and organism level data.
Results. A total of 7,512 patients had ≥1 positive urine culture, with 13,327 positive individual cultures. The average age at sample collection was 6 yrs (IQR 2-11). Overall, 66% of cultures showed resistance to at least 1 antibiotic. Ampicillin resistance (50.1% IQR: 48.2%-52.4%) was the most common and remained stable over the study period. However, resistance against amoxicillin-sulbactam, third and fourth generation cephalosporins, and fluoroquinolones has increased significantly over this period (Figure 1). There was also a corresponding increase in the prevalence of extended spectrum beta-lactamase (ESBL) Enterobacteriaceae (Figure 2). Among infants < 1 year, a similar trend in increasing resistance against beta-lactams was noted (ampicillin-sulbactam 0% to 38%, ceftriaxone 0% to 9% and cefepime 0% to 4%, Figure 3).
Conclusion. There are rising rates of antibiotic resistance to broad spectrum antibiotics, including beta-lactams and quinolones, in a pediatric population over the last 10 years, with a notable increase in resistance starting in 2015-2016. While we were not able to distinguish patients with community acquired UTI, the increase in resistance among infants < 1 year suggests a community reservoir of multi-drug resistant gram-negative bacteria. Colonization by resistant uropathogens has implications for empiric antibiotic choice, limited oral therapy options, and clinical outcomes which necessitate further study.
Disclosures. All Authors: No reported disclosures

1372. Urinary Tract Infections Caused by Gram-Positive Bacteria in Patients Younger than 19 Years: Prediction Analysis in a 13-year Hospital-Based Cohort
Yu-Lung Hsu, MD; Shin-Ni-Chang, MS; Chin-Chi Kuo, MD, PhD; Che-Chen Lin, MS; Hsiao-Chuan Lin, PhD; Huan-Cheng Lai, MD; Kuo-Pin Hwang, PhD; Hsiu-Yin Chiang, PhD; Division of Pediatric Infectious Diseases, China Medical University Children’s Hospital, Taichung, Taiwan; Taichung, Taichung, Taiwan; Big Data Center, China Medical University Hospital, Taichung, Taiwan, Taichung, Taichung, Taiwan; China Medical University Hospital, Taichung, Taiwan, Taichung, Taiwan, Taiwan; Division of Pediatric Infectious Diseases, China Medical University Children’s Hospital, Taichung, Taiwan, Taichung, Taiwan, Taiwan, Taiwan
Session: P-61. Pediatric Bacterial Studies (natural history and therapeutic)
Background. Urinary tract infection (UTI) is one of the common pediatric bacterial infections. Gram positive (GP) pathogens, in contrast to gram negative (GN) bacilli such as E. coli, are less accounted for pediatric UTI. The aim of this study was to identify predictors to enable clinicians to detect GP uropathogens from mostly causative GN bacteria in children with UTI.
Methods. This retrospective cohort study identified 26,066 paired urinalysis and urine culture obtained from the pediatric patients during 2003-2016. Of patients with UTI meeting our criterial, we included children with first-time UTI and classified them into GP-UTI and GN-UTI (Figure 1). Demographic, clinical and laboratory data were