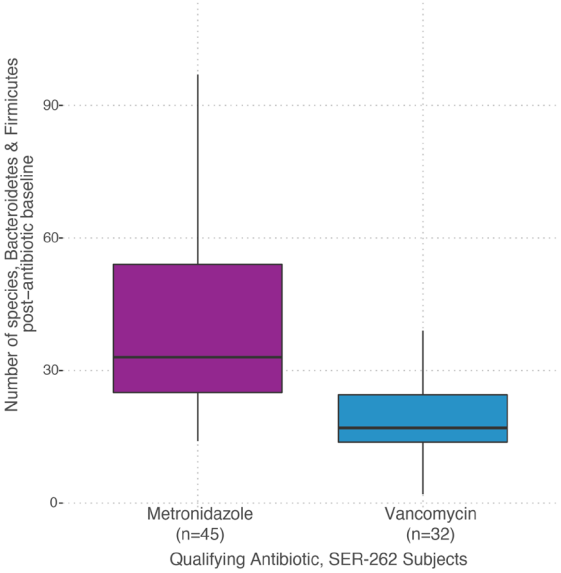
Figure 3. Baseline Diversity (defined as the number of Firmicutes & Bacteroidetes species) by qualifying antibiotic.



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

1504. Epidemiology and Etiology of Pyogenic Liver Abscess in the Calgary Health Zone: A Population-Based Study

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Background. Pyogenic liver abscess (PLA) is a significant cause of morbidity and mortality. Epidemiological data regarding risk factors and outcome determinants are often ascertained from referral population bases. We utilized a population-based study design to better understand PLA.

Methods. Calgary Health Zone (CHZ) residents ≥18 years of age (population ~1.3 million) who were hospitalized with PLA in 2017 were included. Charts were manually reviewed to determine demographics and clinical outcomes. Univariate and multivariate logistic regression were used to assess for factors associated with 30-day mortality using STATA 15.1 (College Stn., TX).

Results. Forty-four patients with PLA were identified (39% female, median age 61 [IQR 56–68] years) corresponding to an incidence rate of 3.7 cases per 100,000 population. Prevalent co-morbidities with PLA included; hemodialysis dependence (4.5%), cancer (25%), diabetes (23%), and cirrhosis (6.8%), each of which was significantly more common ($P < 0.05$) than in the general population; 85.3X, 11.2X, 3.6X, 29.9X, respectively. Rates of other comorbidities including ischemic heart disease, COPD, and rheumatoid arthritis did not differ from general populations ($P > 0.05$). The etiology of PLA was established in 72% of cases, of which biliary was most common (48%). Most (91%) cases had at least one organism identified via blood or liver aspirate culture. The most common organisms were *Streptococcus anginosus* group (12), *Klebsiella pneumoniae* (11), *Klebsiella oxytoca* (6), *Escherichia coli* (4), and obligate anaerobes (3). Blood cultures were positive in 25/44 (56%) cases. Thirty-day mortality from admission was 11% and had multiple risk factors (Table-1).

Conclusion. PLA in the CHZ is common and associated with high mortality. Understanding factors influencing PLA occurrence and outcome can assist in correctly identifying and optimally treating patients.

Table-1: Risk factors associated with 30-day mortality in patients with PLA.

Factors associated with 30-day mortality	Univariate (% with versus without, Relative risk, p-value)	Multivariate (p-value)
Bacteremia	20% vs 0%, NA, p=0.05	0.27
Polymicrobial bacteremia	56% vs 0%, NA, p<0.001	NA
Biliary source	19% vs 0%, NA, p=0.05	0.23
Altered immunity	40% vs 3%, 13.6, p<0.01	0.02

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1505. Shorter-Course Antibiotic Treatment for Pediatric Ventilator-Associated Tracheitis Is Safe and Effective

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Background. Ventilator-associated tracheitis (VAT) is a common infection in children cared for in pediatric intensive care units (PICU). Short-course antibiotic treatment (5 days) has been shown to be effective. In October 2016, we implemented a PICU VAT guideline for short-course therapy. We assessed the impact of this intervention.

Methods. We conducted a retrospective cohort study of PICU patients diagnosed with VAT from October 2016 to June 2018. The antimicrobial stewardship program (ASP) identified potential patients through daily chart review. Only those patients with a clinician diagnosis and who were receiving antibiotics for VAT, either enterally or parenterally, were included. Frequencies and proportions were calculated. Chi-square or Fisher exact tests were used to compare proportions.

Results. ASP identified 251 potential patients, 105 (42%) of whom met inclusion criteria. The median age was 7 years (range: 0–21). Twenty-eight (27%) were tracheostomy dependent. The most commonly prescribed antibiotics were cefepime (43%), ceftriaxone (17%), and vancomycin (14%). Median antibiotic duration was 13 days (range: 1–29); 57 (52%) received > 5 days and 48 (44%) received 5 days. Only 3 (6%) patients who received 5 days of antibiotics required retreatment within 10 days of their initial course vs. 11 (19%) who received > 5 days (P = 0.09). A diagnosis of ventilator-associated pneumonia (VAP) within 10 days of completing VAT treatment was made in 2 (4%) patients who received 5 days vs. 3 (5%) of patients who received > 5 days ($P = 1.0$). *C. difficile* infection within 90 days occurred in 2 (4%) patients who received > 5 days vs. 1 (2%) who received 5 days (P = 1.0).

Conclusion. Short-course antibiotic therapy for VAT was not associated with retreatment for VAT or subsequent diagnosis of VAP. Development of *C. difficile* was similar between groups. Adherence to the guideline was approximately 50%, perhaps due to physician perception of disease severity. Additional work is needed to refine the diagnosis of VAT and assess the interaction between illness severity and treatment duration.

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1506. Outcomes of Standardized Neonatal Cephalexin Dosing

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Background. The optimal dosing of cephalexin in infants ≤90 days old is not well known. Our Antimicrobial Stewardship Program (ASP) standardized cephalexin dosing for inpatients ≥30 days old using available literature and released an antimicrobial dosing guideline in September 2016. Recommended antimicrobial dosing for inpatients <30 days old followed in November 2017. We reviewed the indications, cephalexin dosing, and clinical outcomes of patients before and after the release of our ASP's cephalexin dosing guidelines.

Methods. Webi Universe was queried for cephalexin orders for inpatients ≤ 90 days old at the Inova Children's Hospital from January 2016 to November 2018. Manual chart review extracted clinical points of interest and ensured that inclusion criteria were met. For patients <30 days old, the pre-intervention period was January 2016 to October 2017 and the post-intervention period was November 2017 to October 2018. For patients ≥30 days old the pre-intervention period was January 2016 to August 2016 and the post-intervention period was September 2016 to October 2018. Aggregate data from the two pre-intervention and two post-intervention periods were pooled, respectively.

Results. 41 patients were identified: 25 in the pre-intervention period and 16 in the post-intervention period. The median age of patients in the pre-intervention period was 16 days compared with 31 days in the post-intervention period ($P = 0.02$). No patients had acute kidney injury requiring cephalexin renal dosing. Skin and soft-tissue infections (18) and urinary tract infections (10) were the most common infections in both periods. 24% of patients received the recommended cephalexin dose in the pre-intervention period compared with 63% in the post-intervention period ($P = 0.02$). Logistic regression controlling for pathogens and area of care showed that patient age predicted the use of recommended cephalexin dosing (OR 1.1, 95% CI: 1.01–1.21). There were no deaths or recrudescent infections.

Conclusion. Our ASP's interventions improved adherence to standardized cephalexin dosing in inpatients ≤90 days old without any adverse clinical outcomes. Patients ≥30 days old were more likely to receive recommended cephalexin dosing. Opportunities remain to best define the optimal dose of cephalexin in infants ≤90 days old.

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1507. Pharmacodynamic Target Attainment of Daptomycin Against *Staphylococcus aureus* for Treatment of Pediatric Osteomyelitis

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