was driven by vancomycin. Gram-positive antibiotic use was moderately associated with days of ICU-level of care (Spearman correlation coefficient = .55) but anti-pseudomonal antibiotic use was not (Figure 2). There was no association between days of antibiotic exposure and 30-day mortality.

Conclusion. Among a homogenous population of children undergoing transplantation for acute leukemia, both the volume and spectrum of antibiotic exposure in the immediate post-transplant period varied widely. These data present an opportunity for hospitals to benchmark their antibiotic utilization practices and can be further leveraged to assess the clinical impact of differential antibiotic exposure.

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770. Nurse Prompting for Prescriber-Led Review of Antimicrobial Use in the Critical Care Unit: A Quality Improvement Intervention with Controlled Interrupted Time Series Analysis. Sumit Raywardhan, ACPR BsC, Phm MPH; Bonnie Chung, ACPR BsC, Phm; Danielle Ferreira, RN BHSc, MN; Marina Bitton, RN MN CNCC; Phil Shin, MD; Tiffany Kan, PharmD and Pavani Das, MD; North York General Hospital, Toronto, ON, Canada

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Background. Audit-and-feedback (A&F) is a core strategy for antimicrobial stewardship programs (ASPs). However, it is resource-intensive, and may not be practical in every setting. Recent guidelines support the non-ASP-led review of antimicrobials by prescribers (AM-REV) on a routine basis. A sustainable strategy for AM-REV in a critical care unit (CrCU) may improve antimicrobial utilization without additional ASP resources.

Methods. Using a quality improvement framework, a prompt for AM-REV strategy was created. The primary outcome was antimicrobial utilization defined by days of therapy/1000 patient-days (AM-DOT). A secondary process outcome was the proportion of relevant cases for which an antimicrobial prompt was provided to the prescriber (AM-PRT). Balancing measures included CrCU mortality rates, length of stay, and 48-hours re-admission rates. Utilization data of a control class of medications (proton-pump inhibitors) was also collected. AM-DOT was collected for 34 months pre- and 14 months post-intervention. AM-PRT was collected for 3 months pre- and 12 months post-intervention. Segmented regression analysis was used for the primary outcome, with a descriptive analysis of secondary outcomes.

Results. CrCU nurses were recruited to prompt AM-REV duringCrCU rounds. A standardized script was developed to insert day of antimicrobial therapy into rounds; prescribers were primed to respond with affirmation, rationale, and clinical decision. Plan-Do-Study-Act (PDSA) cycles further refined the intervention to include nursing reminders from CrCU pharmacists and increased engagement of nurses during formal A&F rounds. Prior to the intervention, monthly AM-DOT was 804 with a positive trend (7.3 DOT/1000PD, P < 0.05). Post-intervention resulted in a significant reduction of 217 DOT/1000 PD (P < 0.05) with a non-significant negative AM-DOT trend, representing a 20% (95% CI –15%, -25%) reduction in AM-DOT per month. There was no significant change in utilization of the control class of medications. The ABX-PRT increased from 17% to 50% during the intervention period. Balancing measures were comparable pre and post-intervention.

Conclusion. Nurse prompting of AM-REV can lead to significant reductions in antimicrobial utilization, providing a non-ASP mechanism of sustaining antimicrobial awareness.

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771. Implementation of a Centralized Telehealth-based Antimicrobial Stewardship Program (ASP) for 16 Small Community Hospitals (SCHs). John J. Veillette, PharmD, BCPS; Todd Vento, MD, MPH; Stephanie Gelman, MD; Whitney R. Buckel, PharmD, BCPS; Peter S. Jones, MLS; Valoree Stanfield, MPH; Mary Adams, RN, BSN; Katherine Repko, RN, MSN; Edward Stenehjem, MD, MSc; Intermountain Medical Center, Murray, UT; Clinical Epidemiology/Infectious Diseases, Intermountain Medical Center, Murray, UT; Infectious Diseases/ Antimicrobial Stewardship, Intermountain Medical Center, Murray, UT; Clinical Epidemiology and Infectious Diseases, Intermountain Medical Center, Murray, UT; Division of Infectious Disease, Intermountain Medical Center, Murray, UT

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Background. Innovative strategies are needed for ASP implementation in SCHs (<200 beds). Most SCHs lack ASPs that meet Joint Commission (JC) requirements and CDC core elements. Telehealth can help extend infectious diseases expertise and stewardship resources to such facilities.

Methods. The Infectious Diseases Telehealth (IDt) program provides consultation and ASP support to 16 Intermountain SCHs (18-150 beds). Key stakeholders were identified at each site to establish formal ASPs. An IDt physician and pharmacist attended local meetings as ASP members to provide guidance. Centrally tracked antibiotic usage and resistance data were reviewed with each program to identify opportunities for improvement. Daily stewardship responsibilities were shared: front-line pharmacists were trained to review charts for appropriateness using automated electronic alerts, while the IDt physician reviewed high priority alerts (e.g., positive blood cultures). Recommendations were made to local staff, or to the IDt physician in cases needing telehealth consultation.

Results. ASPs were formed at 15/16 hospitals (1/16 had an existing ASP). Members included: local physician (15/16), local pharmacist (15/16), infection preventionist (16/16), quality representative (15/16), nursing (5/16), and administration (5/16). Collaborative data review led to 16 planned projects to improve antimicrobial prescribing. Eleven targeted specific drugs (carbapenems (n = 6), piperacillin-tazobactam (n = 1), fluoroquinolones (n = 2), vancomycin (n = 2)), and five aimed to improve
processes (allergy assessment (n = 2), order sets (n = 2), and implementation of rapid diagnostics (n = 1)). Five of 16 ASPs documented full compliance with JC and CDC requirements, and 11/16 documented partial compliance (none were compliant prior to IDT implementation). Front-line pharmacists reviewed 3,593 stewardship alerts during the first 7 months, leading to 836 interventions across 16 facilities. The IDT pharmacist reviewed 1,198 alerts leading to 318 interventions.

Conclusion. We established or augmented ASPs in 16 Intermountain SCHs through local empowerment, central data sharing, and IDT mentorship. Future goals include documenting improvement in antibiotic use and patient outcomes.

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772. Volume-adjusted antimicrobial prescribing rate: An automated method for identifying antimicrobial over-prescribers in ambulatory care
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Background. A major target for outpatient antimicrobial stewardship has been the unnecessary use of antimicrobials, particularly for acute respiratory tract infections (ARTIs). The objective of this study was to determine whether data electronically extracted from the medical record (i.e., volume-adjusted antimicrobial prescribing rate) could identify outpatient providers who are more likely to prescribe unnecessary antimicrobials.

Methods. At a single VA medical center, patient visits during 2016 to primary care or the emergency department (ED) were retrospectively reviewed if associated with an ICD-10 code for cystitis or an ARTI. Using manual chart-review, an over-treatment rate was calculated for each provider by determining the frequency at which antimicrobials were prescribed when not indicated. A volume-adjusted antimicrobial prescribing rate was determined by extracting data on all antimicrobials prescribed by each provider and adjusting for the total number of patient-visits for that provider.

Results. Manual audits to determine antimicrobial necessity were performed on 633 ED visits and 247 primary-care visits. Antimicrobials were not indicated in 51% (324) of ED visits and 58% (144) of primary care visits. For 14 ED providers, the median volume-adjusted antimicrobial prescribing rate was 13.7 prescriptions per 100 patient-visits (IQR 12.5-14.8), and the median over-treatment rate was 47% (IQR 38-64%). Among 7 primary care providers, the median volume-adjusted antimicrobial prescribing rate was 8.1 prescriptions per 100 patient-visits (IQR 7.3-8.6), and the median over-treatment rate was 33% (IQR 31-59%). There was a positive correlation between a provider’s volume-adjusted antimicrobial prescribing rate and their overall rate of over-treatment in both the ED (r = 0.67, P < 0.01) and primary care (r = 0.80, P = 0.03).

Conclusion. In this small study, electronically-extracted data on a provider’s rate of volume-adjusted antimicrobial prescribing strongly correlated with the frequency at which unnecessary antimicrobials were prescribed, particularly in primary care. Comparing providers within a given outpatient setting on their volume-adjusted antimicrobial prescribing rate may be an efficient way to identify over-prescribers.

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773. Hiding in Plain Sight: Observations from a Review of Positive Urine Cultures Prior to an Antimicrobial Stewardship Program Campaign Targeting Asymptomatic Bacteriuria
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Background. Data have shown that many patients with asymptomatic bacteriuria (ASB) receive unnecessary antibiotics, increasing risk of adverse events and resistance. Positive urine culture (PUC) and urinalysis (UA) results have been shown to prompt treatment without symptoms or compelling indication (pregnancy or prior to urologic procedure). We reviewed clinician action based on PUCs across 28 acute-care hospitals of varied size, scope, and antimicrobial stewardship program (ASP) maturity prior to an ASP educational campaign.

Methods. We conducted a retrospective sampling of inpatient PUCs collected February 1–28, 2017. Patients were excluded if pregnant, undergoing urologic procedure, or <18 years, neutropenic, or were admitted on active urinary tract infection (UTI) therapy or with nephrolithiasis. A CDC UTI assessment form was adapted to collect: demographic, clinical, and laboratory data. The presence of UTI symptoms, microbiological results, antimicrobial therapy and duration, and rate of ASP interventions.

Results. Data from the First 200 included patients at 14 hospitals are shown. Most patients (84/200 (42%)) presented with only non-specific symptoms (NSS) or no symptoms (62/200 (31%)) vs. (vs) at least 1 specific urinary symptom (SUS) (54 / 200 (27%)). Ceftriaxone was the most common empiric therapy in those with no symptoms (17/40 (42.5%)) or NSS (35/74 (47%)) who were treated. Interventions were documented on 18/200 (9%) patients, despite daily use of clinical decision support (CDS) at 58% of hospitals.

Conclusion. ASP presents many targets and challenges. UA and UC were often performed in patients with no symptoms or NSS. Thus, optimal ordering of UA and UC should be targeted to avoid unnecessary cost and therapy. Treatment of patients with no symptoms appeared to be more common in rural vs. urban hospitals and may help focus education. Low ASP intervention rates, despite use of CDS, may indicate challenges in identifying ASB patients. Many patients received ceftriaxone, which may not be targeted for initial review by ASP. Due to high volume at many sites, daily review of all PUCs may not be feasible.

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774. The Experience of Stewards in Using a Visual Analytic Tool to Benchmark and Track Therapy Duration for Pneumonia, Urinary Tract Infections, and Skin and Soft-tissue infections
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Figure 1. Presenting Symptoms.

Figure 2. Results by Presenting Symptoms.

Figure 3. Empiric Treatment by Urban Vs. Rural Hospital.

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