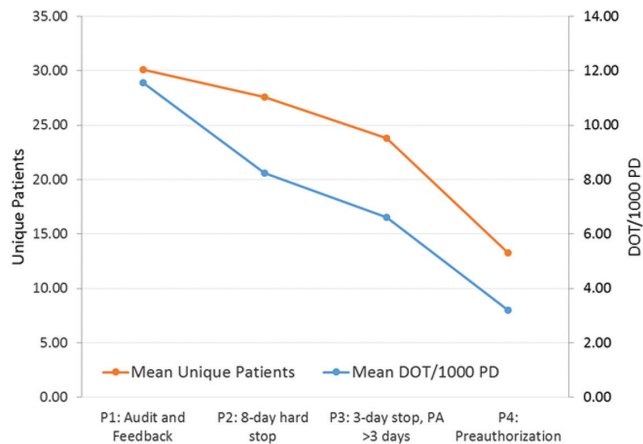


call AMS prior to initiation. Daptomycin utilization rates (DOT/1,000 PD) and mean unique patients receiving daptomycin were collected for each period.

**Results.** As restriction strategies enhanced, mean rate of daptomycin use (DOT/1,000 PD) progressively declined with a significant decrease during each period transition (Figure 1); P1->P2 (11.6 vs. 8.3;  $P < 0.01$ ), P2->P3 (8.3 vs. 6.6;  $P = 0.017$ ), and P3->P4 (6.6 vs. 3.2;  $P < 0.01$ ). The mean number of unique patients on daptomycin decreased with implementation of new AMS strategies; P1->P2 (30.1 vs. 27.6;  $P = 0.18$ ), P2->P3 (27.6 vs. 23.8;  $P < 0.01$ ) and P3->P4 (23.8 vs. 13.3;  $P < 0.01$ ). Of note, linezolid "balloon effect" only occurred following transition from P3 to >P4 (6.1 vs. 10.5 DOT/1,000 PD;  $P < 0.01$ ).

**Conclusion.** This single-center descriptive analysis of AMS restriction strategies reveals a progressive decrease in daptomycin use with stepwise implementation. This significant decrease was most profound with ultimate transition to PA. AMS programs unable to initially implement highly restrictive policies can consider using a stepwise approach to ease practitioners into the new model and still have a meaningful impact on antimicrobial utilization.

### Daptomycin Trends over Time and Restriction Styles



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

### 224. Cost Analysis of a Significant Decrease in Vancomycin Use as a Result of an Antimicrobial Stewardship Intervention

Haley Hodgson, PharmD<sup>1</sup>; Paul O'Donnell, PharmD<sup>1</sup>; Sarah Won, MD, MPH<sup>2</sup> and Sheila K. Wang, PharmD, BCPS<sup>1</sup>; <sup>1</sup>Department of Pharmacy Practice, Midwestern University, Chicago College of Pharmacy, Downers Grove, Illinois, <sup>2</sup>Department of Internal Medicine, Division of Infectious Diseases, Rush University Medical Center, Chicago, Illinois

**Session:** 51. Antimicrobial Stewardship: Interventions to Improve Outcomes  
Thursday, October 4, 2018: 12:30 PM

**Background.** A previous pre-post quasi-experimental study performed at an academic medical center assessed benefits of daily stewardship review with and without rapid diagnostic technology (RDT). The study found no difference in time to effective antibiotic therapy when comparing daily stewardship review to RDT and historical control groups. However, vancomycin duration of therapy significantly decreased with daily stewardship review compared with control (31.8 vs. 66 hours,  $P < 0.001$ ). Subsequent elimination of this RDT saved the institution \$53,000 in annual costs. However, the effect of the decrease in vancomycin use on this institution's annual costs is unknown.

**Methods.** The purpose of the present study is to determine the difference in institutional costs associated with vancomycin after implementation of a stewardship intervention. A retrospective cost analysis was performed which included hospitalized adults on vancomycin for positive blood cultures from June to October 2014 (preintervention) and June to October 2015 (postintervention). The primary outcome was the amount of institutional cost saved, including drug, phlebotomy, laboratory, nursing, and pharmacy costs. Secondary outcomes included vancomycin DOT/1,000 patient-days, nephrotoxicity, in-hospital mortality, and length of stay.

**Results.** Institutional cost savings associated with vancomycin over 5 months amounted to \$2,900 for an extrapolated cost savings of \$6,960 per year. Although this cost savings was minimal, there were decreases in each individual vancomycin cost component. Drug acquisition was associated with the largest cost reduction represented by a 26% decline. Next, phlebotomy and laboratory costs each decreased by 24%, while nursing and pharmacy costs decreased by 7% and 4%, respectively. There were no differences in vancomycin DOT/1,000 patient-days, nephrotoxicity, in-hospital mortality, or length of stay.

**Conclusion.** Vancomycin is associated with many hidden ancillary costs, and pharmacy and nursing labor remain substantial despite a reduction in its use. The tracking of antimicrobial stewardship actions is highly recommended; however, more research is needed to determine the optimal process for a vancomycin cost analysis.

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

### 225. Antimicrobial Stewardship Program Interventions Targeting Intravenous Vancomycin Use at a Community Hospital Improves Prescribing and Safety

Ronald Kendall, PharmD and Asgar Boxwalla, MD<sup>1</sup>; <sup>1</sup>Henry Ford Wyandotte Hospital, Wyandotte, Michigan

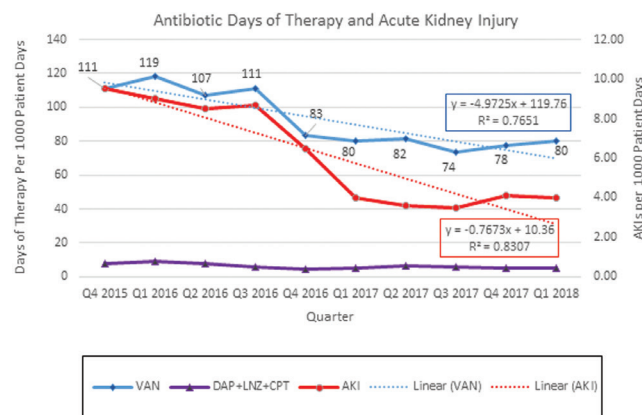
**Session:** 51. Antimicrobial Stewardship: Interventions to Improve Outcomes  
Thursday, October 4, 2018: 12:30 PM

**Background.** Intravenous vancomycin (VAN) continues to be a workhorse for suspected or documented methicillin-resistant *Staphylococcus aureus* (MRSA) infections. VAN over-prescribing, and suboptimal dosing or monitoring can be detrimental to efficacy, safety, and resource utilization. A local antimicrobial stewardship program (ASP) was implemented in September 2015 as an expansion of a pre-existing health-system ASP. The local ASP included an infectious diseases (ID) pharmacist, partial FTE ID physician, ASP software, and a goal to decrease inappropriate vancomycin use and improve safety.

**Methods.** We performed a serial cross-sectional study assessing the impact of ASP interventions on VAN consumption and AKI incidence at a single-center community hospital from October 2015 through March 2018. ASP interventions included a revised vancomycin dosing and monitoring guideline, education, and prospective audit and feedback by clinical pharmacists working under the guidance of ID pharmacist and physician. Antibiotic days of therapy (DOT) were tracked and reported quarterly with Theradoc<sup>®</sup> software. Acute kidney injury was defined as an increase of  $\geq 0.5$  mg/dL or 50% in serum creatinine from baseline in all hospitalized patients with baseline  $< 2$  mg/dL.

**Results.** Figure 1 demonstrates MRSA antibiotic utilization and AKI over time. VAN use declined from a peak quarterly use of 119 DOT/1,000 PD to a minimum of 74 DOT/1,000 PD (37.8% decrease). During the same timeframe AKI/1,000 PD decreased over 50%.  $R^2$  values of the trends are 76.5% and 83.1%, respectively. The use of VAN alternatives daptomycin (DAP), linezolid (LNZ), and cefazolin (CPT) remained stable. There were 809 ASP recommendations made regarding VAN over-prescribing (primarily to de-escalate or discontinue VAN therapy) and 340 ID pharmacist interventions to improve VAN dosing and monitoring.

Figure 1.



**Conclusion.** ASP initiatives, education, and interventions were associated with reduced VAN use and reduction in AKI at a community hospital.

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

### 226. An Emergency Department Antimicrobial Stewardship Intervention to Improve Antibiotic Selection and Duration for Skin and Soft-tissue infections in Adult and Pediatric Outpatients

Larissa May, MD, MSPH<sup>1</sup>; Dan Tancredi, PhD<sup>1</sup>; Benjamin Mooso, MS<sup>1</sup>; Megan Nguyen, PharmD<sup>2,3</sup>; Susan Ondak, MD<sup>1</sup>; Chance Anderson, MS<sup>1</sup>; Jennifer Briggs, PharmD<sup>2</sup>; Linh Luong, BS<sup>2</sup> and Loren G. Miller, MD, MPH<sup>3,4</sup>; <sup>1</sup>University of California-Davis, Sacramento, California, <sup>2</sup>Western University of Health Science, Pomona, California, <sup>3</sup>Los Angeles Biomedical Research Institute, Torrance, California, <sup>4</sup>Harbor-UCLA Medical Centre, Los Angeles, California

**Session:** 51. Antimicrobial Stewardship: Interventions to Improve Outcomes  
Thursday, October 4, 2018: 12:30 PM

**Background.** Skin and soft-tissue infections (SSTIs) are common infections seen in the Emergency Department (ED). However, adherence to IDSA guidelines for treatment, in terms of antibiotic selection and duration, is poor.

**Objective.** To evaluate the ability of a multifaceted intervention to improve adherence to the 2014 IDSA guidelines for the management of SSTIs in an academic adult and pediatric ED.

**Methods.** A non-randomized study of a multifaceted intervention for SSTI in the ED was employed which included educational presentations, implementation of an electronic order set based on 2014 IDSA guidelines, dissemination of ED-specific antibiograms, monthly departmental peer comparisons, and bimonthly individual feedback. SSTI visits were identified using ICD-10 codes L00, L02.x1, L03, L08.89, and L08.9. The primary endpoint was adherence to IDSA guidelines. Outcomes during

the preintervention and intervention periods, adjusting for patient demographics and infection characteristics, were compared with the same time periods at a control site (CS) that did not implement the intervention.

**Results.** There were 583 SSTIs included in the study [intervention site (IS) =283, CS =300] split over three time periods: preintervention (October 2015–March 2016; IS = 130, CS = 150), intervention (October 2016–March 2017; IS = 99, CS = 150), and postintervention (April 2017–July 2017; IS = 54, CS = 0). At the IS, adherence was 41% prior to the intervention and 51% during the intervention. At the CS adherence was 19% and 25% during the two time periods. In the adjusted model, adherence at the IS was higher during the intervention compared with the preintervention period [adjusted odds ratio (aOR) 2.26 (95% CI 1.24–4.10)]. Adherence in the postintervention period was similar to the preintervention period [aOR 0.94 (0.45–1.97)]. No changes were seen during the two time periods at the CS [aOR 1.00 (0.53–1.89)].

**Conclusion.** Implementation of an antimicrobial stewardship intervention for SSTI significantly improved adherence to IDSA guidelines; however, adherence regressed after the intervention ended. Additionally, adherence was generally poor in all time periods and at both sites. Further research is needed to understand barriers and challenges to implementation of SSTI guidelines in ED settings.

**Disclosures.** L. G. Miller, Merck: Grant Investigator, Research grant

## 227. Provider Education Paired With Peer Comparison Demonstrates Sustained Reduction in Overall Antibiotic Prescribing Within a Veterans Affairs Primary Care System

Deanna J. Buehrle, PharmD<sup>1</sup>; Nathan R. Shively, MD<sup>2</sup>; Cornelius J. Clancy, MD<sup>1,3</sup> and Brooke K. Decker, MD, CIC<sup>4</sup>; <sup>1</sup>Veterans Affairs Pittsburgh Healthcare System, Pittsburgh, Pennsylvania, <sup>2</sup>Infectious Diseases, Division of Infectious Disease Allegheny Health Network, Pittsburgh, Pennsylvania, <sup>3</sup>Infectious Diseases, University of Pittsburgh, Pittsburgh, Pennsylvania, <sup>4</sup>Veterans Affairs Pittsburgh Healthcare System, Pittsburgh, Pennsylvania

**Session:** 51. Antimicrobial Stewardship: Interventions to Improve Outcomes  
Thursday, October 4, 2018: 12:30 PM

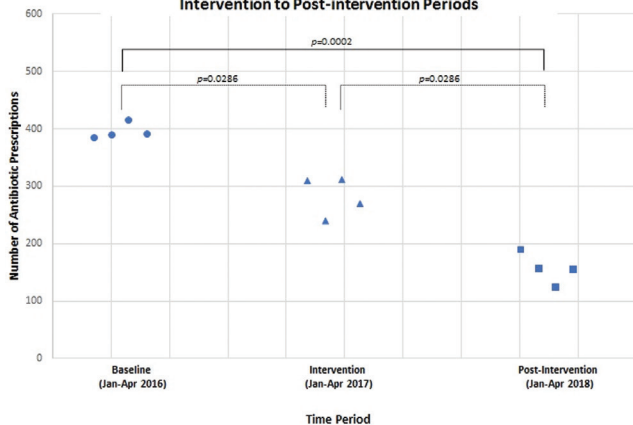
**Background.** Data on antimicrobial stewardship (AS) interventions in outpatient primary care settings and optimal strategies to sustain results are lacking. We report results of a comprehensive outpatient AS intervention that included provider education and peer comparison.

**Methods.** Baseline antibiotic prescribing data from primary care clinics at VA Pittsburgh Healthcare System from January to April 2016 were collected. Educational sessions were offered to all primary care providers (PCPs) in December 2016. During an intervention period from January to April 2017, PCPs were emailed monthly comparisons of their antibiotic prescribing rate, peer rates, and a system target. Postintervention overall antibiotic prescribing rates from January to April 2018 were assessed. The decision-support software was updated after the intervention to reflect AS team guidance.

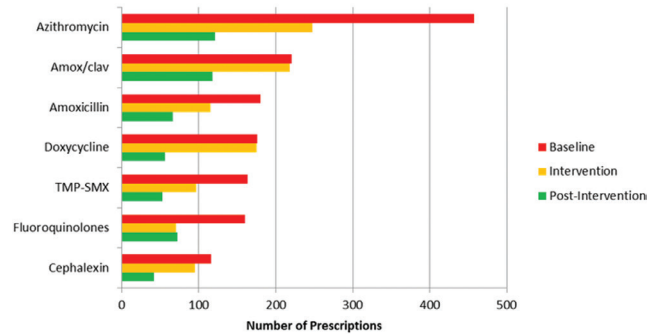
**Results.** During the postintervention period, 626 antibiotic prescriptions were written by 73 PCPs caring for 40,428 patients, compared with 1,585 antibiotic prescriptions written by 65 PCPs caring for 40,734 patients during the baseline period and 1,131 antibiotic prescriptions written by 73 PCPs caring for 41,191 patients during the intervention period ( $P = 0.0002$ ). There were significantly fewer antibiotic prescriptions written during the intervention period than the baseline period ( $P = 0.0286$ ), and during the postintervention period than the intervention period ( $P = 0.0286$ ). Azithromycin use decreased by 45.9% (458 vs. 248 prescriptions,  $P < 0.0001$ ) from the baseline to the intervention period and further decreased by 51.2% (248 vs. 121 prescriptions,  $P < 0.0001$ ) from the intervention period to the postintervention period. Fluoroquinolone use decreased by 55.6% (160 vs. 71 prescriptions,  $P < 0.0001$ ) from the baseline to the intervention period, and remained low during the postintervention period (71 vs. 72 prescriptions,  $P = 0.88$ ).

**Conclusion.** A comprehensive AS intervention including provider education and peer comparison demonstrated a sustained reduction in overall antibiotic prescribing rates among PCPs. The decision-support software may assist in maintaining reduced prescribing rates. A full data analysis to include an assessment of appropriateness during each period is ongoing.

### Reduction in Monthly Antibiotic Prescriptions from Baseline to Intervention to Post-intervention Periods



### Reduction in the Most Common Prescriptions from Baseline to Intervention to Post-intervention Periods



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

## 228. Impact of Early Alert to Antimicrobial Stewardship Interventions with the Prospective Audit and Feedback Strategy

Sarah Si Lin Tang, BSc (Pharm) (Hons)<sup>1</sup>; Lun Yi Tan, BSc<sup>2</sup>; Daphne Yah Chieh Yui, BPharm<sup>1</sup>; Andrea L. Kwa, PharmD<sup>1</sup> and Piotr Chlebicki, MBBS<sup>3</sup>; <sup>1</sup>Pharmacy, Singapore General Hospital, Singapore, Singapore, <sup>2</sup>Singapore General Hospital, Singapore, Singapore, <sup>3</sup>Infectious Diseases, Singapore General Hospital, Singapore, Singapore

**Session:** 51. Antimicrobial Stewardship: Interventions to Improve Outcomes  
Thursday, October 4, 2018: 12:30 PM

**Background.** Prospective audit-feedback is the primary strategy adopted by our hospital antibiotic stewardship program (ASP). It is labor-intensive and successful uptake relies on the visibility of the written intervention note. A rapid notification system (RNS), whereby the physical note is replaced by an electronic document followed by immediate prescriber alert through text messaging, was recently implemented. We seek to quantify the impact of this initiative on patient outcomes and ASP resource utilization.

**Methods.** Interventions to discontinue, de-escalate, or switch from intravenous to oral antibiotics in the pre-implementation (P1: January 2016–February 2017) and post-implementation (P2: March 2017–February 2018) periods were identified from the ASP database. Same-day intervention acceptance rate (IAR), duration of antibiotic therapy (DOT), and hospital length of stay (LOS), measured from day of intervention to discharge, were compared. Manpower time saved from having to perform a next-day intervention follow-up (15 minutes/intervention) was calculated.

**Results.** A total of 1,904 (11.4%) and 1,311 (12.4%) interventions of 16,723 and 10,545 antibiotic audits were made during P1 and P2, respectively. There were no significant differences in antibiotic or intervention types between both periods—piperacillin–tazobactam (85.4%) was most common, followed by meropenem (11.4%); intervention to discontinue antibiotic (68.4%) was most frequent. Implementation of RNS led to a pronounced 2.5-fold increase in same-day IAR (19.3% vs. 47%,  $P < 0.01$ ). Potential savings in ASP manpower was estimated at 75 hours/year. Overall improvement in IAR at 48-hours was also observed (79.2% vs. 82.5%,  $P = 0.02$ ). Patients with ASP interventions accepted on the same day had significantly shorter DOT (4.4 vs. 5.4 days,  $P < 0.01$ ) but not LOS (13.4 vs. 11.6 days,  $P = 0.08$ ). Thirty-day-day infection-related mortality rates were similar across the two periods (3.3% vs. 3.3%).

**Conclusion.** An early alert to ASP interventions can strengthen the impact of ASP in reducing unnecessary antibiotic use without compromise in patient safety. ASPs, particularly those serving large and busy hospitals, should consider having an RNS in place to improve program efficiency and visibility.

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

## 229. The Role of Antimicrobial Stewardship Program on Appropriate Use, Dose, and Duration of Vancomycin Treatment

Olga Kaplun, MD<sup>1</sup>; Melinda Monteforte, PharmD<sup>2</sup>; Samad Tirmizi, PharmD<sup>3</sup>; Mersema Abate, MD<sup>2</sup>; George Psevdo Jr, MD<sup>4</sup> and Roderick Go, DO<sup>5</sup>; <sup>1</sup>Infectious Diseases, Stony Brook University Hospital, Stony Brook, New York, <sup>2</sup>Stony Brook University Hospital, Stony Brook, New York, <sup>3</sup>Department of Pharmacy and Clinical Sciences, Stony Brook School of Pharmacy, Stony Brook, New York, <sup>4</sup>Infectious Diseases, Northport VA Medical Center, Northport, New York, <sup>5</sup>HSC T 16 Room 027J, Stony Brook, New York

**Session:** 51. Antimicrobial Stewardship: Interventions to Improve Outcomes  
Thursday, October 4, 2018: 12:30 PM

**Background.** In an era of increasing bacterial resistance, antimicrobial stewardship programs (ASP) are essential in guiding judicious antibiotic use and improving patient safety goals. A prior medication use evaluation of vancomycin conducted at Stony Brook University Hospital (SBUH) identified three areas for improvement: (1) vancomycin dosing to achieve target trough concentration, (2) treatment duration, (3) and the use of vancomycin drug assay. As a result, the ASP at SBUH implemented an interdisciplinary team which consists of pharmacists and physicians to optimize these areas.

**Methods.** A prospective quality improvement program was implemented from October 1, 2017 to December 31, 2017. Patients on two medicine units (60 patient beds) were enrolled in the program if they received vancomycin for more than one day and were