1058. Decreases in Antibiotic Use Associated with the Implementation of Electronic Antibiotic Visualization Tools for Stewards at Eight Veterans Affairs (VA) Healthcare Facilities

Christopher J. Graber, MD, MPH[1]; Makoto M. Jones, MD[2]; Matthew B. Goetz, MD[3]; Karl Madaras-Kelly, PharmD, MPH[4]; Yue Zhang, PhD[5]; Jorie M. Butler, PhD[5]; Charlene Weir, PhD, RN[5]; Ann F. Chou, PhD[6]; Sarah Y. Youn[7]; Matthew H. Samore, MD[5]; Peter A. Glassman, MBBS[1]; [1]VA Greater Los Angeles Healthcare System/University of California at Los Angeles, Los Angeles, California; [2]IDEAS Center of Innovation, Veterans Affairs Salt Lake City Health Care System, Salt Lake City, Utah, ; [3]VA Greater Los Angeles Healthcare System and David Geffen School of Medicine, University of California at Los Angeles, VA-CDC Practice-Based Research Network, Los Angeles, California; [4]Idaho State University, Pocatello, Idaho; [5]University of Utah, Salt Lake City, Utah; [6]Oklahoma University Health Sciences Center, Oklahoma City, Oklahoma; [7]VA Greater Los Angeles Healthcare System, Los Angeles, California

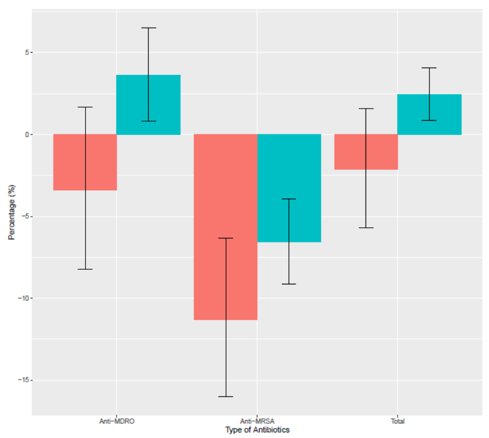
Session: 131. Antibiotic Stewardship: Interventions
Friday, October 4, 2019: 12:15 PM

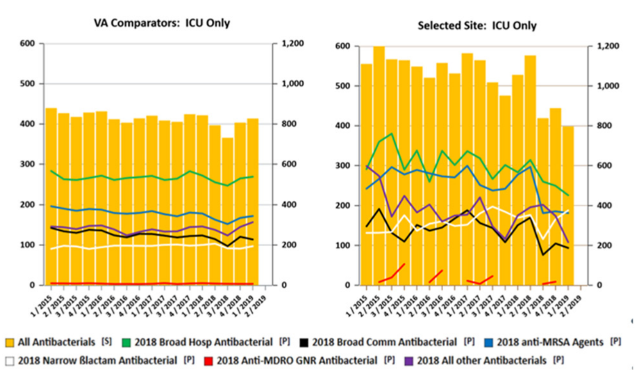
Background. To identify areas for improved antibiotic use, we developed and pilot-tested visualization tools to quantify antibiotic use at 8 VA facilities. These tools allow a facility to review its patterns of total use, and use by antibiotic class, compared with patterns of use at VA facilities with similar (or user-selected) complexity levels.

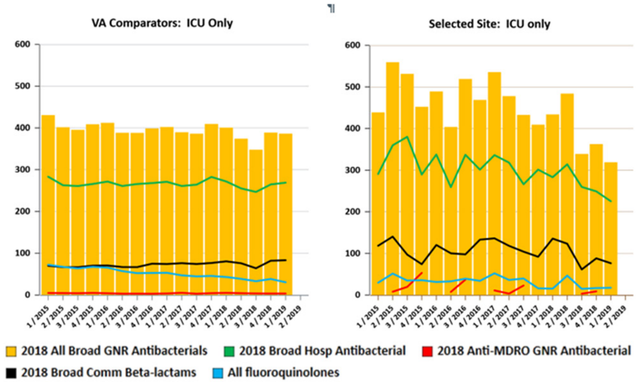
Methods. Antibiotic stewards from 8 VA facilities participated in iterative report development and implementation, with the final product consisting of two components: an interactive web-based antibiotic dashboard and a standardized antibiotic usage report updated at user-selected intervals. Stewards also participated in monthly learning collaboratives. The percent change in average monthly antimicrobial use (all antibiotics; anti-methicillin-resistant *S. aureus* agents (anti-MRSA); and broad-spectrum agents predominantly used for hospital-onset/multi-drug-resistant organisms (anti-MDRO)) was analyzed using a pre-post (January 2014–January 2016 vs. July 2016–January 2018) with un-involved controls (all other inpatient VA facilities, n = 132) design modeled using Generalized Estimation Equations segmented regression.

Results. Intervention sites had a 2.1% decrease (95% CI = [−5.7%,1.6%]) in all antibiotic use pre-post-intervention, vs. a 2.5% increase (95% CI = [0.8%, 4.1%]) in nonintervention sites (P = 0.025 for difference). Anti-MRSA antibiotic use decreased 11.3% (95% CI = [−16.0%,−6.3%]) at intervention sites vs. a 6.6% decrease (95% CI=[−9.1%, −3.9%]) at nonintervention sites (P = 0.092 for difference). Anti-MDRO antibiotic use decreased 3.4% (95% CI = [−8.2%,1.7%]) at intervention sites vs. a 3.6% increase (95% CI = [0.8%,6.5%]) at nonintervention sites (P = 0.018 for difference) (Figure 1). Examples of graphs include overall antibacterial use (Figure 2), and usage of broad-spectrum Gram-negative therapy (Figure 3) in intensive care units.

Conclusion. The use of data visualization tools use and participation in monthly learning collaboratives by antimicrobial stewards in a pilot implementation project at eight VA facilities was associated with decreases in antimicrobial use relative to uninvolved sites.







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

1059. Impact of a Syndrome-Based Antimicrobial Stewardship Intervention on Anti-Pseudomonal β-Lactam Use, *C. difficile* Rates and Cost in an Urban Community Hospital

Alfredo J. Mena Lora, MD[1]; Martin Cortez, PharmD[2]; Ella Li, PharmD[2]; Lawrence Sanchez, PharmD[2]; Rochelle Bello, MSN PhD[2]; Candice Krill, RN MBA[2]; Yolanda Coleman, RN PhD[2]; Eden Takhsh, MD[2]; Susan C. Bleasdale, MD[1]; [1]University of Illinois at Chicago, Chicago, Illinois; [2]Saint Anthony Hospital, Chicago, Illinois

Session: 131. Antibiotic Stewardship: Interventions
Friday, October 4, 2019: 12:15 PM

Background. The use of anti-Pseudomonal β-lactam (APBL) agents has significantly increased in the past decade, carrying higher costs and contributing to antimicrobial pressure. Antimicrobial stewardship (ASP) can promote evidence-based antimicrobial selection and mitigate excess APBL use. We implemented a comprehensive ASP with syndrome-based prospective audit and feedback (PAF) at an urban community hospital. The goal of this study is to assess the impact of syndrome-based PAF on APBL use, *C. difficile* rates and cost.

Methods. ASP with all CDC core elements was implemented at a 151-bed community hospital in October 2017. Syndrome-based guidelines and PAF was established and overseen via direct communication with an ID physician. Days of therapy (DOT), cost and *C. difficile* rates were assessed 12 months before and after ASP. DOT for APBL and non-APBL utilization was tabulated by unit and paired t-test performed.

Results. Most cases reviewed by PAF (51%) were represented in our syndrome-based treatment guidelines (Figure 1). Soft tissue (33%) and intra-abdominal (24%) infections were the most common syndromes. Change to guideline was the most common PAF intervention (62%) followed by de-escalation (30%). At 12 months, total DOT/1,000 increased (392.5 vs. 404) while the proportion of parenteral antimicrobials used decreased (71% vs. 65%). Antibiotic expenditures decreased by 23%, with a reduction in APBL of 20% and non-APBL of 10% (Table 1). Statistically significant reductions APBL use in non-ICU settings (P = 0.0139) and statistically significant increases in non-APBL in ICU settings occurred (P = 0.0001) (Figure 2 and 3). *C difficile* rates decreased from 21% (3.27 vs. 2.56).

Conclusion. Syndrome-based PAF was successfully implemented. A reduction in APBL use was seen in non-ICU settings, where evidence-based de-escalation may be more feasible. APBL use remained high in the ICU but was guideline consistent. A rise in non-APBL use also occurred. Certain critical illness syndromes warrant APBLs, but PAF may promote culture-directed and syndrome-specific treatments. ASP increased guideline-based therapy and contributed to decreased broad-spectrum antimicrobial use, antimicrobial expenditures and *C difficile* rates. Syndrome based PAF can be successfully implemented in community settings.

Table 1. Expenditures on anti-bacterial agents

	Before	After
Antibacterial expenditures	$172,897	$132,053
APBL expenditures	$31674	$25389
Non-APBL expenditures	$60267	$54416

Figure 1. Cases reviewed by syndrome-based prospective audit and feedback

Figure 2. DOT/1000 of APBL and non-APBL before and after ASP in non-ICU units

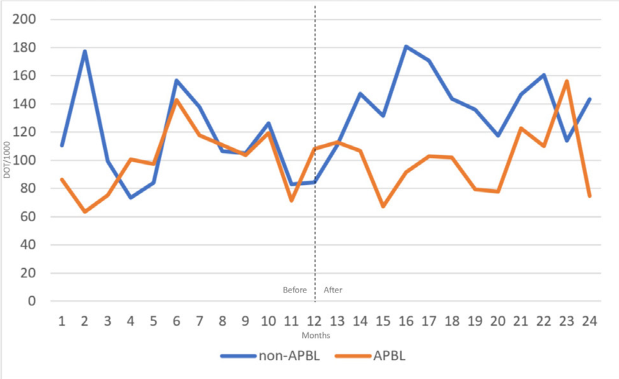
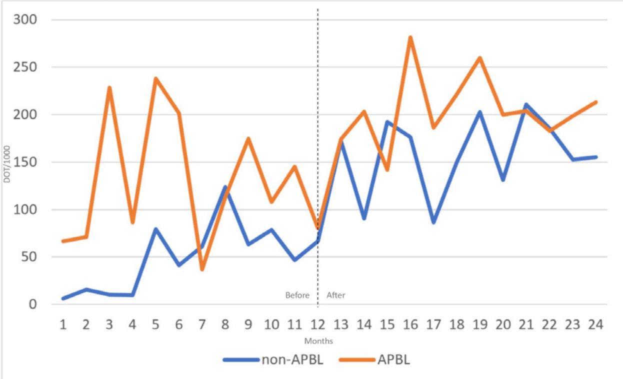


Figure 3. DOT/1000 of APBL and non-APBL before and after ASP in ICU



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

1060. Impact of Laboratory Cessation of Extended-Spectrum β-Lactamase (ESBL) Reporting on Minimum Inhibitory Concentration (MIC) Distribution Trends and Associated Clinical Outcomes

Anthony Chiang, PharmD[1]; Maya Beganovic, PharmD, MPH, BCIDP[1]; Jennifer Dela-Pena, PharmD, BCPS, BCIDP[2]; Kelvin Gandhi, PharmD Candidate[3]; Jessica Miller, PharmD, BCIDP[4]; Erik LaChance, PharmD[5]; Morgan Anderson, PharmD[6]; Sarah Wieczorkiewicz, PharmD, FIDSA, BCPS, BCIDP[7]; [1]Advocate Lutheran General Hospital, Evanston, Illinois; [2]Advocate Lutheran General Hospital and Advocate Good Samaritan Hospital, Park Ridge, Illinois; [3]Massachusetts College of Pharmacy and Health Science, Boston, Massachusetts; [4]Advocate Trinity Hospital and Advocate South Suburban Hospital, Chicago, Illinois; [5]Advocate Illinois Masonic Medical Center, Chicago, Illinois; [6]Advocate Condell Medical Center and Advocate Good Shepard Hospital, Libertyville, Illinois; [7]Wolters Kluwer, Chicago, Illinois

Session: 131. Antibiotic Stewardship: Interventions
Friday, October 4, 2019: 12:15 PM

Background. The Clinical and Laboratory Standards Institute (CLSI) lowered the minimum inhibitory concentration (MIC) breakpoints of various β-lactam antimicrobials eliminating the need for confirmatory testing of extended-spectrum β-lactamase (ESBL) organisms. Our institution adopted the new CLSI breakpoints in June 2015. This multi-site study assessed the impact of laboratory cessation of ESBL reporting on the MIC distribution of commonly used antimicrobials and clinical outcomes.

Methods. This retrospective study included adult inpatients with positive blood cultures for *Escherichia coli, Klebsiella pneumoniae, K. oxytoca, or Proteus mirabilis* from June 2012 to June 2018. Patients were included in the pre-implementation group if they had an ESBL-positive blood culture from June 2012 to May 2015 and in the post-implementation group if they had a ceftriaxone-resistant organism from June 2015 to June 2018. Patients who died or transitioned to hospice within 48 hours of blood culture identification or before final susceptibilities were excluded. The primary outcome was MIC distribution of ceftriaxone, ceftazidime, cefepime, piperacillin/tazobactam, fluoroquinolones, and carbapenems. Secondary outcomes were antimicrobial prescribing patterns, 30-day all-cause mortality, 30-day re-infection rate, and time to microbiological clearance.

Results. A total of 249 patients were included (n = 40, pre-implementation; n = 209, post-implementation). Pitt Bacteremia Scores were significantly higher in the pre-implementation group (3.59 ± 2.85 vs. 2.21 ± 2.06; P = 0.0004). The median MIC distribution for each antimicrobial stayed within one dilution throughout the study timeframe. Carbapenem use decreased in the post-implementation group [n = 35 (87%) vs. n = 131 (63%)]. No significant differences were noted for other secondary outcomes: 30-day all-cause mortality (15% vs. 10%; P = 0.40), 30-day re-infection rate (2.5% vs. 4.3%; P = 1), and time to microbiological clearance (2.28 ± 1.2 vs. 2.41 ± 1.76 days; P = 0.72).

Conclusion. Adoption of lowered CLSI breakpoints did not impact MIC distribution of select antimicrobials for Enterobacteriaceae; however, it has affected antimicrobial prescribing patterns.

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

1061. Decreased Utilization of Piperacillin–Tazobactam for *Escherichia coli* and *Klebsiella* Bacteremia due to Selective Susceptibility Reporting

Yorgo Zahlanie, MD[1]; Brenton Hall, PharmD[2]; Wenjing Wei, PharmD, BCPS-AQID[3]; Norman Mang, PharmD, BCIDP[3]; Jessica Ortwine, PharmD, BCPS-AQID[3]; Shelby S. Anderson, PharmD[2]; Kristi Morgan, MT (ASCP)[4]; Tamara Guzman, BSMT (ASCP)[3]; Bonnie C. Prokesch, MD[5]; [1]University of Texas Southwestern Medical Center, Dallas, Texas; [2]Parkland Health and Hospital System, Dallas, Texas; [3]Parkland Health and Hospital System, Dallas, Texas; [4]Parkland Health and Hospital Systems, Denton, Texas; [5]Assistant Professor of Internal Medicine, Dallas, Texas

Session: 131. Antibiotic Stewardship: Interventions
Friday, October 4, 2019: 12:15 PM

Background. Over 2 million people in the United States are diagnosed with antibiotic-resistant infections annually. The Infectious Diseases Society of America (IDSA) recommends cascade reporting of antibiotic susceptibility data by the clinical microbiology laboratory as an intervention to decrease resistance, though this is based on low-quality evidence.

Methods. We conducted a retrospective study to assess the effect of cascade susceptibility reporting on prescribing practices and patient outcomes. A cascaded testing algorithm was executed wherein susceptibility data for piperacillin–tazobactam (PT) was suppressed from the susceptibility report if an organism was susceptible to ceftriaxone. Patients with positive monomicrobial blood cultures with non-ESBL *Escherichia coli* (*E. coli*) or *Klebsiella* isolates in blood cultures and receiving empiric PT were included. Data were collected one year prior and one year after cascading protocol implementation, and included patient demographics, length of stay (LOS), duration of antibiotics, time to de-escalation, and adverse events including acute kidney injury (AKI) and *Clostridioides difficile* infection (CDI).

Results. 212 patients (108 pre-intervention and 104 post-intervention) were included. 87% of patients were de-escalated from PT pre-intervention, while 90% were deescalated post-intervention. Mean time to deescalation decreased from 30 hours before to 17 hours after cascade implementation (P = 0.02) (Figure 1). Median LOS decreased from 15 to 10 days following the intervention (P = 0.12). While the rate of AKI increased from 14 to 19% post-intervention (P = 0.89), the rate of CDI (2 vs. 2 patients) was comparable among both cohorts (P = 0.97) (Figure 2).

Conclusion. While cascade susceptibility reporting is recommended by the IDSA as a tool for antimicrobial stewardship, this recommendation has weak support due to paucity of data. In this study, we found that selective susceptibility reporting has the potential to decrease the use of PT and to reduce LOS in patients with *E. coli* and *Klebsiella* bacteremia. Further research to better identify patient populations most impacted by a cascade algorithm and its overall effectiveness as a stewardship tool is needed.