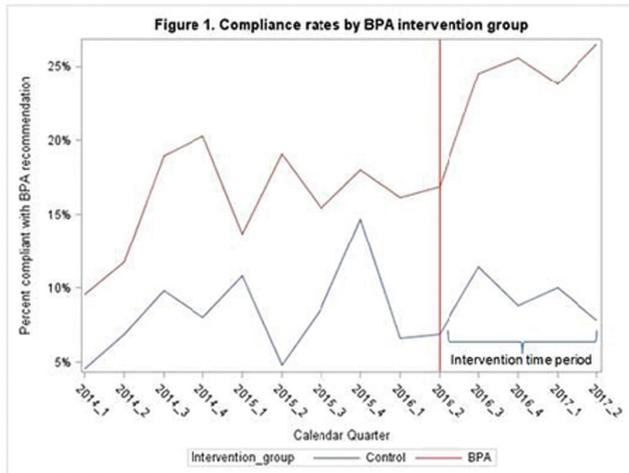


modification presented all providers with a list of abx options including dosage and frequency. The effects of two CDS interventions were assessed for one year.

Results. Results indicate the IG improved in BPA abx compliance over the CG. Figure 1 shows compliance with BPA recommended antibiotics among the IG increased from 17% to 23% during Q1 2014-Q2 2017 compared with a 0% increase in the CG ($P < .0001$). However, overall IDSA recommended compliance did not significantly increase: IG -2% vs CG 1% ($P = .26$). UTI patients of providers who saw the BPA alert were 1.9 times (CI: 1.7, 2.3) times more likely to receive recommended abx compared with the CG.

Conclusion. This randomized control study provides promising data that the use of CDS, specifically BPAs embedded within EMRs, can be used effectively to assist and encourage compliance with guidelines. Next steps include: continuing to educate providers on best practices, consider including more abx options in BPA to reduce errors in prescribing and improve overall compliance, and implementing similar CDS interventions for upper respiratory infections and other infections.



Disclosures. All authors: No reported disclosures.

756. Emergency Department Specific Antimicrobial Stewardship Intervention Reduces Antibiotic Duration and Selection for Discharged Adult and Pediatric Patients with Skin and Soft-tissue infections

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Background. Skin and soft-tissue infections (SSTI) account for 2.4 million annual U.S. emergency department (ED) visits. A majority of physicians give empiric antibiotic treatment that is non-compliant with guidelines, leading to potential patient harm and fueling the emergence of antibiotic resistance. The ED is a deserving focus of antimicrobial stewardship yet interventions have not been well studied in this setting.

Methods. Quasi-experimental study of a multifaceted antimicrobial stewardship intervention at an academic ED in a setting of high prevalence of clindamycin resistance among *S. aureus*. Our intervention included educational presentations by a physician champion, implementation of an electronic order set based on 2014 IDSA guidelines, dissemination of an ED specific *S. aureus* wound isolate antibiogram, monthly departmental peer-comparisons, and bimonthly, confidential, individual audit and feedback. Visits with ICD-10 codes for cutaneous abscess or other SSTI for patients discharged to home from the ED for consented providers were included for analysis. Primary endpoint of antibiotic selection and treatment duration was assessed during the pre-intervention and intervention periods using contingency tables for categorical outcome and a linear regression model for clustered survey data for comparing mean durations.

Results. Seventy-four consented providers' data were included, accounting for 310 patient visits over the baseline (Oct 15-Mar 16) and 315 visits over the intervention period (Oct 16-Mar 17). Mean antibiotic duration decreased from 9.5 to 6.5 days, a difference (95% CI adjusted for provider cluster effects) of -3.0 (-0.6, -5.3) days. Among patients discharged with a diagnosis of abscess, the use of >2 antibiotics declined from 12% (15/125) in the baseline to 4% (4/110) in the intervention period. The relative frequency of clindamycin use decreased from 59% to 23%. Among patients discharged with a diagnosis of cellulitis, cephalosporin use increased from 22% to 42%, with clindamycin use declining from 58% to 28%.

Conclusion. Our ED specific antibiotic stewardship program successfully reduced antibiotic duration and improved guideline adherence in discharged patients with SSTI. Similar implementation strategies should be assessed in a wider variety of settings.

Disclosures. All authors: No reported disclosures.

757. Antibiotic Stewardship in the Medical Intensive Care Unit of an Academic Medical Center: Impact of a Pneumonia Diagnostic Bundle with Pharmacist Intervention

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Background. Acute bacterial pneumonia is a common empiric diagnosis in medical intensive care unit (MICU) patients. Clinically, however, it may be difficult to distinguish from nonbacterial causes of inflammation and infection of the lung(s). Incomplete diagnostic workup at the time of empiric antibiotic initiation or misinterpretation of available data may impede antibiotic de-escalation and discontinuation. We aimed to reduce unnecessary antibiotic use in the MICU by (1.) bundling pneumonia diagnostic orders into a single comprehensive order set and (2.) by implementing a daily pharmacist-driven antibiotic time-out.

Methods. This before-and-after quality improvement pilot project was conducted in the MICU of Baystate Medical Center, a closed 16-bed unit, from December 2016 through March 2017. Outcomes were compared with a baseline period from December 2015 through March 2016. At baseline, all diagnostic orders were entered individually via computer physician order entry (CPOE) and daily antibiotic stewardship was not provided. For the pilot, a pneumonia order set was built which includes all diagnostic tests and recommended empiric antibiotics based on the local antibiogram. Of note, serial procalcitonin levels first became available at our institution through this order set. An interpretation algorithm was adapted from the literature to aid in their interpretation. A new MICU clinical pharmacist position was created which allowed antibiotic time-outs to be conducted 7 days per week. Antibiotic discontinuation was assessed by comparing days of antibiotic therapy per 1000 patient-days.

Results. For all antibiotics used to treat bacterial pneumonia, total days of therapy per 1000 patient-days in the MICU decreased from 905.7 in the baseline period to 688.4 in the pilot period (rate difference -217.3, 95% CI -270.8 to -163.9). The usage of narrow spectrum antibiotics increased during the pilot period.

Conclusion. Bundling pneumonia diagnostic orders together into a single order set inclusive of serial procalcitonin measurement as well as providing daily pharmacist-led antibiotic time-outs were associated with decreased antibiotic usage in the MICU.

Disclosures. All authors: No reported disclosures.

758. Antimicrobial Stewardship Facetime: Comparison of Two Rounding Models at a Tertiary Medical Center

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Background. As an 886-bed tertiary care hospital with both teaching and private physician groups, Cedars-Sinai Medical Center has a unique opportunity to incorporate antimicrobial stewardship pharmacist (ASP) rounds with both a general medicine teaching service (TS) as well as a non-teaching hospitalist group (NTH). The impact of ASP rounds on antimicrobial (ABX) utilization and notable differences in clinical outcomes associated with both rounding models were evaluated.

Methods. An ASP was incorporated into existing teaching rounds for TS and disposition planning rounds for NTH. ASP-TS and ASP-NTH rounds both occurred once daily on weekdays with facetime of 3-4 hours per day for TS and 0.5-1 hour per day for NTH. Metrics included ASP recommendations and acceptance rates, total ASP time, ABX utilization, and clinical outcomes. Chi-squared and the Student's t-test were used as appropriate.

Results. Between November 2016 to April 2017, ASPs reviewed 3184 NTH patients and 1322 TS patients. More opportunities for ASP intervention were identified with TS (40% vs. 26%, $P < 0.001$). Overall recommendation acceptance rates were higher for TS compared with NTH (95% vs. 79%, $P < 0.001$). Total recommendations identified per ASP-hour were higher for NTH vs. TS (1.76 vs. 0.93). ASP recommendations targeting ABX de-escalation, unnecessary use of fluoroquinolones, and treatment of asymptomatic bacteriuria were similar for both groups.

Compared with baseline rates, ASP rounds were associated with a significant reduction (-6%, $P = 0.01$) in ABX days-of-therapy (DOT) for NTH but not for TS (-1%,

$P = 0.6$). Anti-Pseudomonal (PSA) DOT significantly declined in both NTH (-11%, $P = 0.04$) and TS (-22%, $P = 0.02$). No significant changes in mortality, length of stay, and 30-day readmission rates were observed for either group.

Conclusion. ASP rounds identified ample opportunities for improvement in ABX utilization in both NTH and TS models. Rounds were associated with a significant reduction in anti-PSA DOT for both models and a significant reduction in overall ABX DOT for NTH group. Although NTH provided a higher patient volume and allowed for more interventions per ASP-hour compared with the TS model, acceptance rates were lower, which may reflect a shorter amount of time spent on patient discussions.

Disclosures. All authors: No reported disclosures.

759. At a Rural Veterans Affairs Medical Center, Telehealth Decreased Antibiotic Use in Long-Term, but not Acute Care

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Background. Healthcare facilities without access to infectious diseases (ID) expertise may struggle to implement effective antibiotic stewardship programs. In August 2016, we launched a pilot project using the Veterans Affairs (VA) telehealth system to form a Videoconference Antimicrobial Stewardship Team (VAST) to connect a multidisciplinary team from a rural VA medical center with ID physicians at a remote site to support antibiotic stewardship. Here, we present preliminary outcomes summarizing antibiotic use at a rural VA medical center with 27 acute and 162 long-term care beds before and after the VAST implementation.

Methods. Weekly VAST meetings began in August 2016. Using VHA databases, we determined the agent days (number of days a patient received a particular agent), the antibiotic days (the number of days a patient received any antibiotic) and length of therapy. We compared the rates of agent days and antibiotics days per 1000 bed days of care (BDOC) in the pre-implementation (January 2016–July 2016) and post-implementation periods (September 2016–March 2017) for acute and long-term care units.

Results. In acute care, agent days, antibiotic days and length of therapy did not change notably after VAST implementation (table). For long-term care, agent days decreased by 45%, antibiotic days by 42% and length of therapy by 37%. Also, the ratio of agent days to antibiotic days reveals that in acute care patients received on average 1.5 antibiotics (pre- and during the VAST) compared with 1.2 (pre-VAST) and 1.1 (during the VAST) in long-term care.

Outcomes Measures	Acute Care			Long-Term Care		
	Pre-VAST	VAST	Reduction	Pre-VAST	VAST	Reduction
Agent Days/1000 BDOC	1008	996	12 (1%)	62	34	28 (45%)
Antibiotic Days/1000 BDOC	653	644	9 (1%)	52	30	22 (42%)
Mean Length of Therapy (days)	4.57	4.46	0.12 (3%)	8.93	5.60	3.33 (37%)

Conclusion. Weekly multidisciplinary VAST meetings led to decreased rates of antibiotic use and length of therapy in the long-term but not acute care units of a rural VA medical center. Reasons for these differences may relate to the long-term care setting, which is an environment that permits active monitoring off antibiotics. Other possible reasons include differences in patient acuity and provider practice patterns.

Disclosures. All authors: No reported disclosures.

760. Reduction of Overall and Inappropriate Antibiotic Prescribing within a Veterans Affairs Primary Care System through Peer Comparison of Overall Antibiotic Prescribing Rates

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Background. Reducing inappropriate outpatient antibiotic use is an important national goal. A practical intervention with a relatively low barrier to implementation may be peer comparison of overall antibiotic prescribing rates.

Methods. Educational sessions were offered to all primary care providers (PCPs) at VA Pittsburgh. Subsequently, PCPs were sent monthly comparisons of their antibiotic prescribing rate, peer rates, and a system target. The intervention period of January–April 2017 was compared with a seasonal baseline of the same months in 2016. A random sample of prescriptions was reviewed for adherence to consensus guidelines.

Results. Educational sessions were attended by 50 (68.5%) PCPs. During the baseline period, 1,498 acute antibiotic prescriptions were written by 65 PCPs caring for 40,734 patients, compared with 1,131 prescriptions written by 73 PCPs caring for 41,185 patients during the intervention period (24.5% decrease, $P < 0.0001$). Azithromycin use decreased by 43.9% (442 vs. 248 prescriptions, $P < 0.0001$), and percentage overall decreased from 29.5% to 21.9%, $P < 0.0001$. Fluoroquinolone use decreased by 52% (148 vs. 71 prescriptions, $P < 0.0001$), and percentage overall decreased from 9.9% to 6.3%, $P = 0.001$. Among reviewed cases, inappropriate antibiotic prescribing decreased from 61.4% (62/101) to 40% (48/120), $P = 0.002$. No significant differences were observed in guideline-discordant agents (20.5% vs. 13.9%, $P = 0.7$) or guideline-concordant agents given for a guideline-discordant duration (36.8% vs. 37.1%, $P = 0.8$). Unnecessary antibiotic prescribing rates were numerically lower for upper respiratory infections (76.9% (30/39) vs. 63.8% (30/47), $P = 0.2$), urinary tract infections (40% (4/10) vs. 6.7% (1/15), $P = 0.1$), and COPD exacerbations (75% (6/8) vs. 16.7% (1/6), $P = 0.1$), and significantly lower for skin and soft-tissue infections (50% (9/18) vs. 7.1% (1/14), $P = 0.02$). Azithromycin and fluoroquinolones were frequently inappropriate in both periods (80.6% (29/36) vs. 70.8% (17/24) and 85.7% (6/7) vs. 75% (6/8), respectively).

Conclusion. In a primary care setting, initial education followed by monthly peer comparison of overall antibiotic prescribing rates reduced overall and inappropriate antibiotic prescribing.

Disclosures. All authors: No reported disclosures.

761. Quality Assessment of Process Measures in Antimicrobial Stewardship: Concordance of Valacyclovir Indication and Automatic Prospective Approval in Computerized Provider Order Entry

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Background. The Infectious Diseases Society of America (IDSA) and the Society for Healthcare Epidemiology of America (SHEA) recommend computerized decision support at the time of prescribing as an antimicrobial stewardship (AST) tool. Providing antimicrobial indications during prescribing can optimize infection-specific therapy through appropriate antimicrobial selection, dosing, and frequency. The Leapfrog group identifies this as a quality measure for their report card system. At Beth Israel Deaconess Medical Center (BIDMC), indication-based dosing has been incorporated in the computerized provider order entry (CPOE) system since 2006. At BIDMC, valacyclovir is only approved for the treatment of varicella zoster (VZV) infection or prophylaxis of solid organ transplant (SOT) patients at low risk for cytomegalovirus. These indications bypass the need for AST approval. Accuracy validation of the selected indications has not been formally performed.

Methods. A retrospective chart review was performed in patients prescribed valacyclovir during an 8-month period in 2016. Electronic medical records, laboratory reports, and pharmacy records were reviewed to identify the suspected/confirmed infection. The primary outcome was the concordance rate of selected CPOE valacyclovir indication compared with suspected/confirmed infection at the time of ordering. The secondary outcome was the proportion of valacyclovir use per institutional protocol.

Results. Overall, 117 patients were included, with a median age of 57.9 years, 51 (43.6%) were male, and 4 (3.4%) were located in an intensive care unit. Fifty-nine orders (50.4%) selected VZV as the indication, followed by 21 orders (17.9%) for SOT prophylaxis. Of orders with any CPOE indication, only 59/101 (58.4%) were concordant with suspected/confirmed infection. Of the valacyclovir orders with a VZV indication, 37 (62.7%) were concordant. Of the orders with SOT prophylaxis indications, 5 (23.8%) were concordant. Furthermore, only 46 orders (39.3%) were per BIDMC-protocol.

Conclusion. Concordance of CPOE indication selection and suspected/confirmed infection for valacyclovir was low. Using CPOE to grant automatic prospective approval must be monitored and audited for accuracy if employed as an AST tool.

Disclosures. All authors: No reported disclosures.

762. A Hospitalist-Led Initiative to Promote Antibiotic Citizenship on Internal Medicine Teaching Services

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