transmission in the setting of widespread community transmission. Interventions to stop transmission included widespread staff testing, staff auditing regarding temperature and symptom monitoring, and re-education on infection prevention practices. Particular focus was placed on appropriate PPE use including masking and eye protection, hand hygiene, and cleaning and disinfection practices throughout the unit. SARS-CoV-2 admission testing and limited visitation remain important strategies to minimize transmission in the hospital.

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Presentation Type:
Oral Presentation - Top Oral Award
Subject Category: Surveillance/Public Health

Automation of Healthcare-Associated Infections (HAIs) Areas for Opportunity Through the Use of Technology

Meri Pearson

Background: A large healthcare system in Georgia implemented an enhanced electronic infection surveillance system that is incorporated into the electronic medical record (EMR). Prior to the implementation of this electronic infection surveillance system, the infection prevention (IP) team performed healthcare-associated infection (HAI) surveillance through a locally created system that did not interface with their EMR. Each HAI identified undergoes a robust analysis for opportunities depending on the infection type by manual abstraction from the EMR, which is stored in a spreadsheet. One disadvantage of this spreadsheet is that only 1 person can enter data at a time. The coronavirus disease 2019 (COVID-19) pandemic has presented many challenges for healthcare facilities including shifting resources from HAI prevention programs. These programs include the investigations performed to identify risk factors that can aid in preventing future infections. Due to the necessity to increase efficiency in the current pandemic, the IP team proposed using technology to automate our HAI investigation process. **Method:** The IP team and the business intelligence (BI) team met to determine whether data completed in the electronic infection surveillance system could flow into an interactive data visualization software that is currently used for other HAI prevention dashboards. The existing spreadsheet was reviewed to select variables essential for HAI investigations and for which the data existed in the EMR. The BI team worked to find the correct data tables within the EMR so that the data could automatically refresh daily in the data visualization software. **Result:** The BI team was able to correctly identify variables used in the previously manual HAI investigation process within the EMR to interface with the data visualization software. This automation of investigations allows quick analysis of trends and areas of opportunity to prevent future HAIs. **Conclusion:** This utilization of technology can be applied to other healthcare facilities with similar software systems to streamline IP workflows. The automation of quickly and efficiently recognizing areas of opportunity allows IPs more time to facilitate the prevention of HAIs in other ways.

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Poster Presentation - Top Poster Award
Subject Category: Antibiotic Stewardship

Implementation of an Antibiotic Timeout at Veterans' Affairs Medical Centers (VAMC): COVID-19 Facilitators and Barriers

Jorie Butler; Joshua Judd; Cassie Goedken; Vanessa Stevens; Nui Brown; Michael Rubin and Matthew Goetz

Effective stewardship strategies such as an "antibiotic timeout" to encourage prescriber reflection on the use of broad-spectrum antibiotics are critical to reduce the threat of multidrug-resistant organisms. We sought to understand the facilitators and barriers of the implementation of the Antibiotic Self-Stewardship Timeout Program (SSTOP), which used a template note integrated into the electronic health record system to guide decision making regarding anti- methicillin-resistant *S. aureus* (MRSA) therapy after 3 days of hospitalization. We conducted interviews at 10 Veterans' Affairs medical centers (VAMCs) during the preimplementation period (N = 16 antibiotic stewards) and postimplementation (N = 13 antibiotic stewards) ~12 months after program initiation. Preimplementation interviews focused on current stewardship programs, whereas postimplementation interviews addressed the implementation process and corresponding challenges. We also directly asked about the impact of COVID-19 on stewardship activities at each facility. Interviews were transcribed and analyzed using consensus-based inductive and deductive coding. Codes were iteratively combined into barrier and facilitator groupings. Barriers identified in the preimplementation interviews included challenges with staffing, the difficulties of changing prescribing culture, and academic affiliates (eg, rotating physician trainees). Facilitators included intellectual support (eg, providers who understand the concept of stewardship), facility support, individual strengths of antibiotic stewards (eg, diplomacy, strong relationships with surgeons), and resources such as VA policies mandating stewardship. By the postimplementation phase, all sites reported a high volume of COVID-19 cases. Additional demands were placed on infectious disease providers who comprise the antibiotic stewardship teams, which complicated the implementation of SSTOP. Many barriers and facilitators mentioned were similar to those identified during preimplementation interviews. Staffing problems and specific providers not "getting it [stewardship activities]" continued, whereas facilitators centered around strong institutional support. Specific pandemic-related barriers included slow down or stoppage of stewardship activities including curbing of regular MRSA screening practices, halting weekly stewardship rounds, and delaying stewardship committee planning. Pandemic-specific staffing problems occurred due to the need for "all hands on deck" and challenges with staff working from home, as well as being pulled in multiple directions, (eg, writing COVID-19 policies). Furthermore, an increase in antibiotic use was also reported at sites during COVID-19 surges. Our findings indicate that SSTOP implementation met with barriers at most times; however, pandemic-specific barriers were particularly powerful. Sites with strong staffing resources were better equipped to deal with these challenges. Understanding how the program evolves with subsequent COVID-19 surges will be important to support the broad implementation of SSTOP.

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Poster Presentation - Top Poster Award
Subject Category: Antibiotic Stewardship

Chronic Antibiotic Suppression for Nonstaphylococcal Prosthetic Joint Infections Treated with Debridement or Implant Retention

Poorani Sekar; Rajeshwari Nair; Brice Beck; Bruce Alexander; Kelly Miell; Aaron Tande; Kimberly Dukes; Julia Friberg; Marin Schweizer and Andrew Pugely

Background: Early postoperative and acute prosthetic joint infection (PJI) may be managed with debridement, antibiotics, and implant retention (DAIR). Among patients with nonstaphylococcal PJI, an initial 4–6-week course of intravenous or highly bioavailable oral antibiotics is recommended in the Infectious Diseases Society of America (IDSA) guidelines, with disagreement among committee members on the need for subsequent chronic oral antimicrobial suppression (CAS). We aimed to characterize patients with nonstaphylococcal PJI who received CAS and to compare them to those who did not receive CAS. **Methods:** This retrospective cohort study included patients admitted to Veterans' Affairs (VA)

Table 1.

Characteristic	Received CAS N=452 (80.6%)	Did Not Receive CAS N=109 (19.4%)	Total (N=561)	P-value
Age at debridement (mean and std dev)	66.4 (11.3)	68.4 (11.8)	66.8 (11.4)	0.1072
Joint of infection				
Hip	104 (23%)	33 (7.3%)	137 (24.4%)	0.0987
Knee	310 (68.6%)	63 (13.9%)	373 (66.5%)	
Shoulder	38 (8.4%)	13 (2.9%)	51 (9.1%)	
Organism causing the PJI				
Enterococcus spp.	60 (13.3%)	18 (4%)	78 (13.9%)	0.3803
Pseudomonas aeruginosa	33 (7.3%)	7 (1.5%)	40 (7.1%)	0.7489
Cutibacterium acnes	33 (7.3%)	12 (2.7%)	45 (8%)	0.2008
Streptococcus spp.	174 (38.5%)	41 (9.1%)	215 (38.3%)	0.8652
Gram Negatives	125 (27.7%)	30 (6.6%)	155 (27.6%)	0.9779
Polymicrobial	28 (6.2%)	9 (2%)	37 (6.6%)	0.4362
Missing	51 (11.3%)	9 (2%)	60 (10.7%)	0.3588
Comorbidities				
Diabetes Mellitus	173 (38.3%)	40 (8.8%)	213 (38%)	0.7607
Rheumatoid Arthritis	19 (4.2%)	3 (0.7%)	22 (3.9%)	0.4835
Renal Failure	57 (12.6%)	11 (2.4%)	68 (12.1%)	0.4695
Dialysis	9 (2%)	5 (1.1%)	14 (2.5%)	0.1189
Moderate Liver Disease	45 (10%)	7 (1.5%)	52 (9.3%)	0.2535
Severe Liver Disease	7 (1.5%)	2 (0.4%)	9 (1.6%)	0.831
Endocarditis	2 (0.4%)	1 (0.2%)	3 (0.5%)	0.5417
BMI				
Underweight	4 (0.9%)	0 (0%)	4 (0.7%)	0.5203
Normal	75 (16.6%)	18 (4%)	93 (16.6%)	
Overweight	135 (29.9%)	32 (7.1%)	167 (29.8%)	
Obese	226 (50%)	53 (11.7%)	279 (49.7%)	
Missing	12 (2.7%)	6 (1.3%)	18 (3.2%)	
Sex				
Male	433 (95.8%)	106 (23.5%)	539 (96.1%)	0.4835
Female	19 (4.2%)	3 (0.7%)	22 (3.9%)	
Immunosuppressing conditions	3 (0.7%)	0 (0%)	3 (0.5%)	0.3937
Immunosuppressing medications	14 (3.1%)	7 (1.5%)	21 (3.7%)	0.1007
APACHE score (mean and stdev)	38.4 (14.0)	42.0 (14.2)	39.1 (14.1)	0.0473
ESR (mean and stdev)	68.3 (34.4)	66.6 (30.7)	68.0 (33.7)	0.6068
CRP (mean and stdev)	12.3 (10.4)	11.3 (8.6)	12.1 (10.1)	0.3569

hospitals from 2003 to 2017 who had a PJI caused by nonstaphylococcal bacteria, underwent DAIR, and received 4–6 weeks of antimicrobial treatment. PJI was defined by Musculoskeletal Infection Society (MSIS) 2011 criteria. CAS was defined as at least 6 months of oral antibiotics following initial treatment of the PJI. Patients were followed for 5 years after debridement. We used χ^2 tests and *t* tests were used to compare patients who received CAS with those who did not receive CAS. **Results:** Overall, 561 patients had a nonstaphylococcal PJI treated with DAIR, and 80.6% of patients received CAS. The most common organisms causing PJI were streptococci. We detected no significant differences between patients who received CAS and those who did not receive CAS, except that modified Acute Physiology and Chronic Health Evaluation (mAPACHE) scores were higher among patients who did not receive CAS (Table 1). **Conclusion:** Patients not on CAS were more severely ill (by mAPACHE) than those on CAS. Otherwise, the 2 groups were not different. This finding was contrary to our hypothesis that patients with multiple comorbidities or higher mAPACHE scores would be more likely to get CAS. A future analysis will be conducted to assess treatment failure in both groups. We hope to find a specific cohort who may benefit from CAS and hope to deimplement CAS in others who may not benefit from it.

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Poster Presentation - Top Poster Award
Subject Category: Antibiotic Stewardship

Reductions in Postdischarge *Clostridioides difficile* Infection after an Inpatient Health System Fluoroquinolone Stewardship

K. Ashley Jones; Zanthia Wiley; Julianne Kubes; Mary Elizabeth Sexton; Benjamin Albrecht; Jesse Jacob; Jessica Howard-Anderson; Scott Fridkin and Udodirim Onwubiko

Background: Effective inpatient stewardship initiatives can improve antibiotic prescribing, but impact on outcomes like *Clostridioides difficile* infections (CDIs) is less apparent. However, the effect of inpatient stewardship efforts may extend to the postdischarge setting. We evaluated whether an intervention targeting inpatient fluoroquinolone (FQ) use in a large healthcare system reduced incidence of postdischarge CDI. **Methods:** In August 2019, 4 acute-care hospitals in a large healthcare system replaced standalone FQ orders with order sets containing decision support. Order sets redirected prescribers to syndrome order sets that prioritize alternative antibiotics. Monthly patient days (PDs) and antibiotic days of therapy (DOT) administered for FQs and NHSN-defined broad-spectrum hospital-onset (BS-HO) antibiotics were calculated using patient encounter data for the 23 months before and 13 months after the intervention (COVID-19 admissions in the previous 7 months). We evaluated hospital-onset CDI (HO-CDI) per 1,000 PD (defined as any positive test after hospital day 3) and 12-week postdischarge (PDC- CDI) per 100 discharges (any positive test within healthcare system <12 weeks after discharge). Interrupted time-series analysis using generalized estimating equation models with negative binomial link function was conducted; a sensitivity analysis with Medicare case-mix index (CMI) adjustment was also performed to control for differences after start of the COVID-19 pandemic. **Results:** Among 163,117 admissions, there were 683 HO-CDIs and 1,009 PDC-CDIs. Overall, FQ DOT per 1,000 PD decreased by 21% immediately after the intervention (level change; $P < .05$) and decreased at a consistent rate throughout the entire study period (−2% per month; $P < .01$) (Fig. 1). There was a nonsignificant 5% increase in BS-HO antibiotic use immediately after intervention and a continued increase in use after the intervention (0.3% per month; $P = .37$). HO-CDI rates were stable throughout the study period, with a nonsignificant level change decrease of 10% after the intervention. In contrast, there was a reversal in the trend in PDC-CDI rates from a 0.4% per month increase in the preintervention period to a 3% per month decrease in the postintervention period ($P < .01$). Sensitivity analysis with adjustment for facility-specific CMI produced similar results but with wider confidence intervals, as did an analysis with a distinct COVID-19 time point. **Conclusion:** Our systemwide intervention using order sets with decision support reduced inpatient FQ use by 21%. The intervention did not significantly reduce HO-CDI but significantly decreased the incidence of CDI within 12 weeks after discharge. Relying on outcome measures limited to inpatient setting may not reflect the full impact of inpatient stewardship efforts and incorporating postdischarge outcomes, such as CDI, should increasingly be considered.

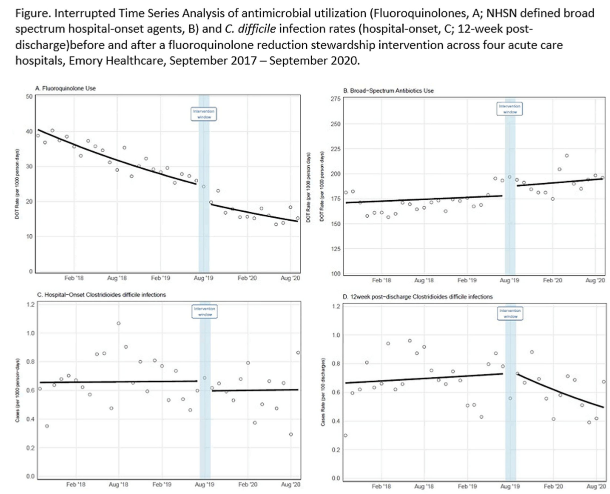

Figure 1.

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