

**Conclusion.** Non-compliance with locally developed antimicrobial management guidelines resulted in a higher proportion of patients being transferred to the ICU and an increased length of stay in our cohort, highlighting the benefits of adherence. Future studies will assess long-term outcomes associated with compliance to infection management guidelines.

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

### 112. Prescriber Perceptions on Utilization of the Antibiotic Self-Stewardship Time Out Program (SSTOP) at Veterans Affairs Medical Centers (VAMC): A Strategy for Improved Antibiotic Use

Cassie Goedken, MPH<sup>1</sup>; Joshua Judd, MBA<sup>2</sup>; Jorie M. Butler, PhD<sup>3</sup>; Nui G. Brown, MA Health Science<sup>4</sup>; Michael Rubin, MD/PhD<sup>5</sup>; Matthew B. Goetz, MD<sup>6</sup>; Matthew B. Goetz, MD<sup>6</sup>; <sup>1</sup>VA Iowa City Health Care System, Iowa City, IA; <sup>2</sup>VA Salt Lake City Health Care System, Salt Lake City, Utah; <sup>3</sup>University of Utah, Salt Lake City, UT; <sup>4</sup>VA Greater LA Healthcare System, Greater LA, California; <sup>5</sup>IDEAS Center of Innovation, VA Salt Lake City Health Care System, Salt Lake City, Utah; <sup>6</sup>VA Greater Los Angeles Healthcare System and David Geffen School of Medicine at UCLA, VA-CDC Practice-Based Research Network, Los Angeles, California

CARRIAGE QUERI Program

**Session:** P-07. Antimicrobial Stewardship: Program Development and Implementation

**Background.** Evidence is lacking on how to implement effective and sustainable antibiotic stewardship strategies. The Antibiotic Self-Stewardship Time Out Program (SSTOP) evaluated the implementation at VAMCs of an "Antibiotic Timeout" 3 days after the initiation of antibiotics to encourage providers to review continued use of broad-spectrum antibiotics.

**Methods.** Sites launched the SSTOP note templates in a rolling fashion from June 2019-March 2020. Clinical pharmacists largely drove the implementation. The vancomycin note template was implemented at 6 of 8 sites and the antipseudomonal note template across 4 of 8 sites. Two sites were unable to launch the note templates due to lack of resources, however they utilized SSTOP principles/guided tools. From Sept 2019-Nov 2020 we conducted post-launch qualitative interviews with Antibiotic Stewardship Program (ASP) champions involved in implementation across the 8 VAMCs. Interviews were transcribed and analyzed for thematic content.

**Results.** Feedback from ASP providers suggests prescribers had mixed reviews on the note template, but overall liked the process and deemed it to be straightforward. Many valued the algorithm, indicating it was helpful in both thinking about antibiotics prior to initiation, and identification of appropriate antibiotics. Barriers included staffing (e.g., rotating residents/turnover), surgery service, information technology (IT) support, COVID-19, and the need to remind providers to use the template. Facilitators consisted of strong stewardship, local champions (e.g., ID Fellow), medicine service, and SSTOP data feedback reports. Recommendations largely centered on improvements to the note template usability and to SSTOP feedback reports (e.g., inclusion of patient/provider-level data).

**Conclusion.** Overall, the SSTOP note templates were considered acceptable and straightforward. By guiding providers to prescribe more appropriate antibiotics, they act as influencers for practice change, and may strengthen provider/ASP relations. Plans for continued utilization of the note templates after the project concludes suggest SSTOP may serve as a way to achieve sustainable promotion of antibiotic use improvements.

**Disclosures.** Matthew B. Goetz, MD, Nothing to disclose

### 113. Improving Transitions-of-Care for Patients Discharged on High-Risk Antimicrobial Therapy

Ryan Zabrosky, Pharm.D.<sup>1</sup>; Ellen C. Rubin, PharmD, BCPS<sup>1</sup>; Erica Liu, PharmD<sup>1</sup>; Karrine Brade, PharmD<sup>1</sup>; Hope Serafin, PharmD<sup>1</sup>; Spencer E. Sutton, Pharm.D.<sup>1</sup>; <sup>1</sup>Boston Medical Center, Quincy, Massachusetts

**Session:** P-07. Antimicrobial Stewardship: Program Development and Implementation

**Background.** Providing effective transitions-of-care (TOC) services improves outcomes for patients discharged on high-risk medications. Literature has shown that successful TOC for certain antimicrobials reduces hospital readmissions, medication errors, and improves post-discharge follow-up and laboratory monitoring. Prior to this quality improvement (QI) initiative, there was no formal TOC process for patients discharged on high-risk antimicrobial therapy (HAT) at our institution. Without standardization, only 55.1% of patients discharged on HAT had successful TOC. The aim of this initiative was to develop and implement a TOC protocol in at least 90% of patients discharged on HAT.

**Methods.** This QI initiative utilized the Institute of Healthcare Improvement model for improvement. A workgroup of key stakeholders developed a protocol to identify and standardize TOC services provided to patients discharged on HAT. Successful protocol completion was achieved if the following process metrics were evaluated, obtained, and documented prior to discharge: baseline laboratory values, pharmacokinetic monitoring, appropriate intravenous access, drug-drug interactions, medication availability, discharge medication counseling, and formal pharmacist documentation in a discharge note. Outcome metrics included referral to outpatient infectious disease (ID) follow-up, 90-day readmissions, and successful TOC. Balancing metrics included pharmacist time and protocol initiation for patients not discharged on HAT.

**Results.** Between October 2020 and May 2021, 218 patients met protocol inclusion criteria. Of these, 203/218 (93.1%) were appropriately identified with the new TOC process. The protocol was successfully followed in 78.9% of patients identified. Readmission rates were 42.8%, which was unchanged from baseline. Inpatient ID

involvement increased from 80.9% to 95.7% and referral to outpatient ID follow-up from 59% to 94.8%.

**Conclusion.** This newly developed TOC protocol successfully identifies patients discharged on HAT, improves provision of TOC services to these high-risk patients, and significantly improves the rate of infectious disease involvement while inpatient and after discharge.

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

### 114. Optimization of Inpatient Antibiotic Use via an Electronic Antimicrobial Stewardship Module and an Infectious Diseases Pharmacy Resident

Victor Chen, PharmD<sup>1</sup>; Lauren Allen, PharmD<sup>2</sup>; Hongkai Bao, PharmD<sup>2</sup>; Kelsie Cowman, MPH<sup>3</sup>; Priya Nori, MD<sup>4</sup>; Priya Nori, MD<sup>4</sup>; Yi Guo, PharmD, BCIDP<sup>5</sup>; <sup>1</sup>UC San Diego Health, San Diego, California; <sup>2</sup>Montefiore Medical Center, Newark, New York; <sup>3</sup>Montefiore Medical Center and Albert Einstein College of Medicine, New York, NY; <sup>4</sup>Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, NY; <sup>5</sup>Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY

**Session:** P-07. Antimicrobial Stewardship: Program Development and Implementation

**Background.** Antibiotic resistance is a public health crisis and antimicrobial stewardship (AMS) pharmacists serve a crucial role in preventing inappropriate use. At Montefiore Medical Center (1,500-bed hospital), a new electronic medical record AMS module was implemented with assistance from an infectious diseases (ID) pharmacy resident in October 2020. The module utilizes a dynamic scoring system to assist in prioritizing interventions, including bug-drug mismatches, insufficient coverage, or de-escalation. The AMS module is operationalized by ID pharmacists during the week and an ID pharmacy resident every other weekend. The objective of this study was to assess the impact of an ID pharmacy resident performing AMS module interventions on broad spectrum antibiotic use.

**Methods.** An observational study of AMS module interventions on antibiotic use (AU) in days of therapy per 1,000 days present and standardized antimicrobial administration ratio (SAAR) was performed. AU data for piperacillin-tazobactam (P/T) and SAAR prior to (October 2019- December 2019) and after (October 2020 - December 2020) the integration of an ID pharmacy resident and the AMS module was compared. Additional data collected included total number and type of interventions.

**Results.** A total of 539 interventions were made by AMS pharmacists and 36.5% of these were completed by the ID pharmacy resident. Across 6 different units, there was a statistically significant decrease in the SAAR for broad spectrum antibacterial agents (Figure 1), and a decrease of at least 10% in P/T use during the two different time periods (Table 1). An estimated P/T cost reduction of 26% of (\$48,708 to \$36,235.80) was observed. AMS pharmacists made 63 interventions in respective units. The top three intervention types were dose/frequency/duration recommendations, pharmacokinetic vancomycin dosing/monitoring, and de-escalation. The acceptance rate of interventions was 99% (534 accepted interventions/539 total interventions).

Figure 1. SAAR Comparison of Broad-Spectrum Agents

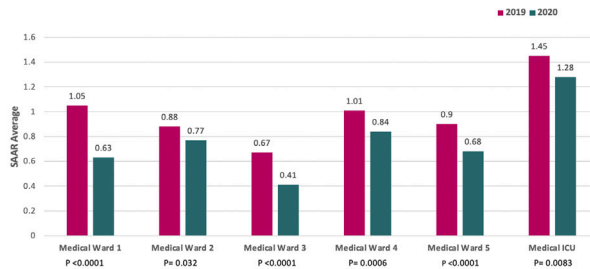


Table 1. AU Rate of Piperacillin-tazobactam

Piperacillin-tazobactam AU Rate (DOT/1000 days Present)	Location	2019	2020	Change	% Change
	Medical Ward 1	70.4	50.3	-20.1	-29%
Medical Ward 2	61	51.1	-9.9	-16%	
Medical Ward 3	42	32.9	-9.1	-22%	
Medical Ward 4	89.1	75.9	-13.2	-15%	
Medical Ward 5	62.9	51.3	-11.6	-18%	
Medical ICU	233.4	195.1	-38.3	-16%	

**Conclusion.** Overall, there was a statistically significant impact on SAARs and a >10% change in P/T AU rate with an estimated cost reduction >25% on select units after implementation of the AMS module with an ID pharmacy resident.

**Disclosures.** Kelsie Cowman, MPH, Merck (Research Grant or Support) Priya Nori, MD, Merck (Grant/Research Support) Priya Nori, MD, Nothing to disclose Yi Guo, PharmD, BCIDP, Merck (Research Grant or Support)

### 115. Variable Use of Diagnostic Codes for Acute Respiratory Infections Across Emergency Departments and Urgent Care Clinics in an Integrated Healthcare System: Implications for Accuracy of Antibiotic Stewardship Metrics

Daniel J. Livorsi, MD, MSc<sup>1</sup>; RAJESHWARI NAIR, PhD, MBBS, MPH<sup>2</sup>;

Michihiko Goto, MD, MS<sup>3</sup>; Eli N. Perencevich, MD MS<sup>4</sup>; <sup>1</sup>University of Iowa Carver College of Medicine and Iowa City VA Health Care System, Iowa City, Iowa; <sup>2</sup>The University of Iowa Carver College of Medicine, Iowa City, Iowa; <sup>3</sup>University of Iowa Carver College of Medicine, Iowa City, Iowa; <sup>4</sup>University of Iowa, Iowa City, Iowa

**Session:** P-07. Antimicrobial Stewardship: Program Development and Implementation

**Background.** Antibiotic stewardship initiatives can leverage metrics that make peer-peer comparisons. A commonly used metric measures how frequently a clinician prescribes antibiotics for acute respiratory infections (ARIs), as defined by diagnostic codes. However, it is unclear if clinicians differ in their use of ARI diagnostic codes. In this study, we evaluated differences in how frequently clinicians code for ARIs and factors that are associated with the use of ARI diagnostic codes in Emergency Department (ED) and Urgent Care (UC) visits across an integrated healthcare system.

**Methods.** We analyzed a retrospective cohort of all ED and UC patient-visits across 129 Veterans Affairs medical centers during 2016-2018. ARI visits were identified using ICD-10 codes for acute bronchitis, influenza, pharyngitis, sinusitis, and upper respiratory tract infections for clinicians with 100 or more visits. A generalized linear mixed model with a link logit function that accounted for clustering at the clinician and facility-level was used to calculate median odds ratios (OR) and to identify factors associated with increased likelihood of entering an ARI code.

**Results.** There were 6,016,499 patient-visits, and 519,389 (8.6%) were coded as an ARI (Table 1). The mean rate of ARI diagnoses across all visits was 8.9% (SD 2.5%) at the facility-level and 7.4% (SD 4.5%) at the clinician-level (Table 2). The median OR was 2.19 (95% CI 2.18, 2.22), suggesting there was between-clinician variation in coding for ARI diagnoses. Visits were significantly more likely to be coded as ARIs if seen by an advanced practice provider (OR=2.36, 95% CI 2.19, 2.54), if a fever was recorded (OR=4.20, 95% CI 4.18, 4.29), and if the visit occurred between December-March (OR=1.97, 95% CI 1.96, 1.98). Approximately 2/5th of the variability (41.4%) in assigning an ARI diagnostic code was explained by differences across individual clinicians.

**Table 1. Characteristics of visits coded as ARIs and non-ARIs in Emergency Departments and Urgent Care Clinics across 129 VA Medical Centers, 2016-2018**

	Total (n=6016499)	ARI visit (n=519389)	Non-ARI visit (n=5497110)
Median Age (IQR)	61 (48-70)	59 (45-68)	61 (48-70)
Male	5299689 (88.1)	441316 (84.9)	4858373 (88.4)
Immunosuppression	217732 (3.6)	15502 (2.9)	202230 (3.7)
Respiratory Viral Season	2013958 (33.5)	250163 (48.2)	1763795 (32.1)
Abnormal Temperature	52816 (0.9)	14896 (2.9)	37720 (0.7)
Chronic Disease	3326374 (55.3)	277158 (53.4)	3049216 (55.5)
Obesity	1106994 (18.4)	106202 (20.5)	1000792 (18.2)
Emergency Department visits	5160783 (85.8)	423950 (81.6)	4736833 (86.2)
Provider type			
Physician	3605553 (59.9)	304572 (58.6)	3300981 (60.1)
Advanced practice provider	1048791 (17.4)	122976 (23.7)	925815 (16.8)
Clinician-type not labeled	1362155 (22.6)	91841 (17.7)	1270314 (23.1)
US Census Region			
Northeast	745396 (12.4)	64185 (12.4)	681211 (12.4)
Midwest	1301490 (21.6)	118568 (22.8)	1182922 (21.5)
South	2629143 (43.7)	237620 (45.8)	2391523 (43.5)
West	1340470 (22.3)	99016 (19.1)	1241454 (22.6)

**Table 2. Frequency at which clinicians used ARI diagnostic codes for Emergency Department and Urgent Care visits across 129 VA medical centers, 2016-2018**

Location of visit and type of clinician	Unique clinicians (n) <sup>1</sup>	Mean percentage of visits coded as an ARI (SD)
<b>Emergency Department</b>		
Physician	2292	7.5% (3.5)
Advanced practice provider	409	10.9% (4.4)
Clinician-type not labeled	1974	5.7% (4.4)
<b>Urgent Care Clinics</b>		
Physician	366	10.6% (4.3)
Advanced practice provider	102	12.8% (4.4)
Clinician-type not labeled	364	7.3% (5.2)
<b>All visit and clinician-types</b>	5507	7.4% (4.5)

1. Limited to clinicians with ≥100 patient-visits during the study period.

**Conclusion.** There was substantial variability in how frequently ED and UC clinicians coded a visit as an ARI, and a large proportion of the variability was explained by differences across clinicians. Unmeasured factors could include different approaches to using diagnostic codes. ARI metrics based on diagnostic codes may need to account for differences in clinicians' coding behavior.

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

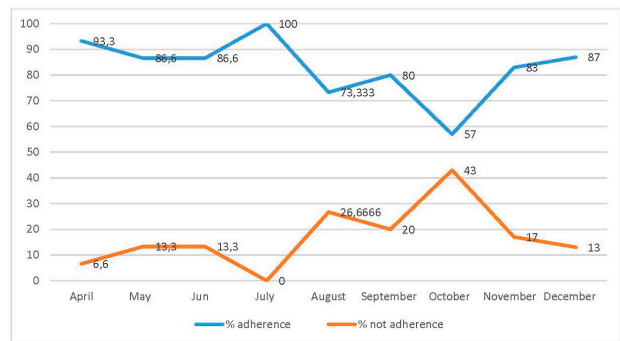
## 116. Impact of an Antimicrobial Stewardship Program in the First Year of Pandemic 2020 in a Large, Academic, Public Network Hospitals in Bogotá, Colombia

Carlos A. Solorzano Ramos, MD<sup>1</sup>; Erika A. Ruiz Palma, MD<sup>1</sup>; Gerardo A. Muñeton Lopez, MD<sup>1</sup>; Camilo Gomez Rodriguez, MD<sup>1</sup>; Elena V. Castro Solarte, MD, MPH<sup>1</sup>; Elkin V. Lemos Luengas, MD, MSc, PhD<sup>1</sup>; <sup>1</sup>Subred Integrada de Servicios de Salud Sur Occidente E.S.E. Bogotá, Distrito Capital de Bogotá, Colombia

**Session:** P-07. Antimicrobial Stewardship: Program Development and Implementation

**Background.** Antimicrobial resistance is a major public health threat internationally but, particularly in Colombia. High and increasing rates of carbapenemases are challenging. Implementing antimicrobial stewardship programs (AMS) in a large, academic, public network hospitals in Bogotá, Colombia, will help curb inappropriate antibiotic use.

Adherence to AMS Program 2020. Subred Integrada de Servicios de Salud Sur Occidente E.S.E Bogotá, Colombia.



Impact of an Antimicrobial Use Optimization Program in the First Year of Pandemic 2020 in a Large, Academic, Public Network Hospitals in Bogotá Colombia

**Methods.** AMS was established in April 2020 consisting of an administrative champion, Infectious Diseases staff, nurse, General Physician, microbiologist, and pharmacists. Antimicrobial stewardship program interventions included postprescriptive audit and establishment of institutional guidelines. The AMS tracked appropriate drug selection including loading dose, maintenance dose, frequency, route, duration of therapy, de-escalation, and compliance with AMS recommendations. Defined daily dose (DDD) of drugs and health economics evaluations of antimicrobials (April-December 2020). Recommendations are placed in the electronic medical record as a progress note.

**Results.** From April to December 2020, 1013 patients were evaluated by means of a prospective methodology. Unnecessary 689 days of hospitalization and 4420 days of antibiotic therapy were avoided. Among the top antibiotics discontinued were piperacillin tazobactam for the months of July, August, November and December, while for September and October was meropenem. The intensive care unit was the most frequently intervened service (52%), followed by hospitalization (43%) and the emergency department (5%). Over the course of the year, there was significant adherence to the program, with 100% in July, followed by 93.3% in April, 87% in December, 86.6% in May and June, 83% in November, 80% in September, 73.3% in August and 57% in October. The AMS program was able to save \$47,409 US in antibiotics and \$55,529 US in hospitalization, and 11% decrease in nephrotoxicity events (14 renal failures were avoided), which also saved additionally \$ 23,503 US for a total of an estimated cost saving for the network public hospitals of \$ 126,441 US by 2020.

**Conclusion.** Implementation of a multidisciplinary antibiotic stewardship program in this academic, large, academic, public network hospitals in Bogotá, Colombia demonstrated feasibility and economic benefits even in a Covid19 pandemic situation.

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

## 117. How Does Antimicrobial Stewardship Provider Role Affect Prospective Audit and Feedback Acceptance by the Attending Physician?

Keely Hammond, MD<sup>1</sup>; Justin Chen, MD<sup>1</sup>; Karen Doucette, MD, MSc (Epi)<sup>1</sup>; Stephanie Smith, MD<sup>1</sup>; Dima Kabbani, MD<sup>1</sup>; Cecilia Lau, RPh<sup>2</sup>; Serena Bains, RPh<sup>2</sup>; Jackson J. Stewart, B.Sc.(Pharm), ACPR, APRY-2 (ID)<sup>3</sup>; Karen G. Fong, BSP<sup>2</sup>; <sup>1</sup>University of Alberta, Edmonton, Alberta, Canada; <sup>2</sup>Alberta Health Services, Edmonton, Alberta, Canada; <sup>3</sup>University of Alberta Hospital, Edmonton, Alberta, Canada

**Session:** P-07. Antimicrobial Stewardship: Program Development and Implementation

**Background.** Antimicrobial stewardship (AMS) teams are commonly multidisciplinary. The effect of AMS provider role on prospective audit and feedback (PAF) acceptance has previously been investigated with mixed results. PAF of restricted antimicrobials (carbapenems, linezolid, daptomycin, and tigecycline) in adult inpatients at our large Canadian academic centre has been performed since 2018. Actionable feedback is communicated via chart note plus one of a phone call, direct message, or