Table 1. TASP Accomplishments

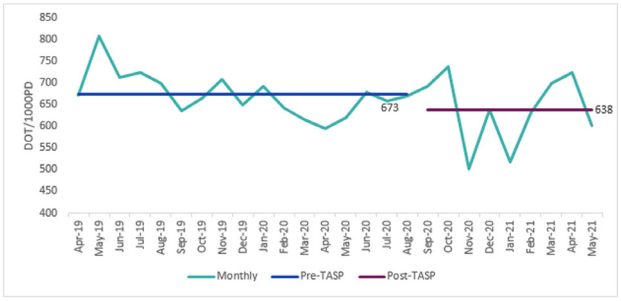
Patient Care	Guidelines	Microbiology Lab	Policies	Education
Prospective audit with feedback M-F	Empiric Antimicrobials for Common Infections	Updated local antibiogram	MDRO and Isolation	Introduction to Stewardship webinar
Patient monitoring form	COVID-19	Revised cascade reporting rules	Surgical prophylaxis	COVID-19 monthly updates and webinars
Stewardship intervention form	CAP	Updated AST panels and reporting rules to align with current breakpoints	Aminoglycoside dosing	Tocilizumab webinar
Available for patient-related questions via email outside of daily stewardship call	HAP/VAP	Added clinician comments to culture and laboratory test results	Renal dosing	Monthly stewardship pearl newsletter
Coaching on conducting thorough beta-lactam allergy history	Procalcitonin	Revised antibiotic reporting rules for *Enterococcus* spp. isolated in urine cultures	Indications for Use on electronic antibiotic orders	
	IV to PO conversion	Enhanced culture results display to providers in electronic health record for improved readability	Vancomycin dosing in dialysis	

Results. From 09/01/2020 to 04/30/2021, 304 stewardship opportunities were identified and 77% of interventions were accepted. Recommending a duration of therapy was accepted most frequently (93.5%) and de-escalation of therapy least frequently (69.6%) (Table 2). Recommending an ID consultation or diagnostic testing was always accepted but only comprised 6.2% of all interventions. Daily calls involved an average of 5 patient reviews. Monthly antimicrobial use declined on average from 673 DOT (days of therapy)/1000 PD (patient days) to 638 DOT/1000 PD (Figure 2). Daily calls were cancelled on 31/166 weekdays (18.7%) due to staffing shortages.

Table 2. TASP Interventions (9/2020 - 4/2021)

	9/2020	10/2020	11/2020	12/2020	1/2021	2/2021	3/2021	4/2021	Total
Discontinue	3/4	2/4	6/13	6/6	8/11	10/15	13/16	8/11	56/80 (70%)
De-escalate	3/4	3/3	6/6	10/15	8/11	6/11	12/18	7/11	55/79 (69.6%)
IV to PO	10/14	10/11	4/6	2/4	1/1	0/0	6/8	5/6	38/50 (76%)
Duration	2/2	4/4	5/5	5/5	3/5	2/2	11/11	11/12	43/46 (93.5%)
Dosing	2/4	0/0	1/1	0/0	3/3	0/0	4/4	4/4	14/16 (87.5%)
ID Consult	1/1	0/0	1/1	2/2	0/0	0/0	8/8	0/0	12/12 (100%)
Escalate	0/0	1/1	1/2	1/1	0/0	0/0	1/3	2/2	6/9 (66.7%)
Diagnostics	1/1	0/0	0/0	0/0	1/1	0/0	2/2	3/3	7/7 (100%)
Other	2/2	0/0	0/0	0/1	0/0	0/0	0/1	1/1	3/5 (60%)

Figure 2. Monthly Antimicrobial Use in Days of Therapy (DOT) per 1000 Patient Days (4/2019 - 5/2021)



Conclusion. Implementation of TASP in a community hospital resulted in a high percentage of accepted stewardship interventions and lower antimicrobial usage. Success is dependent on robust educational efforts, establishing strong relationships with local providers, and involvement of key stakeholders. Lack of dedicated stewardship time for local pharmacists is a very significant barrier.

Disclosures. **Erin K. McCreary, PharmD, BCPS, BCIDP**, **AbbVie** (Consultant)**Cidara** (Consultant)**Entasis** (Consultant)**Ferring** (Consultant)**Infectious Disease Connect, Inc** (Other Financial or Material Support, Director of Stewardship Innovation)**Merck** (Consultant)**Shionogi** (Consultant)**Summit** (Consultant) **Erin K. McCreary, PharmD, BCPS, BCIDP**, AbbVie (Individual(s) Involved: Self): Consultant; Cidara (Individual(s) Involved: Self): Consultant; Entasis (Individual(s) Involved: Self): Consultant; Ferring (Individual(s) Involved: Self): Consultant; Infectious Disease Connect, Inc (Individual(s) Involved: Self): Director of Stewardship Innovation, Other Financial or Material Support; Merck (Individual(s) Involved: Self): Consultant; Shionogi (Individual(s) Involved: Self): Consultant; Summit (Individual(s) Involved: Self): Consultant **Tina Khadem, PharmD**, **Infectious Disease Connect, Inc.** (Employee) **Nancy Zimmerman, RN, BSN**, **I'd connect** (Employee) **John Mellors, MD**, **Abound Bio, Inc.** (Shareholder)**Accelevir** (Consultant)**Co-Crystal Pharma, Inc.** (Other Financial or Material Support, Share Options)**Gilead Sciences, Inc.** (Advisor or Review Panel member, Research Grant or Support)**Infectious DIseases Connect** (Other Financial or Material Support, Share Options)**Janssen** (Consultant)**Merck** (Consultant) **Rima Abdel-Massih, MD**, **Infectious Disease Connect** (Employee, Director of Clinical Operations) **Rima Abdel-Massih, MD**, Infectious Disease Connect (Individual(s) Involved: Self): Chief Medical Officer, Other Financial or Material Support, Other Financial or Material Support, Shareholder **J Ryan. Bariola, MD**, **Infectious Disease Connect** (Other Financial or Material Support, salary support)

102. Evaluation of the Association between the Antibiotic Spectrum Index and Antibiotic Days of Therapy: A Retrospective Study across 124 Acute-care Hospitals

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

Background. Antibiotic stewardship programs often measure antibiotic days of therapy (DOT), but this metric does not reflect the antibiotic spectrum. In this study, we used the previously published Antibiotic Spectrum Index (ASI), which attaches a score (1-13) to the spectrum of each antibiotic, to evaluate the content of antibiotic use across all Veterans Health Administration (VHA) hospitals. We also assessed how benchmarking hospital performance changed when ASI was used instead of DOT.

Methods. We conducted a retrospective cohort study of patients admitted to 124 acute-care VHA hospitals during 2018. We obtained data on administered antibiotics, the days of antibiotic use (DOT), and days-present (DP) from the VHA Corporate Data Warehouse and then aggregated data to the hospital-level using the National Healthcare Safety Network's methodology. We modified the original ASI by changing 3.8% of the bug-drug scores to ensure consistency across all scores and adding 27 new antibiotics agents. For each hospital, we calculated ASI/DOT, ASI/1,000 DP, and DOT/1,000 DP and ranked hospitals on their performance. We performed a

Spearman's rank-order correlation to compare hospitals on these metrics and their associated rankings.

Results. At the hospital-level, the median ASI/DOT, ASI/1,000 DP and DOT/1,000 DP were 5.4 (interquartile range: 5.2-5.8), 2,332.7 (1,941.8-2,796.2) and 443.5 (362.5-512.2), respectively. There was a strong correlation between the ASI/1,000 DP and DOT/1,000 DP metrics [Spearman's correlation test: r=0.97 (p< 0.01)] but only a weak and insignificant correlation between ASI/DOT and DOT/1,000 DP [r=0.17 (p=0.06), Figure 1]. Twenty (16.1%) hospitals showed a difference of 10% or more in their ranking for ASI/1,000 DP compared to their ranking for DOT/1,000 DP. The range of ranking difference was from -17.7% to 21.0% (Figure 2a and b).

Figure 1. Distribution of the Antibiotic Spectrum Index / Day of Therapy by Days of Therapy / 1000 Days Present for 124 Acute-Care VHA Hospitals during 2018. Black line: Median values of DOT/1,000 DP and ASI/DOT, respectively.

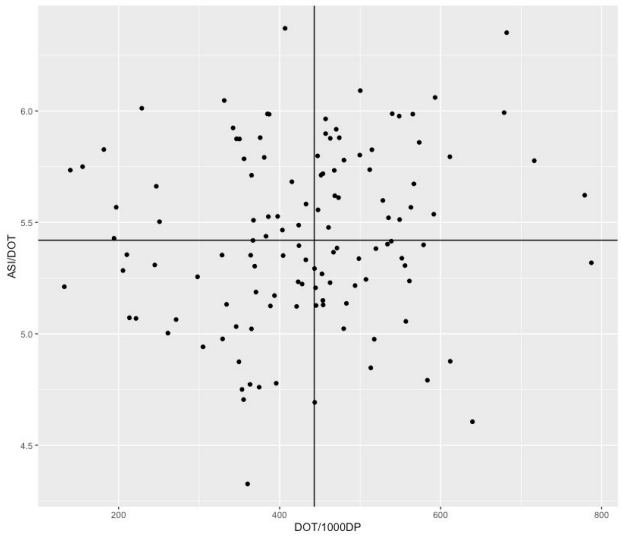
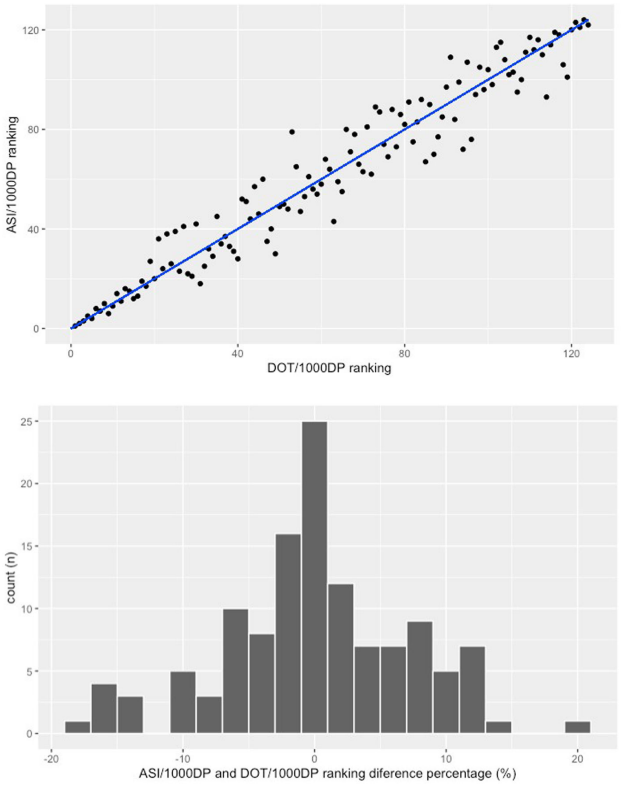


Figure 2. (a) Distribution of the rankings in DOT/1,000 DP and ASI/1,000 DP. Blue line: the position of same ranking between ASI/1,000 DP and DOT/1,000 DP. (b) Distribution of the differences in each hospital's ranking for DOT/1,000 DP and ASI/1,000 DP



Conclusion. Our findings suggest that hospitals using fewer days of antibiotic therapy did not necessarily use narrower-spectrum antibiotics. ASI/1,000 DP, as a combined measure of antibiotic consumption quantity and average spectrum, provided a different view of hospital performance than DOT/1,000 DP alone. Future work is needed to define how this new metric relates to the quality of antibiotic use.

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

103. Expansion of an Antimicrobial Stewardship Program Through Implementation of a Discharge Verification Queue

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

Background. Antimicrobial stewardship programs (ASPs) have traditionally focused interventions on inpatient care to improve antibiotic prescribing. Support of effective interventions for ASPs targeting antibiotic prescriptions at hospital discharge is emerging. Our objective was to expand stewardship services into the outpatient setting through implementation of a process by the antimicrobial stewardship team (AST) to verify antimicrobials prescribed at discharge.

Methods. This quality improvement initiative incorporated a discharge order verification queue managed by AST pharmacists to review electronically prescribed antimicrobials Monday through Friday, from 8:00 am to 4:00 pm. The queue was piloted Sep 2020 and expanded hospital-wide Feb 2021. Patients < 18 years old and those with observation or emergency department status were excluded. The AST pharmacist reviewed discharge prescriptions for appropriateness, intervened directly with prescribers, and either rejected or verified prescriptions prior to transmission to outpatient pharmacies. Complicated cases were reviewed with the AST physician to evaluate intervention appropriateness. Interventions were categorized as either dose adjustment, duration, escalation or de-escalation, discontinuation, or safety monitoring.

Results. A total of 602 prescriptions were reviewed between Sep 2020 and Apr 2021. An AST pharmacist intervened on 28% (171/602) of prescriptions. The most common intervention types were duration (41%, 70/171), discontinuation (18%, 31/171), and dose adjustment (17%, 30/171). The most common indications in which the duration was shortened was community acquired pneumonia (26%, 18/70), skin and soft tissue infection (21%, 15/70), and urinary tract infection (17%, 12/70). The most common antibiotics recommended for discontinuation were cephalexin (32%, 10/31) and trimethoprim-sulfamethoxazole (10%, 3/31). The overall intervention acceptance rate was 78%.

Conclusion. An AST pharmacist review of antimicrobial prescriptions at discharge improved appropriate prescribing. The discharge queue serves as an effective stewardship strategy for inpatient ASPs to expand into the outpatient setting.

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

104. Improving Efficiency of Antimicrobial Stewardship Reviews Using Artificial Intelligence Modelling

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

Background. Antimicrobial stewardship programs (ASP) in hospitals improve antibiotic prescribing, slow antimicrobial resistance, reduce hospitalisation duration, mortality and readmission rates, and save costs. However, the strategy of prospective audit and feedback is laborious. In Singapore General Hospital (SGH), 10 reviews are required to identify 2 inappropriate cases. Limited manpower constraints ASP audits to only about 30% of antibiotics prescribed. This proof-of-concept study explored the feasibility of developing a predictive model to prioritise inappropriate antibiotic prescriptions for ASP review.

Methods. ASP-audited adult pneumonia patients from January 2016 to December 2018 in SGH were included. Patient data e.g., demographics, allergies, past medical history, and relevant laboratory investigations at each antibiotic use episode were extracted from electronic medical records and re-assembled through linking for analysis. Ground truth for model training was based on ASP-defined appropriateness for each encounter. The dataset was split into 80% and 20% for training and testing respectively. Three modelling techniques, XGBoost, decision tree and logistic regression, were assessed for their relative performance in terms of precision, sensitivity and specificity.

Results. There were 12471 unique patient encounters. Training was done on 10459 encounters and 39 data elements were included. When tested on 2012 encounters, the logistic regression model performed the best (86.7% sensitivity, 71.4% specificity). The model correctly classified 1377 out of 1388 (99.2%) encounters as "appropriate" (do not require ASP intervention). 624 antibiotic use encounters were classified as "inappropriate", of which only 72 were truly inappropriate (positive predictive value for ASP intervention, PPV 11.5%). The low PPV was likely due to inadequate representation of "inappropriate" cases in the training dataset (4.1%). Applying this model would prioritise the number of immediate ASP reviews needed to identify cases for intervention by two-thirds, from 2012 to 624 (Figure 1).