that include de-escalation, intensification of treatment, alternative therapy, dose optimization, order clarification, stop date/duration, additional monitoring, education, restriction enforcement, consult, IV to PO conversion, rejection of recommendation, and total monitored interventions requiring no changes.

Results. Pharmacist tracked between 150 and 200 interventions monthly through the EMR system, reflecting both self-stewardship and during rounds with ID physicians. Figures 2–8: Charts display the number of patient-days of therapy per 1,000 days at risk and yearly SVMH Antibacterial Utilization Rates compared nationally to other Teaching and Nonteaching hospitals. Below each graph exhibits yearly Drug Spend per patient-days of Therapy.

Conclusion. Overall, the antibiotic utilization rates decreased over 4 years, particularly with aztreonam, meropenem, and levofloxacin. The formalization of an antimicrobial stewardship partnership between ID physician and pharmacy team led to increases in pharmacist-recommended interventions, streamlining of antimicrobial therapy, as well as decreases in antimicrobial purchasing costs. Proactively working in conjunction with hospitalists allows the pharmacists to play a critical role in sustaining a robust ASP service at our community hospital. The ASP at SVMH can serve as a model for other community hospitals with similar resources.

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1069. Implementation and Results of a Health-System Antimicrobial Stewardship (AMS) Program

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Session: 132. Antibiotic Stewardship: Program Evaluation

Friday, October 4, 2019: 12:15 PM

Results. AMS expansion initiative was implemented in fiscal year 18 (FY18) across a 14-member health system (~1,000 average daily census combined) consisting of 8 community hospitals, 5 rural critical access hospitals and 1 academic medical center.

Methods. The expansion initiative included a 0.5 full-time equivalent (FTE) Infectious diseases (ID) physician and 2.5 FTE ID-trained clinical pharmacists to support daily AMS activities. Clinical decision support software (TheraDoc) had previously been implemented across the health system. Here we report our continuation results for the first 9 months of year 2 (FYTD19) of the expansion initiative.

Results. AMS personnel documented an average of 319.8 and 313.2 interventions per month in FY18 vs. FYTD19, respectively. Mean acceptance rate of AMS interventions by providers was 87.9% and 89.4% in FY18 vs. FYTD19. Provider groups with the highest acceptance rate were Hospital Medicine, Pulmonary Critical Care and Infectious Disease. Highest interventions in FYTD19 included recommending other diagnostic testing (17%) followed by de-escalating/targeting therapy based on culture results and recommending alternative therapy (both at 11%). Most common disease states AMS intervened included bacteremias (29%), pneumonia (ventilator-associated or community-acquired) 13% each, and UTIs 13%. AMS interventions generated 168 ID consults in FYTD19. The most common ID disease states AMS intervened included bacteremias (29%), pneumonias (ventilator-associated or community-acquired) 13% each, and UTIs 13%.

Conclusion. The ability to review offsite electronic medical records daily for antimicrobial optimization with ID pharmacist and physician support, identify facility-specific needs and opportunities, and collect available data endpoints to determine program effectiveness has helped to ensure program success.

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1070. Handshake Antimicrobial Stewardship as a Model to Prevent Patient Safety Incidents and Recognize Diagnostic Errors

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Session: 132. Antibiotic Stewardship: Program Evaluation

Friday, October 4, 2019: 12:15 PM

Background. Patient safety incidents (PSIs), such as diagnostic errors, are common events that may lead to significant patient harm. Few studies describe the impact that antimicrobial stewardship programs (ASPs) have preventing PSIs and recognizing diagnostic errors. Handshake Stewardship has emerged as a specific ASP model that involves prospective review of hospital-wide antimicrobial ordering with a compressed “second look” of relevant clinical and historical patient data. In person recommenda-
tions are then provided directly to the medical team. The objective of this project was to evaluate the potential impact that Handshake Stewardship has on preventing PSIs and recognizing diagnostic errors.

Methods. Following Children’s Hospital Colorado (CHCO) ASP’s implementation of the Handshake Stewardship model in October 2013, the CHCO ASP team began prospectively self-labeling interventions as "Great Catches" (GCs). These GCs were defined as any ASP intervention that “notably changed the trajectory of patient care.” Patient charts for all GCs from October 2014 through May 2018 were retrospectively reviewed and each intervention was assigned one or more descriptive category labels including: administration error, de-escalation/escalation of therapy, bug-drug mismatch, inappropriate dose/duration, potential adverse effect, alternative diagnosis, additional testing, prevent hospital admission, and epidemiology alerts. In addition, each intervention was scored using the previously validated “Safer Dx Instrument” to determine which GCs intervened for a potential diagnostic error.

Results. From October 2014 through May 2018 there were 87,322 admissions to CHCO. Our ASP team intervened on 6,735/87,322 (7.7%) of these admissions. Of these, 174/6,735 (2.6%) were prospectively labeled by ASP providers as GCs, of which 44/174 (25%) resulted in new infectious disease consultations.

Conclusion. Given the frequency and significance of PSIs including diagnostic error, systems are needed to help recognize and prevent patient harm. The Handshake Stewardship model may help prevent PSIs and recognize diagnostic errors among hospitalized children.

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concept using an antimicrobial tier structure, in addition to historical PAAF. The purpose was to assess the impact of the tier structure, along with PAAF performed by the pharmacists and TMDs, compared with PAAF alone.

**Methods.** This retrospective pre (March–August 2018)- and post (October 2018–March 2019) implementation study was conducted at AHO. The ASP team developed a hospital-wide policy listing antimicrobials based on a tier system (Figure 1), with higher priority agents falling in tiers 3 (T3) and 4 (T4). Education was completed in September 2018 and the process was implemented in October 2018. Criteria for use was evaluated at the point of order entry, followed by PAAF by the pharmacist and TMD. The primary outcome was impact on T3 and T4 antimicrobial utilization, measured in days of therapy (DOT) per 1,000 days present (DP). Secondary outcomes included T3 and T4 antimicrobial cost/adjusted patient-days and rates of hospital-acquired C. difficile infections (CDI).

**Results.** During the post-implementation period, the average DOT per 1,000 DP for T3 and T4 agents decreased by 21.3% (89 vs. 70, P = 0.001) compared with the pre-implementation period (Figure 2). Average T3 and T4 antimicrobial costs decreased by 26% during the post-implementation period ($9.83 vs. $7.27, P < 0.001). Additionally, rates of hospital-acquired CDI decreased by 14% (P = 0.41) during the post-implementation period.

**Conclusion.** The tier concept, along with PAAF collaborations between the pharmacists and TMD, allowed for a greater impact on antimicrobial utilization, compared with pharmacist-led PAAF alone. In addition to significant decrease in antimicrobial utilization, substantial cost-savings were demonstrated. A nonsignificant declining trend in the incidence of hospital-acquired CDI was also noted during the post-implementation period.

![Figure 1:](image)

**Table 1:** Tier 3 and Tier 4 Antimicrobials

| Tier 3 Antimicrobials | Tier 4 Antimicrobials |
|-----------------------|-----------------------|
| Ceftaroline            | Beziloxumab           |
| Colistin              | Ceftazidine-avibactam |
| Ciprofloxacin         | Cefotiozane-tazobactam|
| Daptomycin            | Dalbavancin           |
| Erpapenem             | Delafloxacin          |
| Fidaxomycin           | Doripenem            |
| Imipenem-clastatin    | Meropenem-vaborbactam|
| Levofloxacin          | Oritavancin           |
| Linzolid              | Teltacavam            |
| Meropenem             | Tigecycline           |
| Polymyxin B           |                       |

**Figure 2:** Average DOT per 1,000 Days Present

**Figure 2:**

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

1073. Analysis of the Antimicrobial Stewardship Program Recommendation Process in the Intensive Care Units at a Large Tertiary Community Hospital

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**Session:** 132. Antibiotic Stewardship: Program Evaluation

**Friday, October 4, 2019: 12:15 PM**

**Background.** Studies suggest up to 60% of antibiotics prescribed in the intensive care units (ICUs) may not be optimized. The antimicrobial stewardship team (AST) at Abbott Northwestern consists of infectious diseases trained pharmacists, pharmacy residents, and/or advanced pharmacy practice experience (APPE) pharmacy students and provides prospective audits and feedback on all inpatients not being seen by infectious diseases specialists and currently receiving any anti-infectives. Comprehensive daily profile reviews are performed and recommendations are communicated via a physician sticky note in the electronic medical record (EMR) and/or via a direct page. Beginning January 2018, the AST started reviewing patients in the two ICU units earlier to ensure recommendations were completed prior to multidisciplinary rounds. The AST also initiated sending a message within the EMR alerting the decentralized pharmacists prior to rounds.

**Methods.** A retrospective chart review was conducted on recommendations made by the AST between February and April 2017 (control group) and February and April 2018 (intervention group) for patients on two ICU units (ICU 1 and ICU 2). Time to acceptance and acceptance rates were calculated for the control and intervention period. A one-tailed t-test was performed for the time to acceptance analysis and a Chi-squared test was performed to compare acceptance rates. Results were deemed statistically significant when P < 0.05.

**Results.** Time to acceptance for the recommendations showed a significant decrease from 25.9 to 13.7 hours with the new process in ICU 1 (P = 0.038). Provider acceptance rate increased significantly from 77.8% to 88.4% in ICU 2 (P = 0.037). Provider acceptance rate increased significantly from 77.8% to 88.4% in ICU 2 (P = 0.037).

**Conclusion.** Changing the workflow of the prospective audit and feedback process of the AST had a meaningful impact by decreasing the response time (time to acceptance) and increasing acceptance rates of the recommendations in the ICUs. The revised process improved communication between the AST, decentralized pharmacist, and attending provider, which in turn may have contributed to the positive outcomes.

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1074. Evaluation of a Pharmacist-led Antimicrobial and Anticoagulant Monitoring Initiative

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**Session:** 132. Antibiotic Stewardship: Program Evaluation

**Friday, October 4, 2019: 12:15 PM**

**Background.** Adverse drug events are associated with an increase in hospital stay and cost. Risks from these events are minimized by adjusting a medication’s dose or frequency, and changes in renal function may necessitate adjustments. Currently, there is no formal protocol for a prospective audit of renal function over the weekend at this pharmacy. The purpose of this project was to evaluate if a prospective review of Infectious Disease (ID) specialist. We sought to compare the processes and outcomes of ASPs at Veterans Health Administration (VHA) hospitals with and without an on-site ID specialist.

**Methods.** This retrospective cohort included all acute-care patients in VHA hospitals admitted during 2016, or 2 years after a VHA mandate for hospital-based ASPs. Data from a mandatory nationwide survey were used to identify hospitals that self-reported the absence of an on-site ID specialist, including an ID physician or ID pharmacist, in 2016. Antimicrobial use was quantified at the hospital-level as days-of-therapy (DOTs) per 1,000 days present and categorized based on National Healthcare Safety Network definitions. A facility-level negative binomial regression model with risk adjustments made for aggregated case-mix and facility-level factors was used to determine the association between the presence of an on-site ID specialist and antimicrobial use.

**Results.** Eighteen of 122 (14.8%) hospitals lacked an on-site ID specialist. Non-ID hospitals had fewer admissions per month than ID sites (mean 107.3 vs. 425.4, P < 0.01). An ASP policy and an ASP pharmacy champion were present at 29% of hospitals with and without an ID specialist. Core ASP strategies were frequently used in both ID and non-ID sites, including prior authorization (90.4% vs. 83.3%, P = 0.41) and prospective audit-and-feedback (76.9% vs. 66.7%, P = 0.38). Broad-spectrum antibiotic use (263.9 vs. 317.6 DOTs per 1,000 days-present, P = 0.01) but not total antimicrobial use (600.8 vs. 654.5 DOTs per 1,000 days-present, P = 0.34) was lower at ID institutions. After adjusting for non-clinical factors, non-ID hospitals admitted during 2016, or 2 years after a VHA mandate for hospital-based ASPs, but the presence of an on-site ID specialist was associated with less frequent prescribing of broad-spectrum antibiotic agents. An on-site ID specialist may be an important part of an effective hospital-based ASP.

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