Background. Performing urinalyses and urine cultures in asymptomatic patients is one of the most common reasons for inappropriate antibiotic use. However, implementing this practice has been difficult, especially for clinical scenarios deemed to be high risk for infectious complications, such as among patients with delirium or those undergoing orthopedic implant surgery.

Methods. Using the dual-process theory framework “Developing De-Implementation Strategies Based on Un-Learning and Substitution,” an educational intervention citing new IDSA guidelines and providing a pneumonic “ARCS of ASB” was created and delivered didactically to providers. The goal was to increase performance of evidence-based prevention actions in place of low-value urine screening and treating of asymptomatic patients. Clinical providers and staff (MD, RN, APRN, trainees) in 3 different levels of care (acute inpatient, long-term, and outpatient) were included. A web-based anonymous and confidential pre- and post-question format was delivered to assess influence on provider behavior.

Results. Responses from a range of 250–279 unique providers were collected. For scenario #1 (patient with delirium and a positive urine culture and no other infectious symptoms), the option to give antibiotics was reduced by 45% pre to 4% post, Chi-square P < 0.01. For scenario #2 (patient having a knee replacement and positive preoperative urine culture, no other symptoms) the option to give antibiotics was reduced by the same magnitude (~50%) but a lower absolute number (67% pre and 33% post, chi-square P < 0.01). Changes in predicted behavior were similar across levels of care.

Conclusion. Substituting evidence-based practices in place of low-value practices is an appealing framework for influencing provider behavior. Our work demonstrates that education can successfully reduce the intention to use antibiotics for asymptomatic patients with positive urine cultures.

Disclosures. All authors: No reported disclosures.
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1056. Evaluation of Clinical Outcomes Following Implementation of Real-Time Stewardship Team Interventions for Multi-Drug-Resistant Organisms
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Session: 131. Antibiotic Stewardship: Interventions
Friday, October 4, 2019: 12:15 PM

Background. Infections due to multidrug-resistant organisms (MDRO) are associated with an increased risk of mortality. Accurate assessment of culture results and prompt initiation of effective antibiotic therapy have the potential to improve patient outcomes. The purpose of this study was to assess the time to effective therapy and associated clinical outcomes following the implementation of real-time stewardship alerts for infections due to MDRO.

Methods. This pre–post quasi-experimental study identified patients admitted to Michigan Medicine with a positive culture for one of 14 pre-defined MDRO. An alerting system was implemented within the institution’s electronic health record (EHR) in October 2018, which notifies the antimicrobial stewardship (ASP) pharmacist upon detection of an MDRO, regardless of source. The ASP pager is monitored 24/7 by a clinical pharmacy specialist who reviews the patient’s chart and recommends antibiotic modifications if necessary. In the pre-intervention period, no structured alerting or clinical pharmacy specialist intervention was present. Inclusion: 218 years old and trigger of an alert. Exclusions: pediatric service, cystic fibrosis, discharged or deceased prior to alert sensitivities, outside hospital (OSH) transfer growing identical organism upon admission, culture not done at the time of alert for MDRO, regardless of source. The ASP pager is monitored 24/7 by a clinical pharmacy specialist who reviews the patient’s chart and recommends antibiotic modifications if necessary. In the pre-intervention period, no structured alerting or clinical pharmacy specialist intervention was present.

Results. 152 alerts were included in the study (post, n = 75 and pre, n = 77). Outcomes were assessed in patients not on effective therapy at the time of alert (68.0% vs. 70.1%). Time to effective therapy was significantly improved in the intervention group (2.08 hours vs. 3.72 hours, P = 0.0010). Length of stay (18 days vs. 15.5 days, P = 0.1662) and 30-day all-cause mortality (17.6% vs. 18.5%, P = 0.0010) were not different between groups. However, 30-day readmission rates were significantly reduced with the intervention (21.4% vs. 43.2%, P = 0.0316).

Conclusion. Real-time stewardship team interventions for infections due to MDRO improve time to effective therapy and are associated with a decrease in hospital readmissions.

Disclosures. All authors: No reported disclosures.

1057. The Impact of Temporary Suspensions of an Antimicrobial Stewardship Audit and Feedback Program on Antimicrobial Utilization of General Internal Medicine Inpatients
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Session: 131. Antibiotic Stewardship: Interventions
Friday, October 4, 2019: 12:15 PM

Background. A goal of Antimicrobial Stewardship Programs (ASP) is to optimize antimicrobial use; many using audit and feedback (AAF). Although AAF decreases unnecessary target antimicrobial use, it is resource-intensive. As a result, temporary suspensions in AAF activity may occur from human resource limitations or other factors. We describe the impact of these temporary suspensions and intensity of care on antimicrobial utilization trends.

Methods. This retrospective study describes the initiation and temporary suspensions of AAF in the General Internal Medicine (GIM) unit at an urban teaching hospital. Data were collected over 65 months. During active-AAF, a dedicated ID trained clinical pharmacist and ID physician-reviewed antimicrobial use for all GIM patients and provided patient-specific advice to physicians. Antimicrobial use was measured by Defined Daily Doses (DDD) normalized per 1,000 patient-days. To assess the impact of temporary suspensions, data were compared in two ways: 1. All nonactive-AAF time-frames were compared with active AAF. 2. Pre-ASP was compared with Post-ASP Initiation which includes suspension periods. To determine whether differences in trends were seen based on acuity level of the patients (identified at admission as benefiting from frequent monitoring), analyses were repeated after stratification of patients admitted to the Step-Up unit (GIM-SU) and the regular ward (GIM-W).

Results. Comparing nonactive AAF vs. active-AAF, significant changes (P < 0.05) in mean normalized DDD were observed for total antimicrobials (−19%), antipseudomonal β-lactam antibiotics (−41%) and first-generation β-lactams (−30%). Pre AAF vs. Post AAF comparisons showed similar but less pronounced trends. Following stratification to GIM-SU and GIM-W, greater variation in significant changes to targeted antimicrobials between comparisons was observed. Different significant antimicrobial changes were seen in SU vs. W.

Conclusion. Our results show that the temporary suspension of AAF affects antimicrobial utilization trends. Greater sustained decreases in targeted antimicrobials utilization were associated with active AAF. Stratification by patient acuity lead to increased variation in the impact on target antimicrobials and increased the impact of suspension.

Disclosures. All authors: No reported disclosures.