763. Peripherally Inserted Central Venous Catheters (PICCs): An Opportunity for Antimicrobial Stewardship
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Background. PICCs are often used in hospitalized patients who require prolonged intravenous (IV) antibiotic therapy. PICCs offer the advantage of ease and safety of insertion over traditional central venous catheters (CVCs) but still carry the risks of venous occlusion, phlebitis, dislodgement and central line associated bloodstream infection (CLABSI). The objective of this analysis was to determine the impact of an ASP’s prospective audit and feedback when PICCs are ordered for antibiotic therapy.

Methods. Pharmacists from the Antimicrobial Stewardship Program (ASP) and Nurses from the PICC team reviewed the electronic medical record of patients ordered a PICC for IV antibiotic therapy to determine whether antibiotic therapy was changed to the oral route or if therapy was complete per current infectious disease treatment guidelines. If either alternative to the PICC was approved by the ASP physician, the medical team was contacted to discuss discontinuation of the PICC order as well as the antibiotic recommendation.

Results. From January 1, 2016 through March 30, 2017, placement of 35 PICCs was prevented through prospective stewardship review of PICC orders indicated for antibiotic use. A total of 361 PICC days and 378 IV antibiotic days of therapy (DOT) were avoided. Antibiotic therapy was stopped for 6 patients; 27 patients were prescribed an oral antibiotic alternative including 9 patients who were receiving IV vancomycin.

Conclusion. The opportunity exists for ASPs to reduce IV antibiotic DOT, avoid patient risk for CLABSI and reduce the cost of hospitalization and PICC nurse work load through screening PICC orders for IV antibiotic therapy.

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764. Developing Surgical Antimicrobial Prophylaxis Interventions Using Theoretical Domains Framework
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Background. Surgical site infections are common causes of healthcare-associated infections. Using surgical antimicrobial prophylaxis (SAP) is a complex process that can reduce these rates if performed correctly. While antimicrobial stewardship programs have developed guidelines for SAP, there has been less focus on understanding and modifying the behavioral and contextual factors required to optimize prophylaxis use. We performed chart reviews and workflow analyses to develop interventions based on a theoretical framework to improve SAP use in two academic hospitals.

Methods. SAP use during a one month period (October 2016) was analyzed for orthopedic and general surgery procedures by chart review. The primary outcomes of interest were: re-dosing for prophylaxis duration, re-dosing for procedure duration, and postoperative continuation. Structured workflow analyses were performed to understand the processes involved in SAP ordering and administration. These findings were applied to the Theoretical Domains Framework (TDF) to develop theory-based interventions.

Results. We reviewed 88 orthopedic and 63 general surgery procedures. Adherence to institutional guidelines for prophylaxis choice was low in both orthopedic (55%) and general surgery (70%). For general surgery, preoperative timing was incorrect in 25% of cases, re-dosing for procedure duration was incorrect in 59% of cases, and re-dosing for blood loss was not routinely performed. Alternatively, for orthopedic surgery ceftazolin was re-dosed too early, at a median of 93 minutes (n = 42), and postop antibiotic use was continued for 10 days in all 14 aseptic hip revisions.

Methods. Using an existing collaboration between Cedars-Sinai Medical Center and 8 SNFs, we established a framework of antimicrobial stewardship principles related to UTI management as follows: Phase 1 (Jul-Dec 2015), baseline assessment; Phase 2 (Jan-Jun 2016), developed SNF-specific UTI treatment recommendations based on local resistance patterns; Phase 3 (Jul-Dec 2016), implemented tools to standardize UTI assessment, including SNF-specific treatment recommendations developed in Phase 2. Outcome assessments included antimicrobial utilization and prescribing consistent with treatment recommendations. Chi-squared and Student’s t-test were used as appropriate.

Results. Aggregate data were available from 3 SNFs. Compared with baseline, implementation of the program was associated with a 20% reduction in monthly antimicrobial days of therapy (DOT) (181 to 144 DOT/1000 patient days, P = 0.004), including a 39% reduction in fluoroquinolone (FQ) DOT (37 to 22 DOT/1000 patient days, P = 0.002). Initiation of FQ orders declined by 41% (17 to 10 orders/month, P = 0.02). Following implementation, 60% of antimicrobial orders for UTI were consistent with SNF-specific UTI guideline recommendations. We continued to observe a high proportion of patients without UTI symptoms who received antimicrobials (72%). Additional data were available from one facility. Initiation of antimicrobials at the SNF for UTIs decreased 29% (75 to 53 orders/month, P < 0.001), and SNF FQ orders for UTIs decreased 55% (11 to 7 orders/month, P = 0.055).

Conclusion. Hospitals and SNFs can partner to develop a successful antimicrobial stewardship program. Implementing facility-specific tools to guide appropriate management of suspected UTI was associated with a significant reduction in overall antimicrobial prescribing, particularly FQs. Opportunities to reduce overtreatment for asymptomatic bacteruria remain.

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766. Posters that Contain Information About Antibiotic Related Harm Reduce Expectations for Antibiotic Treatment of Viral Upper Respiratory Tract Infections
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Background. Patient-directed education that aims to lower patients' expectations for antibiotics is a promising strategy to reduce antibiotic usage for viral upper respiratory tract infections (URTI). We aimed to test three posters on a patient population to see whether the messages were comparable in reducing expectations for antibiotics to treat URTI.

Methods. We developed three posters about antibiotic treatment of URTI (figure 1). The first indicated that antibiotics are not helpful (futility), the second indicated that antibiotics can cause personal harm (ADR), and the third indicated that antibiotic usage promotes the development of antimicrobial resistance (resistance). We surveyed hospital inpatients over the age of 15 years to measure their expectations to receive antibiotic if they had a hypothetical URTI. We then showed each participant one of the three posters selected randomly, and after 20–30 minutes completed a follow-up survey.

Results. 299 participants completed both surveys. There was a statistically significant association between participants' responses and highest education level (P < 0.001). Eighty-one (27%) expected their doctor to prescribe antibiotics for a "bad cold or flu" and this reduced to 38/299 (13%) after viewing the posters (P < 0.01). This result did not vary between posters, but participants shown poster 2 (ADR, n = 101) and 3 (resistance, n = 100) were less likely to agree that "antibiotics are safe" compared with participants shown poster 1 (futility, n = 98) (P < 0.001). The majority of the participants thought the information would affect their future behaviour (192/299, 64%) and that they would be likely to discuss this information with their friends and families (232/299, 78%). The overall opinions of participants shown poster 2 (ADR) and poster 3 (resistance) were significantly different from the opinions of participants shown poster 1 (futility) (P < 0.01).

Conclusion. Our brief, inexpensive intervention reduced expectations to receive antibiotics for a hypothetical URTI. Information about personal harms (ADR) and public harm (resistance) might have more impact than information solely about futility. Further study is required to test the effect of this intervention at the time a person presents with URTI.

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768. An Opt-out Approach to Antimicrobial Stewardship Utilizing Electronic Alert Recommendations at a Community Hospital

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Background. Prospective audit and feedback is a primary tool for antimicrobial stewardship, but inefficient communication and provider non-participation can limit the impact. To address these issues, a customizable electronic alert system was created to deliver antimicrobial stewardship recommendations to providers upon opening the electronic medical record. If no provider declined the recommendation after 24 hours, the recommendation was implemented by the antimicrobial stewardship program per protocol. This study describes the experience of an opt-out antimicrobial stewardship pilot at a community hospital.

Methods. This is a pragmatic, quasi-experimental, single center study describing the frequency of accepted recommendations delivered during a 12 week intervention period. Recommendation responses are categorized by intent of the recommendation, day of antibiotic therapy, prescribed antibiotics, responding provider specialty, and clinical reasoning. Secondary outcomes are target antimicrobial days of therapy (DOT) per 1000 patient days and healthcare facility-onset Clostridium difficile infections (HO-CDI) per 10,000 patient days for the three months before, during, and three months after the intervention period.

Results. In total, 804 of 1170 (69%) antibiotic recommendations were accepted yielding an average of 10 accepted recommendations per day. Of those accepted, 113 (14%) recommendations were implemented by the antimicrobial stewardship program. Of these, 109 (97%) of the recommendations to discontinue antibiotic therapy were accepted more often than recommendations to discontinue therapy, 376/524 (72%) and 414/631 (66%), respectively. Target antibiotic DOT per 1000 patient days decreased from 775.2 in three months prior to 631 during the pilot (P = 0.05). HO-CDI per 10,000 patient days decreased from 16.24 to 11.70 (P = 0.12). After cessation of the intervention, anti-biotic DOT and HO-CDI rates increased, 681 and 15.55, respectively.

Conclusion. The combination of opt-out antimicrobial stewardship with electronic delivery of recommendations demonstrated an efficient and effective approach to prospective audit and feedback. Future applications are broad including antimicrobial stewardship telepharmacy.

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