

Background. The Antimicrobial Stewardship Program (ASP) was implemented at our 425-bed community hospital in June of 2012. The ASP team, 1 pharmacist, and 1 infectious diseases physician reviewed all intensive care patients on antimicrobials as well as patients on select broad-spectrum antibiotics. In 2016, ASP expansion was undertaken without additional staffing using a novel unit pharmacist model. The effectiveness of in-house antimicrobial stewardship (AMS) training programs for unit pharmacists is not well described. We report the impact of our model on antimicrobial usage and HACDI rates.

Methods. In 2016, an extensive AMS training and certification program was developed for all unit pharmacists. The program consisted of learning modules, didactic lectures, competency assessments, and individual teaching by the ASP team. In 2017, the practice model was rolled out and the ASP team met with each pharmacist biweekly to review prospective audit and feedback cases with a focus on ceftriaxone and fluoroquinolones. Antimicrobial usage was tracked by defined daily doses (DDD) per 1,000 patient-days, as defined by the World Health Organization. HACDI rates per 1,000 patient-days were defined by the Ontario Ministry of Health and Long Term Care.

Results. Since the model launched in 2017 until March of 2019, total antimicrobial usage was decreased by 22% ($P < 0.001$), fluoroquinolones by 21% ($P = 0.01$), and ceftriaxone by 53% ($P < 0.001$). HACDI rates decreased from 0.30 to 0.16 cases per 1,000 patient-days (47%, $P = 0.12$) (Figure 1). Since ASP implementation in 2012, total antimicrobial usage has been reduced by 35% ($P < 0.01$), fluoroquinolones by 73% ($P < 0.001$), clindamycin by 70% ($P = 0.05$) and rates of HACDI by 73% ($P < 0.0001$) (Figure 2). Pseudomonas susceptibility rates improved (2012 vs. 2017) for meropenem (86% to 93%), ciprofloxacin (73% to 90%), and piperacillin-tazobactam (80 to 92%), but did not reach statistical significance.

Conclusion. To the best of our knowledge, this is the first description in the literature of an in-house AMS training and certification program for unit pharmacists and its impact on clinical outcomes. This novel approach creates a sustainable and staffing neutral practice model that effectively reduces unnecessary antimicrobial usage and HACDI, resulting in improved patient safety.

Figure 1: Effect of Antimicrobial Usage on HACDI Rates

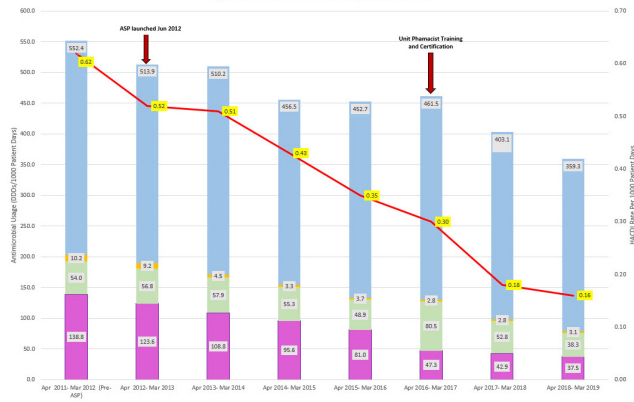
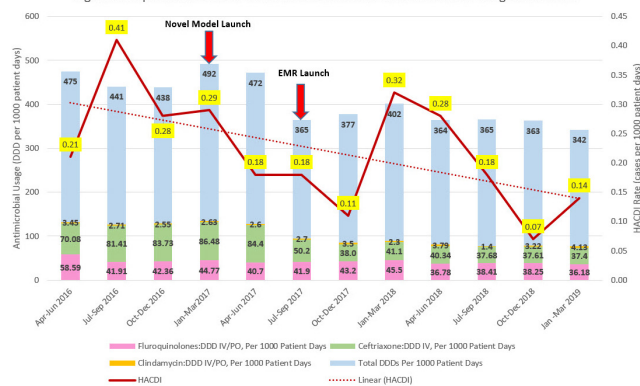


Figure 2: Impact of the Novel Unit Pharmacist Model on Antimicrobial Usage and HACDI



Disclosures. All authors: No reported disclosures.

1989. Impact of Pharmacist-Led β -Lactam Allergy Clarification Interview on Optimizing Preoperative Antibiotic Prophylaxis

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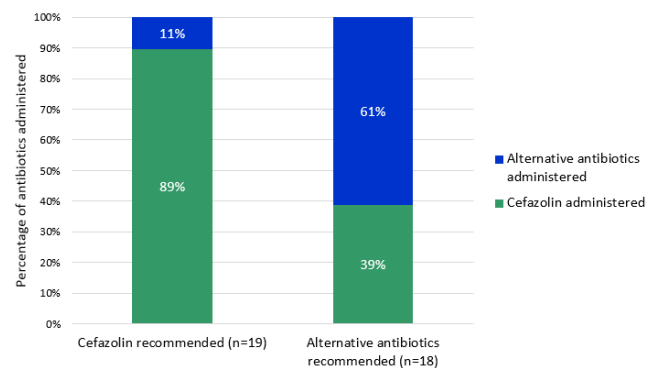
Background. Patients with reported β -lactam allergies (BLA) are often given alternative perioperative antibiotic prophylaxis, increasing risk of surgical site infections (SSI), acute kidney injury (AKI), and *Clostridioides difficile* infection (CDI). The purpose of this study was to implement and evaluate a pharmacist-led BLA clarification interview in the preoperative setting.

Methods. This single-center, IRB-approved, quasi-experimental study compared surgical patients with a BLA between November 2017 and March 2018 (pre-intervention) vs. November 2018 and March 2019. From November 2018 to March 2019, a pharmacist performed BLA clarification phone interviews for patients scheduled for a surgical procedure. Based on the allergy history and decision algorithm, first-line antibiotics, alternative antibiotics, or an allergy testing referral were recommended and documented in the EHR. The allergy label was updated as well. The primary outcome was the use of β -lactams preoperatively. Secondary outcomes included 30-day SSI and CDI, AKI, allergic reactions, allergy labels updated or removed, time to incision, and vancomycin doses administered.

Results. 87 patients were included in the study; 50 (57%) and 37 (43%) in the pre- and post-group, respectively. Most common surgeries: orthopedic 41 (47%), neurosurgery 17 (20%). In the post-group, all EHR BLA labels were updated after interview. 23 patients were referred for allergy testing, 12 (52%) completed BLA testing, and 7 BLA allergies were removed. 76% of pharmacy antibiotic recommendations were accepted (figure). Cefazolin use significantly increased from 28% to 65% post-intervention, $P = 0.001$; vancomycin use also increased from 19 (38%) to 22 (59%), $P = 0.047$. Time to incision decreased by a median of 8 minutes ($P = 0.484$). SSI occurred in 5 (10%) patients in the pre-group only, $P = 0.051$. All of these were associated with alternative antibiotics. Incidence of AKI and CDI were similar between the groups ($P > 0.05$). No allergic reactions occurred in either group.

Conclusion. Clarifying reported BLA in the perioperative setting significantly increased β -lactam preoperative use without negative clinical sequelae.

Pharmacy recommendation acceptance rate in the post-intervention group



Disclosures. All authors: No reported disclosures.

1990. A Strategy of Mandatory Infectious Disease Consultations on Hospital-acquired *Clostridium difficile* Infection and Antimicrobial Utilization

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Background. An antibiotic stewardship program (ASP) is critical to ensure the appropriateness of treatment for infections and to help avert *Clostridium difficile* infection (CDI). In a three-hospital system, infection preventionists (IP) found that hospital-acquired CDI rates were higher than expected in spite of a robust ASP program. The Medical Executive Board mandated infectious diseases (ID) consults for all patients with sepsis, severe sepsis, and septic shock. If consults to ID are mandatory, the hypothesis is that this may help to lower antibiotic days of therapy (DOT)/1,000 patient-days (PD) and HO-CDI rates.

Methods. The ASP program started in November 2014, and mandatory ID consults for all types of sepsis started in March 2016. Data were selected from the time period between 2014 (Quarter 1) to 2017 (Quarter 2). The IP assessed the HO-CDI, and business intelligence generated a monthly report of the total number of ID consults (for any infectious diagnosis). The researchers retrospectively analyzed the data and then performed Pearson correlation statistics.

Results. Data on ID consults at hospital sites A, B, and C were correlated against DOT/1000 PD. Hospital A was statistically significant ($P = 0.015$) for a moderate correlation—where higher ID consults contributed to decreased DOT/1,000 PD. Hospital B showed moderate significance ($P = 0.002$), and the strongest correlation was at hospital C ($P = 0.0007$). Then ID consults at all three hospital sites were compared against HO-CDI rates. Hospital A ($P = 0.76$) and Hospital B (0.18) did not achieve any correlation. Hospital C was strongly correlated ($P = 0.004$).