86. Use of a Novel Clinical Decision Support Tool for Pharmacist-Led Antimicrobial Stewardship in Patients with Normal Procalcitonin
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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Our Antimicrobial Stewardship Program (ASP) instituted review of patients on antibiotics with procalcitonin (PCT) < 0.25 mcg/L in 2012. In 2018, a clinical decision support (CDS) tool was implemented as part of a ‘daily checklist’ for frontline pharmacists to assist in this patient review. We sought to validate the effectiveness of this tool for pharmacist-led PCT-based antibiotic stewardship.

Methods: A retrospective cohort design was used to assess antibiotic de-escalation after PCT alert in patients on antibiotics for lower respiratory tract infections (LRTI). Secondary outcomes included antibiotic use and length of stay (LOS) in patients with PCT interventions vs those without.

Results: From 1/2019 to 11/2019, 652 of 976 (66.8%) PCT alerts were addressed by pharmacists. Of these, 331 were in patients with a respiratory-related diagnosis at discharge and 165 alerts were in patients on antibiotics specifically for LRTI over 119 encounters. Pharmacists made or attempted interventions after 34 (20.6%) of these alerts, with narrowing spectrum or converting to oral therapy being the most common interventions. Antibiotics were completely stopped in 4 of these interventions (11.8%). Patients with pharmacist intervention had 125 fewer antibiotic days of therapy (DOT) in the hospital and IV to PO dose optimization was followed after the alert. Two cases (5.9%) subsequently had therapy escalated within 48 hours. Vancomycin was the most commonly discontinued antibiotic with an 85.3% use reduction in patients with interventions compared to 27.4% in patients with no documented intervention (p<0.0156). Alerts eligible for de-escalation but with no pharmacist intervention represented 140 DOT. LOS was similar in patients from both groups (median 6.4 days vs. 7 days, p=0.81).

Conclusion: Interventions driven by a CDS tool for pharmacist-driven antimicrobial stewardship in patients with normal PCT resulted in fewer DOT and significantly higher rates of vancomycin discontinuation. Additional interventions could have potentially prevented 140 DOT. We feel refinement of this tool can lead to more meaningful CDS, reduce alert fatigue, and likely increase intervention rates.

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87. Utilization of Methicillin-Sensitive/Resistant Staphylococcus aureus Nasal Screen to Decrease Vancomycin and Linezolid Use in Hospitalized Patients with Respiratory Infections
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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Pharmacist-driven protocols for utilization of methicillin-resistant Staphylococcus aureus (MRSA) nares screening protocol on duration of vancomycin or linezolid therapy (DT) in respiratory infections. This study evaluated the impact of a pharmacist-driven MRSA nares screening protocol on duration of vancomycin or linezolid therapy (DT) in respiratory infections.

Methods: Patients aged 18 years and older with a medication order of vancomycin or linezolid for respiratory indication(s) were included. The MRSA nares screening protocol went into effect in October 2019. The protocol allowed pharmacists to reduce DT (≥48h) in patients with negative MRSA nares screening results. This protocol was evaluated retrospectively for the months of October 2018 to March 2019. The post-intervention data was collected prospectively for the months of October 2019 to March 2020.

Results: Ninety-seven patients were evaluated within both the pre-intervention group (n = 50) and post-intervention group (n = 57). Outcomes for DT (38.2 hours vs. 30.9 hours, p = 0.601) and AKI (20% vs. 14%, p = 0.4105) were not different before and after protocol implementation. A subgroup analysis revealed a significant reduction in DT within the pre- and post-MRSA PCR groups (38.2 hours vs. 24.8 hours, P = 0.0065) when pharmacist recommendations for de-escalation were accepted.

Conclusion: A pharmacist-driven MRSA nares screening protocol did not affect the duration of gram-positive therapy (≥48h) but when de-escalation was recommended, there was a reduction in DT when pharmacist-driven recommendations were accepted.

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88. A Behavioral Economic Approach to C. difficile Testing Stewardship
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Session: P-4. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background: To decrease inappropriate testing for C. difficile patients, we first employed an algorithm, followed by a hard stop (based on lack of documented diarrhea or laxative use), that could be overridden only by calling the laboratory. We describe a behavioral economic approach to test overrides that decreased the burden on both clinicians and laboratory staff without encouraging unnecessary testing.

Methods: Our 2-hospital, > 1200-bed community-based academic healthcare system has performed PCR-only C. difficile testing since January 2015. We implemented our initial laxative alert, which did not prohibit testing, in March 2015. In April 2017, we launched a “hard-stop” alert that cancelled orders without documented diarrhea or recent laxative use. The provider could override by calling the laboratory and documenting the laboratory’s name in the order; no further justification was required, but overrides were intermittently monitored. In August 2019, we allowed clinicians to document their clinical justification instead of making this additional call, while emphasizing that rationales would be monitored for validity (Fig 1). We measured number of C. difficile tests completed/month, overrides, and CDI standardized infection ratios (SIRs). We performed time-series analysis to account for each of these test ordering changes.

Figure 1: Image of C. difficile alert

Results: At baseline, we observed a mean of 448 (SD, ±25) C. difficile per month. The initial laxative alert led to a sustained decrease in monthly C. difficile orders by 17% (p < 0.001; Fig 2). Another sustained decrease in monthly C. difficile orders of an additional 29% (p<0.001) occurred after the ‘hard stop’ alert. Overall, C. difficile orders decreased by 40% (3.5% per month). After introduction of the clinical justification documentation, to date we have not observed significant trends in C. difficile override rates. The CDI SIR decreased from 0.9 (95% CI, 0.77–1.04) in 2016 to 0.52 (0.42–0.64) in 2019.

Figure 2: Interrupted time series analysis

Conclusion: An iterative process to improve C. difficile testing stewardship resulted in sustained improvements in C. difficile ordering and hospital onset CDI cases. Behavioral economic approaches emphasize the importance of clinical reasoning allowing us to reduce burden on clinicians and laboratory staff without increasing inappropriate testing.

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89. A Collaborative & Novel Antimicrobial Stewardship Initiative– Mandatory Approval of Peripherally Inserted Central Venous Catheters
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Session: P-4. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background: Central line-associated bloodstream infections result in thousands of deaths and billions of dollars annually. At the Augusta University Medical Center (AUMC), it was identified that ~50% of peripherally inserted central venous catheters (PICCs) that were placed for intravenous (IV) antibiotic administration were unnecessary. A pilot initiative was implemented, which required antimicrobial stewardship/infectious diseases approval for PICC insertions if the indication was for IV antibiotic administration only. The objective of this study was to determine the impact of this initiative.

Methods: A retrospective observational study was conducted at the AUMC. All adult patients with a PICC line insertion order for IV antibiotic administration,