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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Penicillin allergy reconciliation is an important aspect of antimicrobial stewardship with ~10% of the population reporting a penicillin allergy. Our facility utilizes a Penicillin Allergy Reconciliation Program (PARP) led by an Infectious Diseases (ID) Pharmacist and pharmacy students to identify patients with penicillin allergies to reconcile and intervene when necessary. Information is collected by interview, electronic medical record (EMR) review, prescription outpatient fill history. This study evaluated reconciliations with and without a PARP in patients in a community health system.

Methods: This was a retrospective study that compared reconciliations performed on adult patients admitted at least once in 2019 with a self-reported penicillin allergy and ID physician consult at a hospital with a PARP (Institution 1) and one without a formal evaluation and intervention program (Institution 2) within the same community health system with same ID physicians. The primary outcome was documented reconciliation of a patient's penicillin allergy during an inpatient visit in 2019. Reconciliation was defined as an edit or clarification (updating the severity, reaction, or comments section, as well as deleting) to a patient's penicillin allergy in the EMR. The secondary outcome evaluated the percentage of total and ID consult patients with a penicillin allergy.

Results: There were 245 patients who met criteria and were included in the study, 113 from Institution 1 and 132 from Institution 2. For the primary outcome, there were 82 (72.6%) reconciliations at Institution 1 and 15 (11.4%) reconciliations at Institution 2 ($p < 0.001$). Interventions at Institution 1 and 2 resulted in 74 EMR updates and 8 removals and 14 EMR updates and 1 removal, respectively. Reconciliation was performed on the same visit as the ID consult in 59/82 patients (72%) at Institution 1 and 11/15 patients (73.3%) at Institution 2. All reconciliations at Institution 2 were made by pharmacist (10) or nurses (5). For the secondary outcome, 10.9% of patients with an ID consult and 12.6% of all patients admitted in 2019 had a penicillin allergy (p=0.027).

Conclusion: A PARP led by an ID pharmacist and students was an effective method to perform penicillin allergy reconciliations, even in the presence of active ID consultation.

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58. Evaluation of a Disease State Stewardship Intervention for Urinary Tract Infections at an Academic Medical Center

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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Urinary tract infections (UTIs) are often misdiagnosed and mismanaged. Disease state stewardship initiatives targeting UTIs may have a significant impact on the overuse of antimicrobials (ABX). The purpose of our study is to evaluate the effectiveness of a UTI focused disease state stewardship intervention.

Methods: This retrospective study was conducted at a tertiary care academic medical center. Patients > 18 years of age with a collected urinalysis (UA) and receiving ABX for a UTI were included. Retrospective review of UTI management from 9–11/2017 was performed and used as the baseline. In the post-intervention period, 9–11/2018, the UTI management guideline had been published and service lines educated. A prospective audit and feedback (PAAF) initiative was started 6/2019, whereby the antimicrobial stewardship team performed daily reviews of patients on ABX for UTIs. Patients reviewed 9–11/2019 were included in the PAAF cohort. Exclusion criteria included: pregnancy, undergoing a urologic procedure, treatment of a concomitant infection, receiving therapy based on outside recommendations, or left AMA/expired during treatment. The primary outcome of this study was to evaluate overall guideline adherence.

Results: 600 patients (200 in each group) were included, with 419 (69.8%) female and an overall median age of 61.4 years. Altered mental status (24.8%) and dysuria (21.5%) were the two main diagnostic testing indications. Treatment of asymptomatic presentations decreased between the three periods, 74.0% vs 48.5% vs 36.0%. Appropriate ordering of UA (33.5% vs 55.0% vs 68.5%, p< 0.001) and urine cultures (29.0% vs 57.1% vs 64.8%, p< 0.001) improved following guideline implementation and PAAF. Interventions by the stewardship team were made in 21% of patients during PAAF, namely therapy discontinuation (78.6%). Overall guideline adherence significantly improved over time, 13.0% vs 27.0% vs 36.5%, p< 0.001.

Conclusion: UTI disease state intervention was associated with a reduction in the treatment of asymptomatic presentations, increase in appropriate diagnostic ordering, and improvement in overall guideline adherence. PAAF can be a powerful stewardship strategy for promoting consistency in UTI treatment and decreasing unnecessary ABX use.

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59. Evaluation of Drug-Bug Mismatch Alerts and Their Value in an Antimicrobial Stewardship Program

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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Antimicrobial stewardship is a priority for hospitals and utilizing generated reports can enhance stewardship activities. At our institution, a software program was used to help optimize antimicrobial therapy by providing a drug-bug mismatch (DBM) alert which identifies patients with culture susceptibilities not covered by their current antimicrobial therapy. The purpose of this study was to evaluate the utility of this alert feature and determine whether or not an intervention was needed for patients identified.

Methods: From August 2019 to March 2020 the DBM alerts were reviewed by a pharmacist and interventions pursued when appropriate. Data collection included the patient's culture results and source, indication for current antibiotics, and potential for intervention. Alerts were stratified into different groups based on the type of culture, including urine, blood, sputum, bone or bodily fluid, wound or tissues, and stool. Those mismatches not resulting in an intervention were categorized as a contamination, colonization, or inappropriate. This study was approved by the institutional review board.

Results: A total of 105 DBM alerts were analyzed from various sources, including 51 (47.6%) urine, 17 (16.2%) sputum, 16 (15.2%) wound or tissue, 14 (13.3%) blood, 6 (5.7%) bone or bodily fluid, and 1 stool culture. Overall, 48 of 105 (45.7%) of alerts resulted in an intervention. Urine and sputum culture alerts required interventions at the lowest rate with treatment interventions in 12 of 51 (23.5%) and 5 of 17 (29.4%) of those cases respectively. Blood culture alerts were the most successful as 9 of 14 (64.3%) alerts required an intervention. Alerts with wound or tissue cultures identified gaps in therapy as 9 of 16 (56.3%) cases required intervention. Colonization or contamination appeared to be the major cause of alerts that did not result in intervention.

Conclusion: The DBM alert can be a beneficial tool for pharmacists participating in antimicrobial stewardship activities. However, the alerts had varying value depending on the culture source. The DBM alert can identify real-time patient issues regarding appropriate antimicrobial therapy. Further modifications to our process in utilizing this DBM report are warranted to enhance value and allocate time accordingly.

Disclosures: **All Authors**: No reported disclosures

60. Evaluation of Outcomes Associated with Intermittent Versus Extended Infusion of Piperacillin/tazobactam in Acutely Ill Veterans

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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Antibiotic dosing optimization is a key principle of antimicrobial stewardship. This study evaluated the impact of an extended infusion piperacillin/tazobactam dosing protocol on clinical outcomes in acutely ill veterans treated for infections at VA San Diego.

Methods: This retrospective cohort study looked at veterans admitted to the medical-surgical unit who were treated with piperacillin/tazobactam for at least 48 hours. The control group included patients who received treatment between 12/14/2017 to 7/22/2018, and the "protocol" or after protocol implementation group included patients who received treatment between 7/23/2018 to 2/28/2019. Excluded from the study were veterans with microbiological cultures showing intermediate sensitivity or resistance to piperacillin/tazobactam, those who experienced interruption in therapy, or those who required dialysis. Primary clinical outcomes included in-hospital mortality rate, 30-day mortality rate, hospital length of stay (LOS), and 30-day readmission rates. Rates of adverse effects such as elevated liver enzymes, thrombocytopenia, acute kidney impairment (AKI), and *Clostridium difficile* infection were also collected. χ^2, Fisher's exact, and Mann-Whitney U tests were used for statistical analysis.

Results: 260 veterans were included in the final analysis: 96% male, mean age 65 years, mean BMI 29, 84 met SIRS criteria for sepsis, and 55% received at least 48 hours of concomitant vancomycin. Groups had similar outcomes for median LOS, in-hospital mortality, and 30-day mortality. The incidence of AKI was significantly lower in the protocol group (39.2% vs. 56.9%, p=0.004), in veterans on concomitant vancomycin (42.3% vs. 63.2%, p=0.011), and in veterans with obesity (36.4% vs. 70.8%, p=0.001). Rates of liver enzyme elevation, thrombocytopenia, and *C. difficile* infection were lower in the protocol group though these were not significant.

Conclusion: There was a significantly lower rate of AKI with EI dosing which supports enhanced patient safety. This may be the preferred method of administration for obese patients and/or those receiving vancomycin concurrently. This is the first