distributed between the two groups although the CPD group had higher serum creatinine compared to the NF group (p = 0.05). Nine patients (12%) in the NF group versus 13 patients (17.3%) in the CPD group returned to ED or PACT within 30 days (p=0.36). Inappropriate dosing was seen in 13 patients (17.3%) in the NF group vs. 2 patients (2.7%) in the CPD group (p = 0.005) and 44 patients (58.7%) in the NF group vs. 37 patients (49.3%) in the CPD group who received an inappropriate duration of treatment (p = 0.25). None of the patients reported AE associated with antibiotic use.

Conclusion: Treatment success rate of NF and CPD (88% and 82.7%, respectively) suggests that these agents might be effective first line antibiotics for cystitis in males. High rate of inappropriate long duration of treatment indicates the need for staff education and prospective audit and feedback for outpatient stewardship interventions.

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

79. Outcomes Associated with the Utilization of the Methicillin-Resistant Staphylococcus aureus (MRSA) Nasal Polymerase Chain Reaction (PCR) Assay to De-escalate Vancomycin Therapy in Patients with Suspected Pneumonia at a Rural Community Hospital

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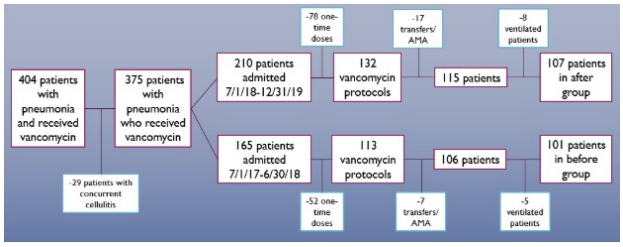
Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Vancomycin is often added to standard inpatient community acquired pneumonia therapy, but the incidence of MRSA pneumonia is relatively low. The MRSA nasal PCR assay is used to detect if a patient's nares are colonized with MRSA. Studies have found that this test has an excellent negative predictive value at ruling out MRSA pneumonia. In practice, there is reluctance to utilize this data to de-escalate vancomycin, possibly because little data exists investigating clinical outcomes associated with this intervention. The purpose of this study was to evaluate how this assay, in combination with antimicrobial stewardship, impacts de-escalation of vancomycin and consequently, length of stay, days of therapy, readmission, and mortality.

Methods: We performed a cohort study of patients who received vancomycin for pneumonia during the period 2017–2019. In July 2018, we implemented a pharmacy-led process to de-escalate vancomycin in pneumonia patients based on the results of the nasal MRSA PCR. Patient were excluded if they had concomitant skin/skin structure infection, osteomyelitis, were transferred to another facility, signed out against medical advice, or required mechanical ventilation. Data on patient characteristics, disease severity, length of stay, days of therapy, readmission, and mortality were compared between the groups.

Figure 1: Patient disposition with reasons for exclusion from study



Results: 101 and 107 patients were included in the before and after group, respectively. The average length of stay was 5.31 (before group) vs 4.33 days (after group), resulting in a 0.98 day decrease (p=0.0095). Days of therapy was 3.16 (before group) vs 1.96 days (after group), resulting in a 1.2 day reduction (p< 0.0001). 30-day mortality was significantly higher in the before group (19.8%) than the after group (9.3%) (RR 0.47, 95% CI 0.23–0.96). 30-day readmission was similar between the two groups (21.8% pre-intervention vs 19.6% post-intervention, p=0.7).

Figure 2: Length of Stay and Duration of therapy reductions between the pre- and post-intervention groups.

Figure 3: 30-day readmission rate and 30-day mortality rate in the pre- and post-intervention groups.

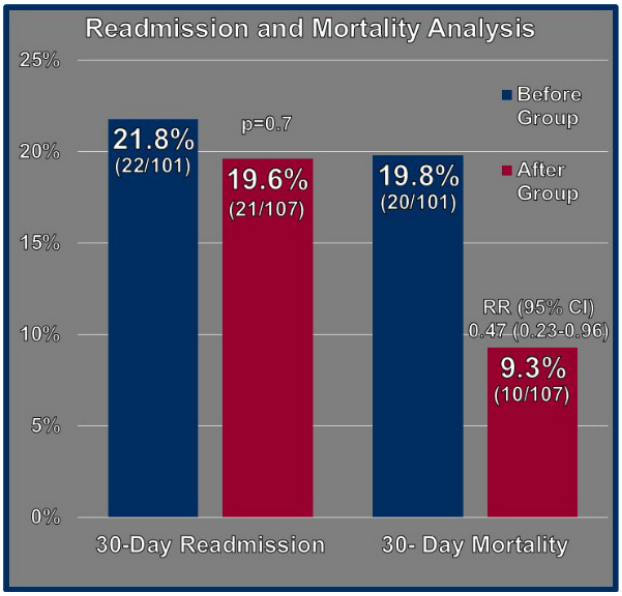
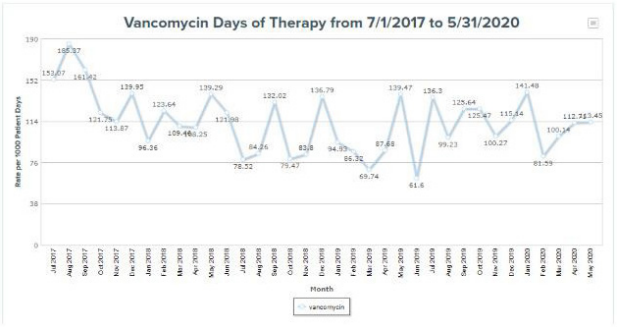


Figure 4: Vancomycin days of therapy per 1000 patient days from July 2017 to May 2020



Conclusion: Use of the MRSA nasal PCR to deescalate vancomycin therapy appears to significantly reduce length of stay and days of vancomycin therapy. Use of this assay did not negatively impact readmission but, may have a positive impact on mortality. Further research is needed to determine the impact of this intervention on length of stay and mortality.

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

80. Pharmacoeconomic Analysis Comparing the Empiric Utilization of Cefepime Versus Piperacillin/tazobactam

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

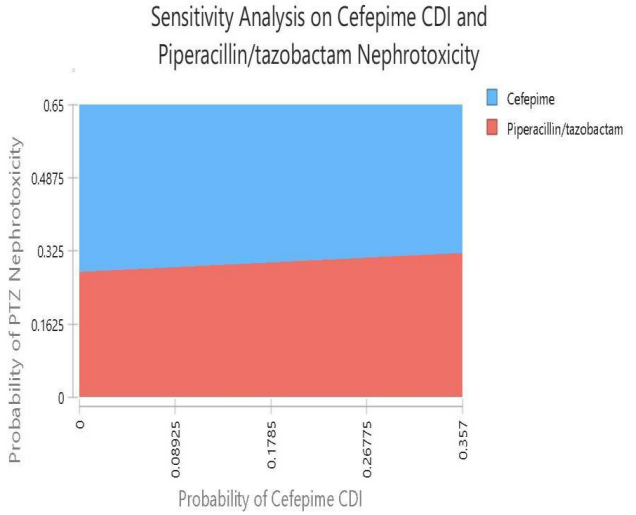
Background: In the hospital setting, cefepime (CFP) and piperacillin/tazobactam (PTZ) are among the most commonly utilized antipseudomonal agents in the empiric treatment of nosocomial and healthcare-associated infections. Institutional preference of CFP or PTZ as the preferred antipseudomonal antibiotic varies. Recent literature suggests each may be associated with increased rates of harmful adverse effects including *Clostridiodes difficile* infection (CDI) and acute kidney injury (AKI). The objective of this study is to perform a pharmacoeconomic analysis comparing CFP versus PTZ for empiric antibiotic treatment in patients where *Pseudomonas aeruginosa* is a concern.

Methods: We performed a cost-utility analysis comparing CFP and PTZ for empiric utilization in the hospital setting by creating a decision analytic model from the

hospital perspective. Model variables were populated utilizing published clinical and economic data including incidence of AKI and CDI, their associated costs and mortality, and the cost of antibiotic therapy. Secondary and univariate sensitivity analyses tested the impact of model uncertainties and the robustness of our model. A willingness to pay (WTP) threshold of $0 was utilized.

Results: Results of our base-case model predicted that the use of CFP dominated PTZ as empiric utilization was less expensive ($7690 vs. $9331) and associated with a higher quality-adjusted life-years (QALY) (0.9193 vs. 0.9191) compared to the use of PTZ. Several variables had the potential to impact base case results. PTZ became cost-effective at our WTP threshold if CFP nephrotoxicity rates increased to 17.3%, the PTZ nephrotoxicity decreased to 28.5%, or if the cost of nephrotoxicity was less than $17,457. No other model variables, including incidence of CDI, impacted base case results.

Sensitivity Analysis on Cefepime Clostridioides difficile Infection Incidence and Piperacillin/tazobactam Nephrotoxicity



Conclusion: Results of our model showed that CFP dominated PTZ for the empiric treatment of nosocomial infections. The model was sensitive to variation in CFP and PTZ nephrotoxicity rates.

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

81. Physicians' Knowledge, Attitude, and Practice regarding Prolonged Antimicrobial Use

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

Background: To reduce unnecessary long-term antibiotic therapies, pharmacist-led intervention followed by the involvement of infectious diseases (ID) specialist was implemented. In addition, a survey for the prescribers was conducted to find the gaps for improvement.

Methods: The "less is better" intervention was implemented between August 1, 2018 and February 28, 2019, which was focused on those to whom antibiotics had been administered for over 15 days. However, the following patients were excluded: patients having hematologic diseases, patients in the neonatal intensive care units, and patients who were recommended to maintain antibiotics by ID specialist. Treatment duration according to the indications was compared between pre-intervention period (Aug to Sep 2017) and post-intervention period. A questionnaire based on clinical vignettes was distributed among 140 prescribers.

Results: Among 500 prescriptions assessed as a prolonged treatment, 475 (95%) were stopped after intervention. Over the pre- and post-intervention period, pneumonia was the most common indication of prolonged antibiotic use (43.8 versus 43.0%). The treatment durations decreased from 21.0 (interquartile range [IQR], 27.3-18.0) days pre-intervention to 16.0 (IQR, 20.0-15.0) days post-intervention (p=0.000).

The survey response rate was 76.4% (107/140). Regarding community-acquired pneumonia, there was a significant difference between knowledge and practice, showing that 53% were aware of the standard duration, but 72% actually prescribed for a longer duration. There was a similar trend for the treatment of urinary tract infection (30% versus 83%, p=0.024). The reasons why the physicians prescribed antibiotics of a prolonged duration in spite of adequate knowledge were not only the lack of symptom alleviation in patients but also organizational factors.

Conclusion: The duration of long-term antibiotic treatment was shortened by active participation of pharmacist as well as ID specialists. However, gaps between the knowledge and practice on the duration of antibiotic treatment were also found. Therefore, it is necessary to implement appropriate feedback and education based on clinical scenario in order to improve the physicians' antibiotic prescription.

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

82. Post-Prescription Review with Threat of Infectious Disease Consultation and Sustained Reduction in Meropenem Use Over Four Years

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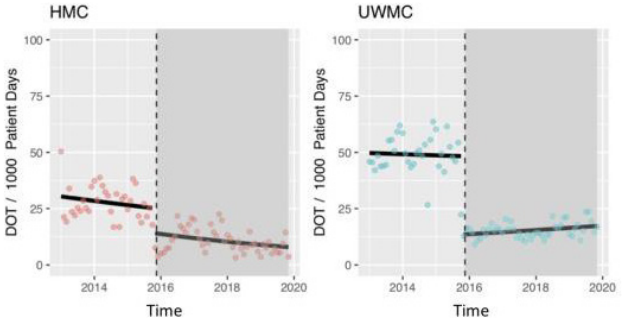
Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Following a meropenem shortage, we implemented a post-prescription review with feedback (PPRF) in November 2015 with mandatory infectious disease (ID) consultation for all meropenem and imipenem courses > 72 hours. Providers were made aware of the policy via an electronic alert at the time of ordering.

Methods: A retrospective study was conducted at the University of Washington Medical Center (UWMC) and Harborview Medical Center (HMC) to evaluate the impact of the policy on antimicrobial consumption and clinical outcomes pre- and post-intervention during a 6-year period. Antimicrobial use was tracked using days of therapy (DOT) per 1,000 patient-days, and data were analyzed by an interrupted time series.

Results: There were 4,066 and 2,552 patients in the pre- and post-intervention periods, respectively. Meropenem and imipenem use remained steady until the intervention, when a marked reduction in DOT/1,000 patient-days occurred at both hospitals (UWMC: percentage change -72.1%, (95% CI -76.6, -66.9), $P < 0.001$; HMC: percentage change -43.6%, (95% CI -59.9, -20.7), $P = 0.001$). Notably, although the intervention did not address antibiotic use until 72 hours after initiation, there was a significant decline in meropenem and imipenem initiation ("first starts") in the post-intervention period, with a 64.9% reduction (95% CI 58.7, 70.2; $P < 0.001$) at UWMC and 44.7% reduction (95% CI 28.1, 57.4; $P < 0.001$) at HMC.

Meropenem and Imipenem DOT (January 2013 – November 2019)



Conclusion: Mandatory ID consultation and PPRF for meropenem and imipenem beyond 72 hours resulted in a significant and sustained reduction in the use of these antibiotics and notably impacted their up-front usage.

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

83. Staff Pharmacist-driven Prospective Audit and Feedback at a Community Hospital: Assessing an all Hands on Deck Approach to Antimicrobial Stewardship

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

Background: Facilities with robust antimicrobial stewardship programs often have infectious disease (ID) pharmacists with devoted time to complete antimicrobial stewardship initiatives. Smaller facilities with limited resources or lacking ID pharmacists, may encounter challenges meeting antimicrobial stewardship regulatory requirements. The goal of this study is to assess the impact of a staff pharmacist-driven prospective audit and feedback program in a small community hospital.

Methods: A pre- and post-intervention study was performed to assess the primary outcome of days of therapy per 1,000 patient days (DOT) for targeted antimicrobials (ciprofloxacin, levofloxacin, piperacillin/tazobactam, cefepime, ceftazidime). Secondary outcomes were antibiotic expenditures and rates of *Clostridioides difficile* infection (CDI).