

During the intervention, ASP pharmacists made 81 recommendations (93.8% accepted).

A post hoc analysis was conducted due to the 35.8% increase in ID consults with the intervention. A significant decrease of 18.5% in in-hospital mortality ( $P = 0.041$ ) and 21.7% in 30 day mortality ( $P = 0.009$ ) with ID involvement was seen.

**Conclusion.** SAB management bundle development with PAF by ASP pharmacists significantly improved adherence rates to evidence based recommendations in SAB inpatients. This simple yet effective ASP intervention can ensure consistent management of a highly morbid infection.

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### 1583. Impact of an Antimicrobial Stewardship Bundle of Rapid Identification of Methicillin Susceptibility and Active Intervention on Treatment of *Staphylococcus aureus* Bacteremia

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**Session:** 168. Stewardship: Improving Outcomes

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**Background.** *Staphylococcus aureus* bacteremia (SAB) is a major source of morbidity and mortality. Studies show rapid initiation of appropriate antibiotic therapy is essential to treatment and optimal therapy depends upon antibiotic susceptibility.

**Methods.** Using a quasi-experimental pre-post intervention study we evaluated a bundled antimicrobial stewardship rapid identification and susceptibility testing protocol. The pre-intervention group included all patients treated for SAB at our hospital between April and Sept 2015; the post-intervention group was between April and Sept 2016. We implemented combined rapid identification by MALDI-TOF with a modified immunochromatographic assay for penicillin-binding protein 2a to differentiate MSSA and MRSA. Identification and susceptibility results were communicated to the primary team per usual protocol and to an antimicrobial stewardship pharmacist for intervention. The primary outcome was time to optimal antibiotic therapy calculated as the difference in time from the first dose of antibiotic therapy to the discontinuation time of the non-optimal antibiotic, for patients receiving combination therapy or first dose of optimal therapy, determined using a predefined protocol developed in collaboration with the Infectious Diseases (ID) consult service. Additional outcomes included time to pathogen identification, time to ID consult, time to source control, length of hospital stay (LOS), intensive care unit LOS, inpatient-days of therapy, and in-hospital mortality. Outcomes were compared using the  $\chi^2$  test, or Student's *t*-test for independent samples.

**Results.** 74 pre-intervention and 55 post-intervention patients were included. Time in days to optimal therapy ( $1.7 \pm 1.2$  vs.  $2.5 \pm 1.6$ ,  $P = 0.003$ ), total time to pathogen identification ( $1.5 \pm 0.5$  vs.  $2.7 \pm 0.6$ ,  $P < 0.001$ ) and time to ID consult ( $1.6 \pm 1.5$  vs.  $2.8 \pm 2.4$ ,  $P = <0.001$ ) were significantly shorter in the intervention group. All other outcomes were not statistically significantly different between groups.

**Conclusion.** We demonstrate significant improvement in time to pathogen identification, optimal therapy, and ID consult utilizing rapid pathogen identification and susceptibility testing coupled with antimicrobial stewardship pharmacist intervention.

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### 1584. Use of Diagnosis-related Group-Based Days of Therapy to Evaluate Fluoroquinolone Use Optimization Across a Large Healthcare System

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**Background.** Optimal use of fluoroquinolones (FQ) is a common antimicrobial stewardship program (ASP) target based on well-cited risk for *Clostridium difficile* colitis and has gained national attention in the setting of recent FDA warnings about serious side effects. Identifying appropriate metrics for benchmarking poses a significant challenge. Diagnosis-related group (DRG) can be leveraged to focus large volumes of patient data to derive DRG-based days of therapy (DOT). Novant Health identified an opportunity to improve FQ use among patients with COPD and pneumonia (PNA) across the health system and created a FQ use optimization initiative based on inter-facility data that would otherwise not have been possible using the standard DOT per 1000 patient-days (PD) metric.

**Methods.** A staged approach to optimizing FQ use was developed through a multidisciplinary, system-level ASP, and system-specific benchmarks for FQ use among patients with PNA and COPD DRGs were established. 10 facilities ranging in size from 60 to 900 beds were included in the intervention. We evaluated FQ use at the system and facility level using both standard (DOT/1000 PD) and novel metrics (DRG-specific DOT/1000 PD and percentage of antibiotic use attributed to FQ within each DRG). In addition to providing feedback on performance relative to other facilities, the

intervention also included provider education and targeted infectious diseases pharmacist review and feedback.

**Results.** Percentage of FQ use among patients with PNA DRGs decreased from 20% to 9%, while use in COPD DRGs decreased from 38% to 12% over 15 months (55% and 68% reductions in FQ use, respectively). System-wide FQ utilization decreased by 38% over the same 15 month time period, from a peak of 114 DOT/1000 PD to 71 DOT/1000 PD.

**Conclusion.** Decreases in overall FQ utilization were influenced by DRG-specific benchmarking and inter-facility comparisons. Traditional DOT/1000 PD metrics are plagued with variance in patient characteristics (e.g., disease state variations, severity of illness). While DRG-based metrics have inherent limitations, they can provide specific data on antibiotic use patterns to support health-system specific and evidence-based benchmarking and inter-facility comparisons.

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### 1585. Impact of an Emergency Medicine Pharmacist on Appropriate Empiric Antibiotic Prescribing for Community-Acquired Pneumonia and Intra-Abdominal Infections

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**Background.** Antibiotics are the second most common drug class prescribed in the Emergency Department (ED); therefore, it is critical to engage ED providers in antimicrobial stewardship programs (ASP). Emergency medicine pharmacists (EMP) play an important role in ASP by working with providers to choose the most appropriate antimicrobial agent, dose, and duration. This study aimed to determine the impact of an EMP on appropriate empiric antibiotic prescribing for community-acquired pneumonia (CAP) and community-acquired intra-abdominal infections (CA-IAI).

**Methods.** A retrospective cohort study was conducted evaluating adult patients admitted with a diagnosis of CAP or CA-IAI. The primary outcome of this study was to compare guideline-concordant empiric antibiotic prescribing when an EMP was present vs. absent. We also aimed to compare the impact of an EMP in a new ASP (2014) vs. established ASP (2016). Secondary outcomes included in-hospital mortality and hospital-acquired *Clostridium difficile* infection (CDI).

**Results.** 320 patients were included in the study (EMP  $n = 185$ ; no-EMP  $n = 135$ ). Empiric antibiotic selection was more likely to be guideline-concordant when an EMP was present (78% vs. 61%,  $P = 0.001$ ). Guideline-concordant empiric prescribing occurred more often when an EMP was present in the subgroup of CAP patients (95% vs. 79%  $P = 0.005$ ) as well as in the subgroup of CA-IAI patients (62% vs. 44%  $P = 0.025$ ). Overall guideline-concordant prescribing significantly increased between the new ASP and established ASP (60% vs. 82.5%,  $P < 0.001$ ) and was more likely when an EMP was present (new ASP: 68.3% vs. 45.8%,  $P = 0.005$ ; established ASP: 90.5% vs. 73.7%,  $P = 0.005$ ). Patients receiving guideline-concordant antibiotics in the ED were continued on appropriate therapy on admission 82.5% of the time vs. 18.8% if the ED antibiotic was inappropriate ( $P < 0.001$ ). The presence of an EMP did not impact hospital-acquired CDI (1.1% vs. 1.5%,  $P = 1.0$ ) or in-hospital mortality (4.3% vs. 1.5%,  $P = 0.2$ ).

**Conclusion.** The presence of an EMP significantly improved guideline-concordant empiric antibiotic prescribing for CAP and CA-IAI. This impact was demonstrated in both a new and established ASP. Inpatient orders were more likely to be guideline-concordant if appropriate therapy was ordered in the ED.

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### 1586. Is More Always Better? Effect of a Combination *Pseudomonas* Antibiogram on Levofloxacin Use and Patient Outcomes for Pneumonia in a Large Community Hospital

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**Background.** Evidence suggests that combination therapy for *Pseudomonas* pneumonia only provides mortality benefit in critically ill patients. In November 2015, the Antimicrobial Stewardship Subcommittee at Baptist Memorial Hospital-Memphis (BMH-Memphis) developed a combination *Pseudomonas* antibiogram and guideline, based on local susceptibilities, for critically ill patients with Hospital Acquired Pneumonia (HAP), Health Care Associated Pneumonia (HCAP), or Ventilator Associated Pneumonia (VAP).

**Methods.** This is a single center, retrospective study evaluating patients admitted to the BMH-Memphis medical intensive care unit (MICU) and surgical intensive care unit (SICU) with a diagnosis-related group (DRG) code for HAP, HCAP, or VAP. The primary objective of this study was to compare levofloxacin days of therapy per 1000 patient-days (DOT/1000 patient-days) before and after implementation of the combination *Pseudomonas* antibiogram guideline at BMH-Memphis. Secondary objectives included a comparison of individual levofloxacin orders, 30-day mortality, hospital