BACKGROUND
• The need for antimicrobial stewardship becomes more prevalent as resistance rates and adverse effects increase throughout the United States
• Pneumonia remains a significant healthcare challenge, leading to substantial morbidity and mortality globally
• Selection of empiric antibiotics is influenced by pneumonia type, resistance patterns, and the need for broad-spectrum coverage

OBJECTIVES
• The study aims to investigate and assess initial antibiotic selection for pneumonia treatment
• Assess the total duration of antimicrobial treatment, appropriateness of MRSA nares screening, appropriateness of respiratory cultures, appropriateness of aspiration pneumonia treatment, and lastly the presence of bloodstream infection.

METHODS
• This study was a single-center retrospective patient case review
• 147 patients who were admitted for pneumonia from March to June 2023 were reviewed
• Pediatric and ventilator-associated pneumonia (VAP) patients were excluded in analysis
• Initial antimicrobial regimen appropriateness was determined by referencing the latest IDSA recommendations and risk factors

RESULTS
• Overall, 88 (59.9%) of patients received appropriate antimicrobial therapy.
• The average age of patients was 70 and 68 (46.26%) patients were male.
• Most patients in this study were diagnosed with CAP, specifically non-severe CAP with a total of 72 (48.78%).
• There were 54 (36.73%) patients with antibiotic allergies, 39 (26.53%) of which were beta-lactam allergies.
• The most common antibiotics that were used were ceftriaxone and azithromycin.

| Table 3: Primary and Secondary Outcomes |
|-------------------------------|-----------------|
| VARIABLE                                | n=147           |
| PRIMARY OUTCOME                              |                 |
| Coverage Appropriate                        | 88 (59.9%)      |
| SECONDARY OUTCOMES                           |                 |
| Average Duration of Antimicrobial Treatment - Inpatient | 4.6 days        |
| Average Duration of Antimicrobial Treatment – Total | 8.1 ± 4.8 days  |
| MRSA Nares Ordered Appropriately            | 125 (85%)       |
| Respiratory Culture Appropriate              | 79 (54.1%)      |
| Aspiration Pneumonia Treatment Appropriate   | 5/21 (17.9%)    |
| Concurrent Bloodstream Infection Present     | 21 (14.3%)      |

LIMITATIONS
• Limitations included being a single center study and a small patient population.

CONCLUSION
• Approximately 60% adherence to appropriate initial antimicrobial therapy
• Commonly observed inappropriate anaerobic coverage, especially with metronidazole, potentially due to a lack of risk factor evaluation per treatment guidelines.
• Another driving factor of inappropriate empiric antimicrobial coverage was a lack of atypical coverage in CAP patients
• Total duration averaging 8.1 days, exceeding recent IDSA guidelines for CAP and HAP.
• Outliers in duration could be due to the presence of bloodstream infections in 14.3% of patients contributing to extended courses.
• Highly appropriate MRSA nares screening (85% adherence) when indicated by risk factors.
• Possible solutions include educating physicians on the importance of antimicrobial stewardship, providing up-to-date guidelines, and resources for appropriate therapy decisions.

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