

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.

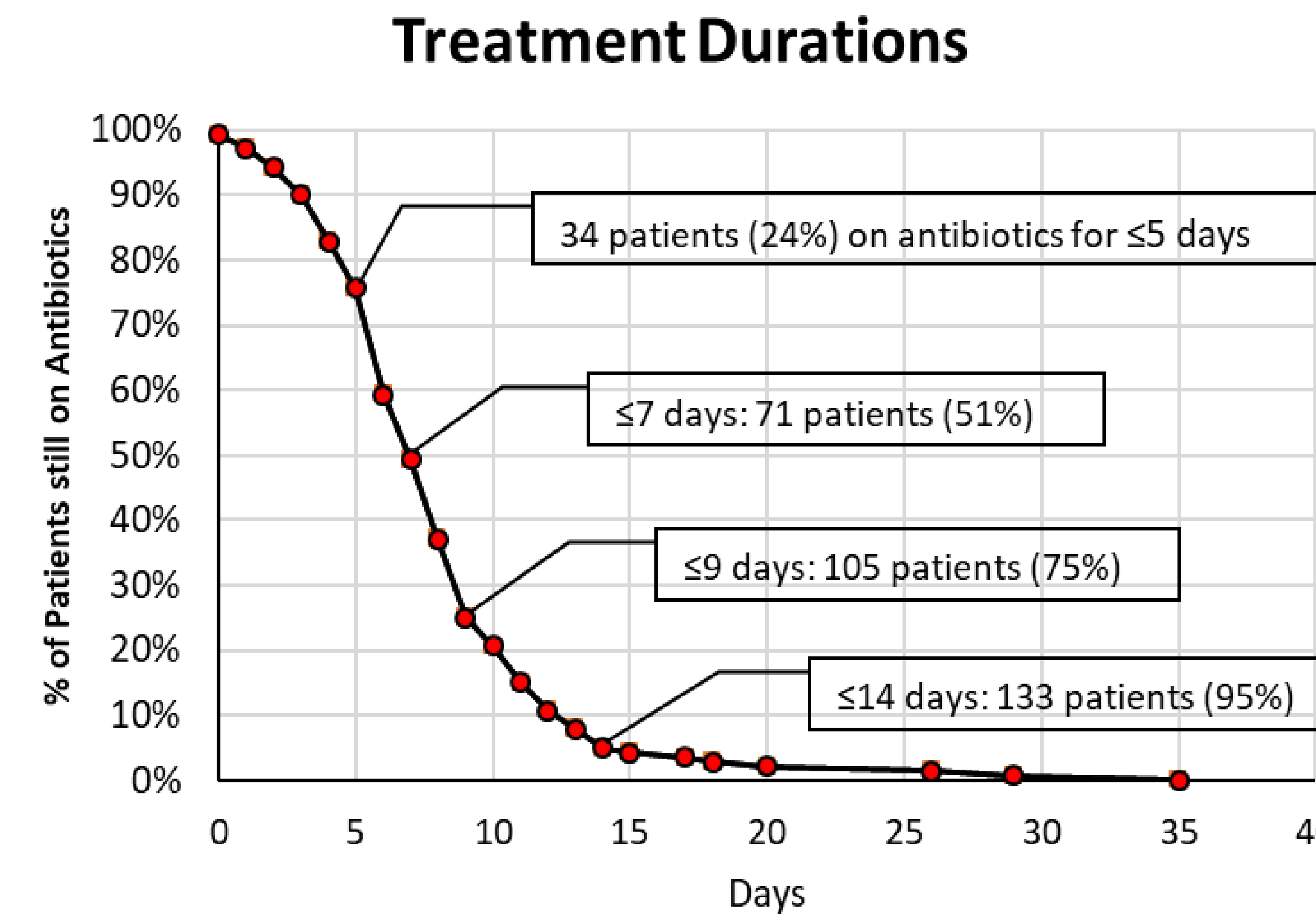


Table 3: Primary and Secondary Outcomes

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.

Author Contact

- Leah Baker (lebaker@siue.edu)
- Dalton Clouse (daclous@siue.edu)