

## BACKGROUND

- Pneumonia is a common infection with high burden of healthcare resources and costs.
- American Thoracic Society estimated that in 2013, pneumonia was responsible for 960,000 hospitalizations and \$9.5 billion in annual health care costs.
- CDC Core Elements for Antimicrobial Stewardship programs recommends intravenous (IV) to oral antibiotic interventions to improve infection-related outcomes.
- IV to oral switch has been shown to reduce length of hospitalization for patients with community-acquired pneumonia by up to two days.

## OBJECTIVE

- Determine whether an institutional IV to oral antibiotic protocol has an impact on hospital length of stay.

## METHODS

### Study Design:

- Retrospective chart review

### Study Population

#### Inclusion Criteria:

- Inpatients ages 18-89 admitted with diagnosis of community-acquired pneumonia

#### Exclusion Criteria:

- Hospitalization within 30 days or hospitalization lasting >48 hours within the last 90 days
- IV antibiotic therapy in last 30 days
- Bacteremia
- Immunosuppression

### Outcomes

#### Primary:

- Hospital length of stay (hours)

#### Secondary:

- Hospital 30-day readmission rates for pneumonia
- Protocol Compliance (defined as IV to oral antibiotic switch within 24 hours of meeting criteria)
  - Patients are eligible for the IV to oral protocol if the meet each following criteria: 3 days of IV therapy; afebrile (<38°C or 100.4°F); improving leukocytosis; absolute neutrophil count >1000.

### Statistics

- Student's t-test for normally distributed continuous data
- Chi-squared test for nominal data
- Mann-Whitney U test for non-parametric continuous and ordinal data.

## RESULTS

Table 1 – Baseline Characteristics

Characteristic	IV to PO (n = 63)	IV Only (n = 67)	P-Value
Age (y ± 95% CI)	66.8 ± 3.6	69.8 ± 3.8	0.24
Male, n (%)	28 (42%)	28 (44%)	0.76
Weight (kg)	82.3	83.4	0.84
CURB-65	1.46	1.67	0.33

Figure 1 – Antibiotics used as Initial Therapy

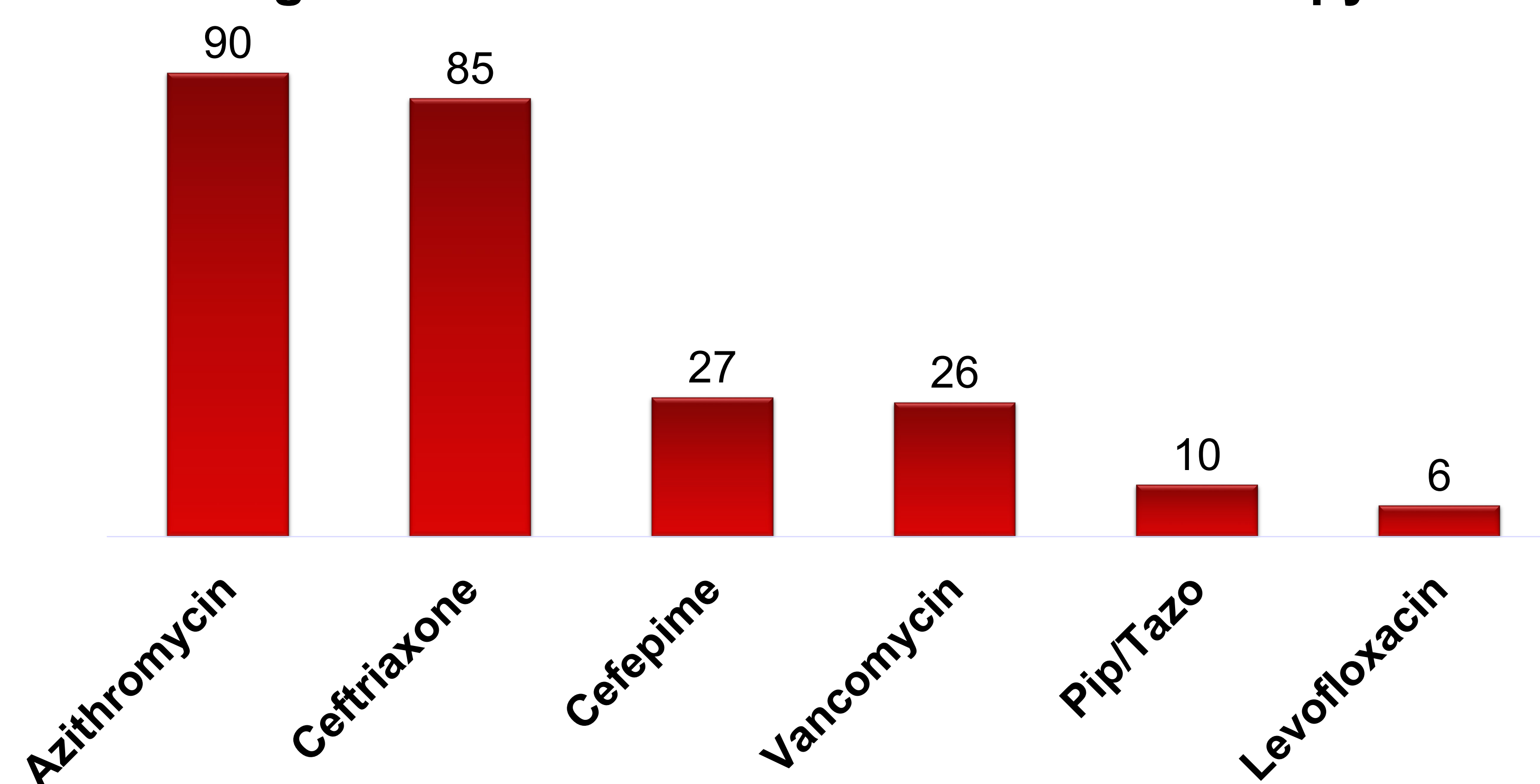


Table 2 – Primary Outcome

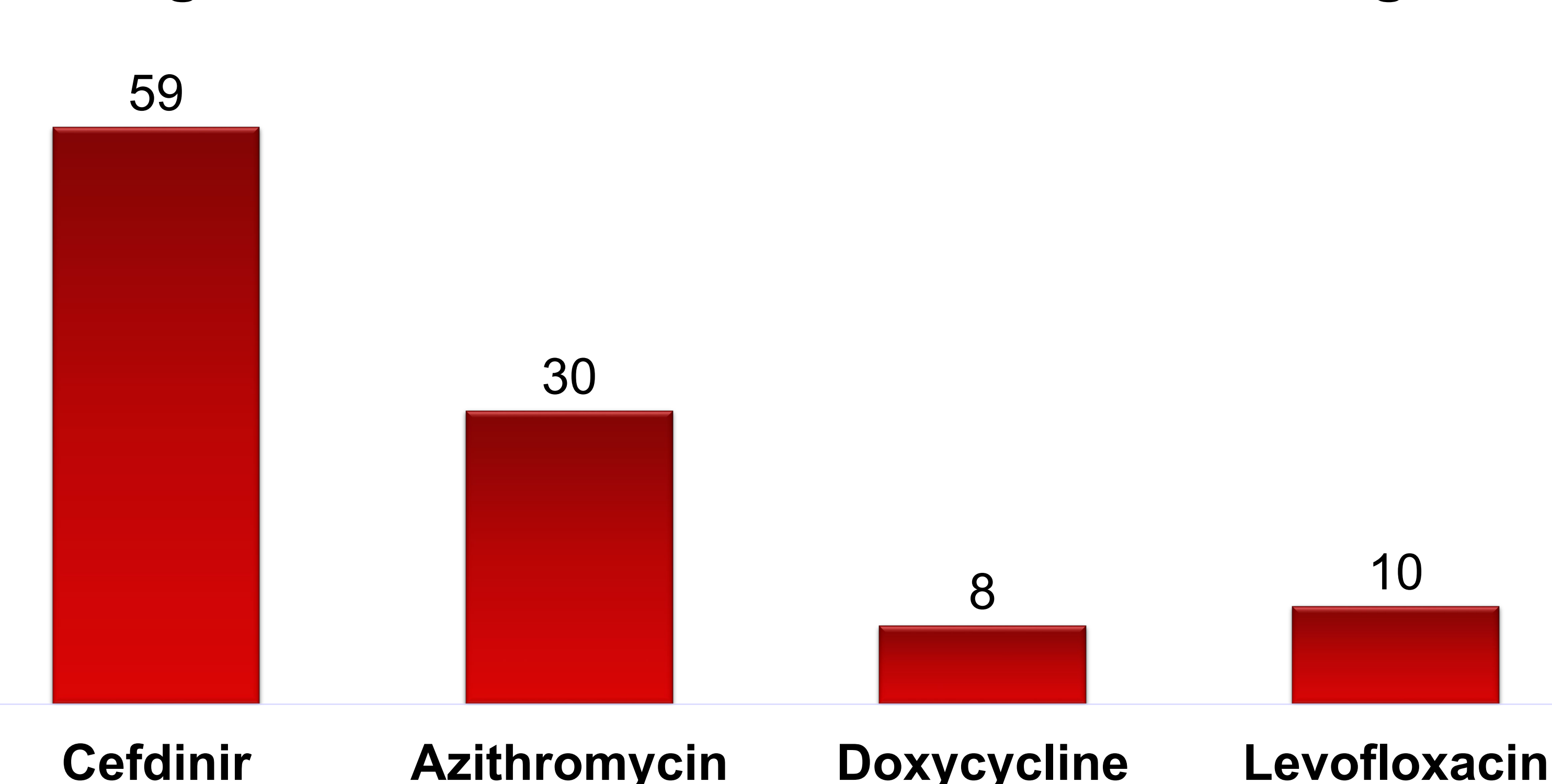
	IV to PO	IV Only	P-Value
Hospital Length of Stay (hours)	118 ± 22	128 ± 20	0.33

Table 3 – Secondary Outcomes

	IV to PO	IV Only	P-Value
30-day Readmission n (%)	5 (7.9)	5 (7.5)	0.92
	IV to PO	IV Only	Total
Fit Protocol Criteria n	32	31	63
Protocol Compliance n	12	0	12

## RESULTS CONTINUED

Figure 2 – Antibiotics Prescribed at Discharge



- Baseline characteristics were similar between groups.
- Ceftriaxone and azithromycin were the most commonly used antibiotics for initial therapy.
- No statistically significant difference was found in hospital length of stay or 30-day hospital readmissions.
- Patients in the IV to PO group (49/63, 78%) were discharged on antibiotics more often than patients in the IV only group. (38/67, 56%, P = 0.008)
- Cefdinir and azithromycin were the most common antibiotics prescribed at discharge.

## CONCLUSIONS

- No difference was found in hospital length of stay.
- Daily evaluation of patients with CAP on IV antibiotics may impact IV to oral conversion.
- There was no difference in 30-day hospital readmission, demonstrating that IV to PO conversion does not result in inadequate treatment.
- Re-evaluating this intervention after educating pharmacists and other healthcare providers on potential benefits of this intervention may improve compliance and more accurately show the impact of the IV to oral protocol.

## REFERENCES

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Disclosure:  
Authors have no disclosures.