

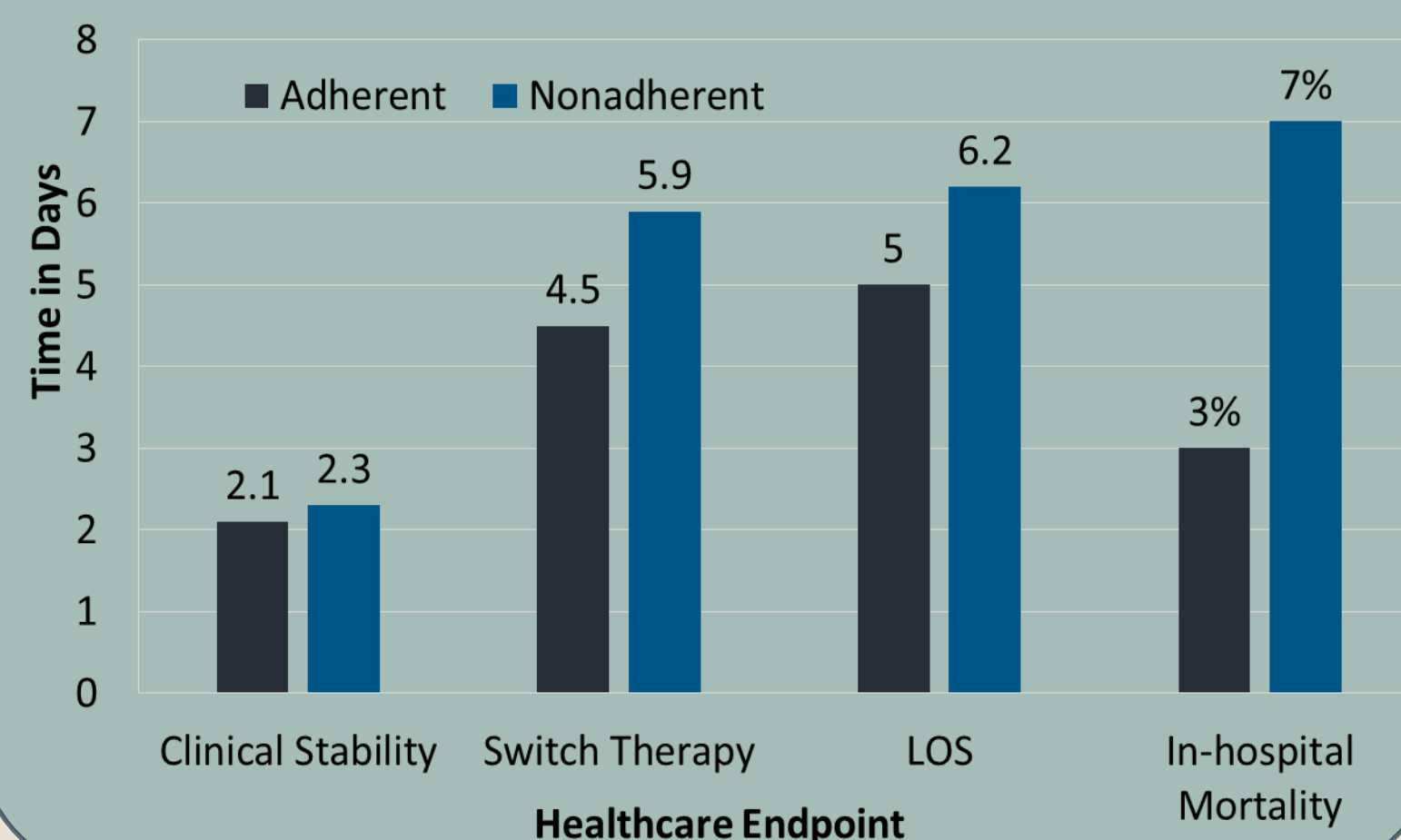
An Evaluation of Compliance with Guideline-Concordant Therapy for Empiric Atypical Bacterial Coverage in Critical Community-Acquired Pneumonia Patients – Work in Progress Research

Primary Investigator: [Pharmacy student name removed]; Project Advisors: Robert Rockwood, PharmD, BCPS, Sara Jordan, PharmD, BCPS; Biostatistician: Christy Collins, PhD Site: Grant Medical Center – Columbus, OH

Background

- Community-acquired pneumonia (CAP) is a common infectious disease with a mortality rate of 25-40% in patients admitted to the ICU¹
- Multiple studies have shown adherence to the IDSA/ATS guidelines for the empirical antibiotic treatment of pneumonia results in a decrease in mortality, length of hospital stay, and time to clinical stability²⁻⁵ (see Figure 1)
- IDSA/ATS guidelines recommend empirical treatment with a β -lactam (ampicillin-sulbactam, cefotaxime, or ceftriaxone,) plus either azithromycin or a respiratory fluoroquinolone for patients being admitted into the ICU with suspected CAP⁶ (see Table 1)
- Multiple studies have demonstrated ICU patients have the lowest adherence to guidelines in the treatment of CAP compared to those in other levels of care^{3,5} (see Figure 2)
- One study did conclude that initial atypical pathogen coverage is being missed in patients with CAP worldwide; however, it is unknown whether this correlates with patients admitted to the ICU⁷

Figure 1. Healthcare Endpoints for CAP Patients Adherent and Nonadherent to IDSA/TSA Guidelines⁴



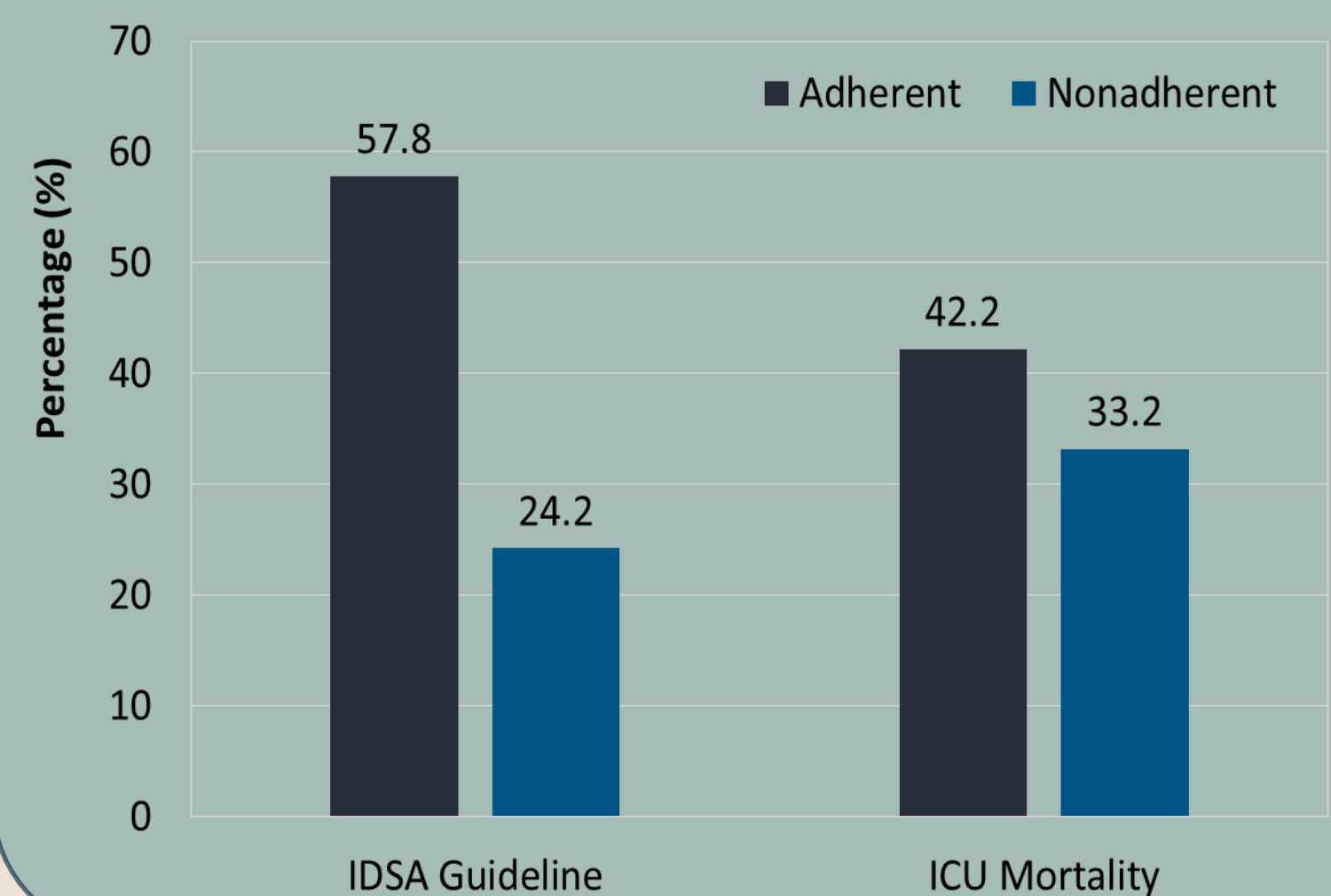
Purpose

- To evaluate institutional compliance with IDSA/ATS guidelines regarding empiric atypical pathogen coverage for CAP in patients admitted to the ICU from the emergency department

Table 1. OhioHealth ICU CAP Empiric Coverage Guidelines

CAP without Additional Risk Factors	Ceftriaxone + Levofloxacin OR Azithromycin
CAP with Pseudomonas Risk Factors	Cefepime OR Piperacillin/tazobactam + Levofloxacin
CAP with S. aureus Risk Factors	Add Vancomycin
CAP ICU Anaphylactic Penicillin Allergy	Aztreonam + Levofloxacin

Figure 1. IDSA Adherence and Mortality Rates in Patients Admitted to the ICU²



Methods

Design

- Retrospective, single center chart review
- Patients admitted to ICU from March-August 2015
- Approved by institution IRB

Population

- Grant Medical Center: 640-bed community teaching hospital and Level 1 Trauma Center
- Adult patients (≥ 18 years of age) admitted into the ICU or step-down unit with suspected pneumonia
- Review a maximum of 120 charts with final population of 60 patients that meet criteria
- See Table 2

Table 2. Inclusion and Exclusion Criteria

Inclusion	Exclusion
Primary diagnosis pneumonia	Patients < 18 years
Primary diagnosis respiratory failure, secondary diagnosis pneumonia	HIV, AIDS, or Huntington's disease
Primary diagnosis of acute respiratory infection, secondary diagnosis pneumonia	Transfer from another hospital, nursing home, or long-term care facility
Primary diagnosis sepsis or suspected sepsis, secondary diagnosis pneumonia	Active chemotherapy or hemodialysis
	Diagnosed or risk factors for hospital acquired pneumonia (HAP)*

*Patients with risk factors for hospital acquired pneumonia will be individually reviewed to determine eligibility for inclusion

Primary outcomes

- Proportion of patients with CAP for which IDSA/ATS guidelines for empiric antibiotic therapy were followed by initially covering for atypical pathogens
- Time to atypical bacterial therapy once patient admitted into emergency department

Secondary outcomes

- Length of stay (LOS) associated with critical CAP patients when empiric atypical bacterial coverage was initially missed

Statistics

- Descriptive

Results and Conclusions

- To be compiled and presented when data collection is complete

References

- Fine MJ, Smith MA, Carson CA, et al. Prognosis and outcomes of patients with community-acquired pneumonia: a meta-analysis. *JAMA*. 1996; 275:134-41.
- Bodi M, Rodríguez A, Sole-Viola N, et al. Antibiotic Prescription for Community-Acquired Pneumonia in the Intensive Care Unit: Impact of Adherence to Infectious Diseases Society of America Guidelines on Survival. *CID*. 2005;41:1709-1716.
- Mortensen E, Restrepo M, Anzueto A, Pugh J. Effects of Guideline-Concordant Antimicrobial Therapy on Mortality among Patients with Community-Acquired Pneumonia. *AJM*. 2004;117:726-731.
- Frei C, Restrepo M, Mortensen E, Burgess D. Impact of Guideline-Concordant Empiric Antibiotic Therapy in Community-Acquired Pneumonia. *NJM*. 2006; 119:865-871.
- Dambrava P, Torres A, Valles X, Mensa J, Marcos M, Penarroja G, et al. Adherence to guidelines' empirical antibiotic recommendations and community-acquired pneumonia outcome. *Eur Respir J*. 2008;32:892-901. doi: 10.1183/09031936.00163407.
- Mandell L, Wunderink R, Anzueto A, et al. Infectious Diseases Society of America/American Thoracic Society Consensus Guidelines on the Management of Community-Acquired Pneumonia in Adults. *CID*. 2007;44(suppl 2):S27-S72.
- Arnold F, Summersgill J, LaJoie A, et al. A Worldwide Perspective of Atypical Pathogens in Community-acquired Pneumonia. *Am J Respir Crit Care Med*. 200;175:1086-1093. doi:10.1164/rccm.200603-3500

Authors have nothing to disclose