

Evaluation of Empiric Antibiotic Prescribing in Patients with Uncomplicated Urinary Tract Infections in Outpatient Clinics



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Background

Background

- Urinary tract infections account for approximately \$3.5 billion per year in health care costs and time missed from work in the United States annually.¹
- In 2011, The Infectious Diseases Society of America released a clinical practice guideline that recommended short-course antibiotic therapy and avoidance of fluoroquinolones for uncomplicated urinary tract infection.²
- A retrospective cohort study of outpatient and emergency department (ED) visits found the following:³

FQs were the most commonly prescribed antibiotic both before and after guideline release (45% vs 42%).

Greater than 75% of prescriptions written had inappropriate treatment durations.

The clinical practice guideline had minimal impact on antibiotic prescribing behavior by providers.

2016 – 2017 Uncomplicated UTI treatment review at CoxHealth Springfield urgent care and ED

Indicated opportunities for improvement in antimicrobial prescribing



2018 – 2019 Prescriber education pre-post study of uncomplicated UTI treatment at CoxHealth Branson ED

Indicated improved prescribing patterns following provider education



2019 – 2020 Current retrospective, cohort review of uncomplicated UTI treatment in CoxHealth outpatient clinics

Purpose

- Evaluate the appropriateness of antibiotic use for uncomplicated urinary tract infections in an outpatient clinic setting

UTI = urinary tract infection FQ = fluoroquinolones

Methods

Cohort 1 – Primary Care Clinics

- Family Medical Care Clinic
- CoxHealth Center Steeplechase
- CoxHealth Center Chesterfield
- CoxHealth Center Medical Mile

Cohort 2 – Walk-in Clinics

- HyVee Quick+Care
- The Clinic at Walmart: Ozark
- The Clinic at Walmart: Republic
- The Clinic at Walmart: Springfield-Campbell
- The Clinic at Walmart: Springfield-Kansas Expressway

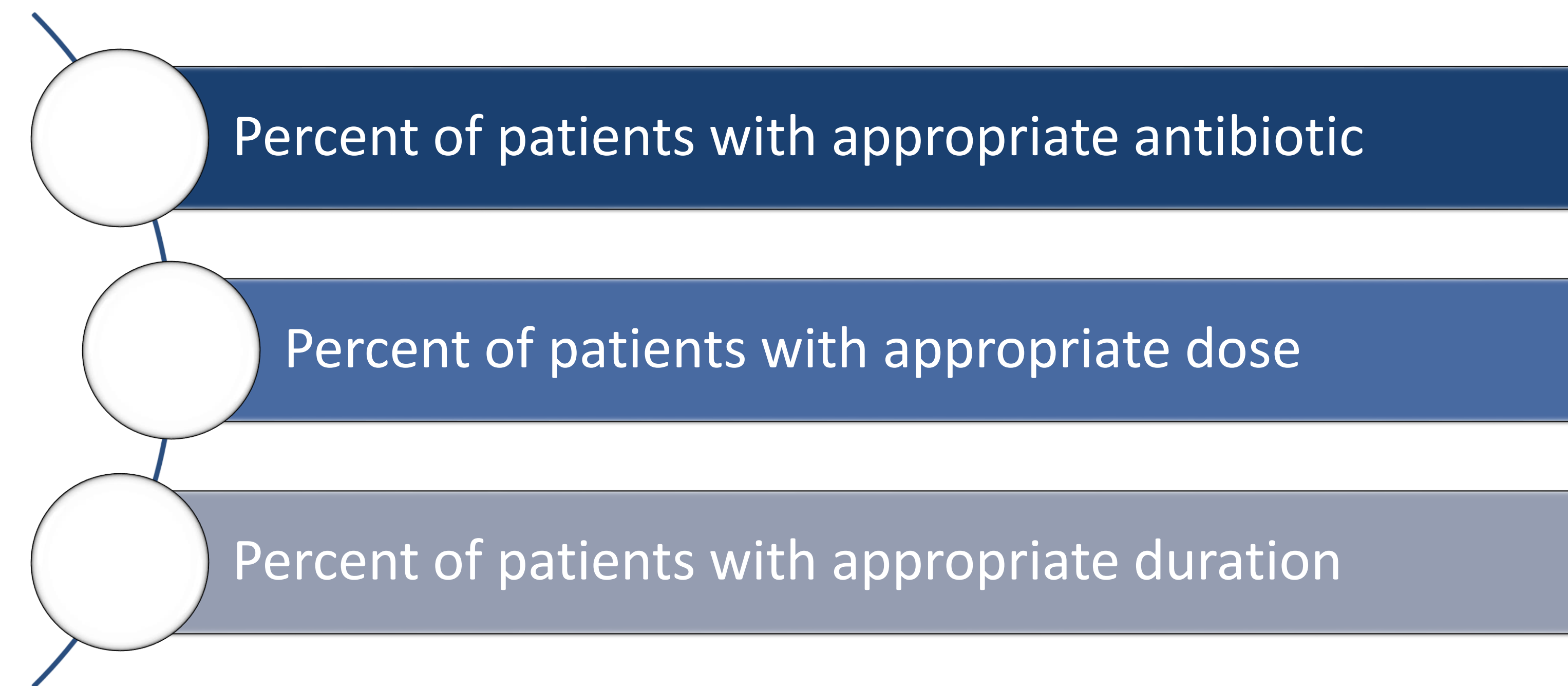
Inclusion Criteria

- Study duration: January 1, 2019 to June 30, 2019
- Women ≥ 18 years and < 65 years
- Patient encounter occurring at the clinics listed above
- Diagnoses of uncomplicated urinary tract infection

Exclusion Criteria

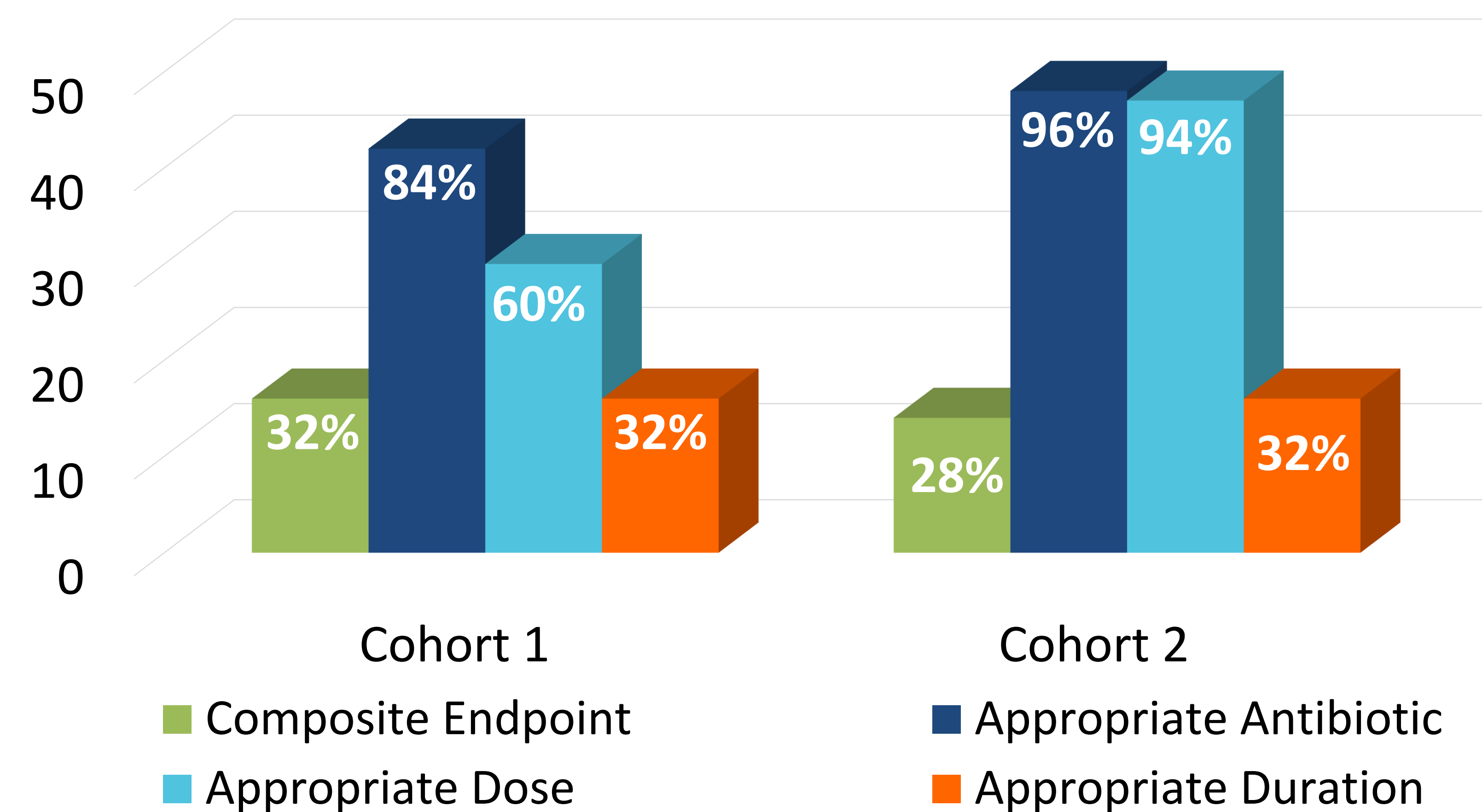
- Pregnancy
- Male
- Structural abnormality of the urinary tract
- History of resistance or treatment failure

Primary Outcomes

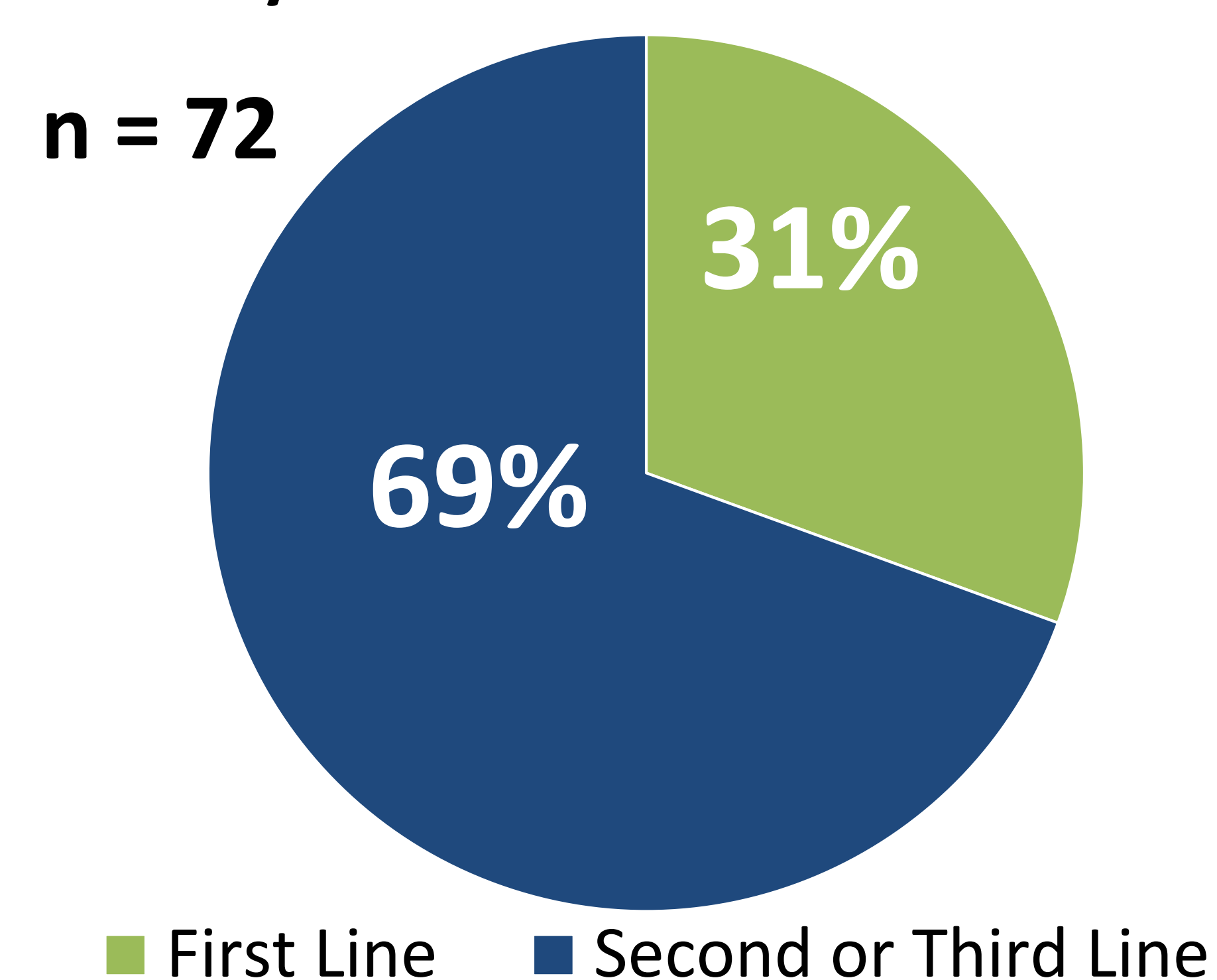


Results

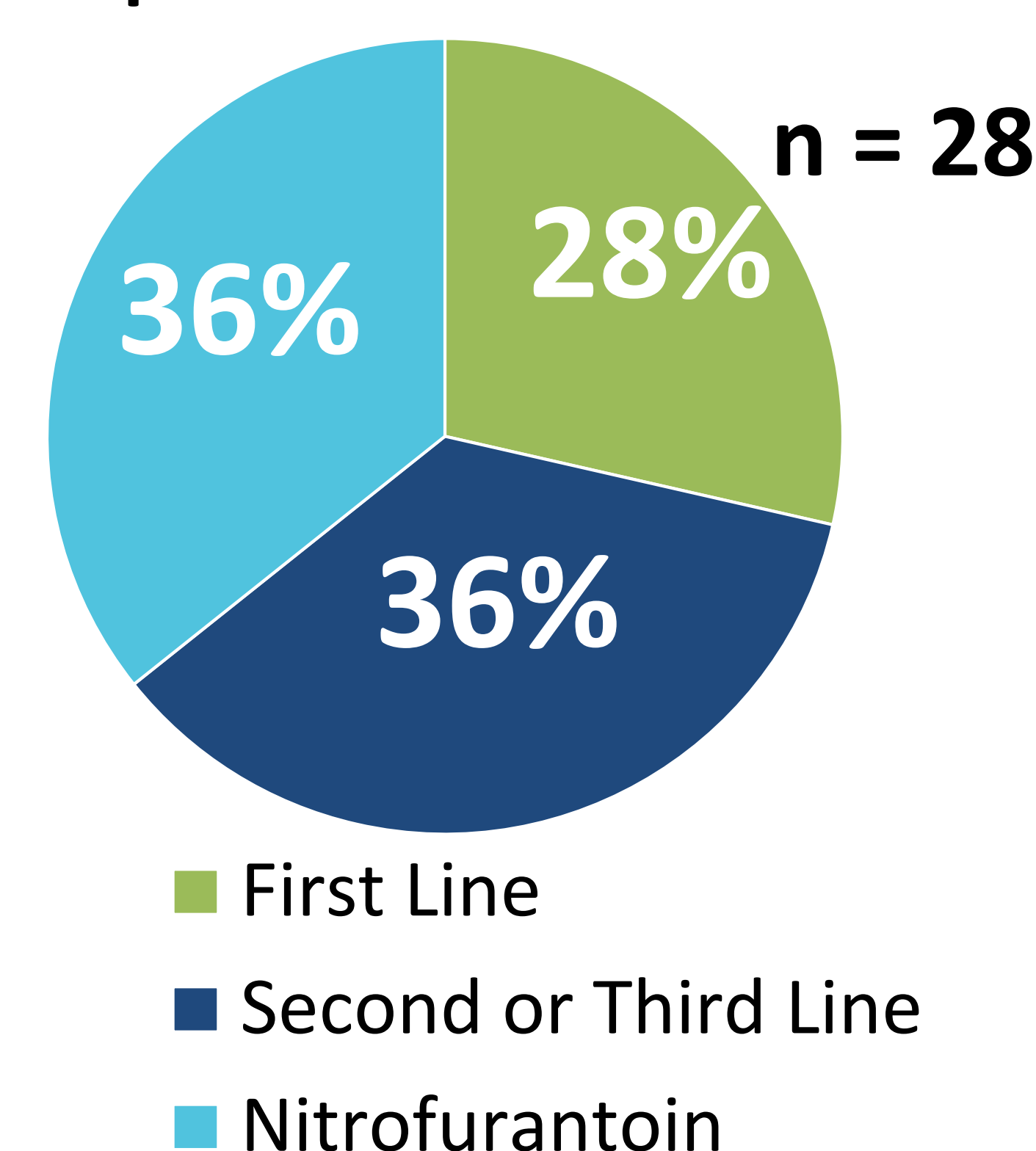
Primary Outcome



Cystitis Antibiotic Selection



Pyelonephritis Antibiotic Selection



Discussion & Conclusions

Limitations

- Small sample size
- Charting omissions
- Provider preference

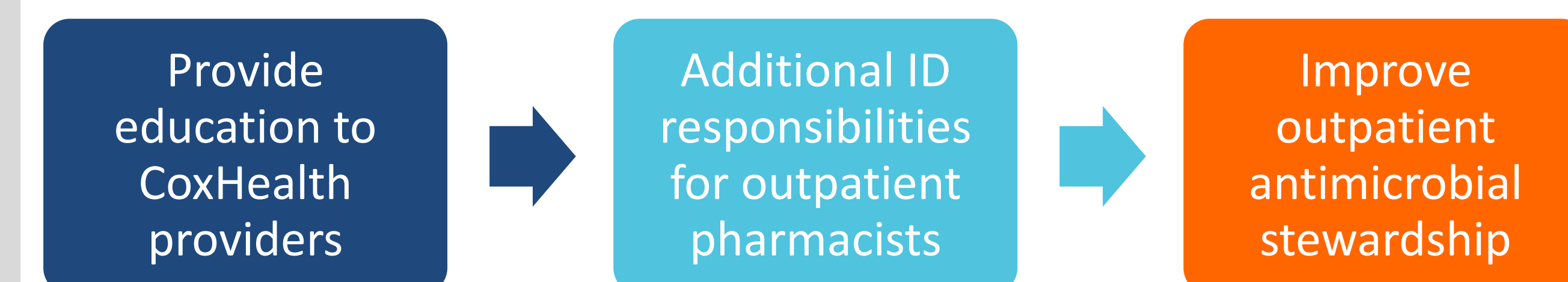
Discussion

- Duration of therapy exceeds current recommendation for 3-5 days.
- Ciprofloxacin was prescribed in 25% of patients diagnosed with cystitis despite current recommendations.
- Sulfamethoxazole/trimethoprim was prescribed in 36% of patients despite high local resistance rates.

Conclusions

- Providers in both clinic settings prescribe appropriate antibiotic, dose, and duration less than 32% of the time.
- Results of this study suggest provider education could improve empiric therapy selection.

Future Directions



References

- Flores-Mireles AL, Walker JN, Caparon M, Hultgren SJ. Urinary tract infections: epidemiology, mechanisms of infection and treatment options. *Nat Rev Microbiol.* 2015;13(5):269-84.
- Gupta K, Hooton TM, Naber KG, et al. International clinical practice guidelines for the treatment of acute uncomplicated cystitis and pyelonephritis in women: A 2010 update by the Infectious Diseases Society of America and the European Society for Microbiology and Infectious Diseases. *Clin Infect Dis.* 2011;52(5):e103-20.
- Durkin MJ, Keller M, Butler AM, et al. An Assessment of Inappropriate Antibiotic Use and Guideline Adherence for Uncomplicated Urinary Tract Infections. *Open Forum Infectious Diseases.* 2018;5(9).
- Core Elements of Outpatient Antibiotic Stewardship | MMWR. Centers for Disease Control and Prevention. <https://www.cdc.gov/mmwr/volumes/65/rr/rr6506a1.htm>. Published November 11, 2016. Accessed August 6, 2019.

Author Disclosures

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