Impact of 10-day versus 5-day Duration Default on Length of Antibiotic Outpatient Prescriptions from the Emergency Department

Amber Watts, PharmD[1] and Shannon Holt PharmD, BCPS-AQ ID[1-2]
[1]WakeMed Health & Hospitals, Raleigh, North Carolina; [2]UNC Eshelman School of Pharmacy, Chapel Hill, North Carolina

WakeMed Health & Hospitals

BACKGROUND

- Antimicrobial stewardship programs (ASP) traditionally focus on inpatient care; however there is a growing effort to optimize antibiotic prescribing at transitions of care.[1-3]
- Previous studies found discharge prescriptions were written for an average of 3.8 days longer than indicated and >50% of discharge prescriptions were written for an inappropriate length of therapy.[2,3]
- Longer than necessary discharge prescriptions increase the risk of antimicrobial resistance, *C. difficile* infection (CDI) and adverse events.[3-5]
- The Centers of Disease Control Core Elements for Outpatient Antimicrobial Stewardship and Hospital Antimicrobial Stewardship Programs recommend efforts to ensure appropriate duration for outpatient antimicrobial prescriptions, including those prescribed in the Emergency Department (ED).[7,8]
- To improve appropriate outpatient antibiotic prescriptions, the health system updated the electronic medical record (EMR) outpatient antibiotic prescription default from 10 days to 5 days in February 2020.
- This study aims to assess the impact of a 10-day versus 5-day EMR antibiotic outpatient prescriptions default on duration of therapy (DOT) for patients discharged from the ED.

OBJECTIVES

- Primary objective: To evaluate the incidence of prescriptions written for a ≤ 5 day duration
- Secondary objective: To compare the incidence of prescriptions written for a ≤ 5 day duration based on indication

DISCLOSURE

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or Indirect interest in the subject matter of this presentation:

Amber Watts: Nothing to disclose
Shannon Holt: Nothing to disclose

METHODS

STUDY DESIGN

Design

- Retrospective cohort study evaluating ED discharge prescriptions before and after transition from a default duration of 10 days to 5 days at a large community health-system

Inclusion Criteria

- ED discharge prescriptions written from December 2019-January 2020 (control) and April 2020-May 2020 (intervention)
- Prescriptions written for the following indications based on primary diagnosis: urinary tract infection (UTI), community-acquired pneumonia (CAP), skin and soft tissue infections (SSTI), diverticulitis, or dental infections

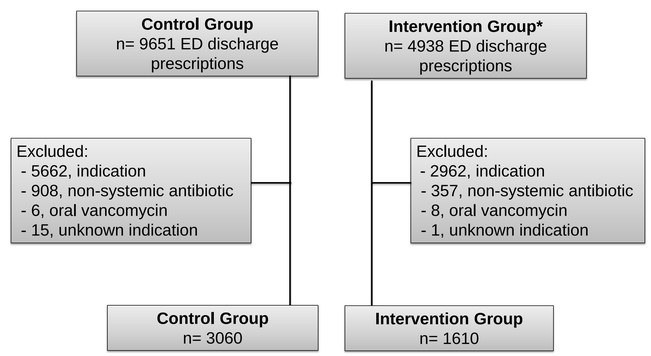
Exclusion Criteria

- Prescriptions written for antivirals or antifungals, oral vancomycin, non-systemic antimicrobials, or indications not previously specified.

Statistical Analysis

- Chi square analysis applied to categorical variables

STUDY POPULATION



*Approximately 50% decrease in discharge prescriptions are likely associated with the decline in ED visits due to the Covid-19 pandemic starting March 2020.

RESULTS

Table 1. Patient Demographics

	Control (n=3060)	Intervention (n=1610)
Age (years), mean (range)	37 (0-98)	38 (0-97)
Female (years), n (%)	1995 (65)	934 (58)
Duration of prescription (days), mean (range)	8.44 (1-21)	8.30 (1-20)
Diagnosis, n (%)		
SSTI	1013 (33)	602 (37)
UTI	1040 (34)	475 (30)
CAP	423 (14)	162 (10)
Dental	394 (13)	267 (17)
Diverticulitis	190 (6.0)	104 (6.5)

Figure 1. Primary Endpoint: Prescriptions for ≤ 5 Days

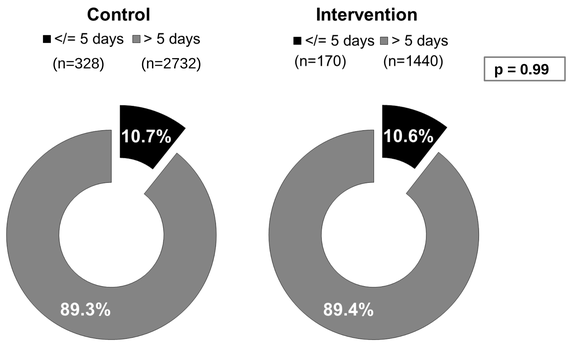


Figure 2. Prescriptions for ≤5 Days by Indication

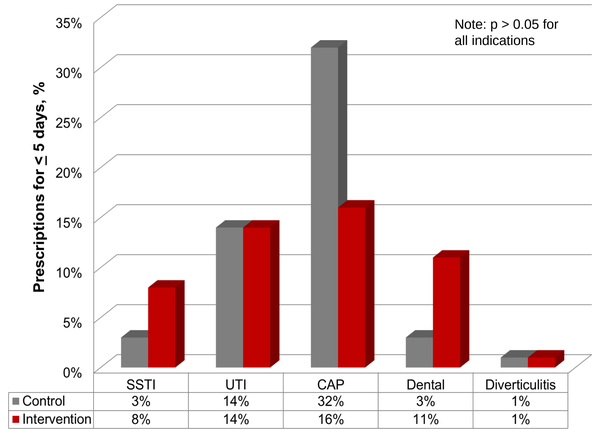


Table 2. Length of Discharge Prescriptions by Indication

	Control	Intervention
CAP		
5 days	17%	12%
7 days	15%	30%
10 days	53%	52%
SSTI		
5 days	3%	8%
7 days	31%	38%
10 days	64%	54%
UTI		
5 days	13%	13%
7 days	53%	55%
10 days	31%	29%

CONCLUSION

- Implementation of a shorter default duration for antibiotic outpatient prescriptions from the ED did not significantly increase the incidence of prescriptions written for ≤ 5 days (10.7% vs. 10.6%, p = 0.99) for common, uncomplicated infections.
- There was an improvement in duration for SSTI (2.96% vs. 7.64%, p=0.86) and dental infections (3.30% vs. 10.86%, p=0.81) after implementation of a shorter default duration.

DISCUSSION

- The default duration for 5 days did not impact appropriate treatment courses for CAP, as indicated by a lower rate of prescriptions for ≤ 5 days in the intervention group. Providers continued to prescribe longer courses for 7 and 10 days despite the new 5-day default.
- Treatment of uncomplicated UTIs requires only 3-5 days duration of therapy, however for complicated infections and some antimicrobial regimens, duration of therapy may be longer. Agent selected and complications were not reviewed in this study, limiting the ability to assess the appropriateness of the durations of therapy found for UTI treatment.
- These results demonstrate a need for provider education regarding guideline-directed treatment durations for common, uncomplicated infections such as CAP and UTI.

REFERENCES

1. *J Antimicrob Chemother* 2019;74:515-520
2. *Infect Control Hosp Epidemiol* 2017;38(3):353-355
3. *Infect Control Hosp Epidemiol* 2015;36(4):474-478
4. *Clin Infect Dis* 2011;53(1):42-48
5. *JAMA Intern Med* 2017;177(9):1308-1315
6. *Antimicrob Resist Infect Control* 2013;2:31
7. Core Elements of Antibiotic Stewardship. Atlanta, GA: US Department of Health and Human Services, CDC; 2019
8. Core Elements of Outpatient Antimicrobial Stewardship, GA, US Department of Health and Human Services, CDC; 2016