



# Improving Outpatient Antimicrobial Stewardship Through Pharmacist Assessment of Urine Cultures via a Mature Culture Follow-up Program

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## Background

- Since March 2014, Trinity Health Grand Rapids (THGR) has operated under a collaborative practice agreement (CPA) that allows pharmacist-led culture follow up, including symptom assessment for patients discharged from emergency department (ED) and urgent care (UC) sites. This CPA supports not prescribing antibiotics for patients who are asymptomatic at follow up
- No previous studies have assessed clinical outcomes of a mature culture follow-up program that includes antimicrobial deprescribing or non-prescribing for patients with positive urine cultures

## Objectives

### Primary

- Compare clinical outcomes associated with deprescribing and non-prescribing antibiotics at follow-up for patients with a positive urine culture but with resolved or absent symptoms of urinary tract infections (UTIs) versus the standard of care

### Secondary

- Assess days of therapy, safety outcomes, and workload with pharmacist deprescribing and non-prescribing

## Methods

### Design

- Retrospective cohort study
- January 1, 2020 – December 31, 2024

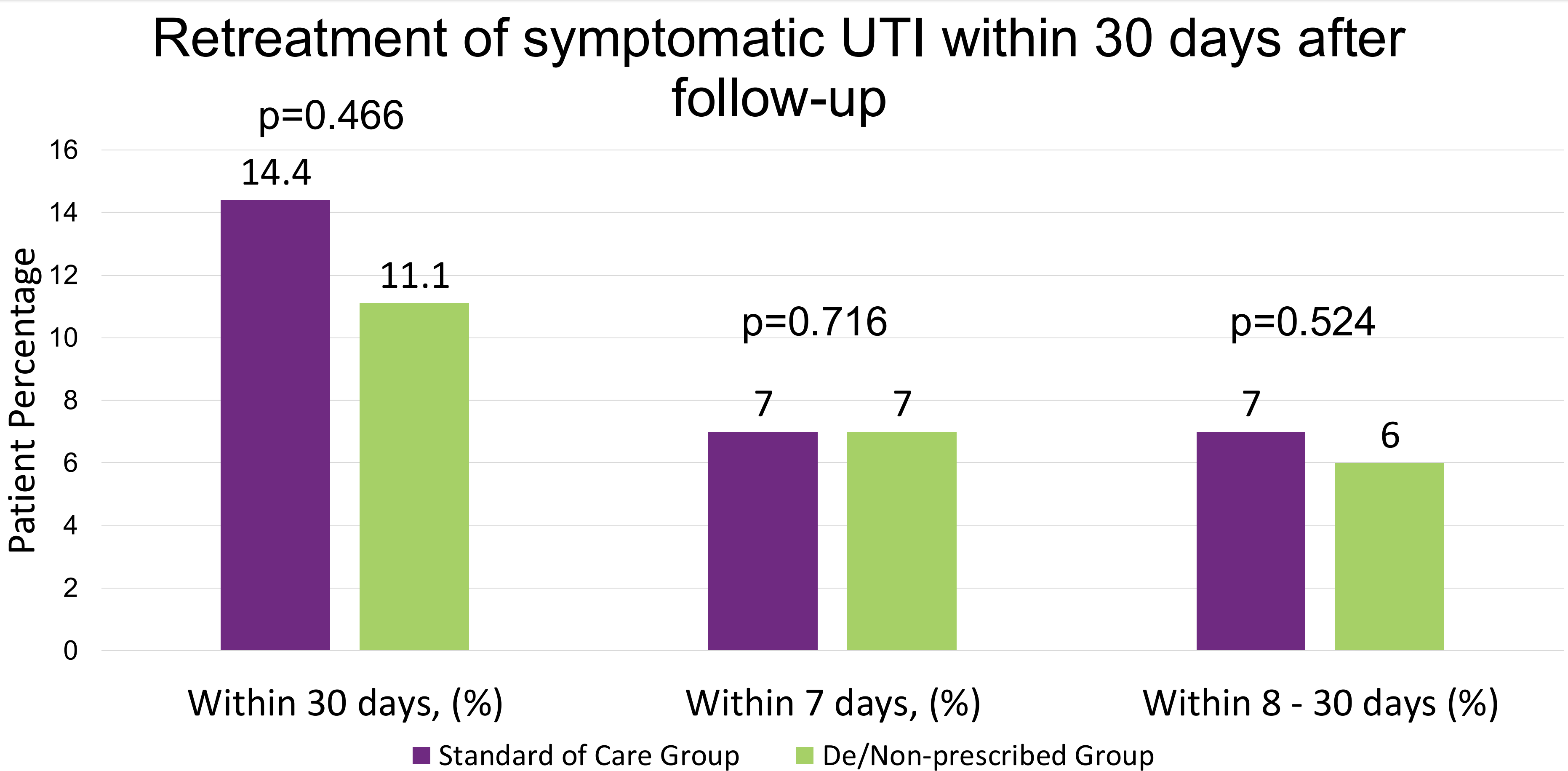
### Patient Population

- Females ≥18 years with a positive urine culture contacted by the pharmacist-led culture follow-up team
- 200 patients to detect approximately a 15% difference between groups (100 in each arm)

### Most Common Exclusion Criteria

- Receipt of parenteral antibiotics before oral antibiotics
- Recurrent UTI

## Results



## Patient Characteristics

Group	Standard of Care (n = 97)	De/Non-prescribed (n = 117)	p-value
Initial Visit Location (n, %)			
▪ Emergency Department	47 (48.5)	83 (70.9)	0.001
▪ Urgent Care	50 (51.5)	34 (29.1)	
Reported symptoms at initial visit, n (%)	81 (83.5)	62 (53)	<0.001
Diagnosis of acute cystitis (n, %)	38 (39.2)	26 (22.2)	0.007
Empiric Antibiotic Prescribed (n, %)	36 (37.1)	30 (25.6)	0.392
▪ Cephalexin	16 (44.4)	18 (60)	
▪ Nitrofurantoin	17 (47.2)	11 (36.7)	
▪ Sulfamethoxazole Trimethoprim	3 (8.3)	1 (3.3)	
Initial duration of antibiotic (days), mean (±SD)	5.8 (±1.6)	5.9 (±1.5)	0.747
Appropriate duration of antibiotics prescribed (n, %)	26 (72.2)	23 (76.7)	0.681

## Follow-up Characteristics

Group	Standard of Care (n = 97)	De/Non-prescribed (n = 117)	p-value
Organism not susceptible to empiric agents (n, %)	35 (97.2)	27 (90)	0.323
Reported symptoms at follow-up, n (%)	89 (91.8)	6 (5.1)	<0.001
For no symptoms reported, intervention, n (%)			
• Deprescribed	-	2 (1.7)	-
• Not Prescribed	-	115 (98.3)	

## Results

- The mean duration of antibiotics given by pharmacists at follow up was 4.9 days
- There were no cases of *Clostridioides difficile* within 30 days of follow up
- There was one reported adverse event of a mild allergy in the standard of care group
- For both groups, time to pharmacist follow up occurred approximately 2.5 days later, with a median of 1 contact attempt made and a median of 15 minutes spent on each intervention

## Discussion

- Not prescribing antibiotics at follow up for asymptomatic patients despite a positive urine culture is an appropriate stewardship intervention supported by national guidelines
- Improved diagnostic stewardship is needed. Decreasing inappropriate urinalysis and cultures can prevent treating asymptomatic patients
- An opportunity exists for CPA expansion to allow for direct deprescribing practice as this is not outlined in the current CPA

## Conclusions

- There was no difference in clinical or safety outcomes when comparing deprescribing or not prescribing antibiotic practices to the standard of care for treating UTIs and asymptomatic bacteriuria in a long-standing pharmacist-driven ED culture follow up program

## References

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- Fleming-Dutra KE, Hersh AL, Shapiro DJ, et al. *JAMA.* 2016;315(17):1864-1873.