

Antimicrobial Stewardship Opportunities for Urine Cultures Resulting After Patient Discharge

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Background

- Antimicrobial stewardship (AS) programs predominately focused on reducing inappropriate inpatient diagnostic and antimicrobial prescribing, however, 40% of patients have an antimicrobial at time of discharge¹
 - Urinary tract infections (UTI) are among the top indications for discharge prescriptions, accounting for 60%²
- Inappropriate antibiotic prescribing for UTI is largely due to patient selection and diagnostic uncertainty (i.e. asymptomatic bacteriuria versus true UTI), which leads to:
 - Increased burden to microbiology laboratory
 - Delays in urine culture processing
 - Increased opportunity for inappropriate antimicrobial prescribing
- Though outpatient AS programs and targeted UTI AS initiatives have demonstrated success at reducing overall antibiotic use and improving appropriate guideline-concordant UTI prescribing.¹⁻⁶

Objectives

Primary Objective

- Assess the number of opportunities for AS in patients with updated urine culture results after discharge from Duke University Health System

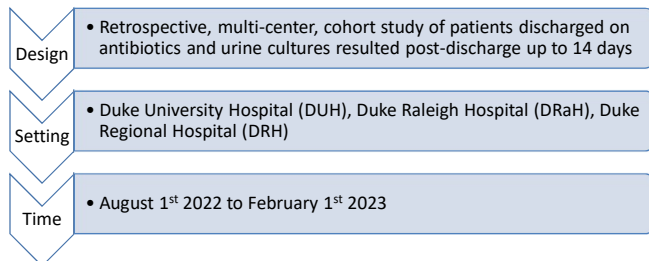
Secondary Objective

- Identify outpatient AS intervention opportunities during review of updated urine culture results after discharge, as determined by "The Five Ds of Outpatient Antimicrobial Stewardship"³ including:



Data: Action with updated culture and/or susceptibility data

Methods



Patient Population

Table 1. Study Inclusion and Exclusion Criteria

Patient Selection	
Inclusion Criteria	<ul style="list-style-type: none"> Age ≥ 18 years Admitted inpatient or encountered/observed in the ED Urine culture collected during encounter with final result post-discharge up to 14-days Prescribed antibiotics at discharge or within 72 hours of discharge
Exclusion Criteria	<ul style="list-style-type: none"> Indication for antibiotics other than UTI Death occurring prior to final result Discharge to hospice
Primary outcome: N patients with at least one stewardship opportunity / N assessed patients	

Results

Figure 1. Patient Enrollment

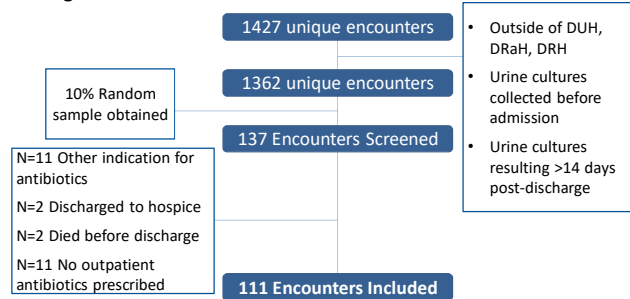


Table 2. Baseline Characteristics

Encounter Characteristic	Total (N=111)
Age, mean (SD)	62.1 (23.8)
Female, n (%)	87 (78.4)
Race or Ethnicity, n (%)	
White	62 (55.9)
Black or African American	35 (31.5)
Other	14 (12.6)
Not reported/Declined	4 (3.6)
Status, n (%)	
Emergency	75 (67.6)
Inpatient	23 (20.7)
Observation	13 (11.7)
Immunocompromised, n (%)	6 (5.4)
Urologic abnormality, n (%)	27 (24.3)
Antibiotic allergy, n (%)	30 (27.0)
UA WBC > 10 / HPF, n (%)	96 (86.5)
UA Leukocyte Esterase Positive, n (%)	102 (91.9)

Results

Figure 2. Encounters With At Least One AS Opportunity

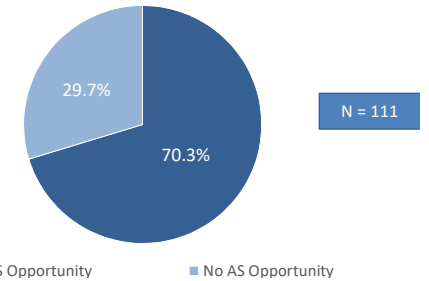


Figure 3. Antimicrobial Stewardship Opportunities

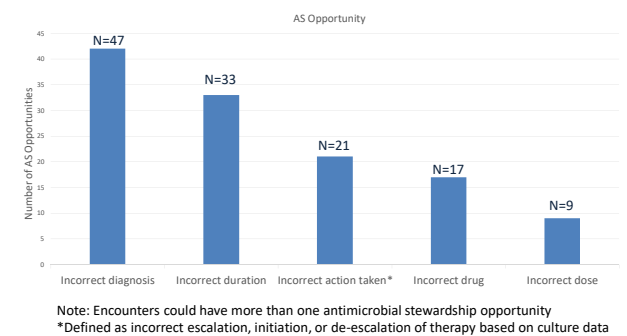


Table 3. Secondary Outcome Results

Secondary Outcome	Total (N=111)
Adverse drug events (ADE), n (%)	4 (3.6)
ED visit / admission due to ADE	2 (1.8)
Change in medication due to ADE	2 (1.8)
Treatment Failure, n (%)	22 (19.8)
Subsequent visit for UTI	19 (17.1)
New drug prescribed for UTI	15 (13.5)

Conclusion

An abundance of stewardship opportunities exist within diagnosing UTI's as well as prescribing appropriate empiric therapy

Implication for future study evaluating the impact of a callback algorithm to prevent inappropriate prescribing with pending urine culture data

Disclosures

Authors of this presentation have no conflicts of interests to disclose regarding personal or financial relationships with commercial entities that may have influenced the content or subject matter of this presentation.

References

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