Figure 2. Proportion of Patients Receiving Inappropriate Fluoroquinolone Treatment for Asymptomatic Bacteriuria and Cystitis by Hospital

Collaborative Average: 20.3%

Table 2. Multivariable Model of Antimicrobial Stewardship Practices Associated with Inappropriate Fluoroquinolone Use in Patients with Asymptomatic Bacteriuria and Cystitis, N=1061 Patients

Variable	OR* (95% CI)	P-value **
Cultures with Cascade Reporting of Antibiotic Susceptibilities	0.67 (0.53-0.86)	0.002
Prospective Audit and Feedback of Fluoroquinolones[1]	0.55 (0.41-0.74)	<0.0001
Institutional Urinary Tract Infection Treatment Guideline	0.76 (0.60-0.98)	0.03

[1] Includes Levofloxacin and ciprofloxacin
*Odds ratios > 1 indicate factors associated with inappropriate fluoroquinolone prescribing
** P-value <0.05 is considered significant
CI, confidence interval; OR, odds ratio; Multivariable model adjusted for hospital level clustering and patient factors significant in the multivariable model (indwelling urinary catheter and urine culture with >100,000 colony forming units of bacteria)

Disclosures. All authors: No reported disclosures.

1107. Impact of Routine Education and Data Feedback on the Durability of an Antimicrobial Stewardship Intervention for Outpatient Urinary Tract Infections

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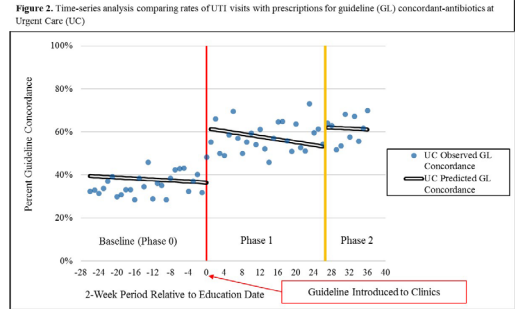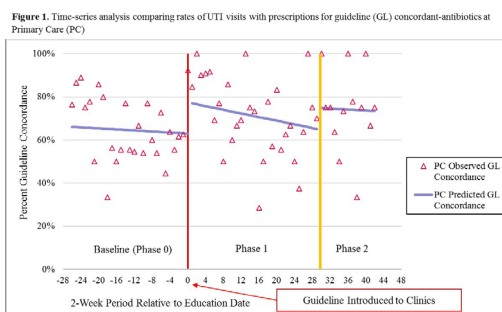
Session: 136. Antibiotic Stewardship: Urine Cultures
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Background. Achieving lasting, sustainable effects in outpatient AS interventions has been a challenge for many programs. Our group observed an initial benefit of an outpatient AS intervention focused on diagnosis and management of urinary tract infections (UTIs). However, prescribing habits trended back toward baseline over time. This study aimed to evaluate the impact of routine education and comparative data feedback on the durability of an outpatient AS intervention for UTIs.

Methods. We conducted a prospective quasi-experimental study at one primary care (PC) and one urgent care (UC) clinic to evaluate the durability of an outpatient AS intervention implemented in August 2017 and November 2017, respectively. Clinicians who treated adult patients with a diagnosis of acute UTI at either clinic participated in the study. The initial intervention (phase 1) included development of clinic-specific antibiograms and UTI diagnosis and treatment guidelines. Approximately 12 months after the initial intervention, routine education along with clinic- and comparative provider-specific feedback reports were emailed to clinicians at regular intervals (phase 2). The primary outcome was percent of encounters in which first- or second-line antibiotics were prescribed. Pre- and post-intervention phase and trend changes were assessed using an interrupted time-series approach.

Results. Data were collected on 792 and 3,720 UTI encounters at PC and UC, respectively. In the 12 months after the initial intervention, rates of guideline concordance were 73% at PC and 57% at UC (Figures 1 and 2). After routine data feedback was provided for approximately 7 months at PC and 5 months at UC, rates of guideline concordance remained relatively stable at 75% for PC and 61% at UC. An initial 37% relative reduction in fluoroquinolone (FQ) use was observed during phase 1 which was further reduced by an additional 18% during phase 2.

Conclusion. Routine provision of clinic-specific feedback and peer comparisons sustained rates of guideline-concordant prescribing at two outpatient clinics. This intervention required significant resources for data analysis and delivery, but it was successful in decreasing rates of FQ prescribing and maintaining clinician engagement.

Figure 1. Time-series analysis comparing rates of UTI visits with prescriptions for guideline (GL) concordant-antibiotics at Primary Care (PC)

Figure 2. Time-series analysis comparing rates of UTI visits with prescriptions for guideline (GL.) concordant-antibiotics at Urgent Care (UC)

Disclosures. All authors: No reported disclosures.

1108. Impact of Implementing a Urine Culture Order Set on Antibiotic Utilization and Rates of Catheter-Associated Urinary Tract Infections in an Urban Academic Medical Center

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Background. Overutilization of urine cultures may lead to inappropriate use of antibiotics. We implemented a computerized urine culture order set where urine specimens are not processed for culture unless there is evidence of pyuria (≥10 WBC per high power field) on urinalysis (UA), or if a patient is pregnant, neutropenic, neonate, renal transplant recipient, planned for or had a recent urologic procedure. Here we evaluated the impact of this order set on antibiotic utilization, urine culture volumes and rates of catheter-associated urinary tract infections (CAUTI).

Methods. We performed a retrospective chart review before and after the order set implementation (August–December 2017 and 2018, respectively). The analysis had two distinct components: first was at institution-level, where data for all adult and pediatric inpatients were compared for urine culture volumes and antibiotic use regardless of indication. The second component was done at patient-level, where we compared clinical data and days of therapy (DOT) for all adult inpatients who had urine cultures without pyuria in the specified pre-intervention period, and those with canceled urine cultures due to absence of pyuria post-intervention.

Results. At the institution-level analysis, a statistically significant reduction was observed in rates of urine cultures performed ($P = 0.02$), as well as use of penicillins, carbapenems and Trimethoprim-Sulfamethoxazole (TMP-SMX) ($P < 0.05$). However, the use of cephalosporins has increased post-intervention ($P < 0.001$). No significant change was noted for aminoglycosides or fluoroquinolones.

At the patient-level analysis, DOT means in patients with negative pyuria did not change significantly (5.16 pre-intervention, 6.54 post-intervention, $P = 0.202$). Prevalence of treatment for bacteriuria despite absence of pyuria was 5.3% (20/380) pre-intervention, vs. 1.9% (1/53) post-intervention ($P = 0.494$). In the pre-intervention period, three cases met the criteria for CAUTI despite negative pyuria. This misdiagnosis could have been avoided by implementation of the urine culture order set.

Conclusion. Implementation of a urine culture order set in our institution led to a statistically significant reduction in rates of urine cultures performed, as well as use of penicillins, carbapenems and TMP-SMX.

Inpatient urine culture volumes

■ Total urine cultures
■ Positive urine cultures (>50,000 CFU organisms)