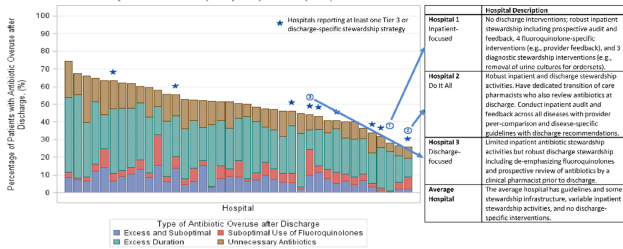


Figure 2. Antibiotic Overuse after Discharge in Patients Treated for Pneumonia or Urinary Tract Infection, by Hospital, (N=39 hospitals)



of antibiotic overuse at discharge. Days of antibiotic overuse at discharge were defined based on national guidelines and included unnecessary therapy, excess duration, and suboptimal fluoroquinolone use. We evaluated the association of stewardship strategies with days of discharge antibiotic overuse 2 ways: (1) all stewardship strategies were assumed to have equal weight, and (2) strategies weighted using the ROAD Home Framework with tier 3 (discharge-specific) strategies had the highest weight. **Results:** Overall, 39 hospitals with 20,444 patients (56.5% CAP; 43.5% UTI) were included. The survey response rate was 100% (39 of 39). Hospitals reported a median of 12 (IQR, 9–14) of 33 possible stewardship strategies (Fig. 1). On bivariable analyses, review of antibiotics prior to discharge was the only strategy consistently associated with lower antibiotic overuse at discharge (aIRR, 0.543; 95% CI, 0.335–0.878). On multivariable analysis, weighting by ROAD Home tier predicted antibiotic overuse at discharge for both CAP and UTI. For diseases combined, having more weighted strategies was associated with lower antibiotic overuse at discharge (aIRR per weighted intervention, 0.957; 95% CI, 0.927–0.987). Discharge-specific stewardship strategies were associated with a 12.4% relative decrease in antibiotic overuse days at discharge. Based on these findings, 3 pathways emerged to improve antibiotic use at discharge (Fig. 2): inpatient-focused strategies, “doing it all,” and discharge-focused strategies. **Conclusions:** The more stewardship strategies reported, the lower a hospitals’ antibiotic overuse at discharge. However, different pathways to improve discharge antibiotic use exist. Thus, discharge stewardship strategies should be tailored. Specifically, hospitals with limited stewardship resources and infrastructure should consider implementing a discharge-specific strategy straightaway. In contrast, hospitals that already have substantial inpatient infrastructure may benefit from proactively incorporating discharge into their existing strategies.

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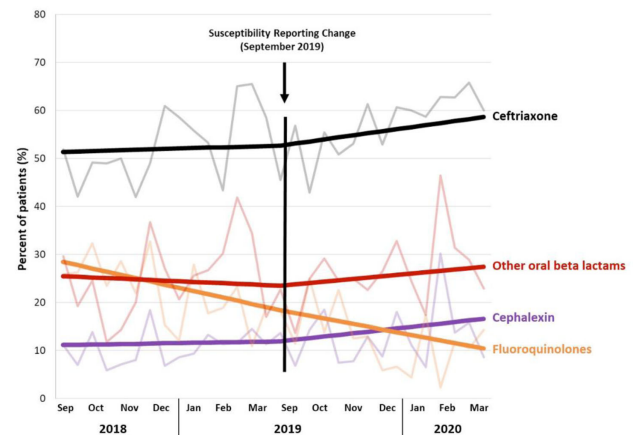
Subject Category: Surveillance/Public Health

Susceptibility reporting and antibiotic prescribing for UTIs in the inpatient setting: A nudge toward improved stewardship

Madison Ponder; Alan Kinlaw; Lindsay Daniels; Ashlyn Norris and Kevin Alby

Background: Urinary tract infections (UTIs) are common in the inpatient, observation, and emergency department settings. Although many UTI-causing pathogens are susceptible to oral β -lactams, these agents are not tested directly, and susceptibility is extrapolated from other agents. To improve the use of these agents, the University of North Carolina Medical Center (UNCMC) added cephalixin to the susceptibility profile generated with urine culture results in the electronic health record (EHR). We evaluated prescribing trends of cephalixin, other oral β -lactams, fluoroquinolones, and other antibiotics for UTIs in the inpatient setting, before and after the susceptibility reporting change. **Methods:** An interrupted time-series analysis was conducted. Among 1,491 patients who had positive urine cultures with susceptibilities and received at least

Figure 1. Segmented trends (bold lines) and raw data (faded) for percent of patients receiving antibiotic class before and after the September 2019 EHR-based intervention, for cephalixin (purple), other oral beta lactams (red), ceftriaxone (black), fluoroquinolones (orange).



1 antibiotic with a listed UTI indication during their inpatient stay at UNCMC, we measured the weekly prevalence (%) of patients who received each antibiotic group: cephalixin, other oral β -lactams (amoxicillin-clavulanate, cefdinir, cefuroxime), fluoroquinolones (levofloxacin, ciprofloxacin), and ceftriaxone. The study comprised a preintervention period (September 2018–March 2019) and a postintervention period (September 2019–March 2020). The prevalence of each antibiotic or group was plotted over time, and segmented linear regression was used to estimate the impact of the intervention on each antibiotic groups’ time trend. **Results:** At study baseline in September 2018, the weekly prevalence of antibiotic use was 11% for cephalixin, 26% for other oral β -lactams, 51% for ceftriaxone, and 29% for fluoroquinolones. Fluoroquinolone use decreased steadily throughout the study period, by 11% during the 7-month preintervention period (95% CI, –17% to –5%) and by 8% (95% CI, –13% to –3%) after the intervention (*P* for trend deflection, .70). In contrast, during the preintervention period, trends were flat for cephalixin, ceftriaxone, and other oral β -lactams (all *P* for nonzero preintervention slope were >.40). During the postintervention period, use increased for ceftriaxone (6%; 95% CI, 3%–9%). Post-intervention use also increased for cephalixin (5%; 95% CI, –3% to 12%) and other oral β -lactams (4%; 95% CI, –8%, 15%), but these trends were imprecise and not statistically significant at $\alpha = .05$. Fig. 1 displays trends and raw data for each antibiotic group. **Conclusions:** The urine culture susceptibility reporting change was associated with small increases in cephalixin and ceftriaxone use, coincident with continued decreasing use of fluoroquinolones, for hospitalized patients with positive urine cultures and a listed UTI indication. Low-resource EHR-based interventions may confer considerable benefit for antimicrobial stewardship efforts in this clinical setting, and larger real-world studies are needed to replicate and contextualize these findings.

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Poster Presentation - Top Oral Abstract

Subject Category: *C. difficile*

Impact of exposure to potentially contaminated hospital beds on risk of hospital-onset *C. difficile* infection

Lucy Witt; Jessica Howard-Anderson; Elizabeth Overton and Jesse Jacob

Background: Environmental contamination increases risk for *Clostridioides difficile* infection (CDI) given that spores can remain on a hospital bed, floor, sink, and light switch despite appropriate cleaning