855. Impact of FDA Black Box Warning on Fluoroquinolone and Alternative Antibiotic Use in Southeastern US Hospitals

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Background. Many antimicrobial stewardship programs have set goals to reduce the use of fluoroquinolones because of risks of causing *C. difficile* and other adverse safety events. The US Food and Drug Administration issued a black box label warning for fluoroquinolones in June 2016 recommending avoidance of this class for treatment of uncomplicated infections.

Methods. We performed a retrospective cohort study of antimicrobial use (AU) data in 29 southeastern United States hospitals from 2013 to 2017. An interrupted time series approach with segmented negative binomial regression modeling was used to estimate the longitudinal trend and effect of the FDA safety announcement on AU rates. Fluoroquinolone and alternative antibiotic agent use rates were measured as days of therapy (DOT) per 1,000 patient days. Alternative antibiotics were analyzed individually or in groups (e.g., community-onset agent group included ceftriaxone, cefotaxime, and ertapenem).

Results. Hospital AU data for the 60-month period included a total of 6,685,950 patient days; 8 to 29 hospitals contributed AU data to estimates each month. FQ use rates declined at a consistent rate of approximately 1 DOT/1,000 patient days per month resulting in an overall 10% decrease prior to the FDA warning. A significant drop in FQ use rates occurred at the time of the announcement ($P = 0.002$), but there was no significant change in trend [rate ratio (RR) 0.89, 95% CI 0.79–1.01, $P = 0.07$, Figure 1]. Alternative antibiotic use significantly increased for the following antibiotic groups after the warning: community-onset agents (RR 1.24, 95% CI 1.11–1.38), atypical agents (RR 1.40, 95% CI 1.19–1.66), and third-generation cephalosporins (RR 1.54, 95% CI 1.19–1.65). Antipseudomonal β-lactam use remained stable (RR 0.96, 95% CI 0.88–1.05, $P = 0.3$).

Conclusion. Fluoroquinolone use was declining in our network prior to the FDA announcement and continued to decline after 2016. This is likely due to stewardship activities focusing on quinolone-sparing treatment guidelines. AU shifted away from FQ toward third-generation cephalosporins and atypical agents.

Figure 1:

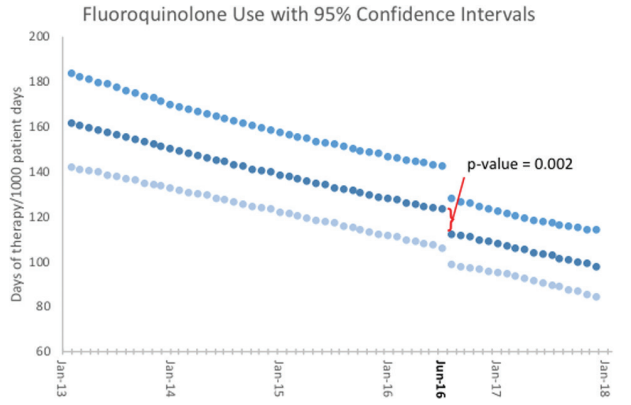
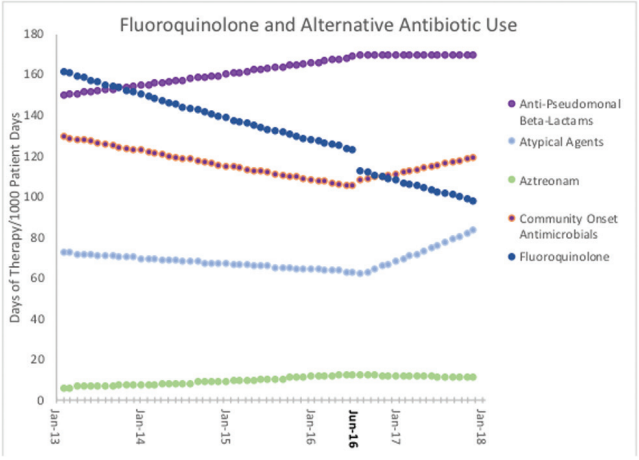


Figure 2:



Disclosures. **All authors:** No reported disclosures.

856. Impact of Early Discontinuation of Antimicrobial Therapy on Survival in Culture-Negative Clinically Suspected Serious Infection: An Electronic Health Record-Based Analysis From 111 US Hospitals

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Background. Up to 40% of inpatients started on antibiotics for suspected infection have negative cultures from all tested body sites. The optimal duration of treatment for these patients is unknown.

Methods. Adults admitted to 111 hospitals between 2009 and 2015 with clinically suspected serious infection but negative cultures were identified. We deemed patients to have clinically suspected serious infection if blood cultures were drawn on hospital day 1 or 2 and IV or PO antibiotics were initiated on the day of or after blood culture draw and continued for ≥3 days. We compared outcomes for patients treated with 3–4 vs. ≥5 days of antibiotics. We excluded patients on vasopressors beyond day 2. We calculated odds ratios for in-hospital mortality (including discharge to hospice), *C. difficile* infection (CDI), subsequent sepsis, and antibiotic restarts >1 day after discontinuation using logistic regression, adjusting for age, race, Sequential Organ Failure Assessment (SOFA) score, and several co-morbidities; findings were confirmed by determining the average treatment effect on the treated (ATET) using propensity matching.

Results. We identified 179,421 patients with clinically suspected serious infection. Of these, 71,786 (40%) had all negative cultures; 26,437 (37%) were treated with 3–4 days of antibiotics; and 45,349 (63%) were treated with ≥5 days. Patients treated with shorter courses were younger, had lower SOFA scores, and were less likely to have concomitant sepsis. There was no difference in mortality for short vs. long course treatment (4.7% vs. 6.5%, aOR 1.01 [95% CI 0.93–1.11]; ATET=1.002 [0.998–1.006]; $P = 0.46$). Patients treated with short courses were less likely to develop CDI (aOR 0.55 [0.47–0.66]) or subsequent sepsis (aOR 0.26, 0.17–0.41) but more likely to have antibiotic restarts (3.9% vs. 3.6% aOR 1.53 [1.35–1.73]). Mortality was lower, however, amongst patients with antibiotic restarts who initially received short (vs. long) courses (aOR 0.76 [0.57–1.00]).

Conclusion. We found no difference in mortality for patients with culture-negative clinically suspected serious infection treated with 3–4 days vs. ≥5 days. Patients treated with short courses had less CDI and sepsis after discontinuation of antibiotics but higher rates of antibiotic restarts. A randomized, controlled trial is warranted to confirm or refute these findings.

Figure 1