**Keywords:** Respiratory fluoroquinolone; *Clostridium difficile* infection; Antimicrobial stewardship

**Short Communication**

Fluoroquinolones are one of the most commonly prescribed antibiotic classes in the United States and up to 81% of inpatient utilization has been deemed inappropriate [1,2]. Inappropriate use is especially concerning when considering a known adverse consequence of fluoroquinolone utilization is *Clostridium difficile* infection (CDI) [3-6]. Previous studies have shown that reducing inpatient respiratory fluoroquinolone use may reduce CDI rates [7,8].

Wenisch JM et al. performed a single center study evaluating the effect of moxifloxacin restriction and found a decrease in the incidence of CDI (59±3 to 32±3 cases per month) as well as moxifloxacin utilization (1,038±109 defined daily doses (DDD)/month to 42±10 DDD/month) [7]. However, this study reported that the sharp decline in moxifloxacin use was partially replaced by levofloxacin use. Additionally Sarma JB et al. conducted a 2-step fluoroquinolone restriction initiative in two hospitals, which decreased fluoroquinolone use from 10-15 to 5 DDD/100 observed bed days (OBD) [8]. A removal of fluoroquinolone stock on hospital floors further reduced fluoroquinolone use to 0-2 DDD/100 OBD.

This restriction correlated with a significant reduction in CDI cases (rate ratio (RR): 0.332; 95% confidence interval (CI): 0.240-0.460 and RR: 0.394; 95% CI: 0.199-0.781, respectively). Of note, the formulary fluoroquinolones in this study were ciprofloxacin and levofloxacin, thus a trial evaluating the effect of a respiratory fluoroquinolone restriction program at a health care system was lacking in the literature.

In our recently published study, we aimed to determine the impact of respiratory fluoroquinolone restriction on utilization, appropriateness of quinolone-based therapy, and CDI rates within a health care system [9].
reduction in the annual acquisition cost for moxifloxacin in the health care system ($123,882 pre-intervention to $12,273 post-restriction, p=0.002).

This study is unique in that it has shown the beneficial effect of a respiratory fluoroquinolone restriction program on utilization, appropriateness of quinolone-based therapy, and CDI rates within a health care system. Additionally, this study exemplifies the importance of collaboration and communication with key stakeholders as well as education for a successful antimicrobial stewardship initiative. Restriction significantly reduced CDI rates across multiple hospitals despite relatively low baseline rates. The program also demonstrated significant improvement in appropriate respiratory fluoroquinolone utilization which may have further antimicrobial stewardship implications.

References