

Interrupted time series analysis evaluating the short- and long-term impacts of a multifaceted approach to targeting fluoroquinolone use in a tertiary, non-teaching hospital

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PURPOSE

To evaluate the impact of a multifaceted approach to decreasing fluoroquinolone use on consumption of fluoroquinolones and common alternative antibiotics at a smaller, tertiary, non-teaching hospital.

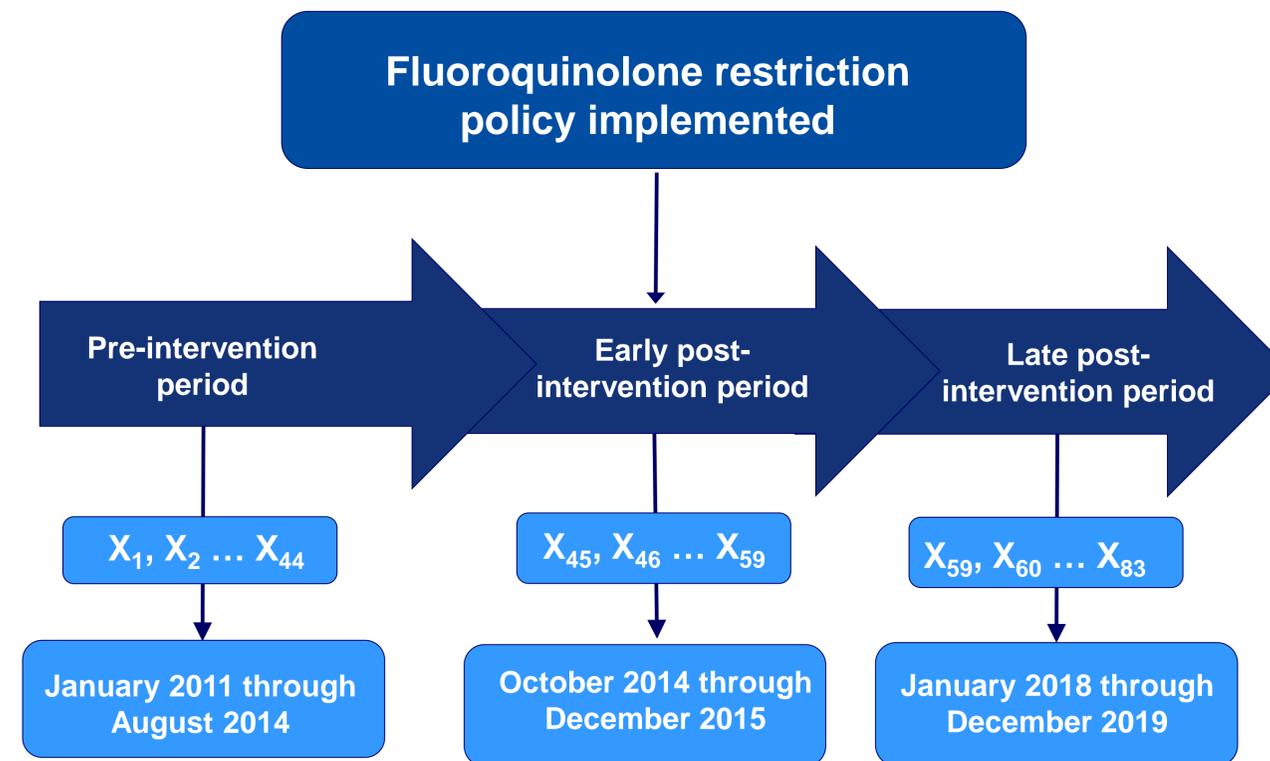
BACKGROUND

- Fluoroquinolone use is a known risk factor for multi-drug resistant organisms, which result in higher hospital costs.^{1,2}
- Fluoroquinolones have been shown to induce various antibiotic mechanisms of resistance, thus potentially increasing resistance to other classes of antibiotics as well.^{1,3}
- Previous studies have shown restricting fluoroquinolones can lead to reversals in resistance of various bacteria and decrease superinfections.²
- A variety of strategies exist to decrease fluoroquinolone use, but feasibility and efficacy differ depending on the setting and available resources.⁴⁻⁶
- The impact on antibiotic consumption and susceptibility is not well described in smaller, tertiary, non-teaching facilities.
- In September 2014, TriStar Skyline Medical Center (TSLMC) implemented a multifaceted approach to fluoroquinolone restriction (specific interventions listed below).

FLUOROQUINOLONE INTERVENTIONS

- Removed fluoroquinolones as antipseudomonal double coverage agents in HCAP/HAP/VAP order sets
- Relegated fluoroquinolones to “Alternative Therapy” status in CAP order sets
- Advised that fluoroquinolones should be considered alternative agents in UTI treatment
- Added CPOE orders for shorter courses of UTI therapy

STUDY DESIGN



X = intervention month

PRIMARY OUTCOME

- Fluoroquinolone consumption measured by defined daily doses per 1000 adjusted patient days (DDD/1k APD)

SECONDARY OUTCOMES

- Impact on other classes of unrestricted antimicrobials (Did we “squeeze the antibiotic balloon”?)
- Impact on susceptibility patterns of *Pseudomonas aeruginosa*
- Impact on rates of *Clostridioides difficile*

METHODS

- Retrospective, single-center study
- Interrupted time series analysis
- Data utilized:
 - Hospital antibiotic purchasing data to determine defined daily doses
 - Antibiogram susceptibility data to assess trends in antimicrobial susceptibility
 - Medication usage evaluation data to assess appropriateness of fluoroquinolone use

RESULTS

Results are pending data analysis

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DISCLOSURES

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation: Brianna Belsky: Nothing to disclose, Quentin Minson: Nothing to disclose,