



Antimicrobial Stewardship Intervention Bundle Decreases Fluoroquinolone Prescribing for Urinary Tract Infection in Urgent Care and Primary Care Clinics

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Background

- Fluoroquinolone antibiotics are associated with a number of serious adverse effects, and are not recommended for use in uncomplicated infections, such as urinary tract infections (UTIs), where other reasonable antibiotic alternatives exist.
- Fluoroquinolones have shown decreased susceptibility amongst Enterobacterales nation-wide in recent years, making their use as empiric therapy in urinary tract infections less attractive.

Objective

- Describe fluoroquinolone utilization within our urgent care centers as well as family practice (FP), internal medicine (IM), and employee health clinics before and after the implementation of an antimicrobial stewardship intervention bundle aimed at reducing prescribing of these agents

Methods

Design: Prospective performance improvement initiative

Setting:

- 23 clinics
 - Four urgent care centers
 - Nineteen internal medicine, family practice, and employee health clinics
- All clinics operated by a 5-hospital, 1,551-bed community health care system in Southwest Florida

Data Collected:

- Fluoroquinolone (ciprofloxacin and levofloxacin) prescribing rates for all UTI patient visits
- Total number of fluoroquinolone prescriptions for UTI visits
- Overall number of fluoroquinolone prescriptions for all visits
- All data are collected and compared for pre-intervention (9/2018-2/2019) and post-intervention (9/2019-2/2020) time periods

References:
1. FDA updates warnings for fluoroquinolone antibiotics on risks of mental health and low blood sugar adverse reactions. 10 July 2018.
2. Neuhauser MM, Weinstein RA, Rydman R, et al. Jama. 2003 Feb 19;289(7):885-8.
3. Gupta K, Hooton TM, Naber KG, et al. Clinical infectious diseases. 2011 Mar 1;52(5):e103-20.

Methods

Figure 1. Interventions

Chartering of Community Antimicrobial Stewardship Committee	<ul style="list-style-type: none">February 2019-presentInitial representation: urgent care practitioners, urgent care leadership, infectious diseases pharmacists, infectious diseases physicians, pediatrics practitioners, and information systems
Development of UTI treatment pathway and UTI SmartSet (order set) optimizations	<ul style="list-style-type: none">April 2019UTI treatment pathway with corresponding EHR order set to recommend antibiotics in preference order according to patient scenario, local antibiograms, patient convenience, and cost
Antimicrobial Stewardship educational presentation to urgent care providers	<ul style="list-style-type: none">April 2019Focused on UTI treatment pathway, national guidelines, and FDA warnings on possible harms of fluoroquinolones
Data feedback on fluoroquinolone use in UTI to urgent care providers	<ul style="list-style-type: none">May 2019-March 2020Peer-to-peer comparisons; data provided monthly x 3 months, then quarterly
Expansion to internal medicine/family practice/employee health clinics	<ul style="list-style-type: none">August 2019-May 2020Clinic-to-clinic comparisons; data provided monthly x 3 months, then quarterly

Results

Figure 2. Urgent Care Center UTI Fluoroquinolone Prescribing Rate

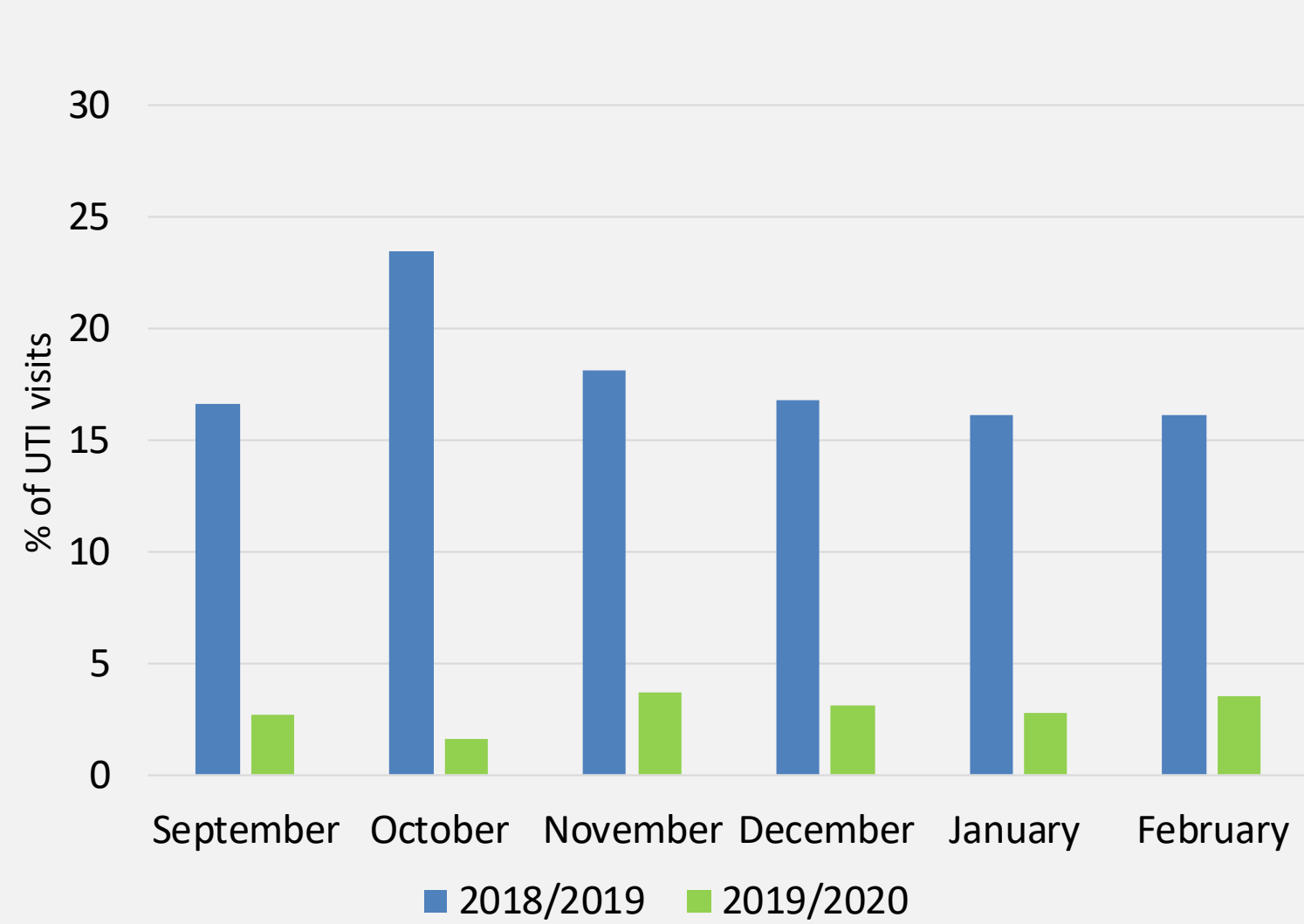
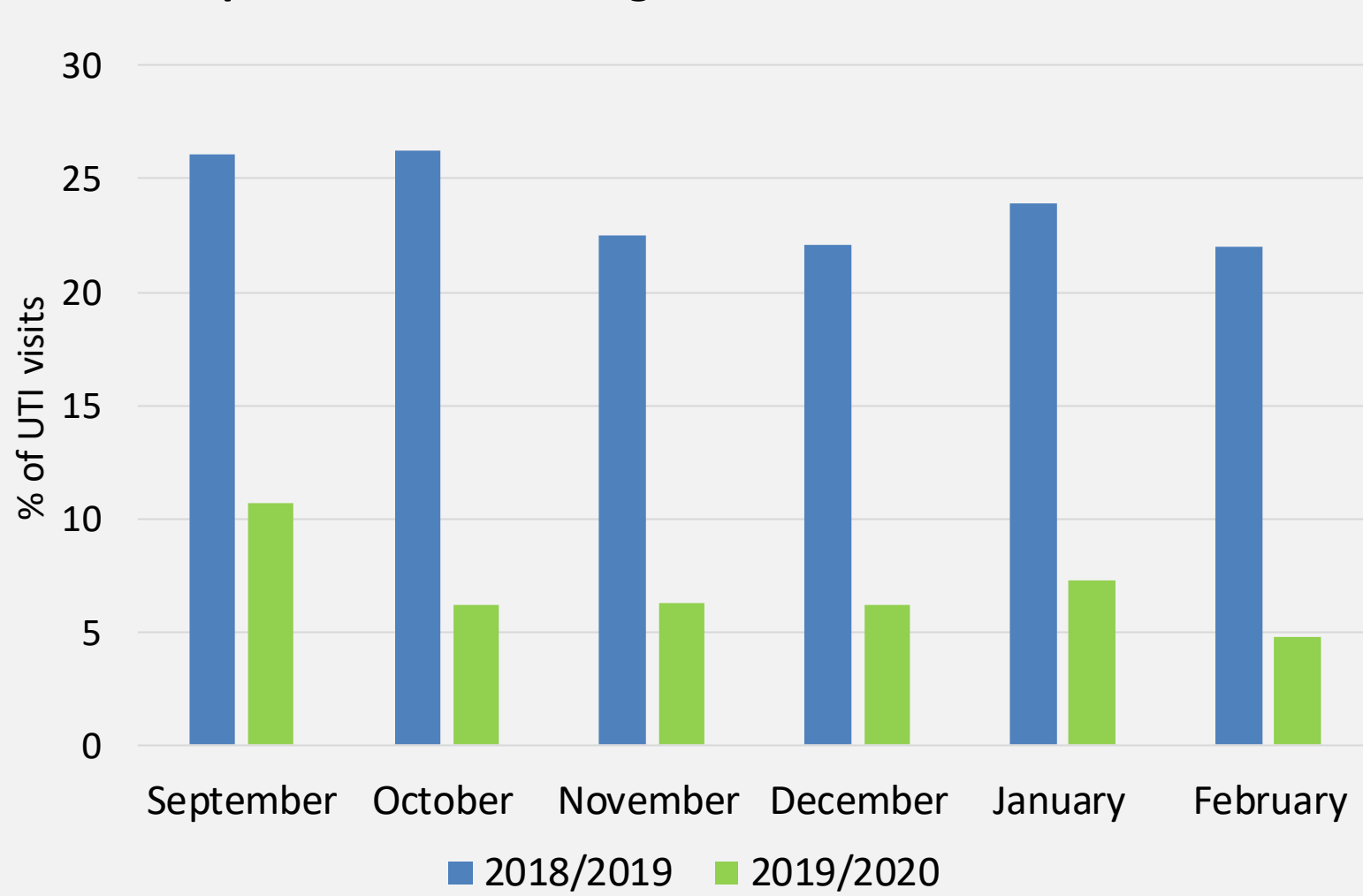


Figure 3. Primary Care/Family Practice/Employee Health UTI Fluoroquinolone Prescribing Rate

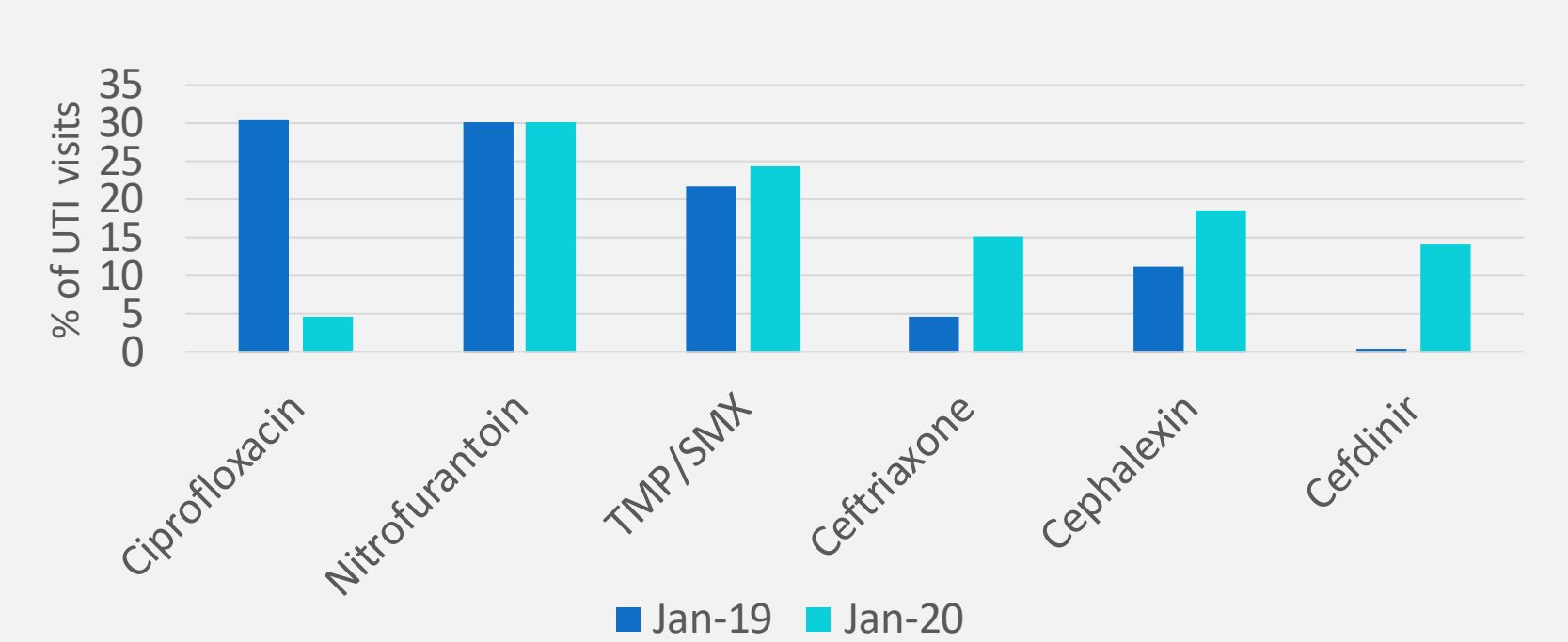


Results

Table 1. Fluoroquinolone prescribing for UTI pre- and post-intervention

Clinic	Pre-Intervention (Sep 2018-Feb 2019)	Post-Intervention (Sep 2019-Feb 2020)	P-value
Urgent Care	660/3741 (17.6%)	111/3752 (3%)	<0.0001
IM/FP/Employee Health	492/2071 (23.8%)	156/2287 (6.8%)	<0.0001

Figure 4. Antibiotics prescribed for UTI at Urgent Care Clinics, pre- and post-intervention



Discussion and Conclusions

- Sustained practice change in fluoroquinolone prescribing was noted as a result of this antimicrobial stewardship intervention bundle
- Successful strategies
 - Educational presentation with discussion of prescribing practices
 - Inclusion of local antimicrobial susceptibility information and cost in treatment pathways
 - Order set optimizations highly utilized by clinic providers
 - Incorporation of data feedback preferences (e.g. utilizing employee numbers) for peer-to-peer comparison
- Limitations
 - Obtainment of data and provision to providers/clinics is resource-intensive

Disclosure

All authors of this presentation have nothing to disclose concerning possible financial/personal relationships with commercial entities that may have direct/indirect interest in the subject matter of this presentation.