

INTRODUCTION

• Cascade Reporting (CR) is a core strategy of reporting antimicrobial susceptibility test (AST) results ASPs can utilize to nudge frontline providers to choose appropriate, narrow spectrum, antibiotics when possible

STUDY AIM

 To evaluate the impact of CR on the consumption of fluoroquinolones (FQs) and carbapenems

METHODS

- Study type: Quasi-experimental
- Study duration: April 2017-March 2019
- Setting: 399-bed tertiary care VAMC in Richmond, Virginia
- CR algorithms were developed by genus of bacteria based on the following:
 - Local antibiogram
 - Practice guidelines for infectious diseases
 - Multidisciplinary team
- Aggregate facility-wide data was extracted from CDC's NHSN AU module as antimicrobial days of therapy per 1000 days present for 1 year pre- and post-implementation of CR
- Analysis:
 - *t* test to determine difference in antimicrobial consumption after CR
 - Linear mixed models accounting for seasonal and random effect to compare slope

Impact of Cascade Reporting of Antimicrobial Susceptibility on Antimicrobial Consumption at a Veterans Affairs Medical Center

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ethoxazole with Trimethoprim			
Table 1: Mean Antimicrobial Utiliz	zation Pre- and Post-Cascade Rep	orting Implementation	
Outcome	Mean (SD) DOTs/1,000 DP in pre-period	Mean (SD) DOTs/1,000 DP in post-period	p-value
Oral Antimicrobials			
Amoxicillin/Clavulanate	13.86 (12.06)	20.23 (16.37)	0.001
Cefpodoxime*	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	0.065
Cephalexin	7.76 (9.08)	8.29 (10.18)	0.702
Ciprofloxacin	18.38 (15.59)	16.53 (14.72)	0.325
Levofloxacin	39.50 (26.64)	36.35 (24.75)	0.362
Moxifloxacin*	0.00 (0.00, 0.00)	0.00 (0.00, 1.33)	0.184
Trimethoprim/Sulfamethoxazole	10.15 (10.74)	10.76 (10.84)	0.654
IV Antimicrobials			
Ceftriaxone	30.41 (22.90)	28.27 (21.54)	0.390
Cefepime	6.98 (10.12)	19.01 (20.09)	<0.001
Meropenem	52.96 (43.83)	40.42 (32.97)	0.005
Piperacillin/Tazobactam	132.56 (73.70)	113.80 (67.28)	0.002





RESULTS

- After initiation of CR, mean monthly meropenem (p=0.005) and piperacillin/tazobactam (p=0.002) consumption decreased; cefepime increased (p<0.001).
- Slope of ciprofloxacin decreased by 2.16 DOTs/1000 DP per month (SE = 0.25, p<0.001)



CONCLUSIONS

- Implementing CR was associated with a statistically significant reduction in slope of ciprofloxacin use
- Mean meropenem and piperacillin/tazobactam use decreased post-CR, but the slope of consumption did not significantly change
- CR is a viable strategy that can be implemented by ASPs to reduce FQ and carbapenem consumption
- Further investigation is needed to determine the impact of CR on
 - appropriateness in reduction of FQ and carbapenem use
 - alternative antibiotic prescribing
 - resistance trends over time
- adverse drug events
- Clostridioides difficile infection rates