

A Practical Approach to Antimicrobial Stewardship Education: Engaging Infectious Diseases Trainees in Targeted Outpatient Provider Feedback Program

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BACKGROUND

- In 2016 a survey among infectious diseases (ID) program directors revealed that only 12% believed their fellows to be “very” or “extremely” well-prepared to initiate and build an antimicrobial stewardship program on completion of training.¹
- The Michael E. DeBakey VA Medical Center (MEDVAMC) has 11 satellite clinics, or Community Based Outpatient Clinics (CBOCs), ranging from 17 to 150 miles from the main medical center. The facility is a training site for Baylor College of Medicine ID Fellows. Fellows can choose the antimicrobial stewardship (AS) track during their second year.
- Azithromycin is the most commonly prescribed antibiotic at MEDVAMC CBOCs and accounts for 1/10th of all antibiotic prescriptions, the majority of which are for acute respiratory tract infection (ARI).
- The outpatient (OP) AS program identified a need to implement an initiative surrounding azithromycin prescribing and sought to design a learning experience for ID fellows to help with the implementation of the project.

OBJECTIVES

ANTIMICROBIAL STEWARDSHIP INITIATIVE OBJECTIVES:

- Provide general education regarding the appropriate management of acute respiratory tract infection to CBOC providers
- Utilize peer comparison reporting to provide individualized feedback to CBOC providers
- Reduce inappropriate prescribing of antibiotics for uncomplicated acute respiratory infections, specifically:
 - Unnecessary antibiotics for viral illness
 - Inappropriate antimicrobial selection for bacterial sinusitis and pharyngitis (i.e. azithromycin)

LEARNING EXPERIENCE OBJECTIVES FOR ID FELLOWS:

- Describe the CDC core elements of outpatient antimicrobial stewardship programs (ASPs)
- Understand regulatory requirements for outpatient ASP
- Review outpatient ASP disease-state priorities and strategies for intervention
- Compile antimicrobial utilization report cards using existing data sources
- Conduct an outpatient ASP intervention

METHODS

LEARNING EXPERIENCE DESIGN/INTERVENTION

- Week 1**
 - Intro to OP AS didactic lecture
 - Review of available data sources and dashboards
 - Fellow is assigned a clinic
- Week 2**
 - Review clinic-level antimicrobial utilization
 - Develop educational presentation for all clinic providers
 - Identify top 3 antibiotic prescribers at assigned clinic
- Week 3**
 - Deliver educational presentation (virtual)
 - Create antibiotic report cards for top prescribers
- Week 4**
 - Share peer-comparison antibiotic report card with top prescribers
 - Provide one-on-one individualized feedback to top prescribers in a 10-minute virtual meeting

ANTIMICROBIAL UTILIZATION METRICS

“Azithromycin Prescribing Rate” and “Azithromycin Index” were used as surrogates for ARI-related antibiotic utilization.

Azithromycin Prescribing Rate:
Number of Azithromycin prescriptions per 1,000 unique patients. A unique patient is defined as a VA patient with at least 1 prescription filled through a VA pharmacy. **This metric accounts for antibiotic fills at VA Pharmacies only.**

Azithromycin Index:
Number of Azithromycin Prescriptions/Total Number of Antibiotic Fills. **This metric accounts for antibiotic fills at VA Pharmacies and Non-VA Pharmacies.**

Available VA and Non-VA Data Sources and Dashboards: VA National Acute Respiratory Tract Infection Campaign Dashboard, VA Outpatient Antibiotic Utilization Dashboard, Heritage Health (Third Party) Pharmacy Claims

RESULTS

Clinic Code	Azithromycin Fills per 1,000 Unique Patients by Fiscal Year Quarter								
	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022
1	3.45	6.96	4.58	4.14	1.27	1.54	0.53	0.53	--
2	0.82	0.40	0.53	0.39	0.38	0.74	1.52	0.65	0.66
3	1.12	1.28	2.69	3.94	6.00	4.44	11.69	10.87	9.12
4	0.96	2.26	2.05	0.97	1.60	2.18	3.04	3.70	2.79
5	--	--	0.65	0.64	--	1.87	--	--	0.63
6	1.68	1.84	0.55	0.18	0.52	0.17	0.16	0.32	0.31
7	0.58	--	--	0.51	--	--	--	--	0.52
8	2.12	1.58	2.14	1.37	1.76	2.32	2.67	1.50	0.91
9	1.12	0.67	0.86	1.01	0.59	2.62	1.68	1.47	1.42
10	--	--	--	--	--	--	1.39	--	0.93
11	--	--	--	7.18	--	--	2.19	--	0.86
Total	0.79	0.97	0.98	0.92	0.95	1.11	1.76	1.49	1.26

-- No VA Pharmacy Data, or Zero Azithromycin prescribed through VA Pharmacy

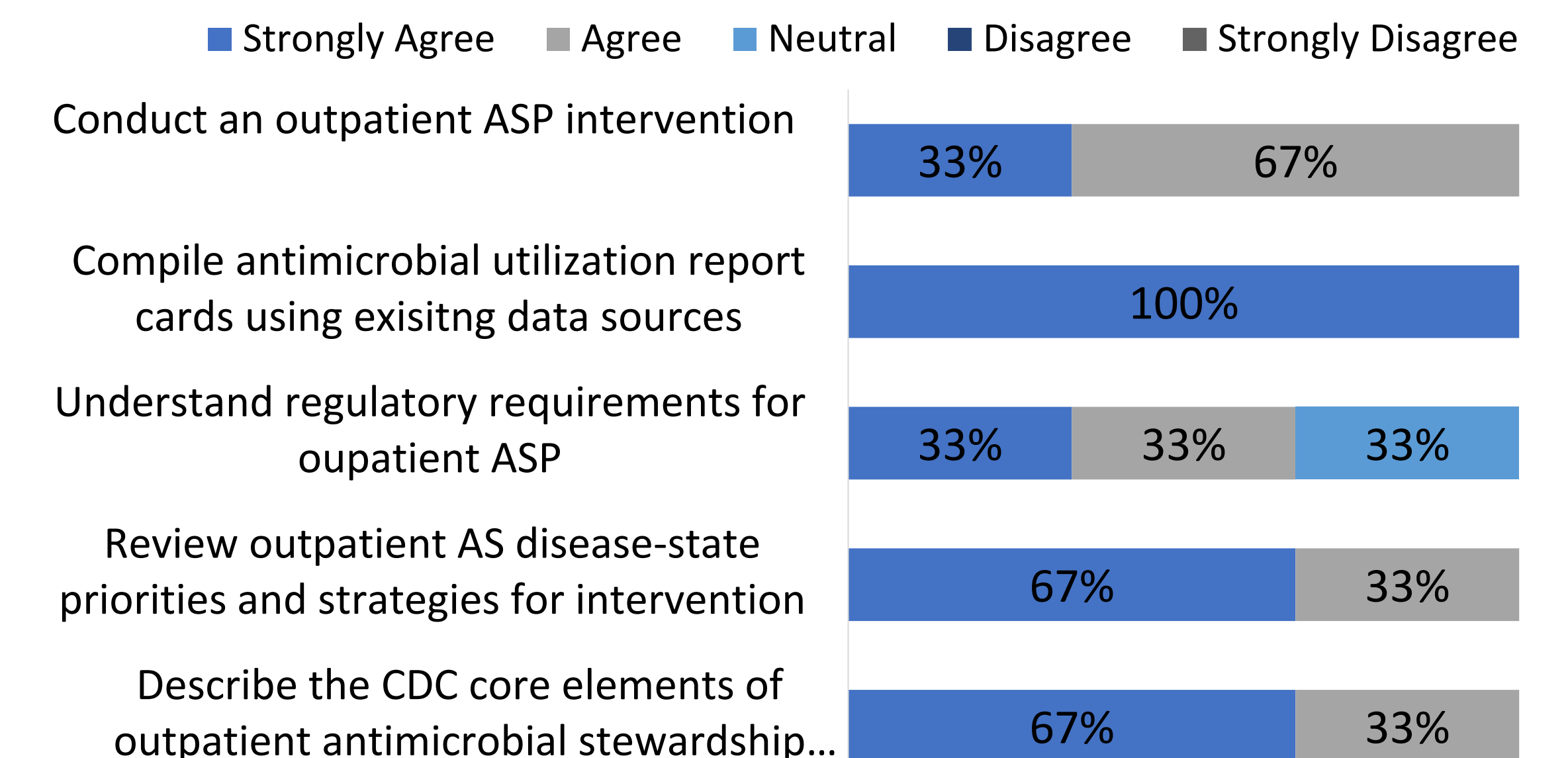
Intervention Clinic
Pre-Intervention

Intervention
Post-Intervention

RESULTS

Clinic Code	Intervention Month, Year	Azithromycin Index	
		Pre-Intervention Azithromycin Index	Post-Intervention Azithromycin Index
1	Sep-21	0.26	0.15
2	Feb-22	0.19	0.13
3	Mar-22	0.18	0.17
4	May-22	0.1	Data not available

ID Fellows Post-Learning Experience Survey Results



CONCLUSION

- ID Fellows agreed/strongly agreed that they were able to conduct an outpatient AS intervention after completion of the OP AS learning experience.
- Azithromycin prescribing rate and azithromycin index decreased in all CBOCs receiving the AS intervention.
- A reduction in azithromycin prescribing rate was also observed at other clinics and is likely multifactorial (seasonal changes in ARI visits/prescribing, general AS education/awareness, expansion of OP AS activities).
- The engagement of ID fellows in outpatient stewardship activities was mutually beneficial.

REFERENCES

- Luther VP, Shnekendorf R, Abbo LM, et al. Antimicrobial stewardship training for infectious diseases fellows: program directors identify a curriculum need. *Clin Infect Dis.* 2018;67(8):1285-1287.

AUTHOR'S DISCLOSURES

The authors have no conflicts of interest or financial relationships to disclose.