Reducing Antibiotic Overuse in Urgent Care Centers for the Treatment of Acute Respiratory Infections

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BACKGROUND & PURPOSE

- Antibiotic overuse is a known contributor to antimicrobial resistance (AMR).
- Antibiotics are commonly prescribed in urgent care centers (UCCs) for viral acute respiratory infections (ARIs).
- Assess the effectiveness of a multifaceted antibiotic stewardship program (ASP).

AIMS

AIM 1: Decrease the rate of inappropriate ABX use for the treatment of ARIs by 10% within 3 months of the ASP

AIM 2: Determine the impact of an ASP on AMR knowledge & attitudes among urgent care providers

AIM 3: Explore the barriers to ARI guideline adherence and the impact of COVID-19 on antibiotic prescribing rates

INTERVENTION

METHODS

- **Design:** Quality improvement (QI) project using a Quasi-experimental study
- **Setting:** 7 urban urgent care centers in Denver Colorado,
- **Sample:** Providers' (MDs, NPs, PAs); Adult patients seeking care for ARIs
- **Intervention:** ASP education, 1-hour PPT presentation, ASP tools; exam room modifications.
- **Data Collection Time Points:**

  ARI prescription rates:

  Time 1 (T1): Pre-intervention (Non COVID)

  Time 2 (T2): Pre-intervention (+ COVID)

  Time 3 (T3): Post-Intervention
- **Outcome Measures:** Antibiotic non-responsive prescription rates for ARIs; Impact of ASP on UCC providers knowledge, attitudes and barriers to prescribing (adapted MITIGATE survey at T2 and T3).
- **Data Analysis:** Descriptive statistics, proportional prescription rates, chi-square tests (alpha <0.05), thematic content analysis on knowledge & attitudes, impact of COVID-19 on prescribing behavior, and ASP preferences.

RESULTS

- **Provider:** 18; MD (22%), NP (28%), PA (50%)

  UCC experience, Ave. 4.92 yrs. (SD 4.61)
- **Patient:** 725 ARIs (T1= 191; T2= 224; T3= 310)

  Mean age = 36.09 (13.1) years; % Female = 53.9

RESULTS

	All ARIs	Total Non-Covid ARIs	Non-COVID ARIs		Total Covid ARIs	COVID ARIs	
Timepoints & Testing	**Total, N**	**Total, N**	**Prescribed ABX N(%)**	**Inappropriate ABX Rx N(%)**	**Total, N**	**Prescribed ABX N(%)**	**Inappropriate ABX Rx N(%)**
T1:	191	NA	104 (55%)	**82 (78.8%)**	--	--	--
T2:	224	109	61 (56%)	**48 (78.6%)**	14 (6.3%)	0 (0%)	0 (0%)
T3:	310	123	23 (18.7%)	**7 (30.4%)**	36 (11%)	2 (5.6%)	0 (0%)
Proportion	Reduction of Inappropriate ABX Rx Rate **{(78.8-34.4/78.8} * 100 = 61.42 %**						
Chi-Square: Significant	T2/T3 Non COVID ARI ABX Rx: **66.6% decrease**, X^2 (1 df, n=232) = 33.15, $p < 0.05$.						
Chi-Square: Significant	T2/T3 Non COVID ARI **inappropriate** ABX Rx: **61.4% decrease**, X^2 (1 df, n=84) = 15.14, $p < 0.05$						
Chi-Square: Non-Significant	T2/T3 Total ARI + COVID ABX Rx: X^2 (1 df, n=534) = 3.8, $p = 0.05$.						

	MITIGATE ASP SURVEY	Themes	Illustrative Quotes
PRE	**AMR is a public health threat**	n=18/18 (100%) agreement	
	Barriers to Prescribing	Patient expectations for ABX Rx (93%) & Concerns with Patient Satisfaction Score (71%); Only 14% reporting COVID-19	"Getting help while the patient is waiting (with posters and patient handouts) goes a long way in reducing misuse of antibiotics."
	Context for Non-Adherent ABX Rx	Comorbidities (n=5, 28%); PE (n=5, 28%); HPI (n=3, 17%); Delayed Rx (n=2, 11%); None (n=3, 17%)	"When an individual has multiple concerning comorbidities including diabetes, smoking, a history of requiring ABX for prior disease process, history of hospitalization for similar process that has progressed (i.e., bronchitis to PNA)."
	Impact of COVID-19 on your ABX prescribing pattern	No Change (n=6, 33%); Decrease (n=4, 22%); Decrease 2/2 Pt awareness (n=4, 22%); Some Increase/Decrease (n=3, 17%); Increase (n=1, 6%)	"Some increase like with bronchitis because I hesitate to use steroids. In other circumstances decrease because people are preoccupied with covid screening and unconcerned about antibiotics."
POST	**AMR is a public health threat & ASPs Improve ABX Rx**	n=14/14 (100%) agreement	
	How the ASP changed your prescribing	Reinforces AS knowledge (n=6, 42.9%) Improves Rx Accountability (n=4, 28.6%) AS Communication Patients (n=4, 28.6%)	"It has reinforced prior philosophy on antibiotic prescribing and given me more power in discussing with patients." "I am now more aware of antibiograms in our area and will avoid meds which show considerable resistance patterns."
	Providers preferences for optimizing ABX use in UCC	Continued online ASP education (n=8, 57.1%); In-person ASP (n=3, 21.4%) Consistent ASP communication (n=2, 14.3%); BPA alerts on EHR (n=1, 7.1%)	"Continue with ASP education, signs in rooms, posters and patient education handouts for clinic work areas." "Great initiative and timing with a pandemic. Small clinic meetings when allowable"

CONCLUSION

ASPs are feasible and highly effective in decreasing (61.4% in this study) inappropriate antibiotic prescriptions in urgent care for the treatment of ARIs

SUSTAINABILITY

- Leveraging timely and multifaceted ASPs that are culturally sensitive to UCC milieux will affect quality patient care through safe antibiotic use.
- Maximizing online education & Exam Room ASP tools are preferred by UCC providers.