

# Comparing Antibiotic Prescription Practices, and Provider's Perceptions of Such Rates, Among Urgent Care and Non-Urgent Care Clinicians at One of the Nation's Largest Federally Qualified Health Centers.

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## INTRODUCTION

The utilization of antibiotics in clinical settings can be tantamount to a clinician's ability to treat a patient, but their adverse effects can cause one to worry about their overall benefit. These side effects include adverse drug reactions and increased *C. difficile* infections. Patients who are unnecessarily being exposed to antibiotics are at risk for these adverse effects with no perceived benefit, and they also contribute to the rise of antibiotic-resistant organisms. The CDC estimates that over 30% of antibiotic prescriptions in The United States are non-essential – that number is estimated to be near 50% when evaluating outpatient clinics alone. Altamed, one of the nation's largest federally qualified health centers, operates many outpatient clinics across Southern California and serves the primary care needs of a high-volume, socioeconomically disadvantaged, predominantly Hispanic population. Consequently, Altamed is at the cross-section of a unique healthcare system, and the growing-minority population within the United States.

**Hypothesis:** Physicians overestimate the success of their prescription practices largely due to reflection bias and limited feedback.

## METHODS

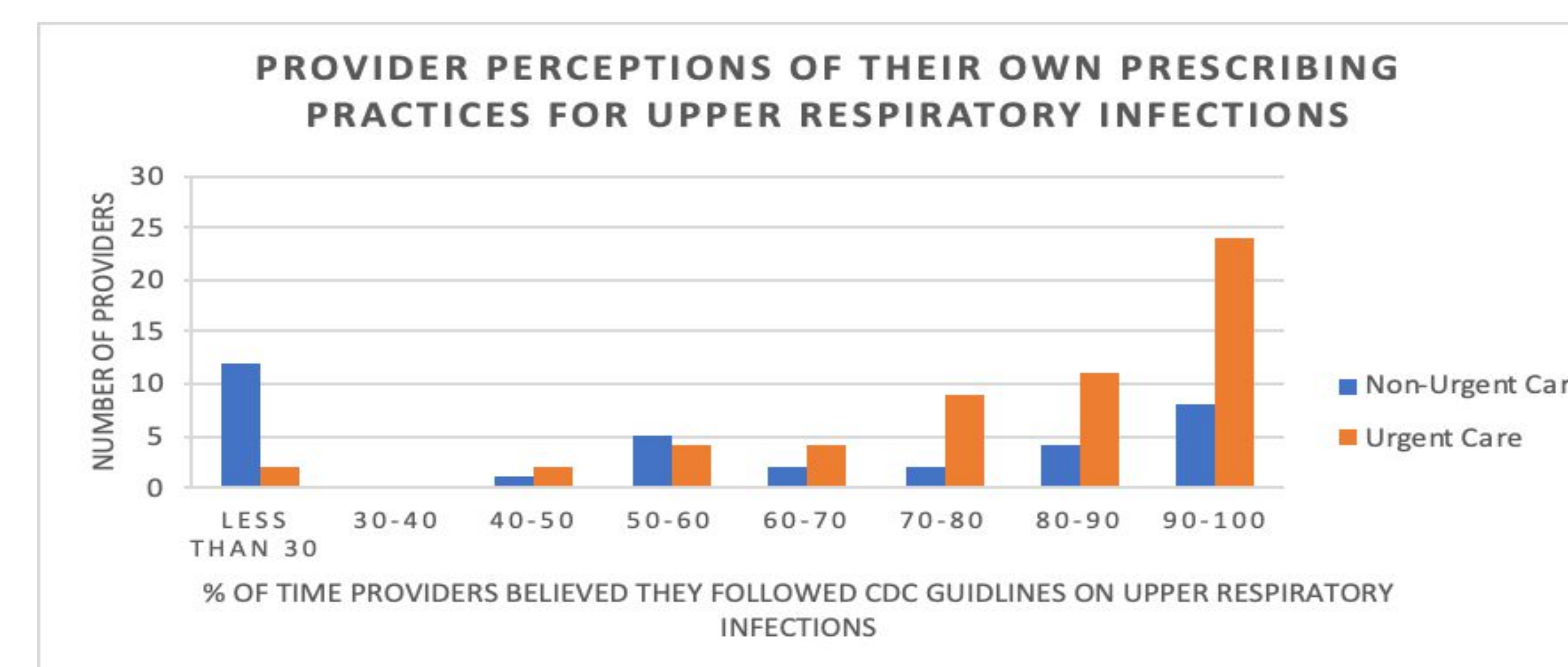
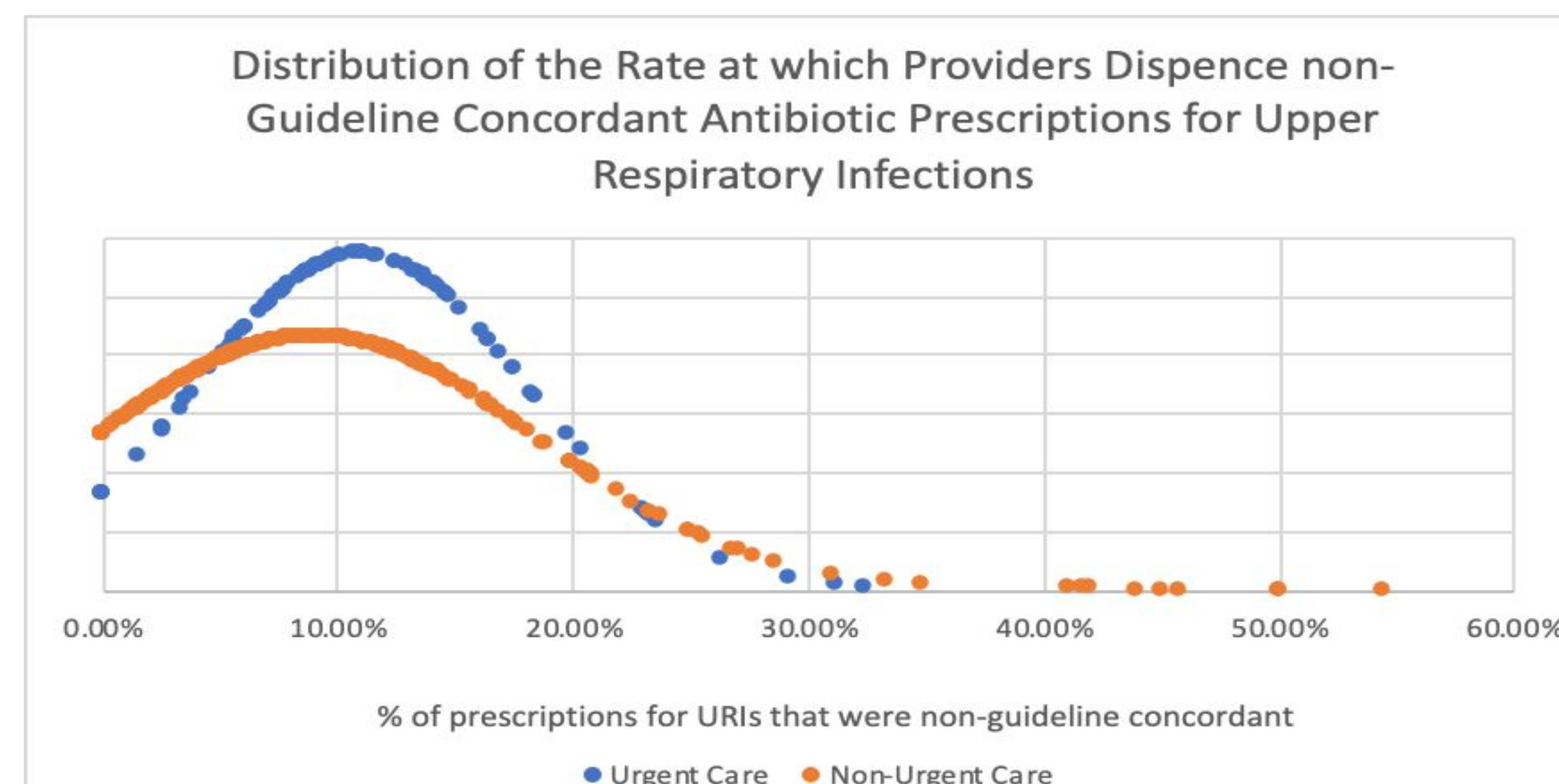
A retrospective evaluation of the inappropriate antibiotic prescription rate for Upper Respiratory Infections (URI) among all providers at Altamed (n=400) was performed.

- The scope was limited to cases of uncomplicated acute bronchitis & URIs that occurred between the dates of January 2018 to December 2018. ICD 10 codes identified URIs, with exclusion criteria limiting for confounding variables, charting errors, and dual diagnoses.
- Data was compiled to ascertain inappropriate prescription rates by both individual providers and by clinics. Both were analyzed by looking at a month-to-month rate as well as an overall rate of inappropriate antibiotic prescribing practices.
- A summative analysis was completed at a holistic level to compare the AltaMed inappropriate prescription rate to that of both non-FQHCs clinics and to that of the predicted national rate of inappropriate antibiotic usage rate of 30% as defined by the CDC.

Providers' perceptions of their prescription practices as well as the mechanisms of said habits were analyzed using a de-identified 17 question, likert-scale assessment (n=90).

- The 17-question survey included both quantitative and qualitative assessment questions
- Additional questions were included to ascertain provider views on antibiotic stewardship, antibiotic resistance, drug education, and resources available to them regarding the matter

## RESULTS



Provider's Perception of their own Antibiotic Prescription Practices and of Antibiotic Stewardship			
Question	Non-Urgent Care	Urgent Care	P-Value
In order to improve patient satisfaction, I sometimes prescribe antibiotics even when I don't feel they're necessary.	1.74	2.13	0.0683
I use the antibiogram information to inform my prescribing practices.	1.82	2.57	0.0007
I know how to access the AltaMed-specific antibiogram (antibiotic susceptibility pattern)	1.85	2.29	0.0510
Antibiotics are beneficial for treating uncomplicated acute bronchitis.	2.00	1.77	0.2718
disease might be of bacterial etiology, it is preferable to prescribe an antibiotic.	2.74	2.65	0.7301
Antibiotics are overused at this clinic	3.24	3.36	0.5813
Antibiotic Resistance is a problem in my community	3.76	4.00	0.2848
I would like to get feedback on my antibiotic prescribing practices.	3.88	3.82	0.7629
Antibiotic stewardship programs reduce the risk of developing antimicrobial-resistant organisms.	4.15	4.27	0.4479
I only use antibiotics to treat bacterial infections.	4.21	4.21	0.9634
I would like more education on antibiotic stewardship programs.	4.29	4.13	0.3332
I support the implementation of an antibiotic stewardship program.	4.35	4.30	0.7666
I follow CDC guidelines in prescribing antibiotics for uncomplicated, Upper Respiratory Infections at least 70% of the time	4.38	4.41	0.8749

Likert Scale Assessment, 1 - Strongly Disagree, 3 - Neutral, 5 - Strongly Agree, Highlights reflect answers that are non-concordant with antibiotic stewardship

## RESULTS (CONT.)

- Of the encounters for URI seen by urgent care providers, 11.09% had inappropriate antibiotic prescriptions written.
- This is significantly different from encounters by non-urgent care providers, where 9.13% were deemed inappropriate (p=0.016).
- Despite this, providers were not uniform in believing their own antibiotic prescription rates to be as successful, with many estimating that their rate of CDC guideline concordance to fall below 90%.
- In survey responses, providers in both urgent and non-urgent care setting were more likely to desire feedback on their prescription habits, believe that antibiotics were overused in their clinical environment, and admit to sub-optimal use of a local antibiogram

## CONCLUSION AND DISCUSSION

- Providers were more likely to overestimate their inappropriate antibiotic prescription practices at Altamed which could be attributed to a variety of factors, including greater media attention to the issue and limited clinical feedback.
- The greater rate of inappropriate antibiotic prescription among urgent care providers demonstrates a more concentrated need for education among a sub-set of providers.
- In regards to antibiotic stewardship, providers were not as aware of either their prescription habits nor regular use of an antibiogram, both feasible interventions to reduce inappropriate antibiotic prescription rates at Altamed.
- It should be noted, however, that the clinic's rate of 11.09% is already considerably lower than that reported by the CDC as the national average (30%). This could be due to a variety of variables including ICD10 code usage, provider culture, and patient self-selection. A study incorporating different clinics and providers at a larger diversity of sites and institutions should be studied.
- Our study limitations included uneven or incomplete charting, the narrow time frame of the study, and the limited survey response rate of Altamed providers.

## FUTURE DIRECTIONS

Future directions of this project will be to use the data compiled to analyze inappropriate antibiotic prescribing rates amongst various specialities and practitioners. One such example of an analysis that we hope to conduct in the near future is the prescribing rates of pediatricians against those who treat only adult patients. Moreover the information ascertained from the study are being incorporated in the implementation of an antibiotic stewardship program at Altamed.