

# Antibiotic Stewardship to Improve Antibiotic Prescribing for Acute Respiratory Tract Infections in Primary Care

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## Background

- Unnecessarily antibiotic prescriptions for ARTIs in primary care account for 30% of cases in the United States<sup>3</sup>
- This highlights the significance of an antibiotic stewardship education program for providers that will improve antibiotic prescribing and use and, thus, patient health outcomes

## Purpose & Aims

- To determine whether an evidence-based antibiotic stewardship education program and toolkit improve provider knowledge regarding antibiotic prescribing practices and reduce unnecessary prescriptions in a primary care setting

- Aim 1** • Increase **provider knowledge** about safe antibiotic prescribing for patients with ARTIs
- Aim 2** • Decrease **antibiotic prescription rates** for viral ARTIs
- Aim 3** • Determine the **feasibility** of a 12-week evidence-based antibiotic stewardship education program

## Methods

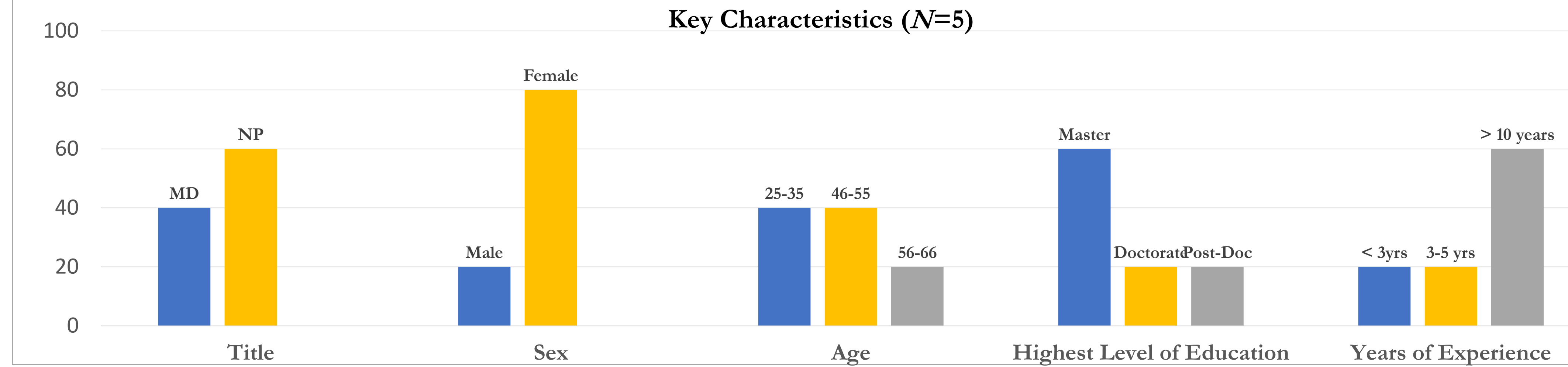
- Design: Pre and post-test design
- Setting: Primary care clinic
- Sample: Convenient sample of six providers
- Measure/Procedure



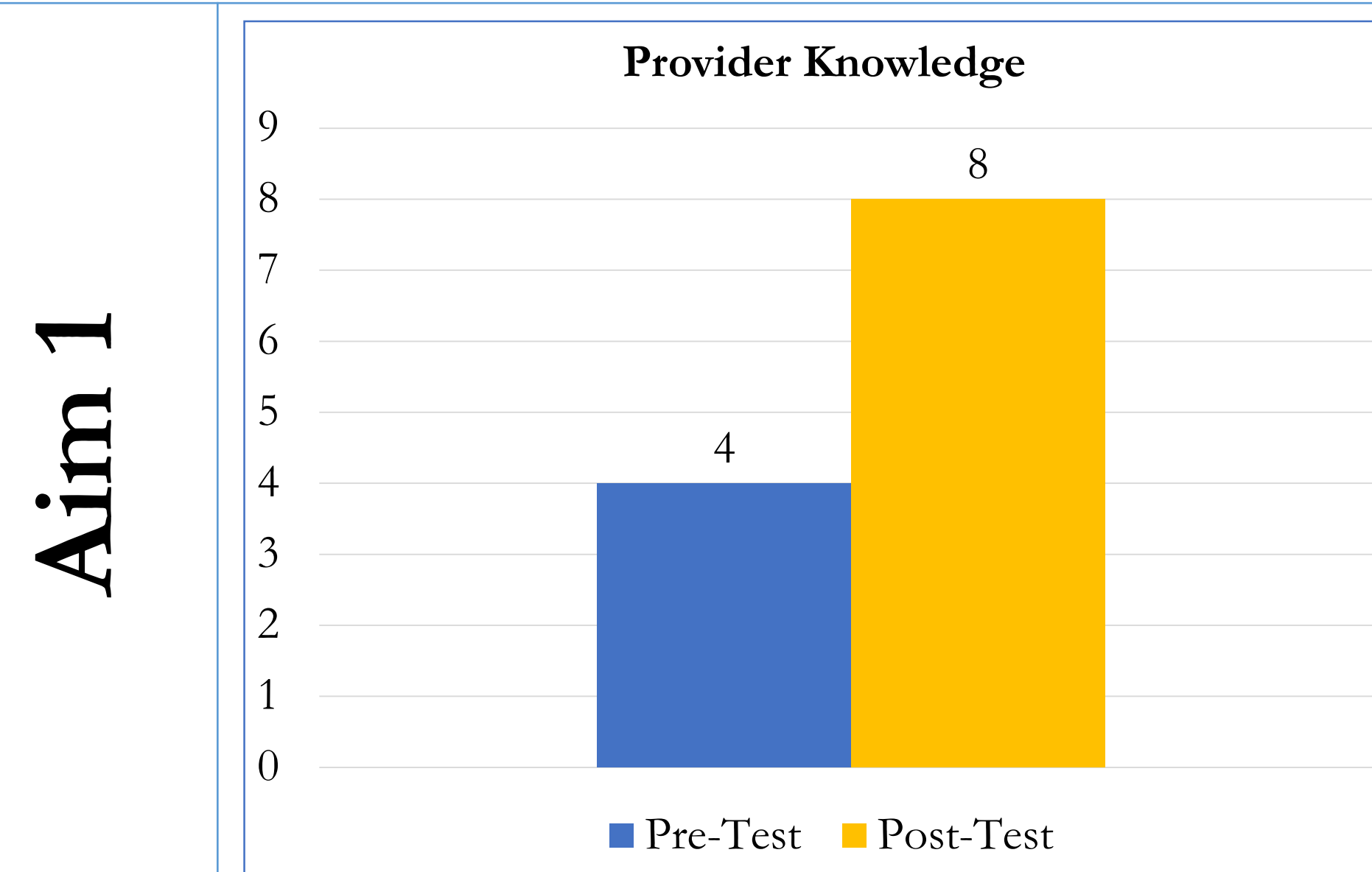
- Provider knowledge (Modified KAP survey)<sup>5</sup>
- Abx Rx rate (44 patients chart review)
- Provider knowledge (Modified KAP survey)<sup>5</sup>
- Abx Rx rate (44 patients chart review)
- Feasibility (FIM survey)<sup>7</sup>

## Demographics

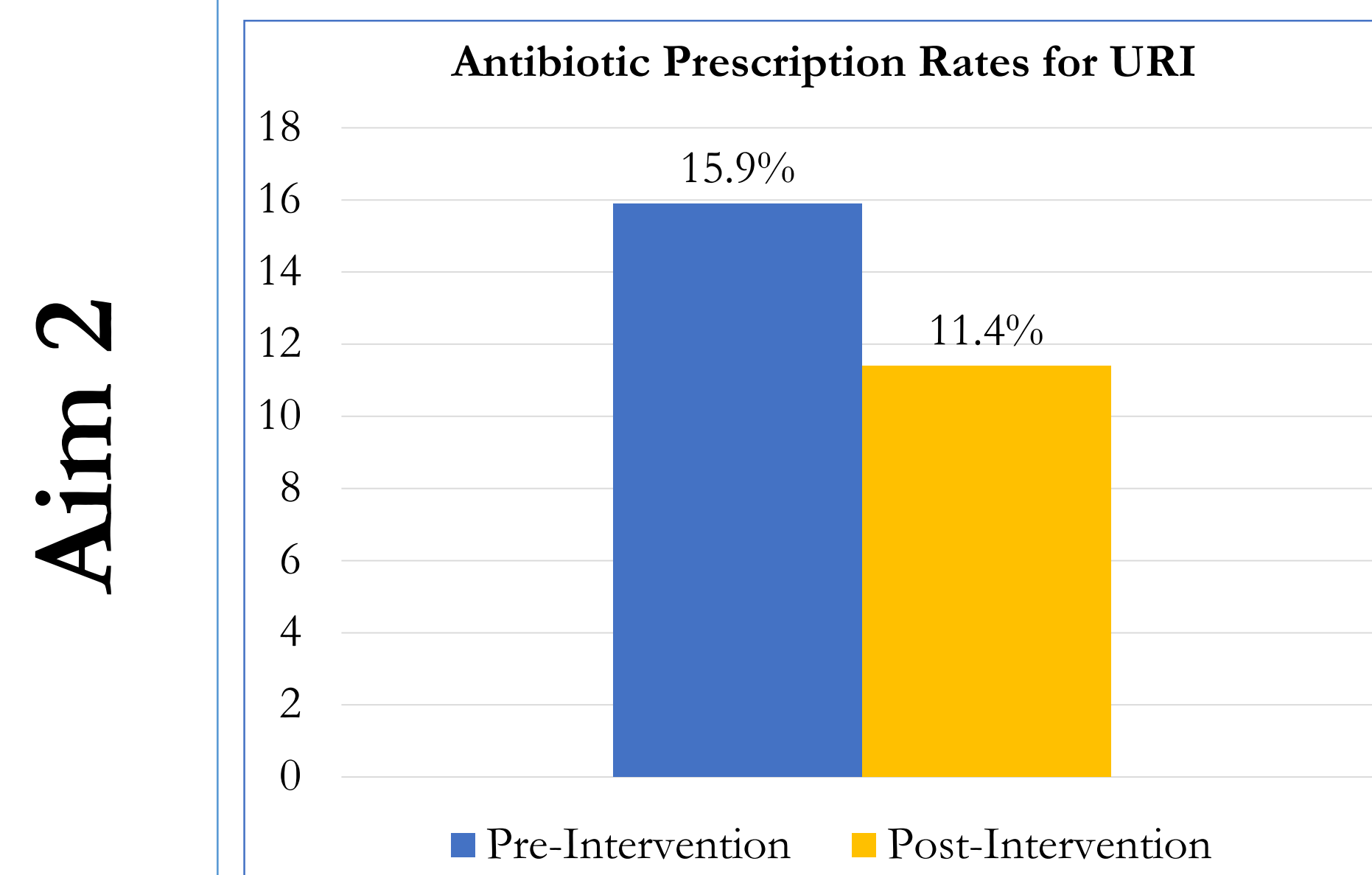
### Baseline Characteristics of Provider Participants



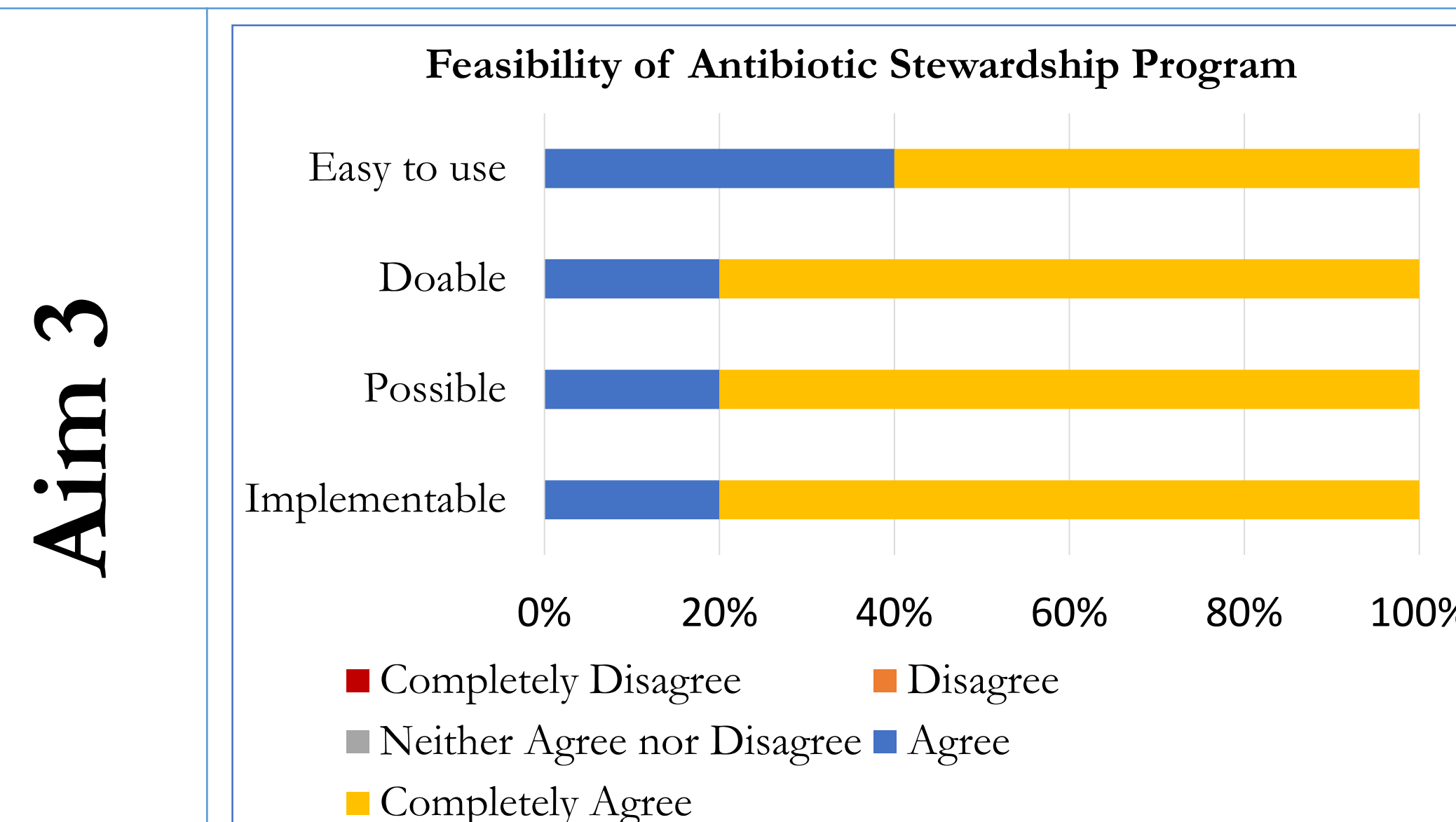
## Results



- Total score for provider's antibiotic knowledge increased by 4 in median
- Wilcoxon Signed Rank Test revealed statistically significant improvement in provider knowledge ( $Z = -2.060, p = .039$ )



- 4.5 % decrease in Abx Rx rate for viral ARTIs among patients  $X^2 (1, N=88) = 0.385, p = .5$
- Changes to provider's decision: 43% decrease in unnecessary Rx for viral ARTIs by the provider Mixed effect logistic regression model (OR = 0.57, 95% CI [0.15–2.12],  $p = .4$ )
- No statistically significant relationship between educational intervention and Abx Rx rates



- 80% completely agreed the program was Implementable, Possible, and Doable
- 60% completely agreed the program was Easy to Use

## EBP Intervention

- Antibiotic stewardship education
  - PowerPoint Presentation (zoom recording)<sup>4</sup>
  - Enhanced in week 5 and week 8
- Toolkit
  - EBP guidelines for treating patients with ARTIs<sup>2,6</sup>
  - CDC core elements of antibiotic stewardship<sup>1</sup>
  - Commitment letter<sup>3</sup>

## Discussion/Limitations

- Clinically significant reduction in Abx Rx rate
  - Suggests the value of provider education as a part of antibiotic stewardship program
- Strength
  - Comprehensive approach of intervention w/ multifactorial strategies
- Small Sample Size
  - May not be generalizable to other populations
  - High attrition (i.e., 1 attrition = 16%)
  - Low degree of anonymity

## Conclusion

- This project confirms on previous research on the efficacy of a multifaceted antibiotic stewardship educational intervention
- The project was found to be effective and highly feasible
- Future studies on a larger scale can build upon this to help establish antibiotic stewardship as a standard care practice for the treatment of ARTI patients and encourage appropriate antibiotic use.

## References

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