



Provider Education Paired with Peer Comparison Demonstrates Sustained Reduction in Overall Antibiotic Prescribing within a Veterans Affairs Primary Care System



Deanna J. Buehrle, PharmD¹, Nathan R. Shively, MD², Cornelius J. Clancy, M.D.^{1,3} and Brooke K. Decker, MD, CIC¹

(1)Veterans Affairs Pittsburgh Healthcare System, Pittsburgh, PA, (2)Division of Infectious Diseases, Allegheny Health Network (AHN)

(3)Division of Infectious Diseases, University of Pittsburgh Medical Center (UPMC), Pittsburgh, PA

Correspondence: Deanna Buehrle, PharmD
University Drive C 111E-U
Pittsburgh, PA 15240
Deanna.buehrle@va.gov

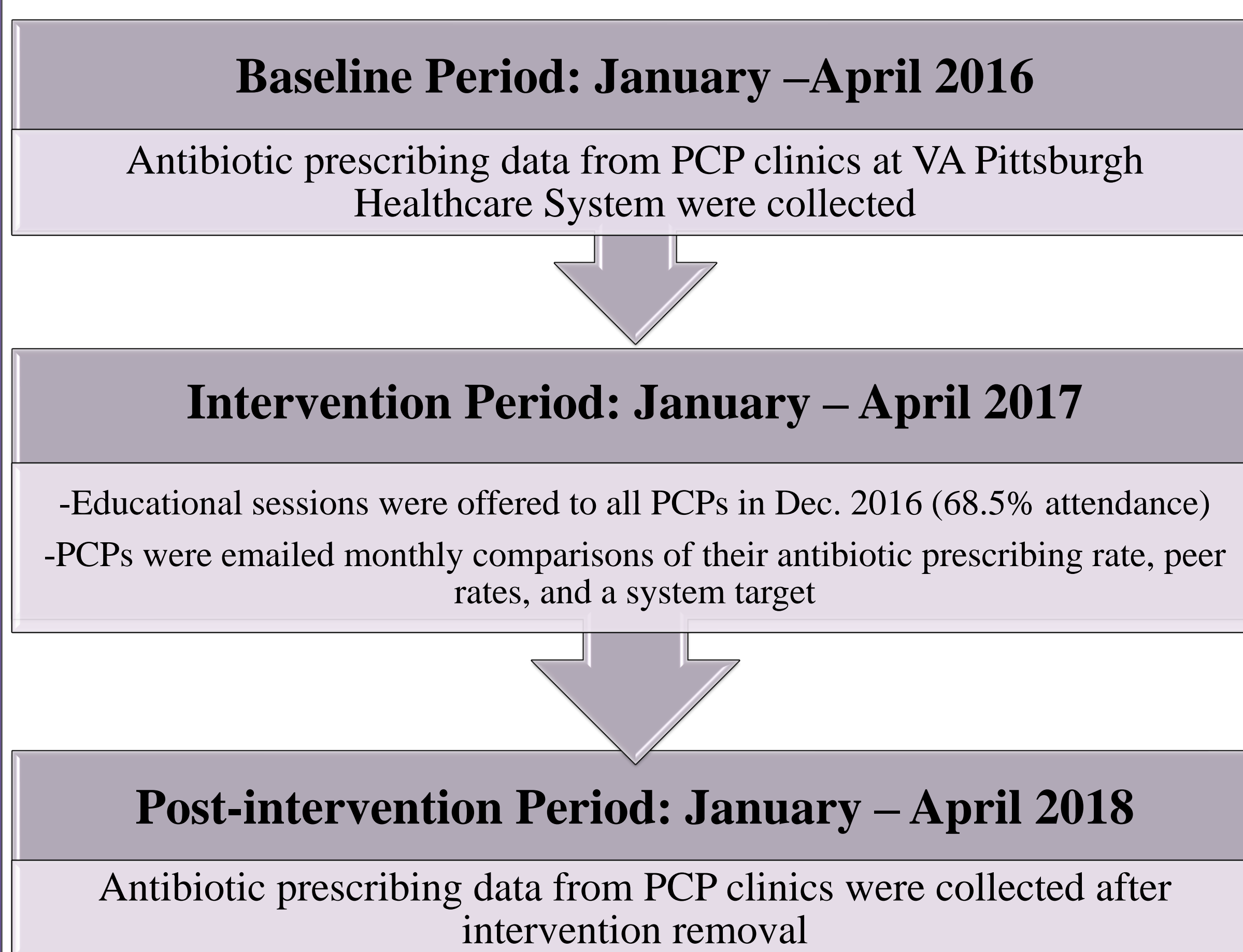
Background

- The majority of antibiotic expenditures in the United States occur in the outpatient setting.¹
 - Broad-spectrum antibiotic prescribing is rising in the outpatient setting.²
- While there exists a wealth of evidence on optimal inpatient antimicrobial stewardship program types for sustainability, the optimal outpatient antimicrobial stewardship program type is not well defined.
- A recent study noted that data regarding sustainability and scalability of outpatient antimicrobial stewardship interventions are limited.³

Objective

Evaluate the sustained effects of an outpatient antimicrobial stewardship program implemented within a Veterans Affairs (VA) primary care system that involved initial education and email-based monthly peer comparison of overall antibiotic prescribing rates

Methods



- Decision-support software was updated after the intervention to reflect stewardship team guidance.
- Random sample of prescriptions during the 3 periods were reviewed for adherence to consensus guidelines.
 - Excluded prescriptions with duration > 28 days
 - Indication, agent selection, and duration reviewed

Results

Baseline Period January – April 2016

- 65 PCPs caring for 40,734 patients

Intervention Period January – April 2017

- 73 PCPs caring for 41,191 patients

Post-Intervention Period January – April 2018

- 73 PCPs caring for 40,428 patients

Figure 1. Reduction in Total Antibiotic Prescriptions from Baseline to Intervention to Post-intervention Periods

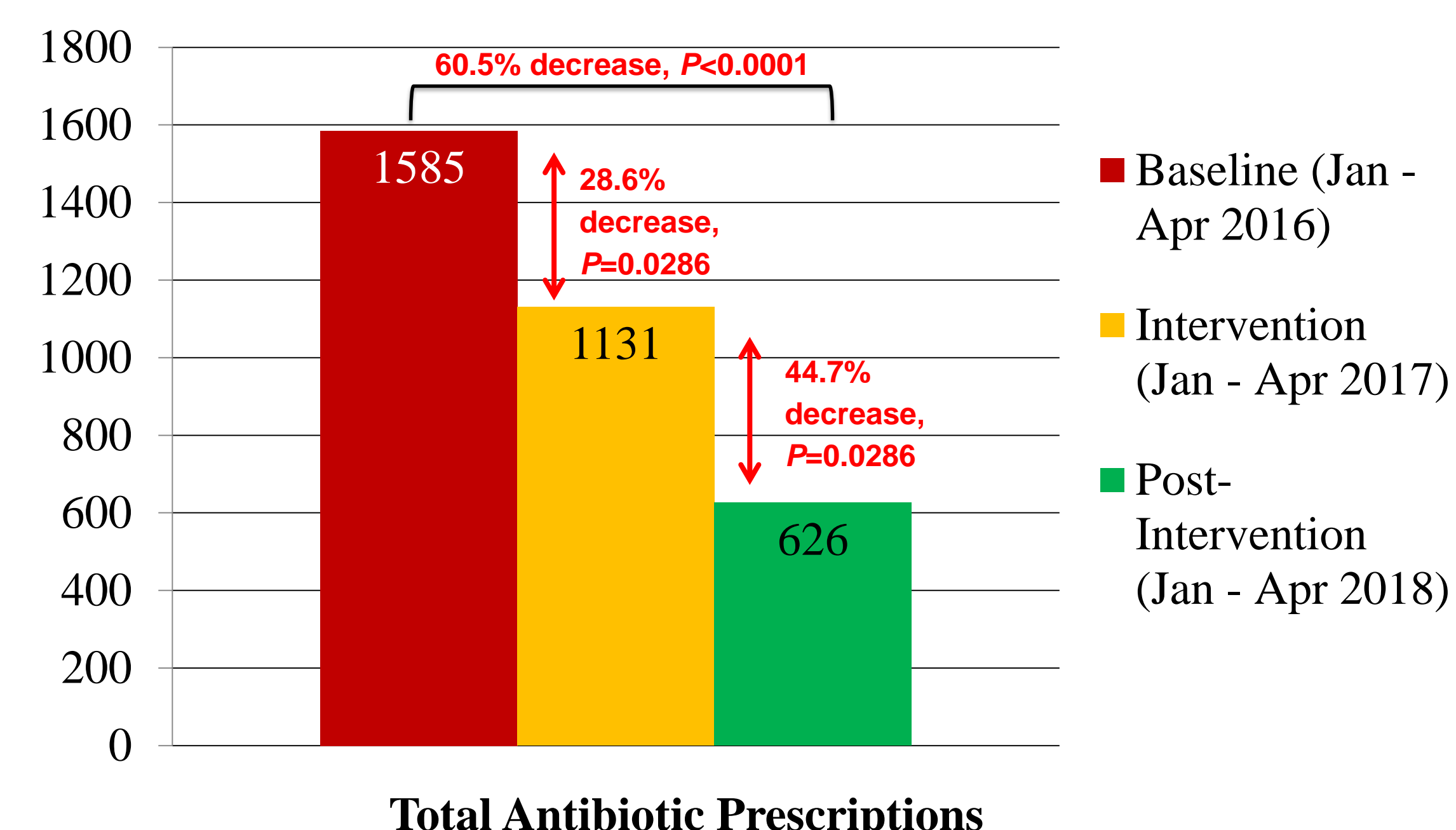
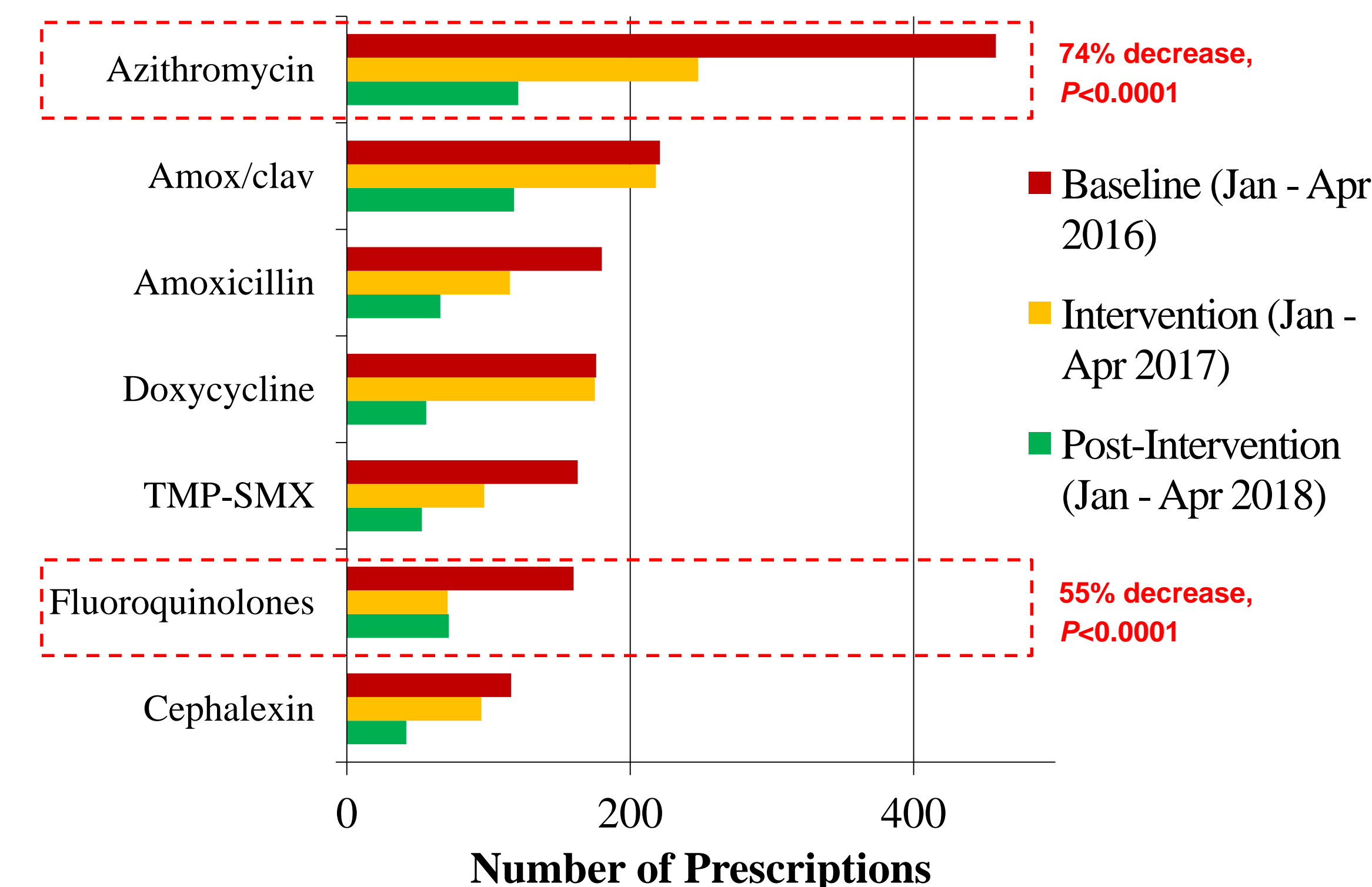


Figure 2. Reduction in the Most Common Prescriptions from Baseline to Intervention to Post-intervention Periods



Significant decreases were observed:

- Total antibiotic prescriptions between three periods
- Azithromycin use between three periods
- Fluoroquinolone use from baseline to the intervention period, and remained low

Results

Figure 3. Inappropriate* Antibiotic Prescriptions from Baseline to Intervention to Post-Intervention Period Overall and for the most Common Conditions among a Randomly Reviewed Subset.

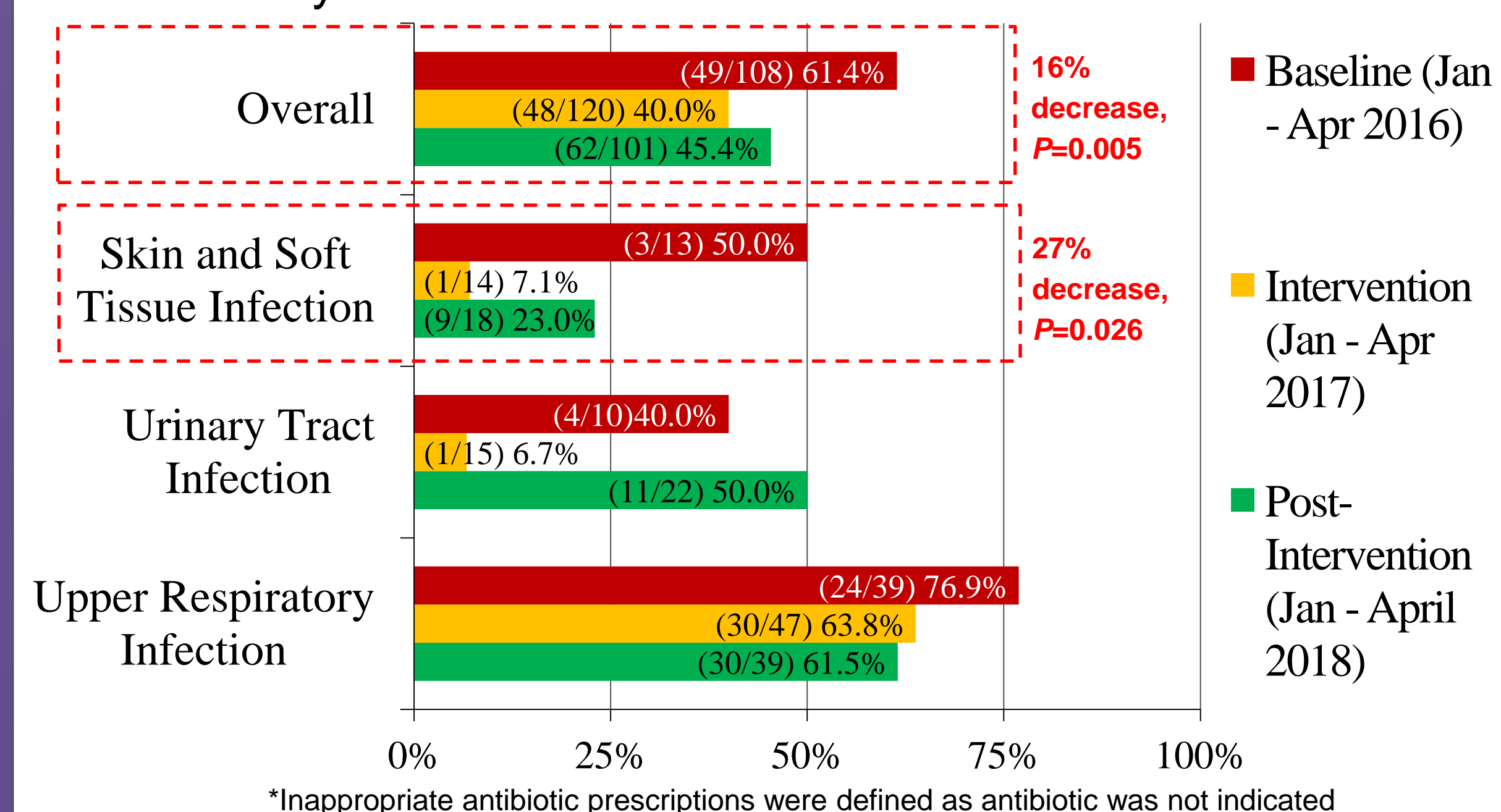


Figure 4. Total Antibiotic Prescriptions and Prescribing Appropriateness by Month during Baseline, Intervention, and Post-intervention Periods

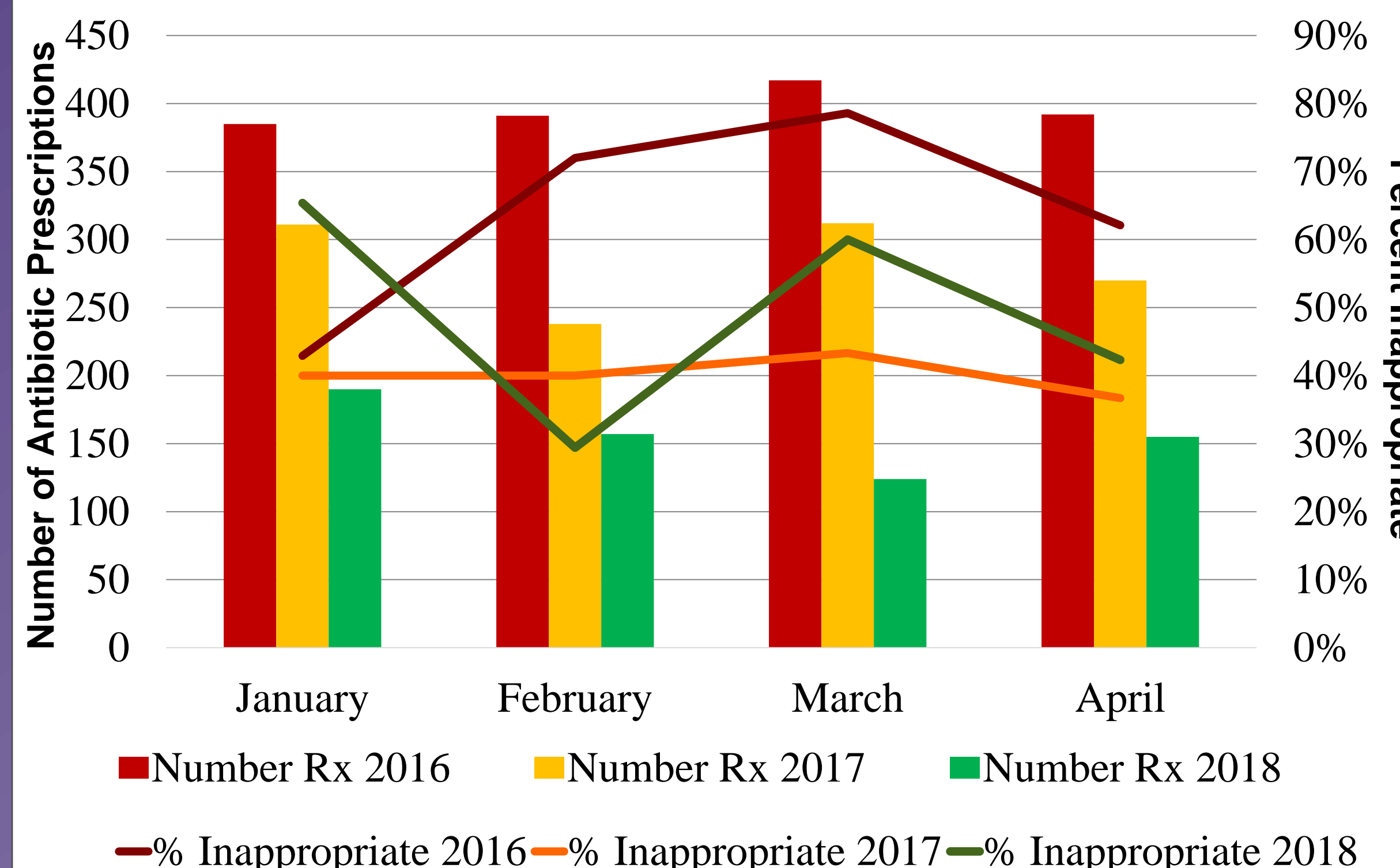
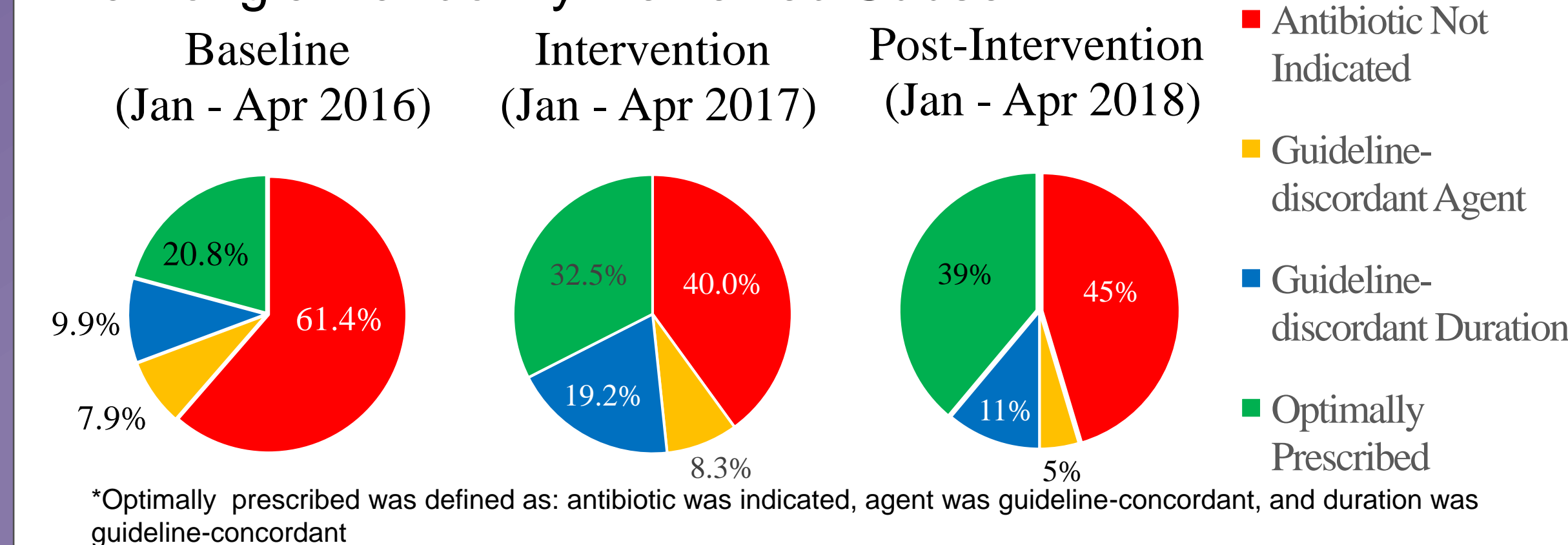


Figure 5. Increase in Optimally* Prescribed Antibiotics from Baseline to Intervention to Post-Intervention Periods among a Randomly Reviewed Subset.



Conclusions

A comprehensive stewardship intervention including provider education and peer comparison demonstrated a sustained reduction in overall antibiotic prescribing rates among PCPs.

- Though decreased overall antibiotic prescribing rates were sustained, the percentage of antibiotic prescriptions that were not indicated overall and for the most common disease states increased following intervention removal.
- However, the percentage of antibiotics that were optimally prescribed (i.e. antibiotic was indicated, agent was guideline-concordant, and duration was guideline-concordant) increased from baseline to intervention and from intervention to post-intervention.
- Decision-support software may assist in maintaining reduced prescribing rates.

Ongoing provider education and peer comparison may be required for sustained appropriateness of antibiotic prescribing.

- Improvements in appropriateness overall and for the most common disease states were observed during the intervention but rebounded following intervention removal.

Azithromycin and fluoroquinolones remain high-priority targets for outpatient stewardship programs.

Limitations

- Limited generalizability due to a single Veterans Affairs Healthcare System
- Appropriateness determinations assume accurate documentation
- No control group

Acknowledgments

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