

# Socioeconomic Status and Antibiotic Prescribing Patterns in a Children's Hospital Emergency Department

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## Introduction

Antibiotic resistance is a major public health problem in the United States resulting in significant morbidity and mortality<sup>1</sup>. Antibiotic prescriptions for dental issues may contribute to this problem while providing only temporary relief of the underlying oral health condition. Previous research suggests differences in prescribing patterns for pain management<sup>2, 3</sup>, but little is known about antibiotic prescribing patterns for pediatric patients. In addition, there is a gap in the literature regarding antibiotic stewardship instruction in dental and other health professional program education for non-traumatic dental conditions.

## Objectives

This study aims to characterize antibiotic prescribing patterns in a midwestern Children's Hospital Emergency Department for non-traumatic dental conditions. This study focuses specifically on the association between socioeconomic factors (insurance status, race, and ethnicity) and antibiotics prescribed outside the AAPD guidelines in the emergency department. We hope to better understand the association between socioeconomic status and antibiotic prescribing patterns by health professionals.

## Hypothesis

Patients with no insurance and public insurance will receive antibiotic prescriptions outside the guidelines more often than patients with private insurance. Also, white race will receive antibiotic prescriptions outside the guidelines less often than other races.

## Methods

- Outcome of interest: variables influencing deviation from recommended AAPD guidelines when prescribing antibiotics to children for non-traumatic dental conditions

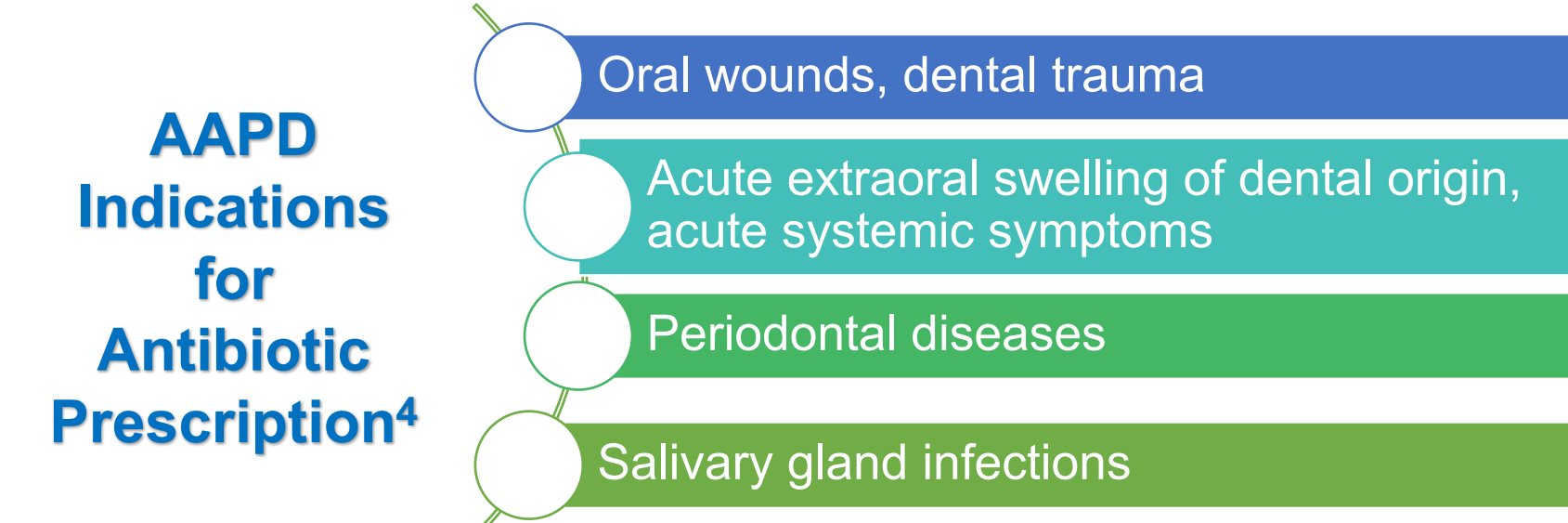


Fig 1: AAPD Indications to Prescribe Antibiotics for Children

- Chart Review (n=1,094) between 2013 and 2021 at Children's Hospital and Medical Center in Omaha, NE for patients ages 19 and younger

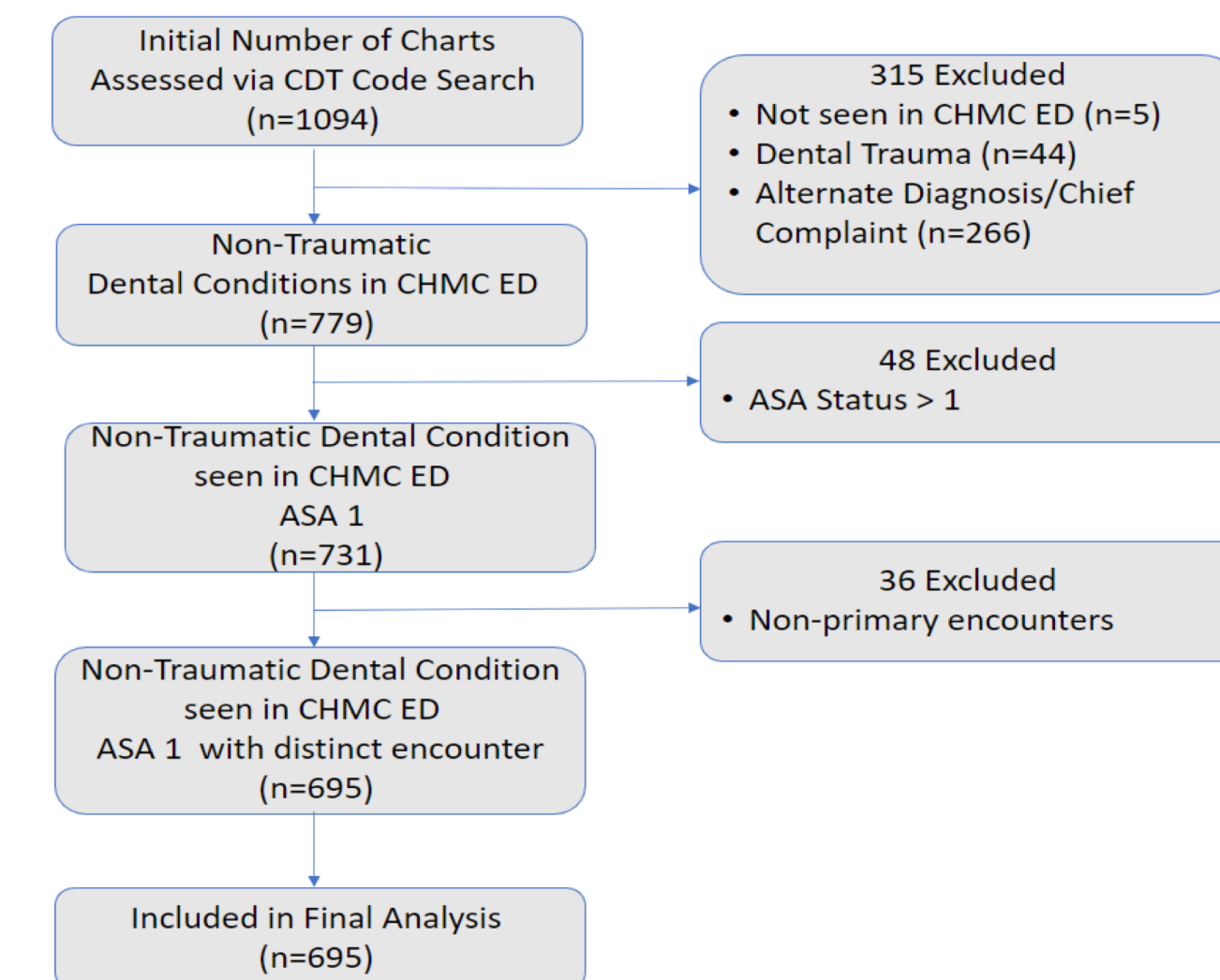


Fig 2: Inclusion criteria includes non-traumatic dental conditions, ASA 1 classification, primary encounters

- Within prescription guidelines (yes/no) variables were compared by socioeconomic factors (insurance status, race, and ethnicity) using Chi-Square tests run with SAS software version 9.4 (SAS Institute Inc., Cary, NC)
- Institutional Review Board Protocol # 0844-21-EP

## Results

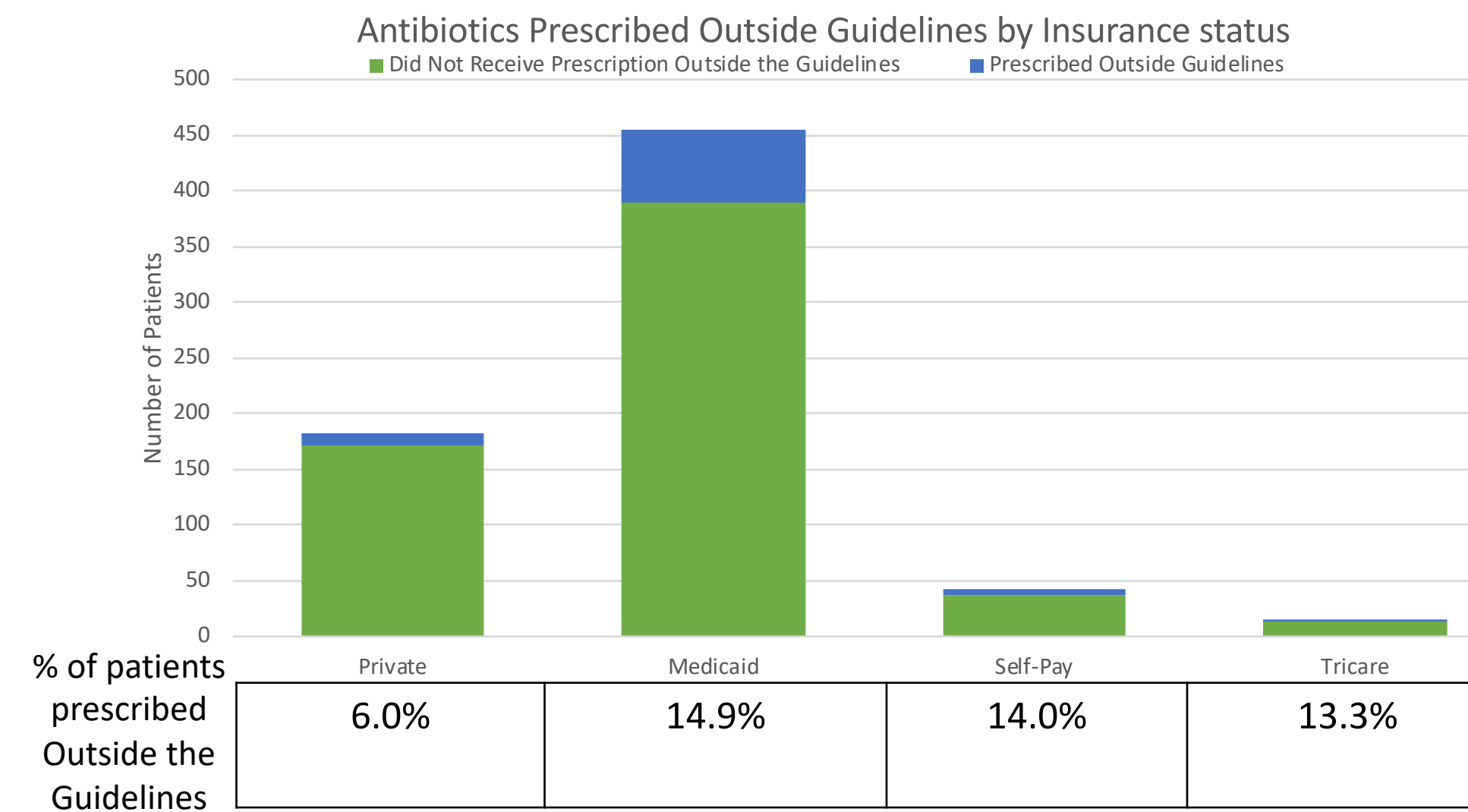


Fig 4: There was a significant association between insurance status and following guidelines ( $p = 0.04$ ). Patients with private insurance had the lowest proportion of antibiotics prescribed outside of guidelines (6.0%) while patients on Medicaid had the highest (14.9%).

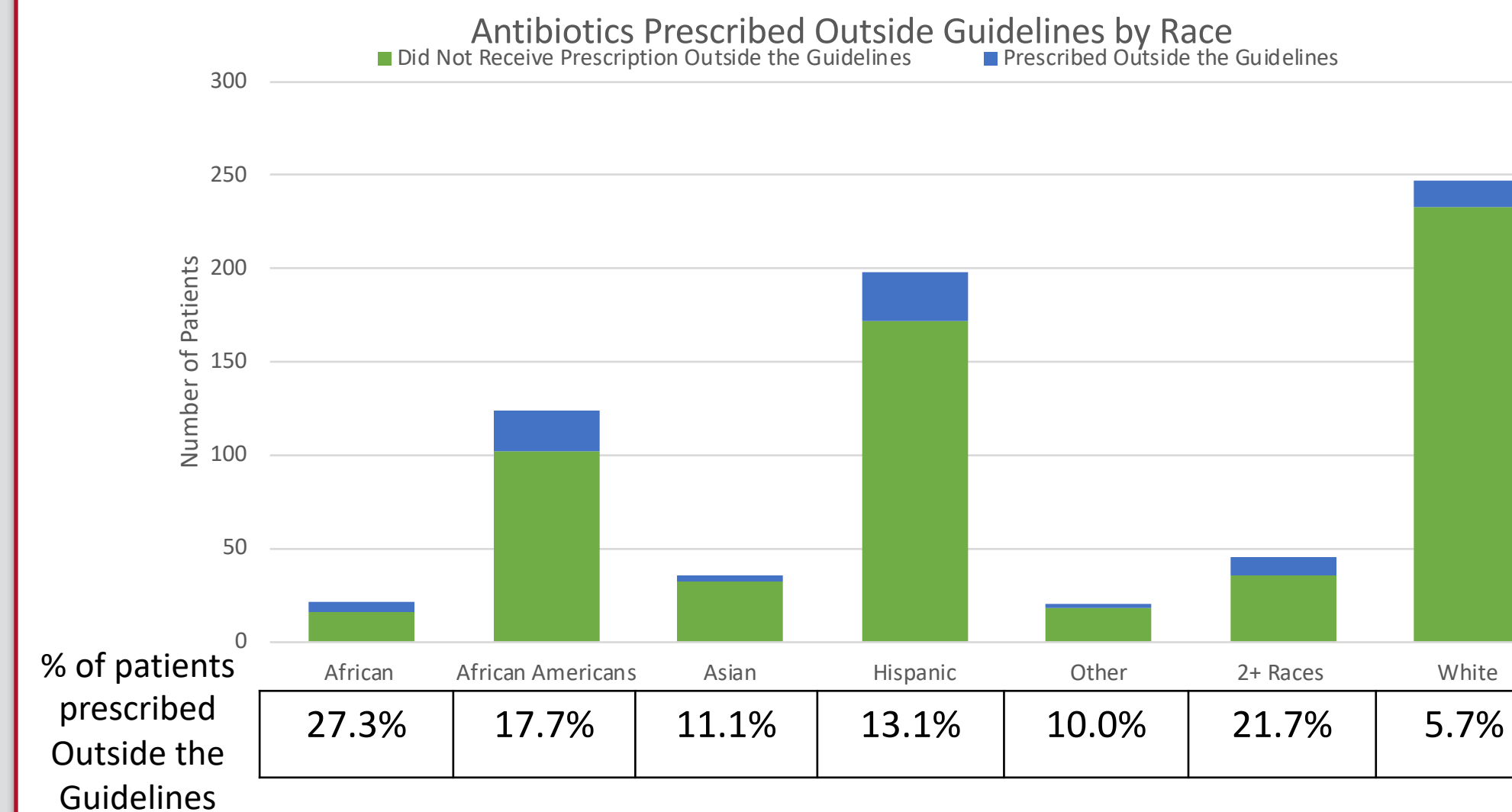


Fig 3: There was a significant association between race and following guidelines ( $p < 0.001$ ). White patients had the lowest proportion of antibiotics prescribed outside of guidelines (5.7%) while African patients had the highest (27.3%).

## Conclusions

- There is a statically significant association between insurance status and antibiotics prescribed outside the guidelines as well as race and antibiotics prescribed outside the guidelines
- Education for providers is needed regarding dental indications for antibiotics
- Thorough education regarding antibiotic stewardship should be included in all dental and other health professional curriculums that will be treating patients with non-traumatic dental conditions
- Adherence to recommended AAPD guidelines<sup>4</sup> is needed regardless of socioeconomic status
- Additional research to better understand causes of inappropriate prescription writing is needed
- Increased access to care for patients with low socioeconomic status to increase primary care services (provided in a dental office) to avoid acute hospital care (in an emergency department)

## References

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