

Introduction

- In the US, approximately 60% of antimicrobial prescriptions are written in the outpatient setting, and roughly 30% of those are unnecessary.¹⁻³
- The Tennessee Department of Health (TDH) previously described outpatient antimicrobial use using data obtained from IQVIA Xponent in 2016 and 2018. These analyses have only sought to describe volume of antimicrobial prescribing in Tennessee.^{4,5}
- TDH acquired additional data from IQVIA Longitudinal Prescription and Medical Claims datasets in 2021.
- We sought to link antimicrobial prescriptions to diagnosis claims from preceding outpatient office visits to measure appropriateness of statewide antimicrobial prescriptions.

Methods

- Retrospective IQVIA medical claims data and antimicrobial prescriptions data for calendar year 2020 were used in this study.
- The claims data were transposed to obtain all diagnostic codes related to each medical visit. The transformed data were then linked to the antimicrobial prescriptions data using a unique patient ID.
- Prescriptions filled within 7 days after a patient's medical visit were included.
- Diagnoses codes from the medical visits were categorized as Tier 1, defined as diagnoses that always require antimicrobial therapy, Tier 2 as diagnoses that may require antimicrobial therapy, and Tier 3 as diagnoses that never require antimicrobial therapy.
- We compared Tier 1 prescriptions versus Tier 2 and Tier 3 prescriptions volume.

Results/Figures

- A total of 2,611,903 prescriptions were filled within the 7 days after the medical visit.
- Of these, 60% were prescribed following pure Tier 3 diagnoses, 24% following Tier 2 diagnoses, and 16% following Tier 1 diagnoses.
- Macrolides made up the highest percent of prescribed antimicrobials (12.3%), followed by narrow-spectrum penicillins (11.0%) and fluoroquinolones (10.5%).
- Patients between 20-64 years old made up 53% of the population, followed by 65+ year old patients (31%).
- Although pediatric patients were least represented (11.1%), they received the least proportion of Tier 3 prescriptions (43%).

Figure 1: Distribution of Prescriptions by Diagnostic Tier and Filled Date

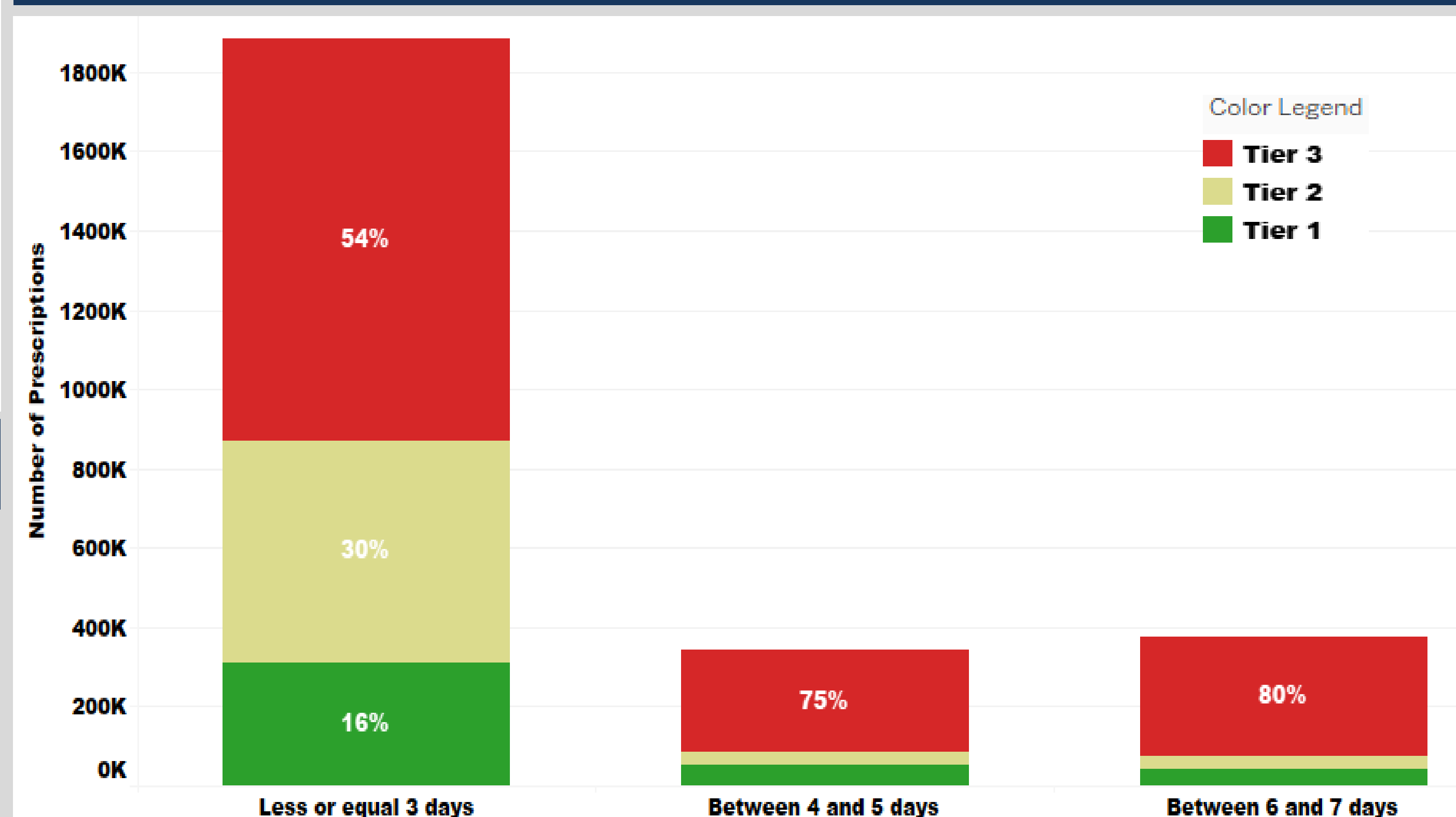


Figure 2: Distribution of Prescriptions by Diagnostic Tier and Prescriber Specialty

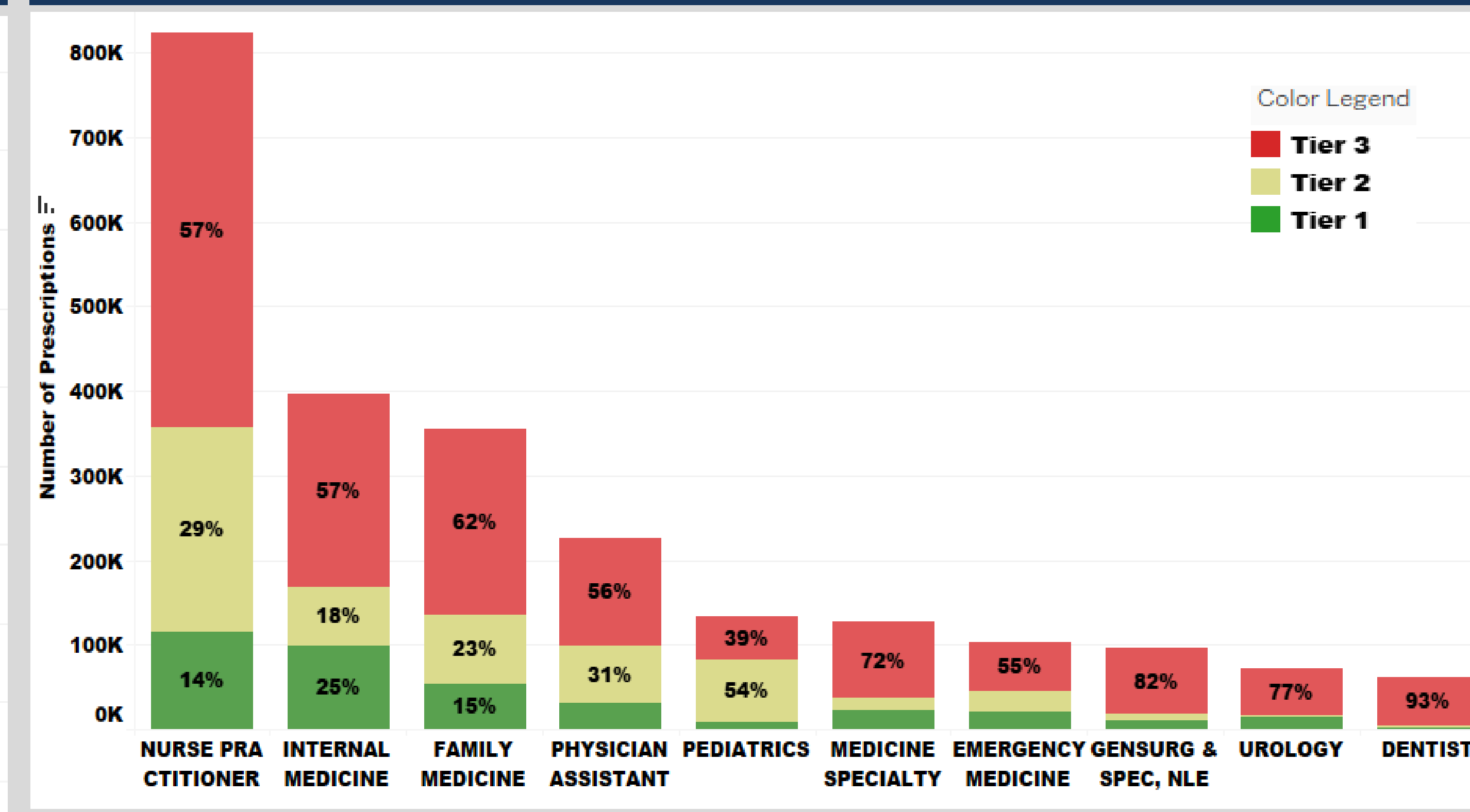


Figure 3: Distribution of Tier 3 Diagnostic Codes

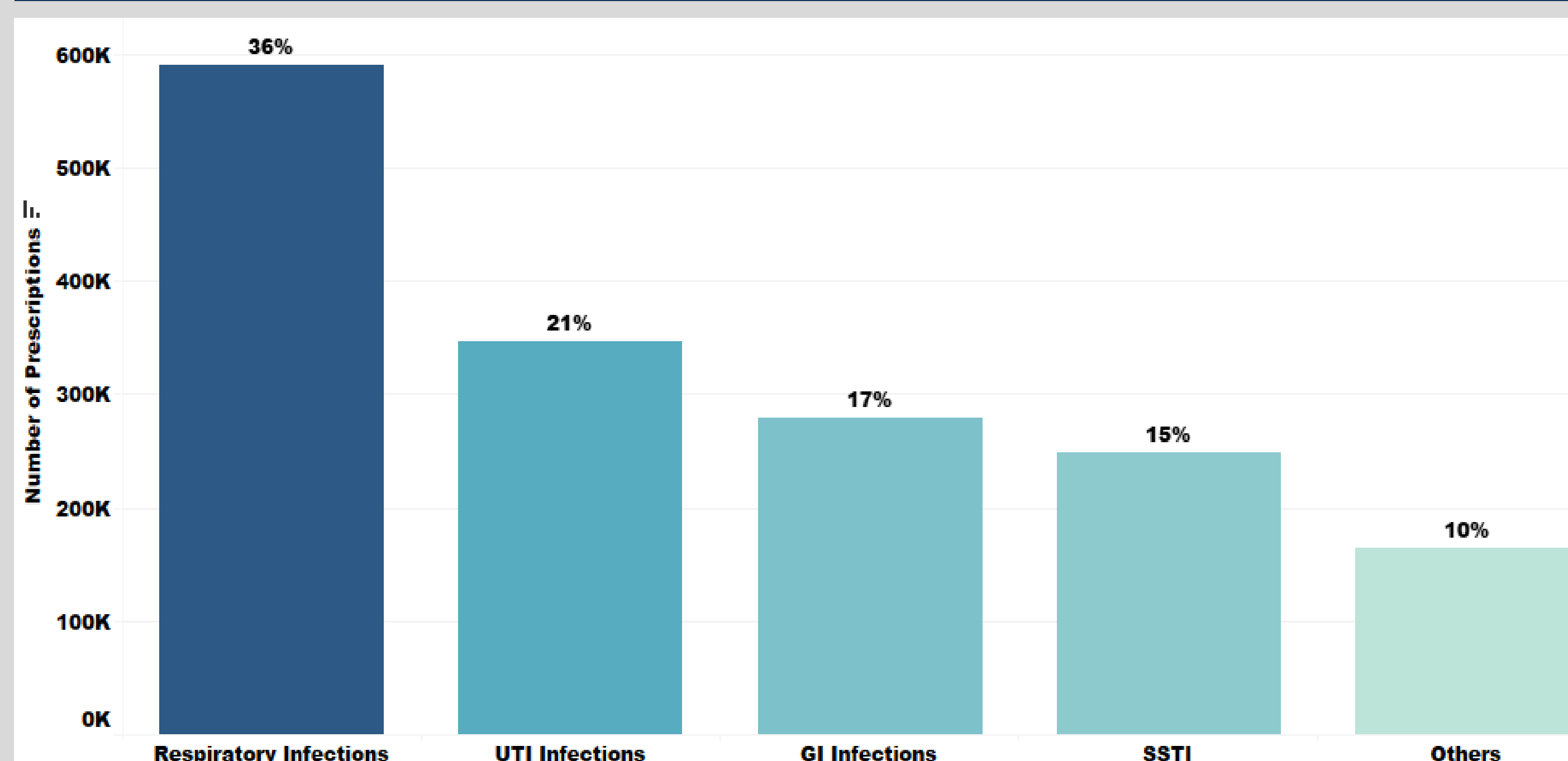
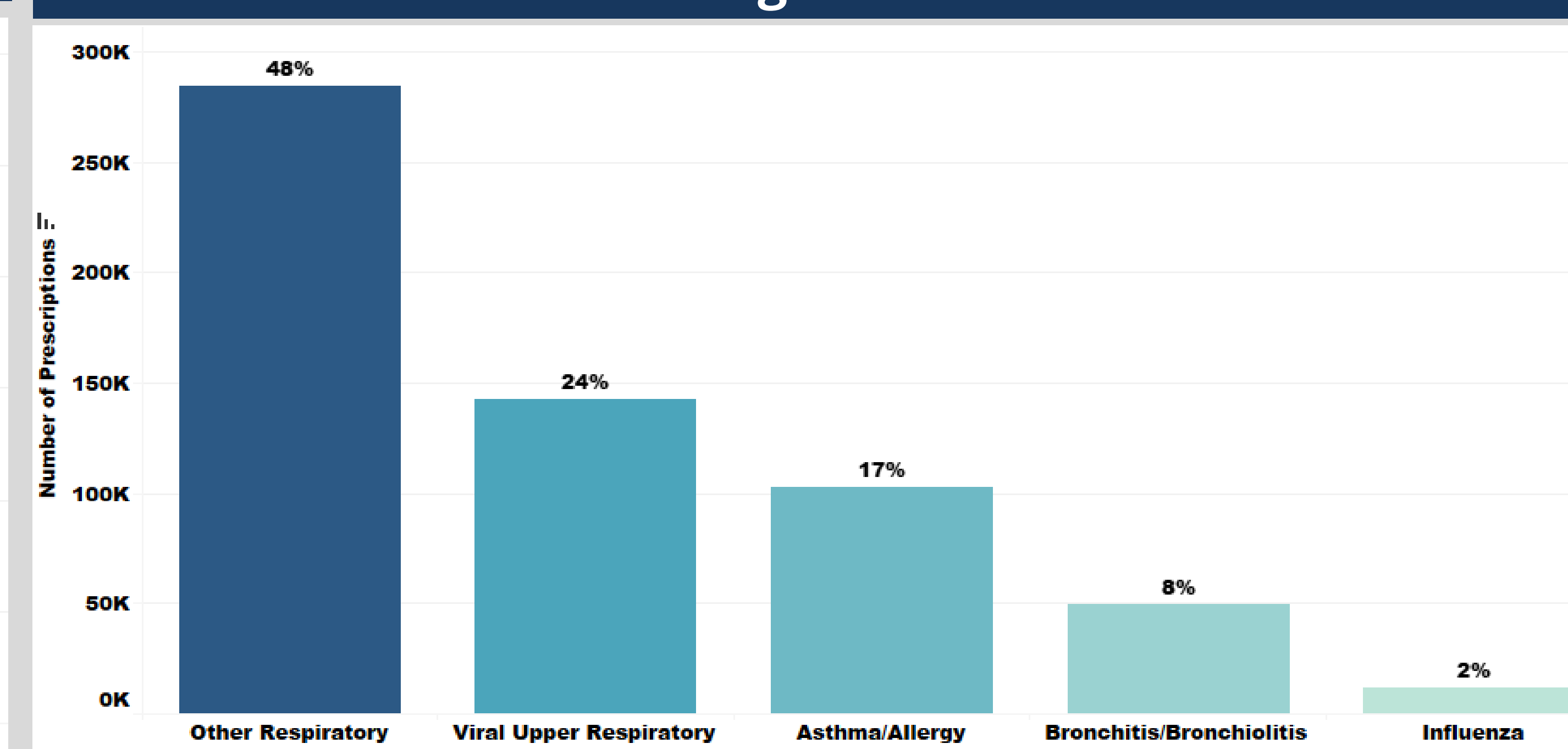


Figure 4: Distribution of Respiratory Infections Types from Tier 3 Diagnostic Codes



Discussion and Conclusions

- Most prescriptions were prescribed for indications that do not require antimicrobial therapy.
- Respiratory conditions accounted for the highest percentage of visits resulting in antimicrobial therapy that did not require treatment.
- Continued educational efforts and provider feedback of these data are planned to combat unnecessary overprescribing in Tennessee.

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