



Department of
Health

Comparison of Outpatient Antibiotic Prescriptions in a High Prescribing State, 2016–2018

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Introduction

- Approximately 80% of antibiotic prescriptions (Rx) are written in the outpatient setting.
- Outpatient antibiotic use (AU) is highest in the Southern United States.
- In 2018, Tennessee (TN) had the 6th highest rate of all antibiotic classes per 1,000 population dispensed in outpatient pharmacies. This was 1.4 times the national average.
- Previous analyses found that 1,195 Rx per 1,000 population were filled in TN in 2016.
- 50% of all outpatient antibiotic Rx were written by 9.3% of prescribers.

Methods

- The TN IQVIA Xponent database from January–December 31, 2018 was analyzed and compared to 2016 results.
- Orally administered antibacterial agents were included.
- Patients < 20 years old were classified as pediatric, consistent with prior analysis.
- County level population data were obtained from the TN Department of Health. The National Center for Health Statistics urban-rural classification was used to classify each prescriber's county.
- Antibiotic Rx rates were calculated as antibiotic Rx per 1,000 population in the specified patient age group.
- Analyses were performed using SAS 9.4 and visualized using Tableau 2020.1.

Results/Figures

- The 2018 statewide AU rate was 1,074 Rx per 1,000 population. Geographical variation was seen across TN. Regional AU rates ranged from 759 to 1,104 Rx per 1,000 population (Figure 1).
- Women(1,288), those older than age 65 (1,459), and those < 2 years old (1,372) had the highest AU rates in 2018. Lower AU rates were observed in all age groups, except the 3–9 years old group.
- In 2018, 9.2% (3,098) of prescribers accounted for 50% of all prescriptions (Figure 2). Similarly, in 2016, 9.3% (2,994) of providers accounted for 50% of all prescriptions. There were 2090 providers who were high prescribers in both years.
- Changes were observed in the top five antibiotics for adults and pediatric patients from 2016 to 2018 (Figure 3 and 4).

Figure 1: 2018 AU rates by TN Regions

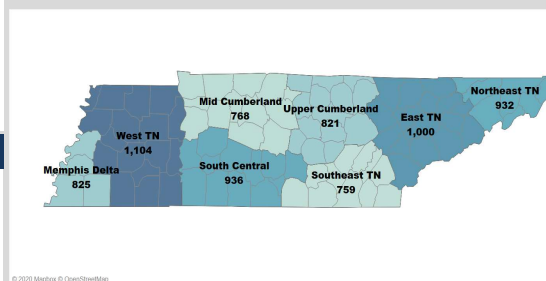


Figure 2: High Prescriber Identification

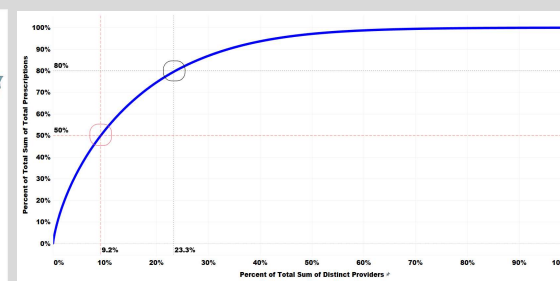


Figure 3: 2018 Top 5 Antibiotics - Adults

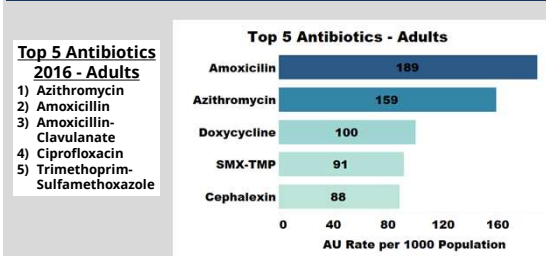
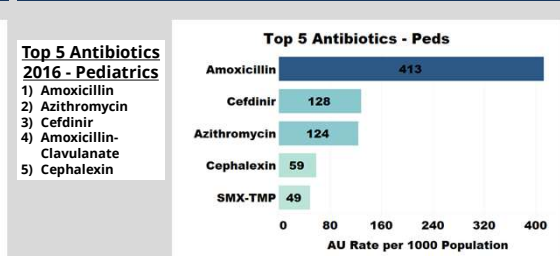


Figure 4: 2018 Top 5 Antibiotics - Pediatrics



Discussion and Conclusions

- Despite reductions in antibiotic prescriptions from 2016 to 2018, Tennessee continues to have a high outpatient AU rate.
- Broad spectrum drugs amoxicillin-clavulanate and ciprofloxacin dropped from the top 5 agents prescribed in adult patients in 2018, replaced by cephalexin and doxycycline.
- Amoxicillin-clavulanate was replaced by trimethoprim-sulfamethoxazole in the top 5 agents prescribed in pediatric patients in 2018.
- A small portion of prescribers, many identified in both 2016 and 2018, account for a large percentage of antibiotic prescriptions.
- Identification of persistently high prescribers allows for communication to improve appropriate antibiotic use.

Contact Information

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