

Outpatient Antibiotic Prescriptions

United States, 2024

Introduction

Tracking national antibiotic use is an essential public health surveillance activity that allows CDC and its partners to identify opportunities to improve prescribing practices. CDC monitors outpatient antibiotic prescription data to inform antibiotic stewardship priorities and measure progress over time to promote equitable access to quality healthcare and optimize patient safety.

Data Sources

Systemic oral antibiotics were extracted from the IQVIA Xponent® database.¹ IQVIA captured an estimated 93% of outpatient prescriptions dispensed from retail pharmacies for any medication nationally, reconciled them to wholesale deliveries to these pharmacies, and projected to 100% coverage. These data represent all outpatient antibiotic prescriptions from community pharmacies from all payers but exclude federal facilities. Healthcare provider specialties are based on the American Medical Association (AMA) self-designated practice specialties, Drug Enforcement Administration (DEA), and National Provider Identifier (NPI) sources and categorized into one of 17 groups. Provider specialty denominators are estimated by extracting the total number of providers in each provider specialty from the IQVIA Xponent® prescription database. Rates are calculated using provider specialty denominators for 2024 aggregated by IQVIA. Yearly antibiotic prescription rates per 1,000 persons by age, sex, and region are calculated using annual [U.S. Census](#) files.

TOTAL OUTPATIENT ORAL ANTIBIOTIC PRESCRIPTIONS IN 2024

255.9 million total oral antibiotic prescriptions, at a rate of 752 prescriptions per 1,000 persons



Table 1. Oral antibiotic prescriptions by age, sex, and region – United States, 2024

Characteristics	Number of Antibiotic Prescriptions (Millions) ^a	Antibiotic Prescriptions Per 1,000 Persons, Rate ^b
Age Group		
<20 years	55.7	679
≥20 years	200.0	775
Sex		
Female	155.4	905
Male	100.4	596
Region		
Northeast	45.3	784
Midwest	53.1	763
South	112.0	844
West	42.6	532

a. Totals may not add to all oral prescriptions (255.9 million) due to missing data.

b. Rates were calculated using population data obtained from the 2024 U.S. Census.

Table 2. Top oral antibiotic classes and agents – United States, 2024

Characteristics	Number of Antibiotic Prescriptions (Millions)	Antibiotic Prescriptions Per 1,000 Persons, Rate ^a
Antibiotic Class		
Penicillins	58.3	171
Cephalosporins	39.4	116
Macrolides	37.5	110
B-lactams, increased activity	34.5	101
Tetracyclines	31.0	91
Antibiotic Agent		
Amoxicillin	55.2	162
Azithromycin	36.3	107
Amoxicillin-clavulanic acid	34.5	101
Doxycycline	28.4	84
Cephalexin	22.9	67

a. Rates were calculated using population data obtained from the 2024 U.S. Census.

Table 3. Oral antibiotic prescribing by specialty – United States, 2024

Specialty	Number of Antibiotic Prescriptions (Millions)	Antibiotic Prescriptions Per Provider, Rate ^a
Primary Care Physicians	68.9	171
Physician Assistants & Nurse Practitioners	103.1	176
Surgical Specialties	16.3	112
Dentistry	25.3	126
Emergency Medicine	14.2	201
Dermatology	5.1	271
Obstetrics/Gynecology	4.1	74
Other	18.9	27
All Healthcare Professionals	255.9	118

a. Rates were calculated using provider specialty denominators for 2024 aggregated by IQVIA.

Figure 1. Antibiotic prescriptions per 1,000 persons by state (sextiles) for all ages – United States, 2024

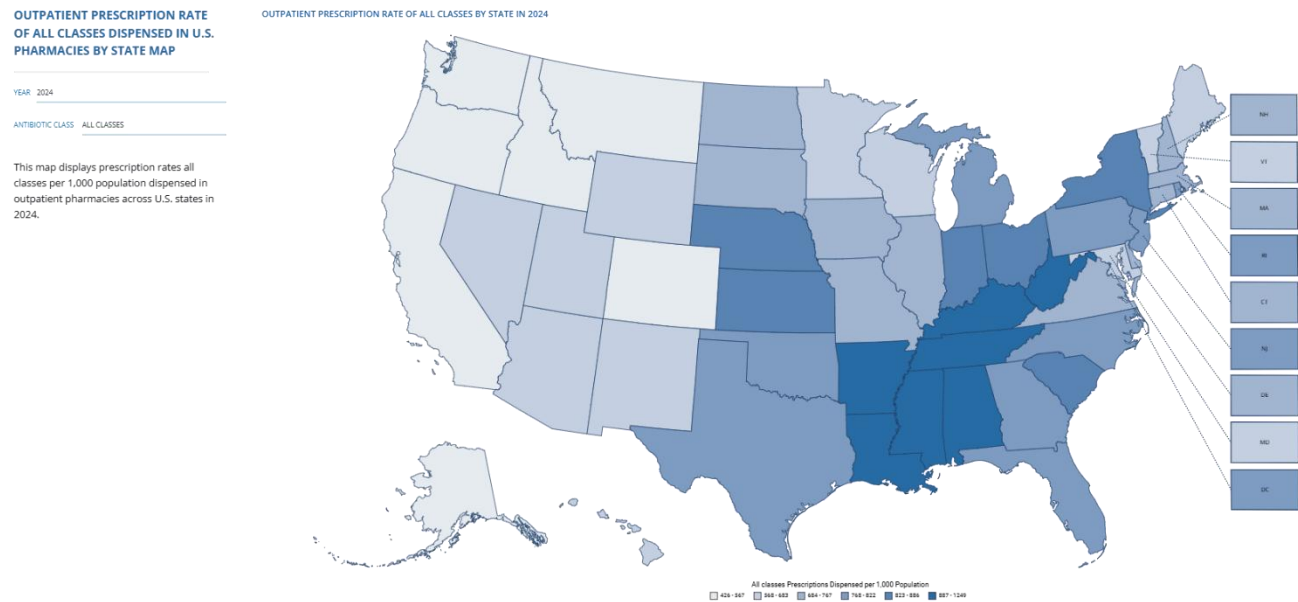


Table 4. Oral antibiotic prescribing by state – United States, 2024

State	Antibiotic Prescriptions Per 1,000 Persons, Rate ^a
Alabama	1027
Alaska	478
Arizona	632
Arkansas	1014
California	513
Colorado	501
Connecticut	754
Delaware	751
District of Columbia	795
Florida	784
Georgia	810
Hawaii	600
Idaho	557
Illinois	744
Indiana	826
Iowa	764
Kansas	832
Kentucky	1089
Louisiana	1047
Maine	664
Maryland	681
Massachusetts	695
Michigan	812
Minnesota	570
Mississippi	1167
Missouri	757
Montana	533
Nebraska	840
Nevada	621
New Hampshire	729

New Jersey	791
New Mexico	619
New York	836
North Carolina	787
North Dakota	689
Ohio	865
Oklahoma	803
Oregon	464
Pennsylvania	784
Rhode Island	784
South Carolina	853
South Dakota	759
Tennessee	983
Texas	791
Utah	617
Vermont	609
Virginia	754
Washington	472
West Virginia	1216
Wisconsin	588
Wyoming	682

a. Rates were calculated using population data obtained from the 2024 U.S. Census.

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References

1. Hicks LA, Bartoces MG, Roberts RM, Suda KJ, Hunkler RJ, Taylor TH Jr, Schrag SJ. US outpatient antibiotic prescribing variation according to geography, patient population, and provider specialty in 2011. Clin Infect Dis. 2015 May 1;60(9):1308-16. doi: 10.1093/cid/civ076. Epub 2015 Mar 5. PMID: 25747410.