

Outpatient Antibiotic Prescriptions — United States, 2017

Citation: Centers for Disease Control and Prevention. Outpatient antibiotic prescriptions — United States, 2017.

Data Sources

Systemic oral antibiotics were extracted from the IQVIA Xponent database. IQVIA captured an estimated 90% of retail outpatient prescriptions 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. Provider specialties are taken from the American Medical Association (AMA) self-designated practice specialties, DEA and NPI sources and categorized into one of 17 groups. Population data were obtained from the U.S. Census bridging files. Starting in 2017, enhancements to IQVIA’s methodology also take into account that some prescriptions which are ordered may not be picked up by the patient and that patients may not pay for their prescriptions in the way that the pharmacy expects, leading to prescriptions that are ultimately not dispensed. Previous methodology did not account for the return or restocking of these prescriptions filled, but not picked up by patients. Accounting for these situations, which can lead to overstated prescriptions, likely makes the revised methodology data more accurate. However, for comparisons to previous years of estimates the previous methodology data should be used.

Total outpatient oral antibiotic prescriptions in 2017

Previous methodology: **267.6 million total oral antibiotic prescriptions**, equivalent to **821 prescriptions per 1000 persons**

Revised methodology: **258.2 million total antibiotic prescriptions**, equivalent to **793 prescriptions per 1000 persons**

Table 1. Oral antibiotic prescriptions by age, sex and region—United States, 2017

Characteristics	Number of Antibiotic Prescriptions (Millions)	Antibiotic Prescriptions Per 1,000 Persons, Rate	Number of Antibiotic Prescriptions (Millions)	Antibiotic Prescriptions Per 1,000 Persons, Rate
	Previous methodology ^a		Revised methodology ^b	
Age group^c				
<20 years	62.5	760	60.4	735
≥20 years	205.1	842	197.7	812
Sex^c				
Female	163.0	986	157.1	950
Male	104.5	651	100.9	629
Region^d				
Midwest	58.7	861	56.7	831
Northeast	48.5	859	46.9	831
South	114.1	923	110.0	890

West	46.3	598	44.6	576
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- a. Estimates created using previous IQVIA methodology
- b. Estimates created using data from revised methodology accounting for reversed and voided prescriptions across weeks
- c. Totals may not add to all oral prescriptions due to missing data
- d. Totals may not add to all oral prescriptions due to rounding

Table 2. Top oral antibiotic classes and agents prescribed—United States, 2017

Characteristics	Number of Antibiotic Prescriptions (Millions)	Antibiotic Prescriptions Per 1,000 Persons, Rate	Number of Antibiotic Prescriptions (Millions)	Antibiotic Prescriptions Per 1,000 Persons, Rate
	Previous methodology ^a		Revised methodology ^b	
Antibiotic class				
Penicillins	63.1	194	61.3	188
Macrolides	46.1	142	44.6	137
Cephalosporins	37.3	115	36.1	111
Fluoroquinolones	25.4	78	24.6	76
Beta-lactams, Increased activity	27.5	84	26.7	82
Antibiotic agent				
Amoxicillin	57.0	175	55.5	170
Azithromycin	43.6	134	42.2	130
Amoxicillin/clavulanic acid	27.5	84	26.7	82
Cephalexin	22.1	68	21.3	65
Sulfamethoxazole/trimethoprim	19.4	60	18.7	57

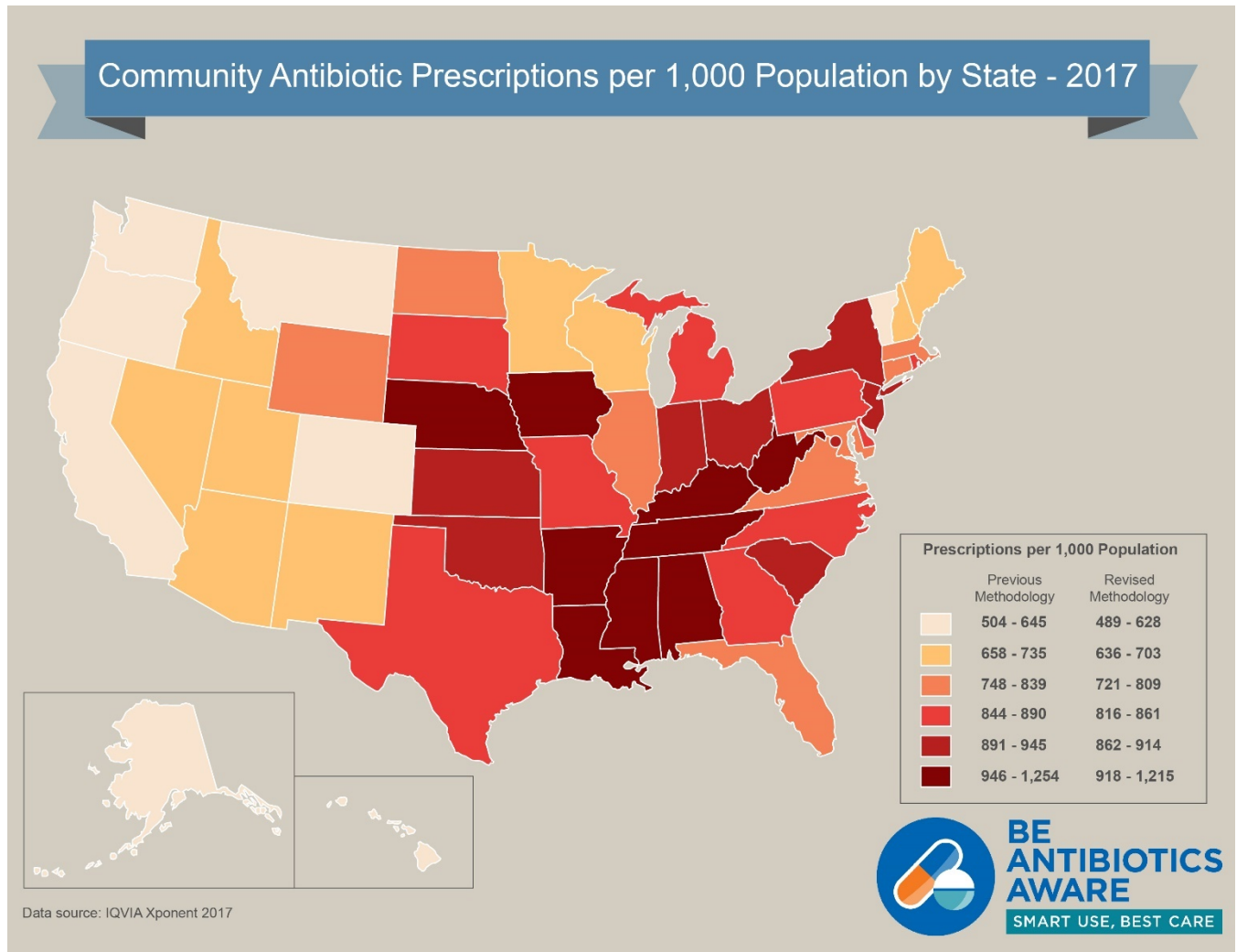
- a. Estimates created using previous IQVIA methodology
- b. Estimates created using data from revised methodology accounting for reversed and voided prescriptions across weeks

Table 3. Oral antibiotic prescriptions by provider specialty—United States, 2017

Provider Specialty	Number of Antibiotic Prescriptions (Millions)	Antibiotic Prescriptions Per Providers, Rate	Number of Antibiotic Prescriptions (Millions)	Antibiotic Prescriptions Per Providers, Rate
	Previous methodology ^a		Revised methodology ^b	
Primary Care Physicians	100.8	425	97.4	410
Physician Assistants and Nurse Practitioners	73.5	424	70.9	409
Surgical Specialties	18.7	210	18.1	202
Dentistry	25.6	209	24.9	203
Emergency Medicine	14.1	436	13.6	421
Dermatology	6.5	572	6.1	536
Obstetrics/Gynecology	5.7	152	5.4	144
Other	22.7	109	21.8	105
All Providers	267.6	293	258.2	283

- a. Estimates created using previous IQVIA methodology
- b. Estimates created using data from revised methodology accounting for reversed and voided prescriptions across weeks

Figure 1. Antibiotic prescriptions per 1,000 persons by state (sextiles) for all ages—United States, 2017



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State	Antibiotic Prescriptions Per 1,000 Persons, Rate	
	Previous methodology ^a	Revised methodology ^b
West Virginia	1254	1215
Kentucky	1239	1199
Mississippi	1222	1182
Louisiana	1204	1159
Alabama	1178	1137
Tennessee	1142	1098
Arkansas	1107	1069
Nebraska	986	954
Iowa	946	918
Ohio	945	914

Indiana	933	899
Kansas	931	898
South Carolina	929	898
District of Columbia	910	877
New York	901	869
Oklahoma	899	869
New Jersey	891	862
Missouri	890	861
Delaware	885	857
Michigan	885	856
Pennsylvania	883	852
Rhode Island	879	849
Georgia	872	841
South Dakota	862	841
Texas	852	820
North Carolina	844	816
Connecticut	839	809
Florida	831	799
Illinois	822	791
Virginia	784	758
Wyoming	770	746
North Dakota	768	742
Maryland	764	738
Massachusetts	748	721
Arizona	735	703
Utah	725	700
New Hampshire	724	700
Nevada	711	683
Wisconsin	703	678
Maine	698	677
New Mexico	681	655
Idaho	674	652
Minnesota	658	636
Vermont	645	628
Montana	618	599
Hawaii	617	597
California	565	544
Colorado	565	544
Washington	560	541
Oregon	520	502
Alaska	504	489

a. Estimates created using previous IQVIA methodology

b. Estimates created using data from revised methodology accounting for reversed and voided prescriptions across weeks