

Outpatient Antibiotic Prescriptions — United States, 2018

Citation: Centers for Disease Control and Prevention. Outpatient antibiotic prescriptions — United States, 2018.

Data Sources:

Systemic oral antibiotics were extracted from the IQVIA Xponent database. IQVIA captured an estimated 92% 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 2018

Previous methodology: **258.9 million total oral antibiotic prescriptions, equivalent to 791 prescriptions per 1000 persons**

Revised methodology: **249.8 million total antibiotic prescriptions, equivalent to 763 prescriptions per 1000 persons**

Table 1. Oral antibiotic prescriptions by age, sex and region—United States, 2018

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	58.2	710	56.2	686
≥20 years	200.7	818	193.2	788
Sex^c				
Female	157.9	951	152.1	916
Male	100.9	626	97.4	604
Region^d				
Midwest	55.8	817	53.8	788
Northeast	47.1	839	45.3	808
South	111.6	895	107.7	863
West	44.4	569	42.9	550

- 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, 2018

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	60.6	185	59	180
Macrolides	41.9	128	40.5	124
Cephalosporins	37.2	114	35.9	110
Beta-lactams, Increased activity	27.5	84	26.6	81
Tetracyclines	24.3	74	23	70
Antibiotic agent				
Amoxicillin	55.3	169	53.8	164
Azithromycin	39.7	121	38.5	118
Amoxicillin/clavulanic acid	27.5	84	26.6	81
Cephalexin	22.2	68	21.4	65
Doxycycline	20.2	62	19.2	59

- 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, 2018

Provider Specialty	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	
Primary Care Physicians	92.5	389	89.3	376
Physician Assistants and Nurse Practitioners	76.5	442	73.3	423
Surgical Specialties	18.2	204	17.5	196
Dentistry	25.4	207	24.7	201
Emergency Medicine	13.1	404	12.7	392
Dermatology	6.3	555	5.9	525
Obstetrics/Gynecology	5.4	145	5.1	137
Other	21.5	103	21.2	102
All Providers	258.9	284	249.8	274

- 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, 2018, estimates created using previous IQVIA methodology

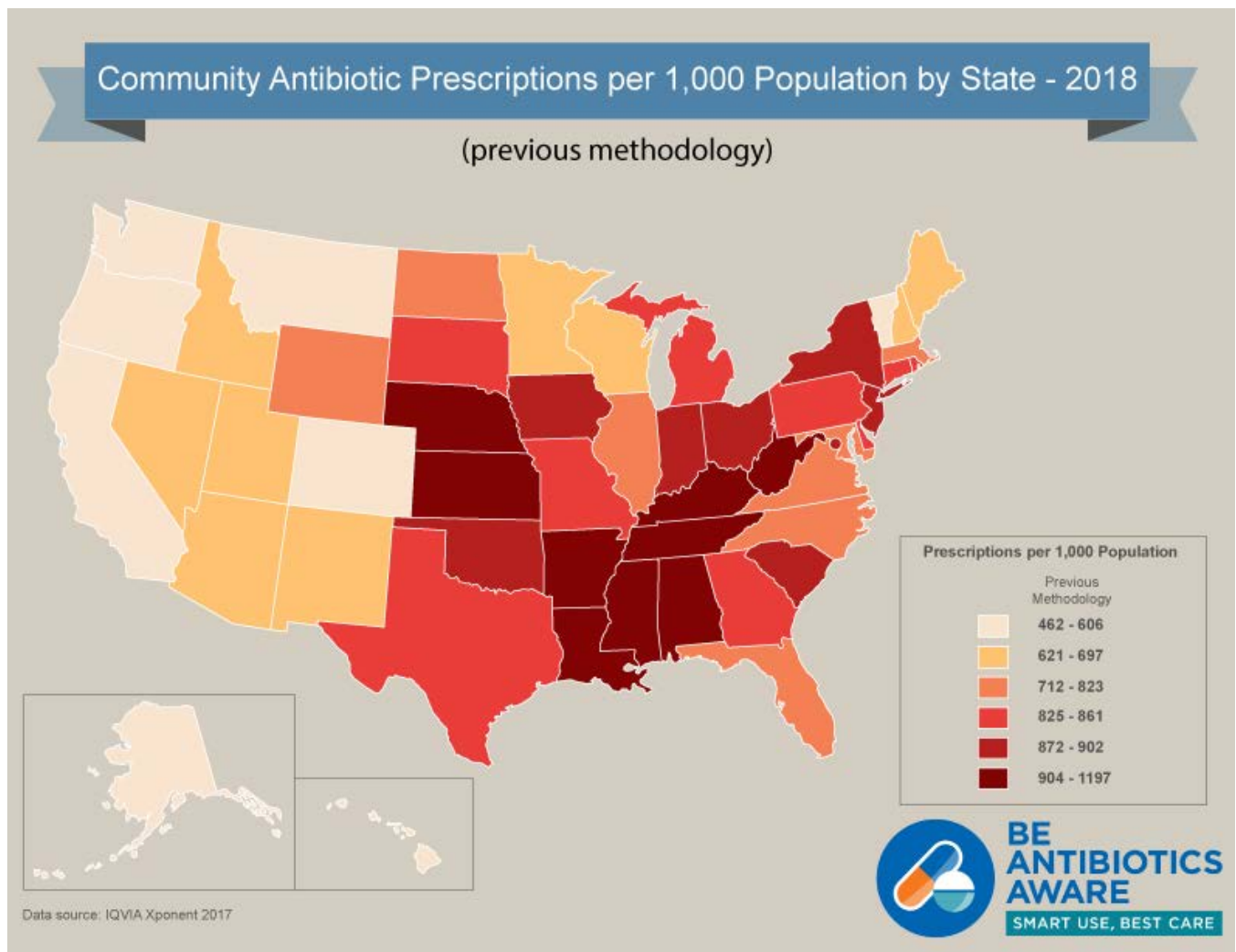
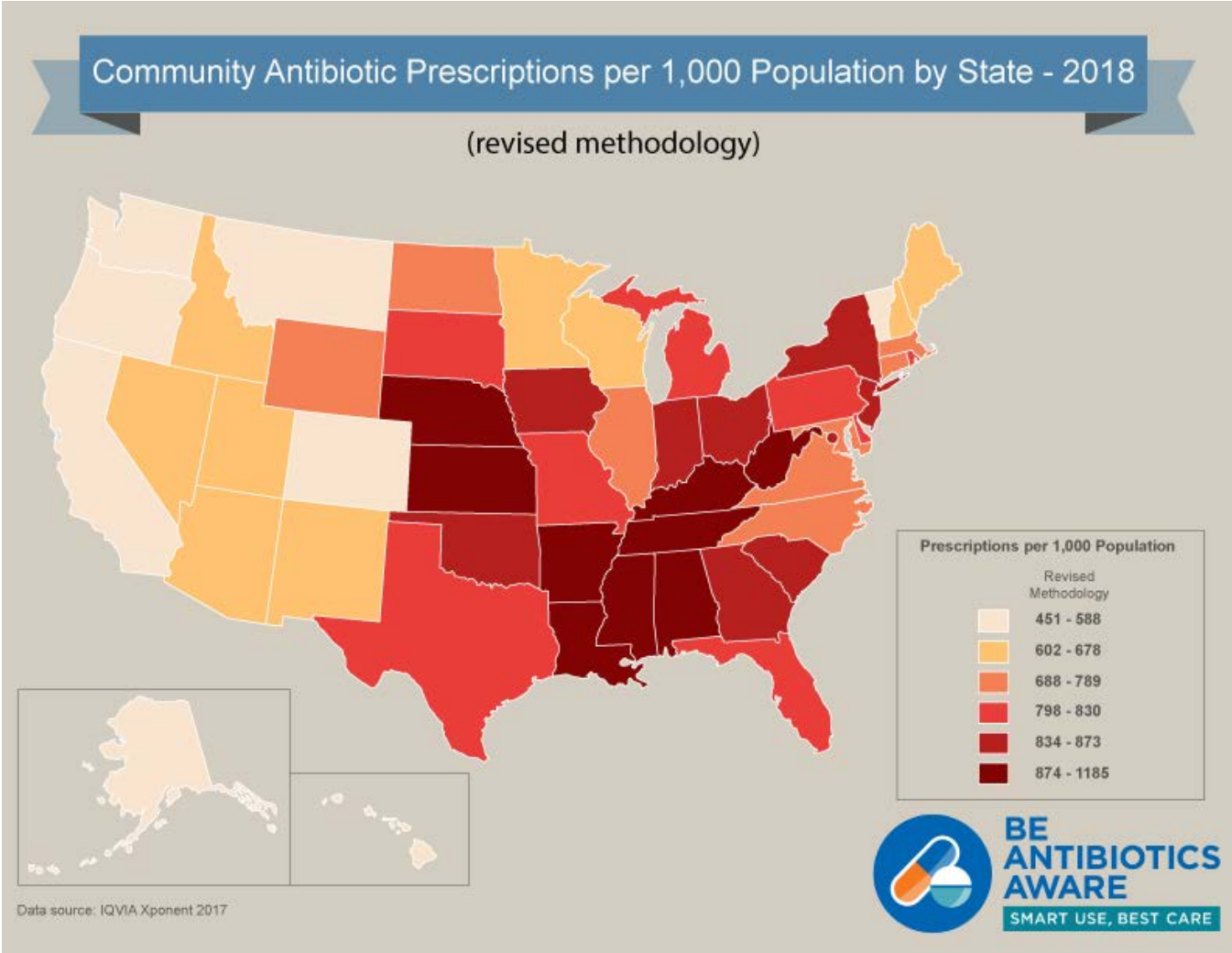


Figure 2. Antibiotic prescriptions per 1,000 persons by state (sextiles) for all ages— United States, 2018, estimates created using revised methodology accounting for reversed and voided prescriptions across weeks



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State	Antibiotic Prescriptions Per 1,000 Persons, Rate		
		Previous methodology ^a	Revised methodology ^b
West Virginia	WV	1197	1185
Kentucky	KY	1174	1127
Mississippi	MS	1170	1117
Louisiana	LA	1169	1122
Alabama	AL	1158	1116
Tennessee	TN	1084	1037
Arkansas	AR	1051	1011

Nebraska	NE	973	935
Iowa	IA	902	873
Ohio	OH	901	869
Indiana	IN	875	844
Kansas	KS	904	874
South Carolina	SC	900	868
District of Columbia	DC	872	830
New York	NY	891	857
Oklahoma	OK	888	849
New Jersey	NJ	874	844
Missouri	MO	835	806
Delaware	DE	853	805
Michigan	MI	841	814
Pennsylvania	PA	841	811
Rhode Island	RI	859	824
Georgia	GA	861	834
South Dakota	SD	830	811
Texas	TX	831	803
North Carolina	NC	799	775
Connecticut	CT	825	789
Florida	FL	823	798
Illinois	IL	785	750
Virginia	VA	745	718
Wyoming	WY	778	753
North Dakota	ND	712	688
Maryland	MD	746	718
Massachusetts	MA	725	696
Arizona	AZ	697	669
Utah	UT	686	665
New Hampshire	NH	694	678
Nevada	NV	682	653
Wisconsin	WI	656	632
Maine	ME	673	650
New Mexico	NM	672	637
Idaho	ID	648	634
Minnesota	MN	621	602
Vermont	VT	606	588
Montana	MT	593	584
Hawaii	HI	598	577
California	CA	537	518
Colorado	CO	531	515
Washington	WA	531	519
Oregon	OR	495	490
Alaska	AK	462	451

a. Estimates created using previous IQVIA methodology.

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