

Variation in Antibiotic Prescribing among Urgent Care Centers, Retail Health Clinics, Emergency Departments, and Offices in the United States, 2014

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BACKGROUND

- At least 30% of antibiotics prescribed in physician offices' and emergency departments (EDs) are unnecessary¹
- Only 60% of outpatient antibiotic prescriptions originate in physician offices or EDs¹
- Urgent care (UC) and retail health (RH) clinics are two growing ambulatory care settings that treat patients with acute conditions that may lead to antibiotics
- Little is known about antibiotic prescribing practices in UC and RH
- Data on antibiotic prescribing practices in UC and RH and how they compare to EDs and offices can inform antibiotic stewardship interventions in all settings

OBJECTIVE

- To assess antibiotic prescribing patterns across 4 ambulatory care settings: UC, RH, ED and offices

METHODS

- We used medical and pharmacy claims data from the 2014 Truven MarketScan Commercial Claims and Encounters Database (Truven Health Analytics, Ann Arbor, Michigan), a convenience sample of employer-based health insurance for individuals aged < 65 years.
- We included visits to UCs, RHs, EDs, and offices from enrollees with both medical and pharmacy coverage.
- We identified outpatient pharmacy claims for dispensed systemic antibiotics and linked them to the most recent UC, RH, ED, and office visit within 3 days for oral antibiotics and on the same day for parenteral antibiotics.
- Diagnoses were assigned using a previously-described system¹ to assign the most likely indication for antibiotics.
- Antibiotic-inappropriate respiratory conditions (upper respiratory infections, bronchitis, asthma & allergy, influenza, nonsuppurative otitis media and viral pneumonia) were identified, and the percent of visits leading to antibiotics were calculated with 95% confidence intervals (CI) by setting.

RESULTS

Figure 1. Percent of all visits leading to antibiotic prescriptions and 95% CI by setting

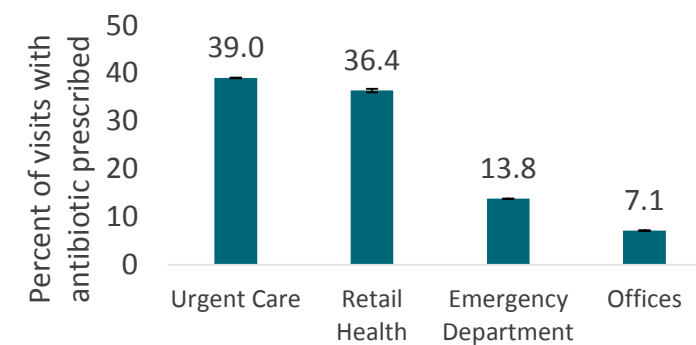


Figure 2. Percent of visits for antibiotic-inappropriate respiratory conditions leading to antibiotic prescriptions and 95% CI by setting

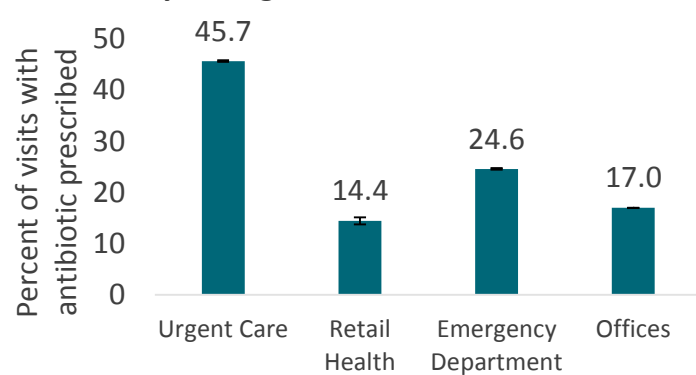
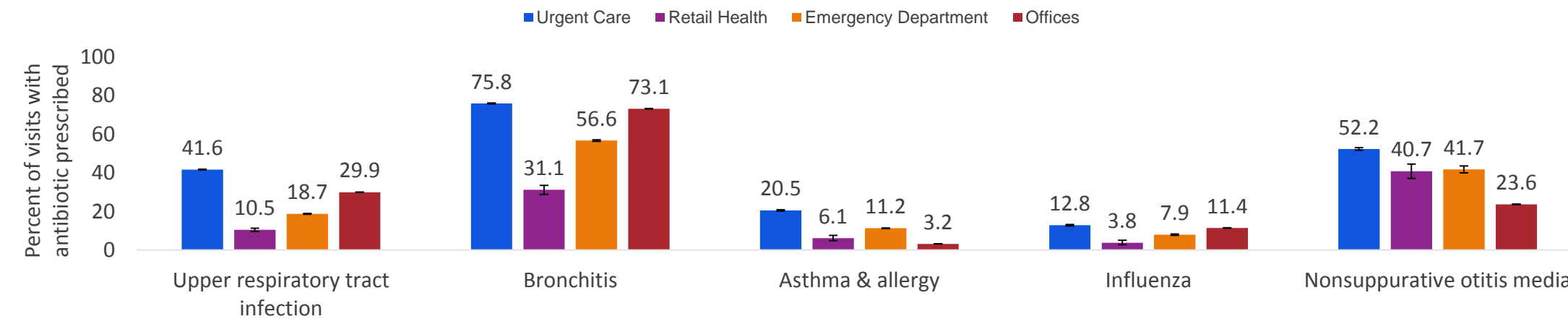


Figure 3. Percent of visits for antibiotic-inappropriate respiratory conditions leading to antibiotic prescriptions and 95% CI according to diagnosis by setting¹



¹Antibiotic prescribing for viral pneumonia not shown because this diagnosis accounted for <0.1% of visits in all settings.

Table. Patient and visit characteristics for all 2014 visits by setting.

Characteristic	Urgent Care Center (N=2,723,316)	Retail Health Clinic (N=58,206)	Emergency Department (N=4,781,047)	Office (N=148,453,330)
	n (%)	n (%)	n (%)	n (%)
Female	1,575,197 (57.8)	36,815 (63.2)	2,697,240 (56.4)	89,091,077 (60.0)
Age Group (Years)				
0 – 1	62,466 (2.3)	194 (0.3)	146,440 (3.1)	3,950,853 (2.7)
2 – 9	294,857 (10.8)	5,920 (10.2)	431,248 (9.0)	10,447,658 (7.0)
10 – 17	320,184 (11.8)	7,058 (12.1)	499,570 (10.4)	13,659,151 (9.2)
18 – 34	834,404 (30.6)	17,257 (29.6)	1,442,216 (30.2)	28,211,731 (19.0)
35 – 44	477,989 (17.6)	11,206 (19.3)	760,647 (15.9)	24,225,780 (16.3)
45 – 54	414,798 (15.2)	8,985 (15.4)	791,724 (16.6)	31,706,485 (21.4)
55 – 64	318,618 (11.7)	7,586 (13.0)	709,202 (14.8)	36,251,672 (24.4)
Employee Geographic Region^a				
Northeast ^b	569,992 (20.9)	4,885 (8.4)	986,258 (20.6)	34,402,846 (23.2)
Midwest ^c	398,292 (14.6)	22,538 (38.7)	1,077,918 (22.5)	29,557,338 (19.9)
South ^d	1,151,771 (42.3)	25,575 (43.9)	1,905,539 (39.9)	54,512,090 (36.7)
West ^e	527,300 (19.4)	5,189 (8.9)	667,228 (14.0)	25,892,354 (17.4)

^a Do not add up to total due to visits with unknown region (75,961 urgent care, 19 retail health, 144,104 ED & 4,088,702 office visits)

^b Northeast: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New Jersey, New York, Pennsylvania

^c Midwest: Illinois, Indiana, Michigan, Ohio, Wisconsin, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota

^d South: District of Columbia, Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia, Alabama, Kentucky, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma, Texas

^e West: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming, Alaska, California, Hawaii, Oregon, Washington, Puerto Rico

SUMMARY

- Antibiotics were prescribed in higher proportions of visits to UCs and RHs than in EDs and offices.
- Antibiotic prescribing for diagnoses for which antibiotics should not be used was most common in UC, then EDs, then offices, and least common in RH

LIMITATIONS

- Convenience sample of enrollees in employer-sponsored health insurance who are aged < 65 years
- Settings are classified by facility code, which may not accurately describe the setting
- Antibiotic prescriptions dispensed within 3 days were linked to most likely diagnosis at most recent visit

CONCLUSIONS

- This visit-level analysis provides an initial assessment of antibiotic use in UC and RH compared to EDs and offices
- High prescribing for antibiotic-inappropriate diagnoses, particularly in urgent care
- Opportunities were identified to improve guideline-concordant antibiotic prescribing and implement antibiotic stewardship activities tailored to each setting

REFERENCES

- Fleming-Dutra et al, JAMA. 2016;315(17):1864-1873.

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