



# Antibiotic Use in Retail Health Clinics, While Encouraging, Shows Room for Improvement

New data highlight areas for continued stewardship efforts to ensure appropriate prescribing

## Overview

Retail health clinics—walk-in clinics located within a retail business—play an important role in the fight against antibiotic resistance as outpatient care providers in the United States. Overuse of antibiotics can contribute to the development of resistance, and improved use is critical to combating this public health threat. A new study from The Pew Charitable Trusts and the Centers for Disease Control and Prevention shows that while providers in retail health clinics are less likely than other types of outpatient providers to prescribe unnecessary antibiotics, there remains room for improvement.

Most antibiotic use in the U.S. health care system occurs in outpatient settings.<sup>1</sup> Previous analysis by Pew and CDC found that nearly 1 in 3 antibiotics prescribed in physicians' offices, emergency departments, and hospital specialty clinics was unnecessary.<sup>2</sup> This brief focuses on retail health clinics.

## What Are Retail Health Clinics?

These walk-in facilities operate within businesses—such as pharmacies, grocery stores, or convenience stores. They provide outpatient preventive and primary care services\* for a range of minor illnesses, such as ear infections and colds, and offer vaccinations, flu shots, and other services.† Retail clinics play a large role in providing outpatient care in the United States and receive an estimated 10.5 million visits a year.‡

Retail health clinics differ from other outpatient facilities, such as urgent care centers or office-based clinics, in that they are often staffed by nurse practitioners and physician assistants rather than doctors.¶ Urgent care centers are health facilities where the primary purpose is to diagnose and treat illnesses or injuries for patients seeking immediate and unscheduled care, and office-based clinics are outpatient facilities other than hospitals, skilled nursing facilities, community health centers, military treatment facilities, intermediate care facilities, or state or public health clinics where primary care services are provided.⁵

\* Centers for Medicare & Medicaid Services, “Place of Service Code Set,” accessed March 29, 2017, [https://www.cms.gov/Medicare/Coding/place-of-service-codes/Place\\_of\\_Service\\_Code\\_Set.html](https://www.cms.gov/Medicare/Coding/place-of-service-codes/Place_of_Service_Code_Set.html).

† AMN Healthcare, “Convenient Care: Growth and Staffing Trends in Urgent Care and Retail Medicine” (2015), [https://www.amnhealthcare.com/uploadedFiles/MainSite/Content/Healthcare\\_Industry\\_Insights/Industry\\_Research/AMN%2015%20W001\\_Convenient%20Care%20Whitepaper\(1\).pdf](https://www.amnhealthcare.com/uploadedFiles/MainSite/Content/Healthcare_Industry_Insights/Industry_Research/AMN%2015%20W001_Convenient%20Care%20Whitepaper(1).pdf).

‡ Deborah Bachrach et al., “Building a Culture of Health: The Value Proposition of Retail Clinics” (2015), [https://www.manatt.com/uploadedFiles/Content/5\\_Insights/White\\_Papers/Retail\\_Clinic\\_RWJF.pdf](https://www.manatt.com/uploadedFiles/Content/5_Insights/White_Papers/Retail_Clinic_RWJF.pdf).

¶ RAND Corp., “The Evolving Role of Retail Clinics” (2016), [http://www.rand.org/pubs/research\\_briefs/RB9491-2.html](http://www.rand.org/pubs/research_briefs/RB9491-2.html).

⁵ Centers for Medicare & Medicaid Services, “Place of Service”

New findings in the *Journal of the American Medical Association Internal Medicine* show that more than a third of visits to retail clinics in 2014 resulted in an antibiotic prescription. The majority of antibiotics prescribed in these clinics were associated with diagnoses of acute respiratory conditions for which antibiotics are often not recommended. This brief presents other key findings from this research.

## Conditions for which antibiotics are not recommended

National treatment guidelines do not recommend antibiotic use for several acute respiratory conditions including viral upper respiratory tract infections (common cold), bronchitis/bronchiolitis, asthma/allergy, influenza, and nonsuppurative middle ear infections (characterized by non-infected fluid in the middle ear).<sup>3</sup> Because these conditions are either caused by viruses or are noninfectious, antibiotics are not effective.

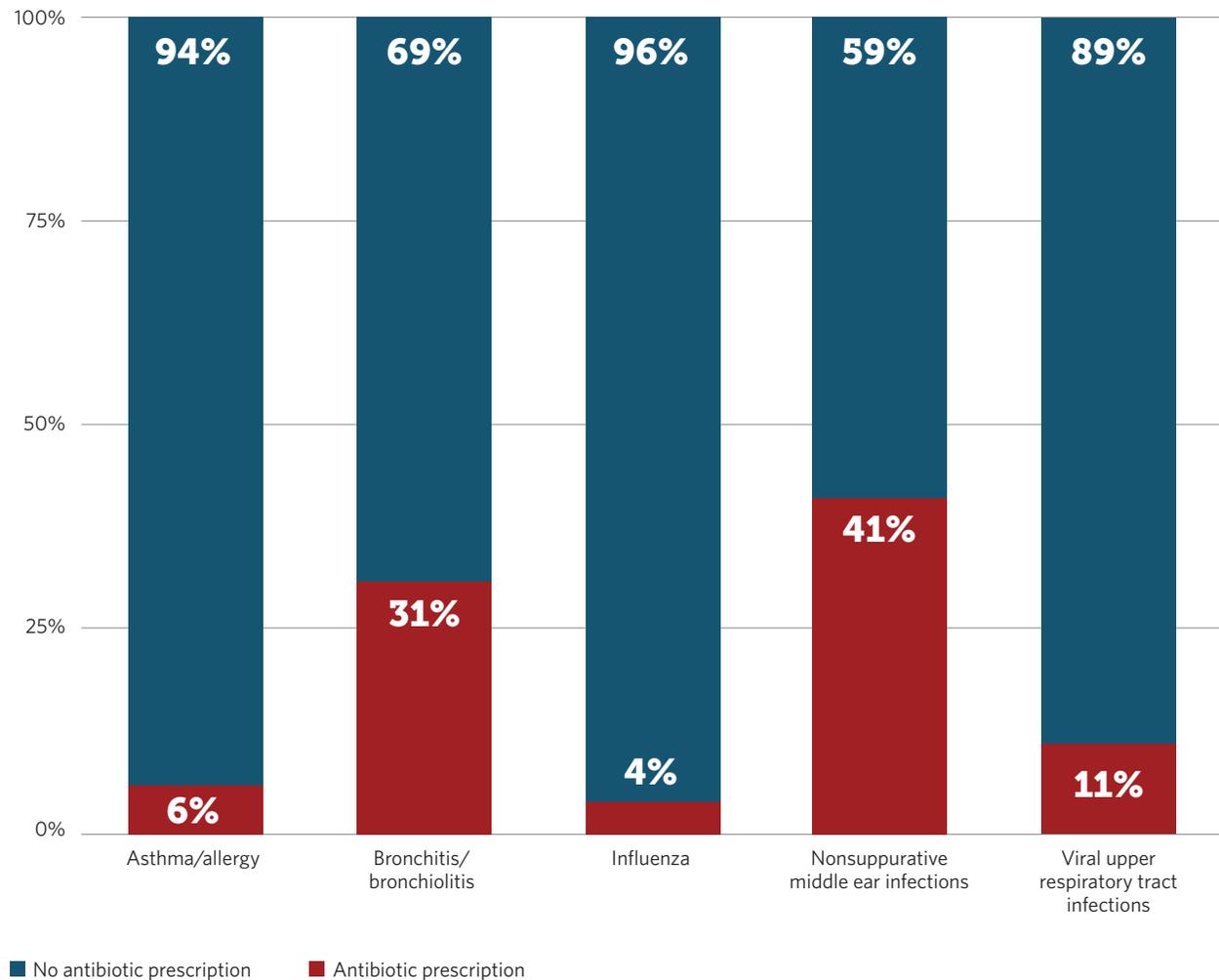
Yet about 14 percent of all retail health clinic visits for non-antibiotic recommended diagnoses resulted in an antibiotic prescription. This is significantly lower than other outpatient health care settings, such as urgent care clinics, emergency departments, and office-based clinics—where the same visits ended with a prescription some 46, 25, and 17 percent of the time, respectively. Although the overall unnecessary use of antibiotics is lower

at retail health clinics, there remains room for reducing prescribing for some of these conditions. For example, antibiotic prescribing in retail health clinics for bronchitis and nonsuppurative middle ear infections was much higher than for the other conditions and could be improved.

Figure 1

## Conditions for Which Antibiotics Are Not Recommended

Percentage of retail health clinic visits resulting in an antibiotic prescription, 2014



Note: Viral pneumonia—another condition for which antibiotics are not recommended—was not included in this analysis. No patients with a diagnosis of viral pneumonia were found in this data set.

Source: Analysis of Truven Health Analytics MarketScan data on U.S. antibiotic prescribing, 2014

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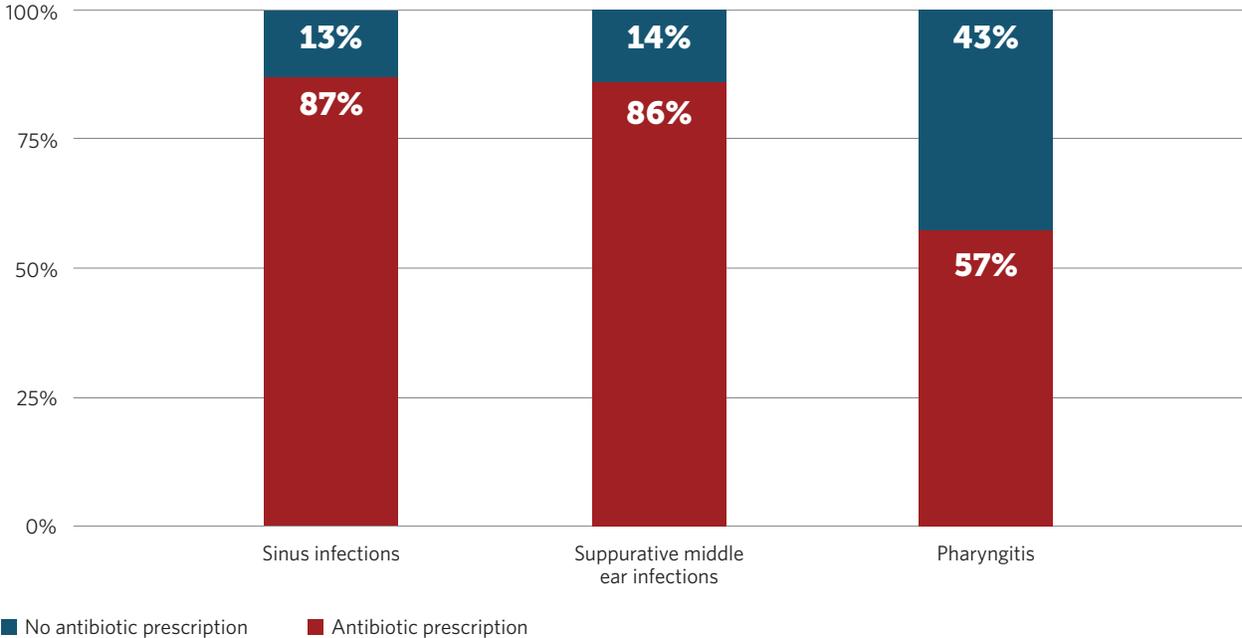
# Conditions for which antibiotics are sometimes recommended

Though fewer antibiotics are prescribed for conditions that do not warrant antibiotic use in retail health clinics, prescribing for conditions for which antibiotics are sometimes recommended could be improved. This study found high levels of prescribing for three common diagnoses:

- 87 percent of **sinus infections** treated in retail health clinics resulted in an antibiotic prescription, compared with 68 percent in emergency departments and 76 percent in office-based clinics.
- 86 percent of **suppurative middle ear infections** treated in retail health clinics resulted in an antibiotic prescription, compared with 72 percent in emergency departments and 79 percent in office-based clinics.
- 57 percent of **pharyngitis** (inflammation of the throat) cases treated in retail health clinics resulted in an antibiotic prescription, compared with 47 percent in emergency departments and 51 percent in office-based clinics.

Compared with other outpatient settings, patients at retail health clinics were more likely to receive an antibiotic prescription for these diagnoses. Antibiotic use is not always recommended for patients with these three conditions. Some of these patients may improve without antibiotic treatment, while other cases can be caused by viruses and thus do not respond to antibiotics. Some antibiotic prescribing for these conditions may be unnecessary, and more research is needed to identify areas where further reduction in antibiotic use in retail health clinics may be possible.

Figure 2  
Conditions for Which Antibiotics Are Sometimes Recommended  
Percentage of retail health clinic visits resulting in antibiotic prescriptions, 2014



Source: Analysis of Truven Health Analytics MarketScan data on U.S. antibiotic prescribing, 2014  
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## Antibiotic stewardship in retail health clinics

Retail health clinics have taken steps to help reduce inappropriate antibiotic prescribing by their providers. For example, treatment protocols are integrated into electronic health records to support providers in making prescribing decisions that are consistent with national guidelines.<sup>4</sup> Additionally, many clinics supply their providers with individualized antibiotic prescribing rates for specific conditions and systematically review charts to assess the appropriateness of antibiotic use.<sup>5</sup> Based on these evaluations, the clinics offer providers feedback and guidance to help improve their prescribing, as well as educational or training sessions when new guidelines are introduced. Expanding these types of antibiotic stewardship efforts will help further reduce inappropriate prescribing.

## Methodology

This study was based on medical and pharmaceutical claims data from the Truven Health Analytics MarketScan commercial claims and encounters database, which captures individuals younger than 65 with employer-sponsored health insurance. Visits to retail health clinics were matched with pharmaceutical claims for antibiotics within three days of the clinic visit to determine how many visits resulted in antibiotic prescriptions.

A tiered analytic strategy (described in a previous study)<sup>6</sup> was used to link prescriptions with the most antibiotic-appropriate diagnosis a patient received during the associated retail clinic visit. For example, if a patient was diagnosed with both bronchitis (a condition that does not warrant antibiotic treatment) and bacterial pneumonia (a condition that does require antibiotic use), the prescription was linked to the pneumonia diagnosis.

## Limitations

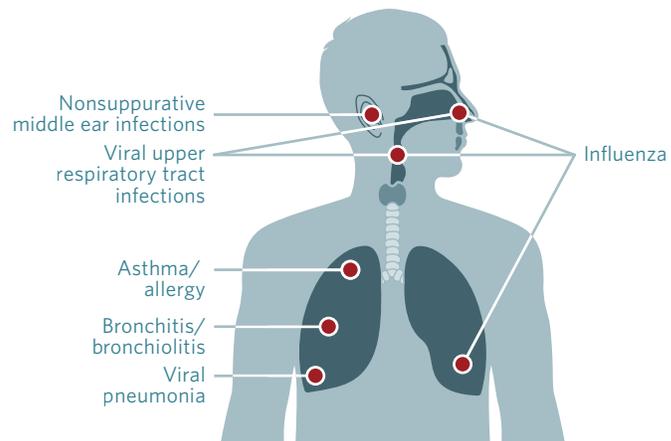
This analysis has a number of limitations. For example, the number of visits to retail health clinics captured by this database is small compared with the anticipated number of visits to these facilities. This may be due to both the population included in the MarketScan database and the fact that not all retail health clinics necessarily file claims using the same facility code (which was used to identify retail health clinic visits in this analysis). For example, some retail health clinics may file claims using a primary care facility code and therefore would not be captured in this analysis.

The MarketScan data do not include Medicaid or Medicare patients, individuals covered by private insurance not provided through an employer, and patients who paid cash for the visit rather than file an insurance claim. This limits the ability to generalize these data.

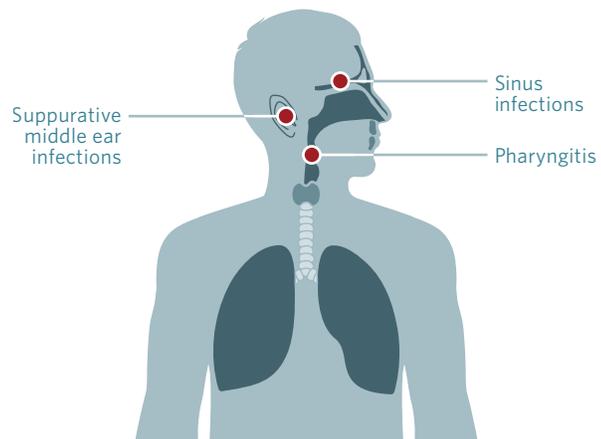
Additional details on study limitations can be found in the *Journal of the American Medical Association Internal Medicine*.<sup>7</sup>

Figure 3  
Acute Respiratory Conditions

Acute respiratory conditions that should **not** be treated with antibiotics:



Acute respiratory conditions that **sometimes** require antibiotics:



Source: Danielle Palms et al., "Comparison of Antibiotic Prescribing in Retail Clinics, Urgent Care Centers, Emergency Departments, and Traditional Ambulatory Care Settings in the United States, 2014," JAMA Internal Medicine, July 16, 2018, <http://jamanetwork.com/journals/jamainternalmedicine/fullarticle/10.1001/jamainternmed.2018.1632>

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## Acute Respiratory Conditions

Acute respiratory conditions include:

- Sinus infections.
- Middle ear infections.
- Pharyngitis.
- Viral upper respiratory tract infections (common cold).
- Bronchitis and bronchiolitis.
- Asthma and allergy.
- Influenza.
- Pneumonia.

**Sinus infections** can be caused by both bacterial and viral pathogens. Treatment guidelines recommend antibiotic use only when the infection is suspected to be caused by bacteria,<sup>\*</sup> a determination often based on clinical criteria—such as whether the patient has experienced related symptoms for 10 or more days without improvement.

**Suppurative middle ear infections** are identified by the presence of pus. Pediatric guidelines recommend either treating patients with an antibiotic or, for certain patients, waiting 48 to 72 hours to see whether symptoms improve.<sup>†</sup>

**Pharyngitis** is a diagnosis of inflammation of the throat, which patients typically report as sore throat. Treatment guidelines state that antibiotics should be prescribed only when the condition is caused by group A *Streptococcus* (strep throat),<sup>‡</sup> an infection that can be confirmed through a diagnostic test. Evidence suggests that approximately 37 percent of children and 18 percent of adults with pharyngitis have strep throat and require antibiotics.<sup>§</sup>

\* Anthony W. Chow et al., “Executive Summary: IDSA Clinical Practice Guideline for Acute Bacterial Rhinosinusitis in Children and Adults,” *Clinical Infectious Diseases* 54, no. 8 (2012): e72–e112, <http://dx.doi.org/10.1093/cid/cir1043>; Richard M. Rosenfeld et al., “Clinical Practice Guideline (Update): Adult Sinusitis,” *Otolaryngology–Head and Neck Surgery* 152, no. 2 (suppl. 2015) (2015): S1–S39, <http://dx.doi.org/10.1177/0194599815572097>; Ellen R. Wald et al., “Clinical Practice Guideline for the Diagnosis and Management of Acute Bacterial Sinusitis in Children Aged 1 to 18 Years,” *Pediatrics* 132, no. 1 (2013): e262–e280, <http://dx.doi.org/10.1542/peds.2013-1071>.

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## Endnotes

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