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## Trends in Retail Clinic Use Among The Commercially Insured

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### Abstract

**Objective**—To describe trends in retail clinic usage among commercially insured patients and to identify which patient characteristics predict retail clinic use

**Study Design**—We performed a retrospective cohort analysis of commercial insurance claims sampled from a population of 13.3 million patients in 21 markets in 2007-9.

**Methods**—We identified 11 simple acute conditions that can be managed at a retail clinic. We described trends in retail clinic utilization for these conditions. We used multiple logistic regressions to identify predictors of retail clinic versus another care site for these conditions and assessed whether those predictors changed over time.

**Results**—Retail clinic use increased ten-fold from 2007 to 2009. By 2009 6.9% of all visits for the 11 conditions were to a retail clinic. Proximity to a retail clinic was the strongest predictor of use. Patients living within 1 mile of a retail clinic were 10.0% more likely to use one than those living 10-20 miles away (p-value <0.001). Women (+0.9%, p-value <0.001), young adults (+1.6%, p-value <0.001), those without a chronic condition (+1.1%, p-value <0.001), and high-income (+1.3%, p-value <0.001) patients were more likely to use retail clinics. All these associations became stronger over time. There was no association between primary care physician availability and retail clinic use.

**Conclusions**—If these trends continue health plans can expect to see a dramatic increase in retail clinic utilization. While usage is increasing on average, it is particularly increasing among young, healthy, and higher income patients who live close to retail clinics.

### Introduction

Retail clinics are a new model for delivering ambulatory care with a focus on patient convenience. Located in pharmacies, grocery stores, or “big box stores” such as Wal-Mart or Target, retail clinics focus on the treatment of a limited set of simple acute conditions or preventive care.<sup>1-4</sup> As the number of retail clinics has grown over the last five years, there has been interest among payers in who will visit a retail clinic and for what reason.<sup>1,5,6</sup> Initial studies found that the first users of retail clinics were primarily young, healthy patients who do not have a primary care provider.<sup>2,7</sup> In this paper we describe (1) the trends in retail clinics use in a large commercially insured population, (2) patient characteristics that predict

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use of a retail clinic versus another care site, (3) whether the demographic profile of retail clinic users has changed, and (4) whether retail clinic usage is higher in communities with a shortage of primary care.

## Methods

### Data

We used 2007-9 claims and enrollment data provided by Aetna for their 13.3 million enrollees in 21 markets in which there are retail clinics. Aetna covered retail clinic visits throughout the three years. The co-payment varied based on the employer, but in general was similar to the co-payment for a physician visit. Aetna provided data on all enrollees who had at least one visit to a retail clinic ( $n = 367,448$ ) as well as a random sample of enrollees from the same markets who did not visit a retail clinic ( $n = 1,010,910$ ). In our analyses we weighted all enrollees by the inverse of their likelihood of selection for our sample.

### Focus on acute care visits

We identified outpatient visits for a set of 11 acute conditions most commonly seen at retail clinics. We identified outpatient visits using the following CPT<sup>8</sup> codes: 99201-99205 and 99211-99215. The 11 “retail clinic sensitive” conditions (associated three digit ICD-9<sup>9</sup> diagnosis codes) were: upper respiratory infections (460, 465), sinusitis (461, 473), bronchitis (490, 466), pharyngitis (462, 463, 034), otitis media (381, 382), otitis externa (380), conjunctivitis (372), urinary tract infections (599, 595), allergic rhinitis (477), influenza (487), and unspecified viral infection (079). Together they accounted for 88% of acute care visits to retail clinics. We did not evaluate utilization trends for preventive care such as immunizations. Though immunizations accounted for 40% of visits to retail clinics, they are inconsistently recorded in non-retail clinic settings and patients also frequently receive immunizations where no claim is issued (e.g. work site).

### Population selection

We limited our population to enrollees under 65 years of age who lived within 20 miles of a retail clinic. We excluded enrollees over 65 because they are likely to have co-insurance with Medicare and therefore all claims may not be captured in our data. We computed the geodesic distance between the center of each enrollee’s ZIP code to the center of each retail clinic’s ZIP code and dropped enrollees who lived more than 20 miles from any retail clinic. Our goal was to examine utilization trends in the market areas for retail clinics, and the vast majority (97.6%) of the enrollees who visited a retail clinic lived less than 20 miles from a retail clinic.

### Predictors of retail clinic use

Our predictors of retail clinic use were sex, age, distance to retail clinic, health status, income level, and access to primary care physicians. We included distance to a retail clinic, because in prior studies proximity to providers was an important driver of use.<sup>10,11</sup> To control for health status, we divided enrollees into three groups: no chronic conditions, one chronic condition, and two or more chronic conditions. The chronic conditions identified were 27 pediatric and adult chronic conditions used in prior work on risk adjustment.<sup>12,13</sup>

We used 2000 ZCTA median household income from the US Census Bureau as a proxy for enrollee income divided into three groups, low income (<2 times federal poverty level), medium income (> 2 times federal poverty level to < \$59,000) and high income (>= \$59,000). We chose \$59,000 as a cut-off because it is the 90<sup>th</sup> percentile of US ZCTA median household income.

To control for the availability of alternatives to retail clinics, we included fixed effects for each of the 21 healthcare markets. We also controlled for whether an enrollee resided in a ZIP code in which the majority of the population lived in a federally-designated primary care Health Professional Shortage Area (HPSA).<sup>14</sup>

### Statistical Analysis

In our first analysis, we tracked monthly retail clinic utilization for retail clinic sensitive conditions in the entire study population. In our second analysis, we modeled the choice to use a retail clinic versus other providers for a retail clinic sensitive condition. Our predictor variables were those listed above. The population of enrollees consisted of those that had a visit to *any care site* for a retail clinic sensitive condition 2007-2009. We ran a logistic regression predicting the likelihood of a patient visiting a retail clinic versus other care sites. In our third analysis, we evaluated changes in our predictors over time. We hypothesized that as the number of retail clinic visitors increased, they would become less distinct from the general population. We estimated separate prediction models for each year with the predictor variables listed above. In order to test the significance of the change in the effect of each of our predictors between 2007 and 2009, we conducted an analysis combining the 2007 and 2009 observations that included interactions with 2009 for all of our predictors. Statistical significance of the interaction terms would indicate statistically significant changes in the predictors between 2007 and 2009.

For all of our logistic models, we used the *Surveylogistic* procedure in SAS, version 9.22 (SAS Institute Inc., Cary, NC). We weighted the enrollees by the inverse of the likelihood of selection and clustered our standard errors by ZIP code. To estimate the marginal effect of each predictor on the likelihood of retail clinic use, we used the method of predictive margins, also called recycled prediction.<sup>15</sup>

### Results

Among all 13.3 million enrollees in our study population, retail clinic usage increased January 2007 to December 2009 from a monthly rate of 0.3 visits per 1,000 enrollees to 2.7 visits per 1,000. Among the 3.8 million enrollees who had at least one retail clinic sensitive visit to any site 2007-9, visits to retail clinics increased from a monthly rate of 0.6 visits per 1,000 enrollees in January, 2007 to 6.5 visits per 1,000 enrollees in December, 2009 (Figure 1). There was a clear seasonal pattern with spikes in the winter months and troughs in the summer months.

Of all enrollees who had a retail clinic sensitive condition visit between 2007 and 2009, 210,763 (5.5%) visited a retail clinic. That fraction was 1.5%, 4.5%, and 6.9% in 2007, 2008, and 2009 respectively.

### Enrollee predictors of retail clinic use

In our model of retail clinic use at any time 2007-9, the strongest predictors were distance, age, chronic illness, income, and gender (Table 1). Enrollees who lived <1 mile of a retail clinic were 10.0% (95% CI, 8.4%-11.5%) more likely to visit a retail clinic than those who lived 10 to 20 miles away. Adults aged 18 to 44 years were more likely to visit a retail clinic than other age groups, and enrollees with no chronic conditions were 1.1% (95% CI, 1.0%-1.2%) more likely to visit retail clinics than enrollees with 2 or more chronic conditions. We found that enrollees in ZIP codes with higher median household incomes were 1.3% (95% CI, 0.7%-1.9%) more likely to use a retail clinic than those from ZIP codes with low median incomes. Women were 0.9% (95% CI, 0.85%-0.98%) more likely to use

retail clinics. We found no difference in the likelihood to use retail clinics for those who lived in HPSAs.

### Change over time in patient predictors

In Figure 1 we show the monthly rate of retail clinic use broken down by the key population characteristics identified by our model: proximity, age, health status, sex, and income (Panels 2-6). In each panel except panel 4 (health status) and panel 6 (income), the distance between the top line and the other lines in the panel generally increases, indicating that the effect of that characteristic is getting stronger over time. For example, the rate of visits per 1,000 enrollees from January 2007 to December 2009 for those who live within 1 mile of a retail clinic (Panel 2) increased from 1.2 visits per 1,000 enrollees in January 2007 to 10.5 in December 2009 while for those 10-20 miles away it increased from 0.1 to 2.0 per 1,000 enrollees.

In our models we tested for a change in predictors over time by estimating separate multivariable logistic models for each year. The marginal effects became stronger over time. For example, the marginal effect for enrollees who lived within 1 mile of a retail clinic increased from 3.5% in 2007 to 14.8% in 2009 (Appendix Table 2). The difference was statistically significant. The marginal effects for age, health status, and sex all increased significantly from 2007-9. However, while the marginal effects of these predictors increased, the associated odds ratios remained steady (Appendix Table 2). This implies that the *relative importance* of the predictor did not change because retail clinic use was increasing across the population.

### Discussion

In a large commercially insured population, we see a striking increase in retail clinic use between 2007 and 2009. In January 2007, shortly after retail clinics entered these markets, few enrollees visited them (less than one visit per 1,000 enrollees). By December 2009, retail clinic usage reached an average of almost 6 visits per 1,000 enrollees for those who sought care for acute conditions. It is clear that enrollees are “voting with their feet” and that retail clinics are meeting an unmet need for simple acute care and/or addressing a shortcoming of traditional healthcare providers.

Our results do not provide a definitive explanation of why enrollees are choosing retail clinics over other sources of care, but they provide some clues. Consistent with prior research,<sup>16</sup> our results suggest that convenience is the strongest predictor of retail clinic use. Enrollees who live close to a retail clinic were much more likely to use one. Controlling for distance to a retail clinic, we also found that enrollees in high-income ZIP codes were more likely to use a retail clinic. This is possibly consistent with prior studies that have shown that higher income patients place a higher value on their time.<sup>17</sup> Our results are not entirely consistent on whether primary care relationships drive retail clinic use. We find that healthier, young adults are the most common users of retail clinics. This group is less likely to have a primary care provider and therefore might visit a retail clinic because they have no alternative. However, we found no association between primary care availability and use of retail clinics. This is contrary to arguments that retail clinics fulfill unmet demand in areas of primary care shortage.<sup>1</sup>

After rapid growth in the number of retail clinics in 2007 there has been no significant net change the number of retail clinics since mid-2008.<sup>18</sup> Despite concerns about the profitability and long-term viability of retail clinics,<sup>19</sup> we believe it is notable that the utilization of retail clinics among at least the commercially insured is growing rapidly.

If these trends continue, payers that offer coverage of retail clinic visits can expect to see continued and rapid growth in the use of retail clinics. Care initiated at retail clinics is 30-40% cheaper than similar care at physician offices and ~80% cheaper than similar care at emergency departments.<sup>3</sup> If the growth in retail clinic visits we observe represents substitution for other sources of care, then the increase in retail clinic use could lead to lower costs. However, if they represent new utilization, patients seeking care when previously they would have stayed at home, then costs could increase. Future work should explore whether retail clinic visits represent new utilization or replacement of visits to physicians or emergency departments.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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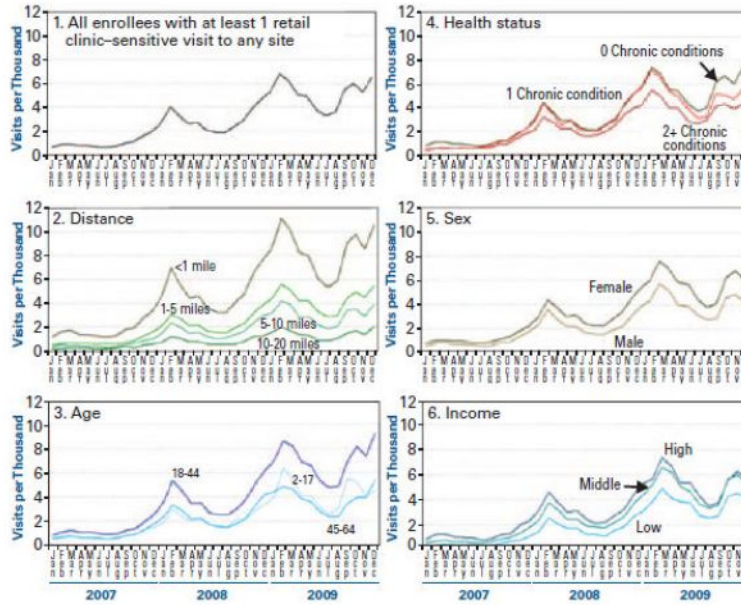
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**Figure. Monthly Rate of Retail clinic Use 2007 to 2009 Among Subsets of the Enrollee Population<sup>a</sup>**

<sup>a</sup>Figure presents unadjusted monthly utilization of retail clinics for acute conditions among the population of all enrollees who had a visit for a retail clinic-sensitive condition (eg, sinusitis, pharyngitis) at any point in 2007 to 2009. A full list of conditions is provided in the text (Methods. Focus on Acute Care Visits). Panel 1 focuses on all enrollees. Panels 2 to 6 divide the population into different groups. Panel 2 divides the enrollees based on the distance from their residence to the nearest retail clinic. Panel 3 divides the nonelderly population by age. Patients aged <2 and >65 years were excluded from the study. Panel 4 divides the population by the presence of chronic illnesses. A description of measures is provided in the Methods. Predictors of Retail Clinic Use section of this article. Panel 5 divides the population by sex. Panel 6 divides the population by income (low: >2 times the federal poverty level; middle: >2 times the federal poverty level to \$59,000; high: \$59,000).

**Table 1**Multivariable predictors of retail clinic use 2007-2009<sup>1</sup>

Predictor	Marginal Effect <sup>2</sup>	95% Confidence Interval
<b>Sex</b>		
Female	0.9%	0.84% to 0.98%
Male	REF	
<b>Age category</b>		
<18	-2.7%	-2.9% to -2.6%
18-44	REF	
45-64	-1.6%	-1.7% to -1.5%
<b>Distance from home ZIP code to retail clinic</b>		
1 mile	7.5%	6.6% to 8.4%
>1 to 5 miles	5.1%	4.3% to 5.9%
>5 to 10 miles	3.8%	2.8% to 4.7%
>10 to 20 miles	REF	
<b>Income<sup>3</sup></b>		
Low Income (<2X FPL)	REF	
Middle Income (2X FPL to \$59,000)	1.1%	0.7% to 1.5%
High Income (> \$59,000)	2.6%	2.1% to 3.1%
<b>Health Status</b>		
No chronic conditions	REF	
1 Chronic condition	-0.2%	-0.3% to -0.1%
2+ Chronic conditions	-0.9%	-1.0% to -0.8%
<b>Health Professional Shortage Area (HPSA)<sup>4</sup></b>		
Enrollee lives in HPSA (ZIP code)	0.0%	-0.4% to 0.4%
Enrollee does not live in HPSA (ZIP code)	REF	
<b>Year</b>		
Year = 2007	REF	
Year = 2008	5.8%	5.5% to 6.1%
Year = 2009	7.9%	7.5% to 8.3%

<sup>1</sup> Logistic model included fixed effects for insurance market areas (not included here). Standard errors clustered by ZIP code.

<sup>2</sup> Increase in probability of retail clinic use associated. Estimated for average enrollee in the analysis population. All are significantly different from 0 at the 0.05 level except the HPSA indicator.

<sup>3</sup> Median household income for ZIP code tabulation area. FPL = Federal poverty level.

<sup>4</sup> Majority of population in ZIP code tabulation area lives in primary care health professional shortage area as defined by the Health Resources and Services Administration.