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## The Growth of Retail Clinics in Vaccination Delivery in the U.S.

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### Abstract

**Background**—Retail clinics are a promising venue in which to promote and administer vaccinations; however, little is known about who receives vaccinations at a retail clinic.

**Purpose**—We aimed to describe the use of retail clinics in the delivery of recommended vaccinations.

**Methods**—The three largest retail clinic operators in the U.S., MinuteClinic, TakeCare, and LittleClinic, provided de-identified clinic data for 2007-2009. Descriptive statistics were generated in 2011 on visit type, type of vaccination, patient age, and payment method.

**Results**—From 2007-2009, there were 8.9 million retail clinic visits across the three largest clinic operators. In 2009, vaccinations were administered at 1,952,610 visits, up from 469,330 visits in 2007. Visits in which vaccinations were administered accounted for 39.9%, 36.4%, and 42.0% of total visits in 2007, 2008, and 2009 respectively. In 2009, 1.8 million influenza vaccinations (including seasonal and H1N1 vaccinations) were administered by the two largest retail clinic operators (94% of all vaccination visits). Pneumococcal vaccination was administered at 59,849 visits (3% of all vaccination visits). In 2009, vaccinations were also administered in 0.8% of acute care visits (n=18,807), 0.8% of chronic care visits (n=261), and 1.3% of general medical exams (n=2,497).

**Conclusions**—Results suggest that retail clinics play a growing role in vaccination delivery, and vaccinations constitute a substantial share of the business conducted by retail clinics. As such, retail clinics have the potential to play an important role in vaccination delivery in the U.S. Retail clinics potentially could deliver more vaccinations if they reviewed vaccination histories and counseled patients regarding the benefits of vaccination during acute care visits.

Increasing vaccination among adults and adolescents is a public health priority.<sup>1,2</sup> Strategies to increase uptake among these groups include educating the public, lowering patient costs, and offering vaccinations outside of physician offices in “complementary” settings such as schools, workplaces, pharmacies, and grocery stores.<sup>1,3-6</sup> Retail clinics, now a common fixture in national drug store chains and “big box” stores, such as Target, are a promising venue in which to promote and administer vaccinations. Distinct from pharmacies that are often co-located in the same stores, retail clinics are staffed by nurse practitioners or

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physician assistants who diagnose and treat a fixed menu of acute conditions, provide preventive care, and increasingly provide care for select chronic conditions.<sup>7</sup> Retail clinics are valued for their convenience, ability to reach persons who remain outside of the healthcare system, and potential to reduce burden on primary care providers.<sup>1,8,9</sup> Because retail clinic staff gather and assess health status information, they are well positioned to identify patients specifically recommended for vaccination and encourage them to be vaccinated. Moreover, there is some evidence to suggest that patients may be more comfortable receiving vaccinations from clinic staff than from a pharmacist.<sup>10,11</sup>

There are now more 1300 retail clinics in the U.S., up from just 200 in 2006.<sup>12</sup> However, little is known about the delivery of vaccinations in retail clinic settings. Recent efforts to promote vaccination in retail settings have focused primarily on pharmacies and pharmacists.<sup>13-15</sup> Moreover, published data on vaccination in retail settings does not distinguish between retail pharmacies and clinics.<sup>16-18</sup> To address this gap, the study team obtained and analyzed data from the three largest retail clinic operators in the U.S to describe trends in the type of patients who visit retail clinics for vaccinations and the types of vaccinations most commonly administered. Given the proliferation of clinics and continuing public health emphasis on expanding uptake, we hypothesized that vaccination at retail clinics would rapidly increase over time and that those who are least likely to have a primary care provider, young adults and those without insurance, would be most likely to receive a vaccination at a retail clinic.

## Methods

The three largest retail clinic operators in the U.S., MinuteClinic, TakeCare, and LittleClinic, supplied the study team with de-identified clinic data from 2007-2009. Together these clinics constitute 81 percent of all retail clinics operating in the U.S.<sup>19</sup> The clinics in our sample are very similar to the other 19 percent of clinics in terms of scope of practice, geographic distribution, and hours of operation.<sup>20</sup> These data were obtained from electronic medical records and billing records and included information on the patient's age, method of payment, and the reason for visit or diagnosis.

The primary ICD-9 diagnosis code was available for each visit. Based on diagnosis code, visits were classified into four non-mutually exclusive categories: acute care, general medical exam, chronic care, and vaccination visit. Two of the three clinic operators also submitted Current Procedural Terminology (CPT codes) indicating the delivery of specific services. To determine the type of vaccine administered at vaccination visits (Table 1 and 2 only), the study team limited analyses to the two operators which submitted both diagnosis codes and CPT codes (representing 76% of all retail clinics in the U.S.) because CPT codes provided greater specificity regarding vaccine type. In order to classify vaccine type, both CPT codes and diagnosis codes were considered. This is important, because a patient could have a CPT code for a vaccination while the diagnosis code was non-specific. A visit was considered to be a "vaccination visit" if one or more vaccinations were delivered. If a patient received more than one vaccination at a particular visit (which occurred in less than 1% of all visits) each type of vaccination was recorded.

The study team examined overall visits as well as by age and payment method for 2007-2009. Because of the large sample sizes (>8 million observations) statistical tests were not conducted when comparing visits, as very small, possibly inconsequential differences would be statistically significant. RAND's Institutional Review Board judged this study to be exempt from review.

## Results

During the three year period between 2007 and 2009, there were 8.9 million retail clinic visits across the three largest retail clinic operators in the U.S. The number of visits in which one or more vaccinations were administered increased from 469,330 in 2007 to 1,952,610 in 2009. Visits in which vaccinations were administered accounted for 39.9%, 36.4%, and 42.0% of total visits in 2007, 2008, and 2009 respectively.

In 2009, 50.7% of visits involved the treatment of acute illnesses, 0.7% of visits involved care of chronic illness, and 4.2% of visits were for general medical exams. Only a small number of vaccinations were administered during visits involving treatment of an illness or general medical exams. In 2009, vaccinations were also administered in 0.8% of acute care visits (n=18,807), 0.8% of chronic care visits (n=261), and 1.3% of general medical exams (n=2,497).

Although a variety of types of vaccinations were administered, the vast majority of vaccinations delivered in retail clinics were injectable influenza vaccinations (Table 1). In 2009, 1.8 million injectable influenza vaccinations (including seasonal and H1N1 vaccinations) were administered across the two largest retail clinic operators (94% of all vaccination visits). Pneumococcal vaccination was administered at 59,849 visits (3% of all vaccination visits). Tetanus-containing vaccinations accounted for approximately 1.7% of vaccination visits. Other types of vaccinations were administered in less than one percent of visits.

Though the majority of patients who received vaccinations were 18 or older (over 80% from 2007-2009) (Table 3), the fraction of vaccination visits for children and adolescents increased from 11.4% to 17.6% from 2007 to 2009. At the same time, the fraction of vaccinations visits paid for in cash declined from 38.8% in 2007 to 28.4% in 2009.

## Discussion

Between 2007 and 2009, the number of vaccination visits to the three retail clinics in our study quadrupled from 469,330 to 1,952,610. In addition, vaccinations were provided during two out of every five clinic visits. The vast majority of vaccinations delivered were injectable influenza vaccinations. If the 81% of clinics studied here are nationally representative, our results imply that approximately 1% of the influenza vaccine doses distributed in the U.S. in 2008 were administered in retail clinics.<sup>21</sup> Recent high profile marketing of influenza vaccinations by retail stores and the prominent role that retail settings played in the H1N1 pandemic may have resulted in even greater utilization since 2009.<sup>22</sup>

Experts have argued that retail settings can provide access to immunizations for those who are uninsured or do not have a regular doctor;<sup>23</sup> however, the results of this study suggest that the proportion of patients who paid for vaccinations out of pocket declined in recent years to less than 30%. While not insignificant, it appears that the typical retail clinic patient who received one or more recommended vaccinations was not “outside the medical system” but perhaps chose vaccination at retail clinics over medical offices because of convenience or because a regular provider did not offer the full range of recommended vaccinations.<sup>24</sup>

In primary care, each patient encounter represents an opportunity to encourage preventive care. Encounters where vaccinations are indicated but not administered are commonly referred to as “missed opportunities.”<sup>4,25,26</sup> Retail clinic providers do not appear to be actively encouraging vaccinations among patients who are seeking medical treatment or widely promoting vaccinations other than influenza. Retail clinics potentially could deliver more vaccinations if they reviewed patients’ vaccination histories and clinical indications,

and counseled patients regarding the benefits of vaccination during acute care visits. While this was not standard practice in the past, follow-up discussions with industry representatives suggest that retail clinics are currently exploring options for incorporating review of vaccination histories to support counseling (N. Gagliano, MinuteClinic, “personal communication,” 1-19-12).

Limitations of this study include variable coding practices and difficulties in comparing data based on calendar year to data from influenza seasons which span two calendar years (September-March). In addition, detailed information about the types of vaccinations administered (e.g., polysaccharide vaccine vs. pneumococcal conjugate vaccine) were not included. This is the case because the data used in this study were not originally collected to classify vaccinations by type. Nonetheless, this analysis suggests that during 2007-2009 vaccinations accounted for a substantial share of visits to retail clinics. As such, retail clinics have the potential to play an important and growing role in vaccination delivery in the U.S.

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**Table 1**

Most Common Types of Vaccinations Administered at Retail Clinic Vaccination Visits \*

Type of Vaccination Administered at Vaccination Visit	2007 # (%)	2008 # (%)	2009 # (%)
Influenza **	451,617 (96.2)	957,056 (94.5)	1,836,766 (94.1)
Injection ***	447,360 (95.3)	951,524 (94.0)	1,806,985 (92.3)
Intranasal	0 (0)	5,355 (0.5)	8,641 (0.4)
Pneumococcal	11,467 (2.4)	30,415 (3.0)	59,489 (3.0)
Tetanus-containing vaccine ^	9,306 (2.0)	23,538 (2.3)	33,729 (1.7)
Meningitis	1,385 (0.3)	3,416 (0.3)	4,679 (0.2)
Measles, mumps, and rubella	1,206 (0.3)	2,591 (0.3)	4,457 (0.2)
Hepatitis A	1,697 (0.4)	3,784 (0.4)	3,233 (0.2)
Hepatitis B	2,620 (0.6)	6,618 (0.7)	11,118 (0.6)
Human papillomavirus	223 (<0.1)	1,056 (0.1)	1,707 (0.1)
Polio	192 (<0.1)	563 (0.1)	329 (<0.1)

\* Table reports data from the two largest retail clinic operators (representing 76% of all retail clinics in the U.S.) These clinics supplied both CPT codes and diagnosis codes to the study team.

\*\* Includes both seasonal and H1N1 vaccinations in 2009 because there is no distinct diagnosis code for H1N1 vaccination.

\*\*\* Several thousand influenza vaccinations could not be classified as injection or intranasal because records included a diagnosis code for influenza vaccination but no CPT code to indicate the specific type.

^ Tetanus-containing vaccines include tetanus and diphtheria toxoids (Td) vaccine or tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine.

**Table 2**

Type of Vaccine Administered by Age in 2009\*

Type of Vaccine	Age Category # (%)					
	<2	2-5	6-17	18-44	45-64	>65
Influenza**	2,762 (0.2)	8,8715 (4.9)	24,0375 (13.2)	441,796 (24.2)	568,448 (31.1)	484,595 (26.5)
Pneumococcal	-	774 (1.3)	1,805 (3.1)	7,861 (13.3)	20,776 (35.2)	27,727 (47.0)
Meningitis	-	-	1,721 (36.8)	2,685 (57.4)	230 (4.9)	-
Tetanus-containing vaccine <sup>A</sup>	-	97 (0.3)	7,473 (22.3)	15,497 (46.2)	7,923 (23.6)	2,570 (7.7)
Hepatitis A	-	86 (2.7)	307 (9.5)	1603 (49.6)	997 (30.9)	239 (7.4)
Hepatitis B	-	21 (0.2)	457 (4.1)	7041 (63.5)	3113 (28.1)	452 (4.1)
Measles, mumps, and rubella	-	92 (2.1)	325 (7.3)	3,331 (74.8)	668 (15.0)	38 (0.9)

\* Table reports data from the two largest retail clinic operators (representing 76% of all retail clinics in the U.S.) These clinics supplied both CPT codes and diagnosis codes to the study team.

\*\* Includes both seasonal and H1N1 vaccinations

<sup>A</sup> Tetanus-containing vaccines include tetanus and diphtheria toxoids (Td) vaccine or tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine.

**Table 3**

## Patient Age and Payer for Vaccination Visits\*

Category	2007 # (%)	2008 # (%)	2009 # (%)
Age			
<2	63 (0.01)	853 (0.1)	2891 (0.1)
2-5	6303 (1.3)	20963 (2.0)	90634 (4.5)
6-17	47,974 (10.1)	87,888 (8.5)	260,027 (12.9)
18-64	277,933 (58.3)	587,692 (56.9)	1,102,418 (54.7)
65+	23,482 (30.4)	335,935 (32.5)	560,966 (27.8)
Payer**			
Cash	167,103 (38.8)	239,971 (27.6)	456,303 (28.4)
Commercial Insurance	182,851 (42.5)	416,069 (47.8)	868,558 (54.1)
Medicaid	556 (0.1)	512 (0.1)	1,449 (0.1)
Medicare	79,381 (18.4)	211,516 (24.3)	276,507 (17.2)

\* Study population differs from Tables 1 and 2. Tables 1 and 2 report data from two retail clinic operator, while Table 3 reports data from the three largest retail clinic operators (representing 81% of all retail clinics in the U.S.). One retail clinic operator did not provide CPT codes which limited them to be used only in this table.

\*\* Column does not add up to 100% because additional category of "unknown/missing" is not included