Business Models, Vaccination Services, and Public Health Relationships of Retail Clinics: A Qualitative Study

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EXECUTIVE SUMMARY

Despite the rapid growth of retail clinics (RCs), literature is limited in terms of how these facilities offer preventive services, particularly vaccination services. The purpose of this study was to obtain an in-depth understanding of the RC business model pertaining to vaccine offerings, profitability, and decision making. From March to June 2009, we conducted 15 interviews with key individuals from three types of organizations: 12 representatives of RC corporations, 2 representatives of retail hosts (i.e., stores in which the RCs are located), and 1 representative of an industry association. We analyzed interview transcripts qualitatively. Our results indicate that consumer demand and profitability were the main drivers in offering vaccinations. RCs in this sample primarily offered vaccinations to adults and adolescents, and they were not well integrated with local public health and immunization registries. Our findings demonstrate the potential for stronger linkages with public health in these settings. The findings also may help inform future research to increase patient access to vaccination services at RCs.

For more information about the concepts in this article, contact Ms. Arthur at bnw6@cdc.gov.
INTRODUCTION
To respond to consumer demand for common, acute care services, and faced with a shortage of primary care physicians (PCPs), retail clinics (RCs), urgent care centers, and telemedicine have emerged as new healthcare models that provide basic medical care in a convenient setting for consumers. These convenient care models have received considerable attention from researchers and policy makers as they weigh the new models' benefits (such as lower costs and better access for consumers, regardless of insurance status) and risks (disruption of care continuity) (Ehley, 2014; Mehrotra, Wang, Lave, Adams, & McGlynn, 2008; Robert Wood Johnson Foundation, 2015). RCs—which typically are located in retail settings such as grocery stores, pharmacies, and discount chains—are of particular interest given their exponential growth over the past 15 years. There are approximately 1,200 RCs in the United States, and this number is expected to double by the end of 2015 (Dermody, 2013). Research has estimated that the three largest clinic operators had a combined 8.9 million RC visits from 2007 to 2009 (Uscher-Pines, Harris, Burns, & Mehrotra, 2012). Furthermore, many major insurers now cover services offered at RCs, and almost all RCs accept insurance payment (Ahmed & Fincham, 2011).

RCs are generally limited in the scope of the medical services they provide, which range from treating common acute illnesses and infections to preventive care (Mehrotra et al., 2008; Wang, Ryan, McGlynn, & Mehrotra, 2010). Vaccines are one of these preventive services, and in 2009 they accounted for more than 40% of visits to the three largest RCs (Uscher-Pines et al., 2012). While vaccines are among the most cost-effective clinical preventive services to offer, they also are essential for decreasing morbidity and mortality in vulnerable populations (Healthy People, 2014). However, despite steady improvement, the rates of vaccine coverage among adults and adolescents remain suboptimal for most routinely recommended vaccines, and they fall short of the Healthy People 2020 targets (Centers for Disease Control and Prevention [CDC], 2012a, 2012b). Visiting venues such as RCs may be a viable method of increasing access to vaccinations.

Despite the rapid growth of RCs, their increased usage by consumers, and their potential to reduce the burden on primary care providers, literature is limited in terms of how RCs offer preventive services—in particular, vaccination services. This exploratory mixed-methods study aimed to obtain an in-depth understanding of the RC business model pertaining to vaccine offerings, profitability, and decision making. The study also explored the eagerness and ability of RCs to partner with public health agencies and helped gauge RC interest in future partnership efforts to potentially improve vaccination rates.

METHODS
For this study, we used a mixed-methods design, which allowed us to obtain an in-depth understanding of the RC industry, its patients, the factors driving which preventive services (including vaccines) are offered, and the potential
impact of RCs on healthcare delivery. Because we wanted to explore RCs from several dimensions and they had only minimally been studied before, we did not use a specific conceptual framework or theory but rather took an open, inductive approach.

We conducted a two-phased mixed-methods study. In phase I, we combined publicly available information about RC corporations and key informant interviews with RC corporations, retail hosts, and industry experts. Phase II consisted of in-person interviews with RC customers and clinicians during four site visits. In this report, we describe only the first phase of the study.

The following definition of RCs was used:

Retail clinics are characterized as having flexible hours, short waiting times, transparent pricing, and a limited number of health services in a convenient setting. They differ from urgent care clinics because they are located within stores, usually use nurse practitioners or physician assistants (and in rare occasions physicians) to provide care, and offer a limited scope of care (Convenient Care Association, 2009).

Our approach to compiling the database of RCs and conducting the interviews follows.

Compilation Database of RCs
We created a comprehensive database of corporations that were currently operating (or had recently operated) RCs to (1) understand the characteristics of the industry, (2) identify the vaccines offered, and (3) establish the universe from which we could identify interviewees. The database was compiled from information on the publicly available websites of 69 RC corporations between January 28, 2009, and January 31, 2009. We then calculated descriptive statistics of the findings regarding industry characteristics and vaccines for the 12 RC corporations interviewed.

Interviews
Respondent Identification and Recruitment
Our aim was to interview representatives from three types of organizations: RC corporations, retail hosts, and industry associations. RC corporations were selected from the database using purposive sampling across the following variables: corporation size (i.e., small, medium, or large), physical location of the RCs (i.e., in a big-box store, grocery, or pharmacy), operating status (i.e., currently operating, defunct, or recently downsized), whether health insurance was accepted, geographic region, and vaccines offered. We used the same compilation database to identify retail hosts based on their physical location. To find industry experts, we conducted an Internet search of organizations representing the industry, and one industry association helped us identify and recruit respondents.

Interview Data Collection
Two of the authors (S.J.S. and A.P.) conducted the key informant interviews via telephone between March 17 and June 4, 2009. The semistructured interview protocols addressed several topics, with the questions tailored to
each type of organization. We focus here on the questions pertaining to the business model and vaccines. Our protocol was reviewed and approved by the institutional review board at Abt Associates, Inc., a research firm headquartered in Cambridge, Massachusetts.

Transcription and Coding
When participants agreed, the interviewers audiotaped and transcribed the interviews. To discover common themes, team members (B.C.A., A.K.F.) read through the transcripts using common exploratory techniques (Bernard, 1994). Themes were explored for each topic covered during the interviews. Codes—defined as labels or tags used to assign meaning to descriptive data—are used to develop a codebook. Using a standardized iterative process, we developed the codebooks, and researchers (B.C.A., A.K.F.) independently coded and compared the responses (MacQueen, McLellan, Kay, & Milstein, 1998). The codebook consisted of more than 50 codes, which mapped closely to the interview questions, while allowing data relevant to a particular question or code to be captured at multiple points throughout the interview. Intercoder percentage agreement was assessed twice during the coding process for every fifth transcript (Carey, Morgan, & Oxtoby, 1996). Revisions to the codebook and coding process were made after the initial assessment; final agreement showed a consistent application of codes and a threshold of 80% agreement. One researcher (B.C.A.) then coded all 15 transcripts using NVivo version 8.0 software (QSR International) and analyzed them qualitatively.

RESULTS
The results from the interviews and our analysis of the services offered by the 12 RC corporations are presented below. Interviews were conducted with representatives from 15 organizations, including RC corporations (n = 12), retail hosts (n = 2), and an industry association (n = 1). The characteristics of the RC corporations interviewed are described in Table 1. The findings are described by the services offered, RC ownership structure, health system affiliation, retail host involvement and RC profitability, vaccine profitability, factors determining the vaccine offering, public health partnership, and immunization registry reporting.

Services Offered by RC Corporations
We interviewed 12 RC corporations, representing 1,040 separate RC locations, and found that together they offered 19 health and wellness services and 23 vaccines. The influenza; pneumococcal; hepatitis A; hepatitis B; tetanus, diphtheria (Td); tetanus, diphtheria, acellular pertussis (Tdap); meningococcal; and measles, mumps, and rubella shots were advertised most frequently (Table 2). Nine of the 12 RC corporations offered at least one vaccine, representing 98% (1,023) of the RC outlets in the sample. Three RC corporations did not offer vaccines, representing a small number (n = 17) of the 1,040 RC outlets (Table 3).

RC Ownership Structure
Table 1 shows the ownership structures of the 12 RC corporations interviewed. Most commonly, the RCs were affiliated with a health system (n = 5) or were
privately owned businesses or franchises \((n = 5)\). They were least likely to be a subsidiary \((n = 2)\).

**Health System Affiliation**

The majority of the RC corporations we interviewed were not affiliated with a health system, although many of the corporations \((n = 9)\) mentioned having partnerships with local healthcare systems \(\text{e.g., health system physicians provided oversight}\). Integration with local providers reportedly facilitated continuity of care between the primary care physician \(\text{(PCP)}\) and the RC clinician. Additionally, for those patients without a PCP, the RC clinicians made a referral, and the PCPs informed their patients that the RC was an option for after-hours care. Whether affiliated with a health system or not, all 12 RC corporations reported sharing records with their patients’ PCPs. Most affiliated RCs were connected to their health system’s
electronic health record (EHR), thereby ensuring that the PCP could find the RC visit in the patient record.

The five RCs affiliated with a health system cited this integration as an opportunity to ensure continuity of care. Industry experts thought affiliation meant easier access to cash than other ownership types, creating a more sustainable business model, while the unaffiliated RCs saw independence as a unique advantage. Compared with unaffiliated RCs, the affiliated RCs had fewer expectations of direct profit and often greater expectations of the revenue associated with a patient referral into their health system.

Vaccine purchase and distribution varied depending on health system affiliation. The five health-system-affiliated RC corporations received vaccines through their system and then distributed the immunizations to all of their clinics, including the RCs. Four of the seven unaffiliated RC corporations used a single vaccine distributor and

<table>
<thead>
<tr>
<th>Vaccines</th>
<th>Number of RCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chickenpox (Varicella)</td>
<td>4</td>
</tr>
<tr>
<td>DT (Diphtheria, Tetanus for Children)</td>
<td>2</td>
</tr>
<tr>
<td>DTaP (Diphtheria, Tetanus, Pertussis for Children)</td>
<td>4</td>
</tr>
<tr>
<td>Haemophilus Influenzae Type b</td>
<td>1</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>7</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>7</td>
</tr>
<tr>
<td>Human Papillomavirus Vaccine (Gardasil, Merck &amp; Co.)</td>
<td>4</td>
</tr>
<tr>
<td>Influenza</td>
<td>8</td>
</tr>
<tr>
<td>Japanese Encephalitis</td>
<td>1</td>
</tr>
<tr>
<td>Measles, Mumps, Rubella</td>
<td>6</td>
</tr>
<tr>
<td>Meningococcal&lt;sup&gt;a&lt;/sup&gt;</td>
<td>6</td>
</tr>
<tr>
<td>Pneumococcal&lt;sup&gt;a&lt;/sup&gt;</td>
<td>7</td>
</tr>
<tr>
<td>Polio</td>
<td>4</td>
</tr>
<tr>
<td>Rabies</td>
<td>0</td>
</tr>
<tr>
<td>Rotavirus</td>
<td>0</td>
</tr>
<tr>
<td>Shingles (Zostavax, Merck &amp; Co.)</td>
<td>4</td>
</tr>
<tr>
<td>Td (Tetanus, Diphtheria for Adolescents and Adults)</td>
<td>7</td>
</tr>
<tr>
<td>Tdap (Tetanus, Diphtheria, Acellular Pertussis)</td>
<td>6</td>
</tr>
<tr>
<td>Typhoid</td>
<td>1</td>
</tr>
<tr>
<td>Yellow fever</td>
<td>1</td>
</tr>
</tbody>
</table>

<sup>a</sup>A specific vaccine was not identified.
received a bulk discount. The representatives we interviewed from the other three unaffiliated RCs were unaware of their organization’s vaccine-procurement process.

**Retail Host Involvement and RC Profitability**

While most retail hosts had minimal-to-no input in the daily clinical operations, they did participate in the selection of the retail host site. Some RC corporations characterized the relationship with the retail host as a lease agreement, although marketing and advertising efforts may have been shared.

Both industry experts and respondents from the RC corporations indicated that they expect an RC to break even 18 to 36 months after opening; the variation in the estimates was the result of differences in business models. Representatives from both RC corporations and retail hosts indicated that there was not a formal expectation of profitability with a landlord-tenant relationship; however, increased foot traffic from the RC presence was an anticipated benefit for retail hosts.

**Vaccine Profitability**

Many of the RC respondents and industry experts concurred that vaccines generally do not yield a high profit margin, though some stated that profitability varied by the particular vaccine and its relative price. One RC corporation respondent stated that anything covered by insurance is more profitable than other services, while other respondents admitted that low reimbursement (e.g., Medicaid) or low fees for vaccine administration do limit the profitability of some vaccines (Table 4).

**Factors Determining Vaccine Offering**

In addition to vaccine profitability, most major decisions (e.g., services offered and price) were made at the corporate level, while day-to-day decisions were made by the individual clinic. RC corporation representatives reported that decisions regarding which vaccines to offer were made at a corporate level. While these decisions were based primarily on consumer demand and profitability, they also were informed by the organization’s business model. One RC corporation

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**Table 3**

<table>
<thead>
<tr>
<th>Types of Vaccines</th>
<th>No. (%) of RC Corporations (N = 12)</th>
<th>No. (%) of RC Outlets (N = 1,040)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Least One</td>
<td>9 (75.0)</td>
<td>1,023 (98.4)</td>
</tr>
<tr>
<td>Select Childhood Vaccines&lt;sup&gt;a&lt;/sup&gt;</td>
<td>4 (33.3)</td>
<td>681 (65.5)</td>
</tr>
<tr>
<td>Human Papillomavirus</td>
<td>4 (33.3)</td>
<td>437 (42.0)</td>
</tr>
<tr>
<td>Select Travel Vaccines&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1 (8.3)</td>
<td>21 (2.0)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Select childhood: haemophilus influenzae type b, DTaP (diphtheria, tetanus, acellular pertussis), polio, or rotavirus.

<sup>b</sup>Yellow fever, typhoid, Japanese encephalitis, or rabies.
representative referred to consumer demand specifically related to flu shots as a primary driver. In contrast, a health-system-affiliated RC corporation did not provide the first dose of the HPV vaccine (Gardasil, Merck & Co.), as requested by system PCPs, but it did provide the subsequent doses.

In addition, unlike other services, vaccines pose specific challenges to RCs related to cost, storage requirements, and age limitations. Many RC corporations did not provide vaccines to infants and young children because of complexities specific to that age group (Table 4).

**Public Health Partnership**

Four of the 12 RC corporations interviewed had active partnerships with public health or health departments in their communities, and one was in the process of developing a partnership to share public health data. Seven RC corporations did not report partnerships with public health departments; the
most frequently cited reason was related to the cost associated with treating patients receiving Medicaid and others who cannot afford care (i.e., the type of patient usually referred by the public health department) (Table 4).

Another example of an active public health partnership is the federally funded Vaccines for Children (VFC) program managed by the CDC (2012c). Each year, the VFC program provides vaccinations for an estimated 40 million uninsured and Medicaid-eligible children through 18 years of age. Of the 12 RC corporations interviewed, only one was currently participating in VFC. When questioned about their clinic’s participation in the program, some respondents showed a lack of understanding of VFC or cited eligibility challenges as reasons for nonenrollment. Respondents who were aware of the program yet opted not to participate cited low reimbursement fees and the administrative burden as barriers (Table 4).

**Immunization Registry Reporting**

Of the 12 people interviewed from RC corporations, 5 reported the number and type of vaccines administered to a local or state immunization registry, 3 did not report, 2 were unsure if their companies reported, and 2 made no mention of reporting. The RC corporations that did not report to an immunization registry noted that the time required for doing so was their main concern (Table 4). Other respondents were unsure if their state had a registry; however, they noted that they do send copies of the vaccine verification to patients’ physicians’ offices.

**DISCUSSION**

This study was conducted during the early growth of RCs, and it expands the understanding of vaccine service delivery at RCs. RCs in this study offered adult and adolescent vaccines and were not well-integrated with public health and immunization registries; the majority of the respondents did not participate in the VFC program. As expected, influenza vaccination was offered more frequently than all other immunizations. Our findings also showed that consumer demand and profitability were the main drivers in vaccine offering. This is noteworthy because the emphasis of RCs is on convenience, affordability, and consumer demand (Wang et al., 2010).

Almost half of the RC corporations interviewed were affiliated with health systems. An important difference between the affiliated and unaffiliated groups was the continuity of care. EHR sharing among health-system-affiliated RCs serves as an advantage over unaffiliated clinics, providing a level of physician oversight between the PCP and RC clinician, which can, in turn, ensure continuity of care. Sharing an EHR is an advantage because EHRs can facilitate data collection (Shen et al., 2012) to promote improved quality and efficiency of care and reduce medical errors (Belletti, Zacker, & Mullins, 2010). They also can facilitate patient-centered care and enhance communication among healthcare providers (Hughes et al., 2011).

The advent of RCs as a venue for vaccination and other healthcare services has been the subject of debate by PCPs and medical care organizations.
Groups such as the American Academy of Pediatrics (2006) have been opposed to the provision of care for children and adolescents in RCs because of possible adverse effects on quality and the fragmentation of care away from the medical home. Furthermore, some providers are concerned that patients will seek care in RCs for more urgent or chronic issues that should be addressed in emergency departments or monitored in primary care practices (Kamerow, 2007). The individuals interviewed report that the RCs operate within their defined scope of practice and appropriately refer patients to other healthcare settings. In addition, recent literature suggests that RC visits do not have a negative impact on preventive care (Reid et al., 2013).

A key element of the early RC business model was patient fee for service (Mehrotra et al., 2008). This practice allowed RCs to avoid the expense of working with insurers. Currently, almost all RCs accept insurance, and vaccination is a reimbursable service (Mehrotra et al., 2010). A study of the three largest RC operators in the United States (constituting 81% of all RC outlets) found that the percentage of patients who paid out of pocket for vaccinations declined in recent years to less than 30% (Uscher-Pines et al., 2012). In addition, from 2007 to 2009, vaccinations were administered during about 40% of all RC visits, indicating that RCs are playing an increasing role in vaccine delivery (Uscher-Pines et al., 2012).

The results of our study support ongoing research in the use of nontraditional vaccination venues, such as RCs; the administration of vaccines by pharmacists; and the impact of increasing immunization coverage. Moreover, since this study was initiated in 2009, a number of substantive changes in vaccine recommendations have been made. For example, the HPV vaccine was not licensed for administration to women and girls until 2006, which may explain why some RC corporations were still reluctant to administer it only a few years after it became available. In 2009—after the study period—HPV4 was licensed for administration to men and boys (CDC, 2010). As it gains longevity and broader experience in the market, there may be greater uptake by RCs of this vaccine.

These findings have important public health and policy implications for the potential participation of RCs in the VFC program and state immunization registries. Several respondents noted that they were not currently participating in the VFC program because of administrative burden, vaccine storage complexities, or lack of program knowledge. These barriers can be addressed through linkages formed among RCs, local health departments, and VFC coordinators. Although the administrative burden cannot be completely eliminated, greater understanding of the program benefits may give RCs an opportunity to make informed decisions and possibly become VFC participants. The results suggest that infants and children younger than 7 years old are not the target population for vaccines offered in RCs, so these sites likely do not provide an opportunity to expand vaccination rates in these groups; however, they might serve
adolescents who are eligible for VFC program benefits. State immunization registry reporting also is an area for improvement, as few RCs are linked to immunization registries.

These study results should be considered in light of limitations. First, qualitative research is not generalizable; however, the intent of the study was to understand the landscape of the RCs through in-depth interviews of representatives from RC corporations, retail hosts, and industry experts. Second, we present data collected in 2009, a time when the landscape of RCs was rapidly changing. Third, there may have been social desirability bias among the representatives from the RC corporations because of their leadership roles.

**CONCLUSION**

These findings have the potential to inform future research to increase awareness and understanding of the RC industry and how RCs can improve patient access to vaccinations in these settings. The results also highlight the importance of exploring possible relationships between RCs and public health departments in state and local jurisdictions. These partnerships can enhance vaccination coverage through participation in the VFC program and state immunization registry reporting. RCs generally serve a population of younger adults, who often lack a regular healthcare provider (Mehrotra et al., 2010). Given lower vaccination coverage among younger adults and adolescents, the use of RCs for routine vaccination could potentially have an impact on these populations.

**ACKNOWLEDGMENTS**
The authors thank the retail clinic representatives and industry experts who were key resources for this study. They also acknowledge Dr. Ardon Arthur, Dr. Suchita Patel, Leighanne Shervington-Hoskins, and Dr. Carla Winston for their thoughtful editorial comments and support of this manuscript.

**REFERENCES**


Retail clinics (RCs) are growing in number and scope throughout the United States. Arthur et al. cite research estimating that from 2007 to 2009, 8.9 million retail visits were made across the three largest clinic operators. In 2009, vaccines accounted
for more than 40% of these visits. Convenient care models such as RCs are logical strategies to provide patients with access to care at a lower cost. Because of limited research on this topic, this article is a good launching point for discussion. The purpose of this research was to better understand vaccine offerings, profitability, and decision making in RCs.

Arthur et al. used a mixed-methods design for the study. They conducted interviews with 15 representatives from three types of organizations and analyzed the interview transcripts qualitatively from 2011 to 2012. Although this research consisted of two phases, this article contains only phase I results, consisting of publicly available information and interviews with key people in RC corporations, retail hosts, and industry experts.

Our health system does not partner with RCs but has considered doing so. While our focus has been on building a primary care network to ensure the provision of the full continuum of care, we have been forced to divert financial and operational resources toward other priorities. We have approached a retail franchise to explore a relationship that would open our first retail structured primary care service line.

The findings of the study were limited but establish the starting point for further research. The authors conclude that vaccination services are determined by consumer demand and profitability. They also point to a severe lack of integration with immunization registries, public health, and electronic health record structures such as health information exchanges. In addition, Arthur et al. report that we should expect breakeven results after 18 to 36 months.

Partnerships between health systems, retail chains, and public agencies seem to offer the greatest opportunity for growth, according to the results of this study. Working together, these organizations could augment the scope of the clinics, including the number and type of vaccination offerings. This partnership could reduce drug costs and other supply costs to enhance profitability. Such partnerships may also reduce barriers to accessing federal programs such as the Vaccines for Children program, participating in public health registries, and connecting with patients’ primary care providers. The Centers for Disease Control and Prevention and other government agencies should streamline administrative processes required for participation in the VFC program, which may encourage participation by smaller healthcare organizations.

Since passage of the Affordable Care Act, high-deductible health plans have grown in number, requiring consumers to become more involved in managing the costs of their care. Consequently, increased reliance on RCs seems logical. The expansion of Medicaid has provided insurance coverage for adults who otherwise would not have coverage. This may have improved access to care for these adults, resulting in higher adult vaccination rates in RCs and all other settings. I believe that health systems will continue to seek partnerships with retail businesses as they enhance efforts to provide the full continuum of care (i.e., from conception through death).

Arthur et al. provide insight into the RC industry. Further research will boost our understanding of this topic and provide additional information for healthcare professionals.