



Published in final edited form as:

J Pediatr. 2013 November ; 163(5): . doi:10.1016/j.jpeds.2013.05.008.

PEDIATRIC PROVIDERS' ATTITUDES TOWARD RETAIL CLINICS

Jane M. Garbutt, MB, ChB¹, Kathy M. Mandrell, BS¹, Randall Sterkel, MD^{1,2}, Jay Epstein, MD¹, Kristin Stahl, MD¹, Katherine Kreusser, MD¹, Jerome O'Neil, MD, Harold Sitrin, MD¹, Adolfo Ariza, MD^{3,4,5}, Evelyn Cohen Reis, MD⁶, Robert Siegel, MD⁷, John Pascoe, MD⁸, and Robert C. Strunk, MD.¹

¹Washington University in St Louis, St. Louis, MO

²St. Louis Children's Hospital, St. Louis, MO

³Northwestern University Feinberg School of Medicine, Chicago, IL

⁴Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago, IL

⁵Children's Research Center of Chicago, Chicago, IL

⁶University of Pittsburgh School of Medicine, Pittsburgh, PA

⁷Cincinnati Children's Hospital Medical Center, Cincinnati, OH

⁸Wright State University Boonshoft School of Medicine, Dayton, Ohio

Abstract

Objective—To describe pediatric primary care providers' attitudes toward retail clinics and their experiences of retail clinics use by their patients.

Study design—A 51-item, self-administered survey from four pediatric practice-based research networks from the Midwestern United States, which gauged providers' attitudes toward and perceptions of their patients' interactions with retail clinics, and changes to office practice to better compete.

Results—A total of 226 providers participated (50% response). Providers believed that retail clinics were a business threat (80%) and disrupted continuity of chronic disease management (54%). Few (20%) agreed that retail clinics provided care within recommended clinical guidelines. Most (91%) reported that they provided additional care after a retail clinic visit (median 1–2 times per week) and 37% felt this resulted from suboptimal care at retail clinics “most or all of the time.” Few (15%) reported being notified by the retail clinic within 24 hours of a patient visit. Those reporting prompt communication were less likely to report suboptimal retail clinic care (OR 0.20, 95% CI 0.10 to 0.42) or disruption in continuity of care (OR 0.32, 95% CI 0.15 to 0.71). Thirty-six percent reported changes to office practice to compete with retail clinics (most commonly adjusting or extending office hours) and change was more likely if retail clinics were perceived as a threat (OR 3.70, 95% CI 1.56 to 8.76); 30% planned to make changes in the near future.

© 2013 Mosby, Inc. All rights reserved.

Address correspondence to: Jane Garbutt, MB, ChB, Department of Pediatrics, Washington University School of Medicine, Campus Box 8116, 660 S. Euclid Ave., St. Louis, MO., 63110 Telephone: (314) 454-8613; Fax: (314) 286-1149; jgarbutt@dom.wustl.edu.

The authors declare no conflicts of interest.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Conclusions—Based on the perceived business threat, pediatric providers are making changes to their practice to compete with retail clinics. Improved communication between the clinic and providers may improve collaboration.

Keywords

Retail clinic; practice-based research network

The role of retail clinics in the U. S. health care system is controversial. Some have suggested that retail clinics play an important role, providing a market-based solution to problems such as access to care and increasing costs.(1) Professional organizations including the American Academy of Pediatrics (AAP) and the American Academy of Family Physicians (AAFP) have raised concerns about the quality of care provided at retail clinics and the impact of fragmentation of care on patients overall health.(2, 3) Retail clinics also represent a business threat for primary care physicians. For pediatricians, the acute upper respiratory conditions initially targeted by retail clinics represent up to 30% of office visits,(4, 5) and expansion of services at some retail clinics to include physical examinations, preventive care, and chronic disease care may further increase the business threat.(6–8)

Retail clinics first appeared in 2000 in Minnesota and are predicted to number more than 6,000 nationwide by 2013.(5) Currently, retail clinics are found in 39 states, most commonly in urban areas.(6, 9) Clinics are staffed by non-pediatric nurse practitioners and physician assistants and provide care for patients who are 18 months of age and older.(7) They sit within high-traffic retail settings, such as pharmacies, supermarkets or discount stores.(1) From the consumer standpoint, retail clinics may be the preferred care option as they are convenient, no appointment is necessary and the wait time is short, typically less than 30 minutes.(10, 11) Retail clinics have extended hours, are open on the weekend and provide one-stop shopping for the desired healthcare, any needed medications, household goods, and groceries.(12) The price of services is fixed and transparent, and may be less expensive than use of a primary care provider or Emergency Department (ED),(10, 13) and many retail clinics now accept health insurance and Medicaid.(14) Retail clinics differ from urgent care centers as they are staffed by non-physicians, provide more limited care options, and do not have on-site diagnostic services, such as phlebotomy and radiography, and the ability to perform minor procedures required to earn the urgent care center designation.(15)

Little is known about how retail clinic care for children is impacting pediatric primary care practice. The purpose of this study was to determine pediatric providers' perception of their patients' encounters with retail clinics, their attitudes towards retail clinics, and changes to office practice made or planned to better compete with retail clinics.

METHODS

This study and survey were developed by the Washington University Pediatric and Adolescent Ambulatory Research Consortium (WU PAARC) in response to concerns presented by local pediatricians. WU PAARC is a Practice-Based Research Network (PBRN) of community pediatricians and pediatric nurse practitioners in St. Louis, Missouri. The survey tool was developed by the WU PAARC study team comprised of five community pediatricians and researchers at Washington University. Items were identified based on a review of the literature and discussion of common concerns and clinical experiences, and modified after pilot testing by the pediatricians. Following administration of the survey in WU PAARC, four items describing additional office-based clinical

scenarios associated with retail clinic use were added to the survey tool (Table IV). The study was approved by the Washington University Human Research Protection Office.

Eligible participants were pediatricians (N=441) and pediatric nurse practitioners (PNPs, N=11) affiliated with four midwestern pediatric PBRNs. The participating PBRNs were WU PAARC in St. Louis, MO, Pediatric Practice Research Group (PPRG) in Chicago, IL, Cincinnati Pediatric Research Group (CPRG) in Cincinnati, OH, and Pediatric PittNet in Pittsburgh, PA (PittNet). The four PBRN communities varied in their duration and intensity of exposure to commercially sponsored retail clinics (most commonly TakeCare clinics in Walgreens and Minute Clinics in CVS stores)(Table I; available at www.jpeds.com).

The survey was conducted first within WU PAARC, and then expanded to include the other PBRNs. In each PBRN, providers were invited by their PBRN director to participate in the anonymous REDCap electronic survey by email, with up to four invitations sent to non-responders. Eleven St. Louis area providers completed a paper version of the survey at a meeting and their responses were entered into the REDCap database by WU PAARC staff.

The 51-item self-completed survey took approximately five minutes to complete and included a description of retail clinics as well as urgent care clinics (Appendix; available at www.jpeds.com). Questions assessed providers' perceptions of the care provided by retail clinics for their patients, the impact of retail clinics on their practice, and their attitudes regarding retail clinics. Providers indicated their agreement with attitudinal statements using a four or five-point categorical scale (strongly agree to strongly disagree; as appropriate, a "don't know" response option was included). Similarly, providers indicated the frequency with which they thought local retail clinics complied with AAP principles concerning retail clinic care including following recommended clinical guidelines and communicating with the patient's pediatrician within 24 hours of the clinic visit.(2) They also indicated how often they thought additional office visits resulted from suboptimal care at the retail clinic (always or almost always, most of the time, about half the time, sometimes, rarely, never). Providers selected from listed items to indicate which suboptimal clinical scenarios they had encountered and changes to their business practices they had made or planned to make to compete with retail clinics. In addition, demographic data were recorded.

Statistical Analyses

Continuous data are summarized as means (standard deviation, sd) or median (range). Categorical data are summarized as percentages. Responses of "strongly agree" and "agree" were combined and reported as "agree." Frequency responses of "most of the time" and "always or almost always" were combined and reported as "at least most of the time."

We used the Pearson Chi-square test to compare responses among various subgroups including demographic groups (male vs. female, and younger vs. older providers, <50 years and >50 years). We also compared responses from those who reported prompt communication at least "most of the time" and who had made changes to become more competitive with retail clinics with other respondents. A probability of $p < 0.05$ (two-tailed) was used to establish statistical significance. Statistically significant associations were further explored using logistic regression to adjust for clustering of providers within the PBRNs. Significant associations are reported as odds ratios (OR) with 95% CI. All statistical analyses were done using STATA 12.1 (StataCorp LP, College Station, TX).

RESULTS

In total, 226 responses were received from October 10, 2011 to March 5, 2012 (50% response rate). Most respondents practiced in a pediatric group (72%) and a suburban setting

(63%) (Table II). Response rates within each PBRN varied from 35% to 64% (Table III). Study participants did not differ from their other PBRN colleagues for practice type or setting. Overall and PBRN-specific summaries of providers' experiences with and attitudes towards retail clinics are provided in Tables III and IV.

Almost all (98%) providers were aware of retail clinics in their town or city, 90% were aware their patients had used retail clinics, and 81% agreed that retail clinics had taken some of their business.

Ninety-one percent reported that they had provided additional care for patients in their offices after a retail clinic visit, with varying frequency (45% did so < 1x/week; 31% 1–2x/week; 18% 3–4x/week; 6% >5x/week). Providers thought suboptimal clinic care was the reason for these additional offices visit “most of the time or always” (37%), “about half the time” (24%), “sometimes” (30%), and “rarely or never” (9%). Many PCPs indicated that they had experienced the following clinical scenarios (Table IV): incorrect diagnoses (81%), overuse (77%) and misuse (68%) of antibiotics, failure to conduct diagnostic tests (68%) or ignoring the test results when making the treatment decision (69%).

Only 15% of providers indicated they were notified by the retail clinic within 24 hours of a clinic visit by one of their patients at least “most of the time.” Providers reporting prompt communication by retail clinics were more likely to report that retail clinic care was in accordance with recommended clinical guidelines (47% vs. 16%; OR 4.89, 95%CI 3.80 to 6.27), and less likely to report experience of suboptimal retail clinic care (13% vs. 41%; OR 0.20, 95%CI 0.10 to 0.42) or that retail clinic care disrupted continuity of care for patients with chronic illness (31% vs. 57%; OR 0.32, 95%CI 0.15 to 0.71).

Eighty percent of providers agreed that retail clinics were a business threat and 20% agreed that retail clinics provided care within recommended clinical guidelines (females 25%, males 12%, $p=0.024$). Over half believed that attendance at retail clinics by their patients had affected their ability to provide recommended preventive care (60%) and had disrupted continuity of care for those with a chronic disease (54%). There were no differences in provider's attitudes towards retail clinics by age group.

Thirty-six percent of providers reported that they had already made changes to their business practices to compete or cooperate with retail clinics (Table III). The most commonly reported changes were adjusting office hours, providing walk-in appointment options and discussing the pros and cons of retail clinic care with parents (Table V). A change was more likely to be reported in those who perceived retail clinics as a business threat (40% vs. 15%; OR 3.70, 95%CI 1.56 to 8.76) or that retail clinics had taken some of their business (40% vs. 15%; OR 3.41, 95%CI 1.54 to 7.54). An additional 30% of respondents intended to make changes in the near future and 35% reported that they had no intention of making any business practice changes. Five (2%) providers reported having contracted with a retail clinic as a supervising physician.

Discussion

This study describes pediatric providers' attitudes towards retail clinics and their perception of the impact of retail clinics on primary care pediatric practice. Four out of five providers reported they had lost business to retail clinics. This is consistent with other studies that suggest most children seen in retail clinics have a primary care provider.(5, 10) By offering convenience and lower costs for care of minor illnesses, retailers sought to take market share.(4) Now insurance companies promote retail clinic use for their enrollees due to the cost advantage and high patient satisfaction.(6, 16) It remains to be seen if retail clinics can

offer a wider range of services and provide more complex care yet continue to maintain their value to consumers and insurance companies.

Our findings suggest that most pediatric providers have recognized the implications of retail clinics for their practice. Two-thirds of respondents had made or planned to make changes to compete with retail clinics such as extending office hours and providing walk-in appointment options (Table V). Patient surveys suggest that these changes may be successful because convenient access is an important factor in parents' decision regarding where to seek care, especially for minor illnesses.(10) Changes to enhance access to care also have been encouraged by the AAP as strategies to achieve convenience and continuity of care in the medical home.(17) Promoting the medical home care model could provide context and an opportunity for providers to discuss their concerns about retail clinic care with patients, and inform them about extended office hours. Strategic adaptations of the current care delivery model are occurring in some communities (eg, innovations in Pittsburgh and Cincinnati) where urgent care clinics affiliated with the local children's hospital offer the same after-hours services as the retail clinics. Our data suggest this model may be seen as less threatening by local providers. In other communities, hospitals and medical groups are partnering with retail clinic operators with some integration of the electronic medical record to facilitate care coordination.(6, 18)

Study data suggest infrequent communication between the retail clinics and pediatric providers and widespread concern among practitioners about the care provided for their patients. Few providers believed retail clinics provided care within recommended clinical guidelines and many reported experience with episodes of suboptimal care of their patients, notably inappropriate antibiotic use. We do not have data from retail clinic records to confirm pediatric providers' impressions of suboptimal care and an earlier study of administrative data found no difference in quality metrics for care of otitis media, pharyngitis and urinary tract infections in children and adults.(14) It is possible that pediatricians' reported experiences reflect more complex cases that required additional care although few indicated retail clinics had resulted in a more complex case mix. Interestingly, providers who reported higher rates of prompt communication by retail clinics were more likely to report care was evidence-based, and less likely to report observing suboptimal care or a break in continuity of care for patients with chronic illness. Perhaps improved communication between the retail clinic and the primary care provider indicates a more collaborative approach with retail clinic care more reflective of the providers' usual practice. Improved communication from retail clinics with primary care providers about patient care and about their efforts to ensure high quality care such as accreditation with the Joint Commission and regular chart audits(1) may reassure providers, avoid duplication of services, and lead to more effective relationships..

Limitations of our study should be noted. Study data are self-reported by providers who are in competition with retail clinics, increasing the likelihood of negative responses that may not accurately reflect care provided in retail clinics. It is also possible that respondents confused retail clinics and Urgent Care Centers, although definitions for both were provided on the survey. Future studies should confirm our findings using objective measures. The study population is comprised of members of four midwestern pediatric PBRNs and our response rate was 50%. Thus our findings may not be generalizable to other communities. As the survey was anonymous, we do not have data to assess whether participants differed systematically from non-participants, nor can we assess any difference in response by provider type, however only 11 PNs were invited to participate.

Retail clinic competition may lead to improvement in pediatric care by encouraging providers to increase access to care for their patients. Improving communication between the

retail clinic and primary care providers may improve providers' perceptions about the quality of retail clinic care, and lead to more collaborative care and improved patient outcomes.

Acknowledgments

Study data were collected and managed using REDCap electronic data capture tools hosted at Washington University.⁽¹⁹⁾ REDCap (Research Electronic Data Capture) is a secure, web-based application designed to support data capture for research studies, providing: 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources. The authors thank all the pediatric providers who completed the survey and Melissa Allen for her assistance with project development and implementation.

Supported by the National Center for Research Resources (NCRR), a component of the National Institutes of Health (NIH), and NIH Roadmap for Medical Research (UL1 RR024992 [Washington University in St. Louis] and UL1 TR000005 [University of Pittsburgh]). Its contents are solely the responsibility of the authors and do not necessarily represent the official view of NCRR or NIH. The sponsors had no involvement in study design, collection, analysis, interpretation of the data, the writing of the report, or the decision to submit the paper for publication.

Abbreviations

AAFP	American Academy of Family Physicians
AAP	American Academy of Pediatrics
CI	confidence interval
CPRG	Cincinnati Pediatric Research Group
ED	Emergency Department
NIH	National Institutes of Health
OR	odds ratio
PBRN	Practice-based research network
PCP	Primary Care Pediatrician
PittNet	Pediatric PittNet, the University of Pittsburgh CTSI pediatric PBRN
PNP	Pediatric Nurse Practitioner
PPRG	Pediatric Practice Research Group
RA	Research Assistant
sd	Standard deviation
WU PAARC	Washington University Pediatric and Adolescent Ambulatory Research Consortium

References

1. Cassel CK. Retail clinics and drugstore medicine. *JAMA*. 2012 May 23; 307(20):2151–2. Epub 2012/05/24. eng. [PubMed: 22618918]
2. AAP principles concerning retail-based clinics. *Pediatrics*. 2006 Dec; 118(6):2561–2. Epub 2006/12/05. eng. [PubMed: 17142546]
3. AAFP. Retail Health Clinics. [updated 2012; cited 2012 April 24]. Available from: <http://www.aafp.org/online/en/home/policy/policies/r/retailhealth.html>

4. Burns LR, David G, Helmchen LA. Strategic response by providers to specialty hospitals, ambulatory surgery centers, and retail clinics. *Popul Health Manag*. 2011 Apr; 14(2):69–77. Epub 2010/11/26. eng. [PubMed: 21091376]
5. Mehrotra A, Wang MC, Lave JR, Adams JL, McGlynn EA. Retail clinics, primary care physicians, and emergency departments: a comparison of patients' visits. *Health Aff (Millwood)*. 2008 Sep-Oct; 27(5):1272–82. Epub 2008/09/11. eng. [PubMed: 18780911]
6. Rudavsky R, Pollack CE, Mehrotra A. The geographic distribution, ownership, prices, and scope of practice at retail clinics. *Ann Intern Med*. 2009 Sep 1; 151(5):315–20. Epub 2009/09/02. eng. [PubMed: 19721019]
7. Clinic TC. Our Services. [cited 2012 May 8]. Available from: <http://takecarehealth.com/whatwe-treat.aspx>
8. Clinic M. Services and Costs. [updated 2012; cited 2012 May 8]. Available from: <http://www.minuteclinic.com/services/>
9. Retail Clinics in the United States 2013. [cited 2013 February 22]. Available from: <http://www.merchantmedicine.com/home.cfm>
10. Ahmed A, Fincham JE. Physician office vs retail clinic: patient preferences in care seeking for minor illnesses. *Ann Fam Med*. 2010 Mar-Apr;8(2):117–23. Epub 2010/03/10. eng. [PubMed: 20212298]
11. Wang MC, Ryan G, McGlynn EA, Mehrotra A. Why do patients seek care at retail clinics, and what alternatives did they consider? *Am J Med Qual*. 2010 Mar-Apr;25(2):128–34. Epub 2010/02/10. eng. [PubMed: 20142442]
12. Weinick RM, Burns RM, Mehrotra A. Many emergency department visits could be managed at urgent care centers and retail clinics. *Health Aff (Millwood)*. 2010 Sep; 29(9):1630–6. Epub 2010/09/08. eng. [PubMed: 20820018]
13. Bohmer R. The rise of in-store clinics--threat or opportunity? *N Engl J Med*. 2007 Feb 22; 356(8): 765–8. Epub 2007/02/23. eng. [PubMed: 17314334]
14. Mehrotra A, Liu H, Adams JL, Wang MC, Lave JR, Thygeson NM, et al. Comparing costs and quality of care at retail clinics with that of other medical settings for 3 common illnesses. *Ann Intern Med*. 2009 Sep 1; 151(5):321–8. Epub 2009/09/02. eng. [PubMed: 19721020]
15. Certified Urgent Care Center (CUC) Designation. [cited 2012 June 21st]. Available from: http://www.ucaoa.org/recognition_certification.php
16. Ashwood JS, Reid RO, Setodji CM, Weber E, Gaynor M, Mehrotra A. Trends in retail clinic use among the commercially insured. *Am J Manag Care*. 2011 Nov; 17(11):e443–8. Epub 2011/12/27. eng. [PubMed: 22200061]
17. Berman S. Continuity, the medical home, and retail-based clinics. *Pediatrics*. 2007 Nov; 120(5): 1123–5. Epub 2007/11/03. eng. [PubMed: 17974749]
18. Pollack CE, Gidengil C, Mehrotra A. The growth of retail clinics and the medical home: two trends in concert or in conflict? *Health Aff (Millwood)*. 2010 May; 29(5):998–1003. Epub 2010/05/05. eng. [PubMed: 20439897]
19. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)--a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009 Apr; 42(2):377–81. Epub 2008/10/22. eng. [PubMed: 18929686]

TABLE I

Exposure to retail clinics by metropolitan area

Metro area	Population in millions *	Number of retail clinics within 50 miles **	Number of retail clinics per 100,000	Date of first exposure to retail clinic
Chicago	9.5	75	.79	2005
St. Louis	2.8	28	1.0	2006
Pittsburgh	2.4	25	1.0	2006
Cincinnati	2.1	17	.81	2008

* population estimated from metropolitan statistical areas found at: <http://www.census.gov/popest/data/metro/totals/2011/tables/CBSA-EST2011-01.csv> and pediatric populations found at: <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>

** This is the distance from the city center. Data are from convenientcareassociation.com, accessed April 2012.

TABLE II

Characteristics of 226 pediatric providers who responded to the survey

Characteristic	% or median (range)
Female sex	58%
Age, years	50 (29–71)
<50 years	47% (99/212)
Racial group	
Caucasian	85%
African American	4%
Asian	7%
Other	3%
Hispanic	4%
Practice arrangement	
Pediatric group practice	72%
Multispecialty group practice	7%
Self-employed (solo practice)	5%
Two-physician office	5%
Non-profit community health center	7%
Other	4%
Practice Location	
Suburban	63%
Urban, not inner city	14%
Urban, inner city	17%
Rural	6%
Percentage of patients covered by Medicaid	15% (0 to 100%)

Percentages may not add to 100 due to rounding

Pediatric primary care providers' experiences with and attitudes towards retail-based clinic care for their patients, by practice-based research network (PBRN) community.

TABLE III

	Overall	Chicago	Cincinnati	Pittsburgh	St Louis
N	226	55	29	60	76
Retail clinics are used by many of my patients [*]	62%	56%	34%	73%	68%
Retail clinics have taken some of my business [*]	81%	76%	69%	80%	91%
Patients have sought care at retail clinics for: [^]					
Acute illness	95%	95%	82%	95%	99%
Physical examinations	74%	71%	64%	71%	87%
Immunizations	49%	58%	32%	24%	69%
Asthma	31%	13%	58%	18%	29%
I have provided additional patient care due to an error or suboptimal care in the retail clinic [‡]	37%	20%	39%	34%	51%
I received communication from retail clinic within 24 hours of clinic visit [‡]	15%	42%	4%	7%	7%
Retail clinics are a significant business threat to PCPs [*]	80%	85%	66%	75%	87%
Retail clinics are an important part of the system for care for children [*]	12%	11%	17%	15%	8%
Retail clinics provide care in accordance with recommended clinical guidelines [*]	20%	40%	17%	10%	14%
Retail clinics have interfered with my providing recommended preventive care [*]	60%	58%	45%	47%	76%
Retail clinics have disrupted continuity of care for my patients with chronic disease [*]	54%	42%	45%	50%	68%
Retail clinics have reduced waiting room crowding and wait time in my office [*]	11%	4%	14%	17%	11%
Retail clinics have allowed me to focus on caring for more serious or complicated problems [*]	5%	7%	0	7%	3%
I have made changes in business practice to become more competitive with retail clinics [*]	36%	28%	19%	56%	32%

^{*} Percent of respondents reporting that they agree or strongly agree with each statement about retail based clinics in their community, by PBRN.

[^] Percent of respondents answering 'yes'

[‡] Percent of respondents reporting that they experience this always/almost always/most of the time about retail based clinics in their community, by PBRN.

Abbreviations: PBRN – practice-based research-network.

TABLE IV

Pediatric providers reported experience with clinical scenarios associated with retail clinic visits by their patients

Scenario	% Providers reported they had experienced this scenario (N=226)
Incorrect diagnosis	81%
Overuse of antibiotics	77%
Misuse of antibiotics (N=149) *	68%
Ignored results of diagnostic test	69%
Failure to conduct simple diagnostic tests	68%
Used diagnostic test without proper follow-up	52%
Overused OTC cough/cold medicine	44%
Missed diagnosis of co-morbid condition that led to inappropriate care	38%
Inappropriate triage	30%
Expectation that PCP would prescribe medications or order tests recommended by the clinic without seeing the patient (N=149) *	22%
Primary care provider not informed about specialist referral (N=147) *	21%
Failed to manage lacerations properly	5%
Repeat administration of vaccine (N=148) *	3%

* These questions were added after the survey was completed by the St Louis area providers.

TABLE V

Changes^{*} in practice reported by 226 pediatric primary care providers to better compete with retail clinics

Practice change	Have made change and provide currently	Planning to make change in near future
Change to in-office services:		
Adjust or extend office hours	27%	16%
Send reminders to patients who are overdue for appointments	15%	10%
Provide walk-in appointments	14%	12%
Take steps to reduce patients' wait time in the office	8%	8%
Reopen practice for new patients	3%	1%
Change to patient communication:		
Speak to families proactively about the pros and cons of retail clinics	17%	13%
Recommend patients to use or to avoid specific retail clinics	13%	7%
Target outreach letters to patients who have visited a retail clinic to remind them of office hours	6%	3%
Provide general information to parents about the pros and cons of retail clinics	5%	8%
Provide patients with convenient communication	5%	5%

* Percentages sum to more than 100% as respondents could select more than one item.

[§]This question was added after the St. Louis area providers completed the survey.