

Convenience Clinics: Characteristics of Persons Using Walk-in Retail Health Clinics and Urgent Care Centers and the
Impact on Preventive Care and Screening Services

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Abstract

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Convenience clinics, including walk-in retail health clinics and urgent care centers, offer care during extended office hours for a limited scope of time-limited acute conditions. Although utilization patterns of these clinics vary, they are increasingly used by some people as a source of regular care. This dissertation describes the factors associated with convenience clinic use for usual care, examines changing patterns in convenience clinic use for usual care following the peak of the COVID-19 pandemic, and analyzes the relationship between the use of convenience clinics for usual care and receipt of some recommended preventive care and screening services. This analysis uses 2019, 2022, and 2023 data from the National Health Interview Survey and regression modeling techniques to explore each of these aims. We found that among people with a place of usual care, people who were younger and uninsured were more likely to report convenience clinics as a usual source of care. Among people with a place of usual care and who have seen a healthcare provider in the last year, people who report convenience clinics as a usual source of care had a significantly lower likelihood of receiving some preventive care services compared to people reporting usual care at a doctor's office or health center. This research provides insight for healthcare providers on the changing demand for convenience clinics in the ambulatory landscape and fills an important gap in the extant literature.

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Chapter 1: Introduction

Convenience clinics are meeting consumer demands for accessible and timely care. Urgent care centers (“urgent care”) that may exist in stand-alone ambulatory medical facilities and walk-in retail health clinics (“retail clinics”) that may be found within pharmacies or general merchandise big-box stores, are an alternative care option typically designed to treat low-acuity, time-limited health needs and are located in suburban and urban areas¹⁻⁵. We define both urgent care and retail clinics as convenience clinics, and both typically offer walk-in appointments and maintain hours during weekdays, evenings, and weekends. The types of services offered differentiate retail clinics from urgent care centers. Urgent care provides more comprehensive low-acuity to mid-acuity care, often with an on-staff physician, and retail clinics provide lower-acuity services often staffed by a Physician Associate or Nurse Practitioner^{1,2}.

Convenience clinics often serve a population disconnected from an integrated healthcare system and are less likely to have a regular primary care provider and be under age 40³. Some patients with a primary care provider report using retail clinics when their provider was not readily available⁴, suggesting that these facilities may fill an important gap in access to care. Retail clinics use a transparent pricing model and may appeal to price-sensitive populations, such as the uninsured, or those with high-deductible health plans⁵⁻⁷. Previous studies have found urgent care centers can reduce long wait times and overcrowding and relieve pressure on traditional healthcare settings⁸. As convenience clinics provide some primary care services, they are increasingly seen as a usual source of primary care for a growing segment of the population⁹.

As of 2023, there were 1,800 retail health clinics in 44 states, located primarily in urban and suburban areas^{10,11} and in 2024, there were 10,700 urgent care centers in the US, primarily in more densely populated metropolitan areas^{12,13}. Most of the growth in the retail clinic market is concentrated in the South and Midwest: with one-third of the total growth located in California, Texas, Florida, Minnesota, and Illinois¹⁴. Convenience clinics are more likely to be located in highly populated areas with the greatest concentration in California, Texas, and Florida, possibly due to large suburban and metro areas within these states that are appealing markets for convenience clinic retailers¹⁵. More than one-third (35%) of the US urban population lives within a 10-minute drive of a retail clinic¹⁴, and 78% of the US population lives within a 10-minute drive of an urgent care center⁸.

More people are relying on convenience clinics as a source of primary care services, and may rely on these facilities as a place of usual care,⁹ despite evidence that having a source of usual care is associated with improved health outcomes and receipt of preventive services¹⁶. The extent to which individuals rely on convenience clinics for usual care is an understudied area of health services research thus the characteristics of those who use convenience clinics as a source of usual care remain largely unknown. Some previous studies have found retail clinics provide evidence-based care that adheres to established clinical practice guidelines, and both urgent care centers and retail clinics achieve high patient satisfaction compared to traditional clinics or emergency departments¹⁷⁻²⁰. However, other studies have found convenience clinic use disrupts receipt of primary care^{21,22}, and may disrupt continuity of care among people also using

primary care from traditional physician office settings²³. Physician groups have cautioned that convenience clinics should be more closely regulated, and have their role clarified as a supplement to primary care^{22–24}. Assessing changing trends in convenience clinic use and the receipt of care among those who report using convenience clinics may help to elucidate opportunities in improving care delivery and ensuring optimal health outcomes.

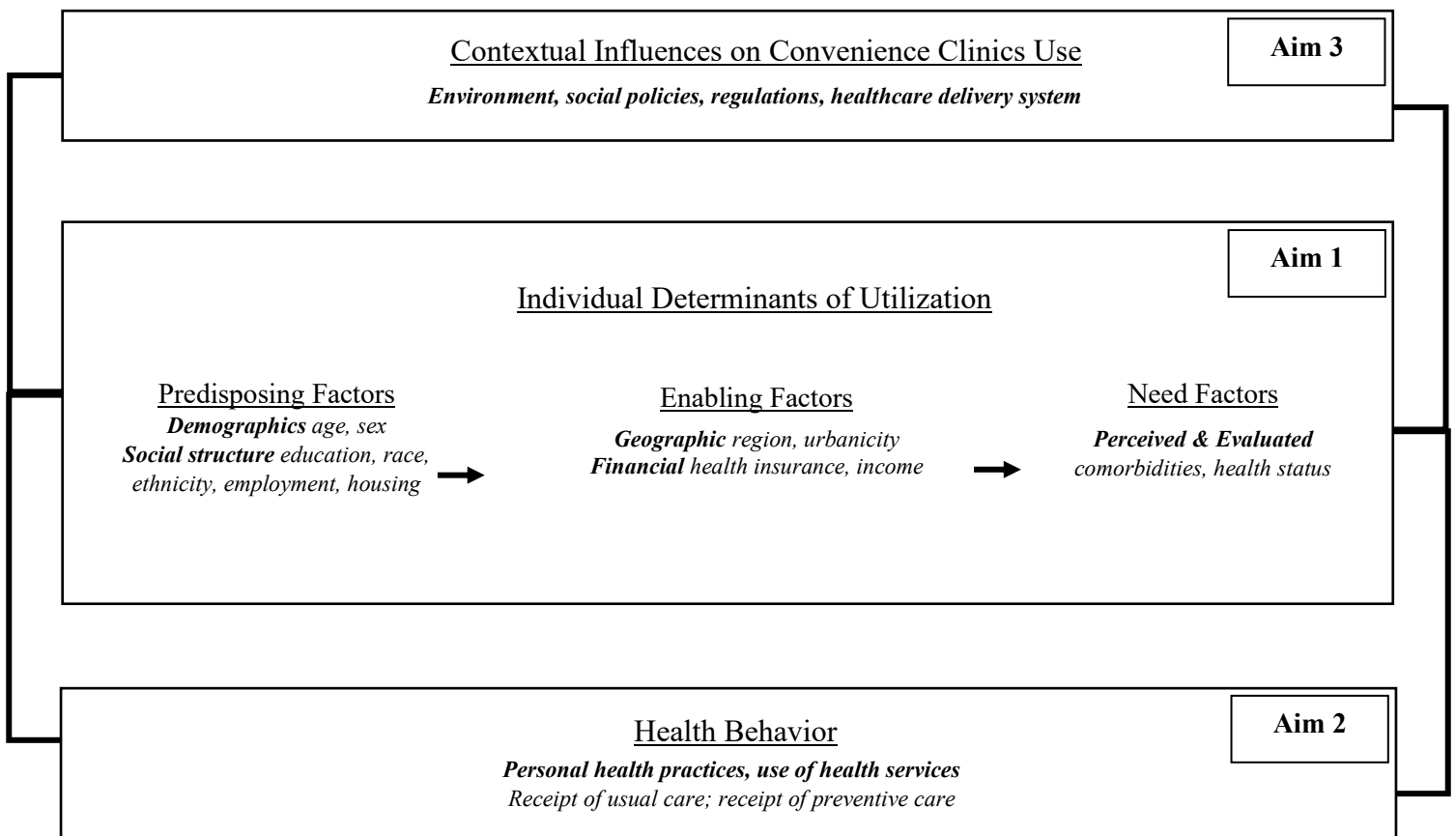
We aim to answer the following questions related to convenience clinic use:

What are the characteristics of people using convenience clinics for usual care?

Are people using convenience clinics for usual care receiving recommended preventive care and screening services?

Are there changing patterns in place of usual care following the peak of the COVID-19 pandemic?

Theory & Conceptual Model



Our study draws on the Andersen-Newman model of health-seeking behavior, which focuses on predisposing, enabling, and need factors to explain individual healthcare utilization²⁵. Originally proposed in 1968 and expanded in 1973, the fourth phase proposed by Andersen (1995) emphasizes the changing and reoccurring nature of health service use²⁶. Our conceptual model adopts features from the fourth phase of Andersen-Newman's model. The interconnected boxes indicate

feedback loops and dependencies between contextual factors, individual factors and health behaviors. Contextual factors, such as social policies and regulations, shape the external environment and create opportunities and barriers that influence individual's use of healthcare. Individual's demographics and social structure (predisposing factors), geographic and financial (enabling factors) as well as perceived and evaluated medical needs (need factors) determine how individuals seek routine healthcare. The healthcare delivery system can also influence utilization of healthcare services²⁷.

Aim 1 identifies the individual predisposing, enabling, and need factors associated with the regular use of convenience clinics. We selected variables guided by the Andersen-Newman model and based on previously published literature describing the association between factors such as race, ethnicity, sex, income, and urbanicity and healthcare utilization²⁵. For example, economic resources allow individuals to access healthcare services including convenience clinics, the geographic concentration of convenience clinics is higher in metro and suburban areas, and urban counties tend to have more health-care providers per capita²⁸. Need factors, such as comorbidities, were also considered as chronic conditions are consistently associated with increased healthcare use²⁹. One study found there are more visits to retail clinics among younger, healthier, higher income patients living close to clinics³⁰. Another study found with older age visits to convenience clinics goes down, and utilization increased with greater educational attainment³¹. As a disruptor in the healthcare marketplace, convenience clinics emerged as a response to consumer demands for affordable and timely care and are increasingly viewed as a source of usual care by some⁹. Persons with a usual source of care or primary care physician are more likely to be white, live in the Northwest, and have Medicare insurance, but one study found the number of people reporting having a usual source of care overall is declining³². It is also possible the population using convenience clinics for usual care may be different from the population using primary care provider offices and a primary care physician as a source of usual care.

Aim 2 explores the association between the use of convenience clinics as a source of usual care and the receipt of preventive care and screening services. While convenience clinics provide some preventive services, they are not designed to provide comprehensive primary care. Aim 2 is anchored in the predisposing, enabling, and need factors contributing to the use of convenience clinics for regular care, and understanding the impact regular use of convenience clinics on receipt of preventive care and screening services provided both within and outside of the convenience clinic setting. Receipt of preventive care is more likely among people with a usual source of care¹⁶. However, patterns in the receipt of preventive care among those reporting convenience clinics as a usual source of care are unknown. Tracking the healthcare use of patients regularly relying on convenience clinics is important as a growing number of individuals identify convenience clinics as their place of usual care. Some individuals may use convenience clinics as a substitute for, rather than a complement to, primary care⁹. Patients using convenience clinics as a source of usual care may forgo visits to a primary care provider, and with fewer primary care visits, patients may have fewer opportunities to receive recommended preventive care services.

Aim 3 explores the changes in convenience clinics as a usual source of care following the peak of the COVID-19 pandemic by comparing changes in use from 2019 to changes in use in 2022 and 2023. During the COVID-19 pandemic, convenience clinics provided COVID-19-related treatment, testing, and vaccination³³. As traditional physician's offices were closed or working at reduced capacity, individuals may have gone to convenience clinics for COVID-related care and, over time, established trust in these facilities to provide care. Broad policy changes and disruptions to norms during this period, including forgone care at physician offices and increased use of convenience clinics, may have led to greater reliance on these facilities that continues after the pandemic peak. Understanding trends in convenience clinics as a source of usual care is important as some other studies have suggested that overall the number of people reporting a usual source of care is declining^{9,32}.

To address these aims, we use the National Health Interview Survey data for 2019, 2022 and 2023. This survey provides a nationally representative sample of the United States population³⁴. We use regression modeling techniques and propensity score matching to explore each of the aims further. Addressing these 3 aims will help us understand how demand for convenience clinics is changing. We can better identify the population using these clinics as a source of usual care and begin to understand the impacts of use on receipt of preventive care and screening services. This information can inform the healthcare system and other healthcare stakeholders about this evolving market segment.

Chapter 2: Characteristics of Persons Using Convenience Clinics for Usual Care in 2022

Abstract

Objective: Little is known about the characteristics of individuals using urgent care centers or walk-in retail clinics, collectively called convenience clinics (CC), as places of usual care.

Methods: Using 2022 National Health Interview Survey data and logistic regression we identified the factors associated with adults using CCs regularly.

Results: Among adults, 7.5% reported receiving usual care at CCs. Individuals who were younger, working, and uninsured were significantly more likely to report CCs as their usual source of care.

Conclusions: Understanding the characteristics of CC users is critical to inform policy for this evolving segment of the healthcare sector.

Background

Convenience clinics, which we define as both urgent care centers (“urgent care”) may exist in stand-alone ambulatory medical facilities and walk-in retail health clinics (“retail clinics”) that are often located within pharmacies or general merchandise big-box stores or as stand-alone operations, are a class of alternative care options typically designed to treat acute conditions and time-limited health needs^{14,35,36}. Convenience clinics are part of a growing sector of alternative care sites to primary care provider office visits^{3,4,37}. Convenience clinics may provide an advantage to care provided in primary care provider offices, as many primary care providers have long wait times for appointments³⁸. Both urgent care and retail clinics may operate without appointments and maintain walk-in hours during weekdays, evenings, and weekends, and are often less expensive than care provided at emergency departments and traditional primary care settings⁴. The staffing models and types of services offered differentiate retail clinics from urgent care centers, as urgent care centers can provide more comprehensive low-acuity to mid-acuity care with an on-staff physician, onsite X-rays, and laboratory testing, and retail clinics provide low-acuity services and treat a limited range of conditions^{13,35}. While convenience clinics may employ a workforce similar to that of primary care provider offices, the financial incentives for preventive care differ between these settings and may result in different approaches to care. Convenience clinics are designed to address time limited acute needs and providers may not be aware of other services patients require due to limited interoperability of electronic medical records. While convenience clinics may provide some of the comprehensive services that are typically offered in primary care office settings, without linkage to a health system they may not provide for the continuity of care that supports delivery of comprehensive primary care.

Previous studies have examined utilization patterns among convenience clinics. Patients use convenience clinics because of the accessibility and expediency these facilities offer, because primary care is unavailable, because of perceived medical needs and due to fixed transparent pricing^{4,14,36}. Convenience clinics are preferred places for care among

millennials, a generation that also reports lower rates of having a regular primary care provider than previous generations³⁷. For populations without a primary care provider, as well as those seeking expedited care, convenience clinics are increasingly seen as a source of routine primary care³. Allen et al²⁰ found that urgent care centers treat patients who would otherwise visit the emergency department for non-emergent conditions, including those with Medicaid and the uninsured. Poon and colleagues³⁹ reported an increase in visits to urgent care and retail clinics from 2008-2015 among commercially insured individuals, and patients using these care sites were more likely to be female, in better health, and overall, patients were more likely to visit urgent care than emergency departments for low-acuity conditions. Ashwood, et. al⁴⁰ reported that among the commercially insured, women, young adults, those without chronic conditions, and high-income individuals living in close proximity to retail clinics were more likely to use retail clinic services.

Although these studies provide important insights into the demand for convenience clinics, they are primarily based on the experience of commercially insured individuals and exclude those who are uninsured. Convenience clinics may be of particular value to uninsured individuals as they are more likely to be price-sensitive and attracted to the typically lower and transparent pricing offered through convenience clinics⁴¹. Recent research using the 2019 National Health Interview Survey data found that both women (32%) and men (26%) had one or more visits to an urgent care center or retail health clinics in the past 12 months, non-Hispanic white adults were more likely to have one or more visits, and as age increased utilization decreased⁴². This study combined both regular and intermittent users of convenience clinics but did not specifically examine those who reported these settings as a usual source of care.

Understanding the characteristics of patient populations using convenience clinics as a usual source of care is important as the sector continues to grow. From 2008 to 2015, growth increased in the urgent care and retail clinic sectors³⁹. In 2020, COVID-19-related care led to a 58% increase in visit volumes to urgent care, and 60% of the total visits were for vaccinations and testing⁴³. Retail clinics were part of the federal government's COVID-19 vaccination strategy, and people became more familiar with these sites after receiving vaccination and testing³³. Prior to the pandemic, convenience clinics explored telehealth options, such as telemedicine kiosks adjacent to pharmacies in retail stores and virtual consults with a primary care clinician if the convenience clinic practitioner deemed it necessary^{44,45}. Despite some growth in the convenience clinic sector offering virtual visits, visits to brick-and-mortar sites continued during the pandemic, as people visited convenience clinics for testing and to receive COVID-19 vaccination. While trends in telehealth grew exponentially during the pandemic with more flexible regulations and reimbursements for remote health care services, telehealth use at the end of the pandemic is declining, while convenience clinic utilization continued to increase⁴⁶. Between 2017 and 2022, there was a 200% increase in retail clinic volume and a 70% increase in urgent care^{11,33}. However, patient factors associated with the regular use of convenience clinics for care in the post-pandemic healthcare environment remain largely unknown.

Having a usual source of primary care allows for an ongoing patient-provider relationship and leads to improved health outcomes including higher rates of preventive care, more equitable care and lower costs^{9,16,32}. A recent 2022 report notes trends in usual care may be influenced by the increased popularity of convenience clinics, as these settings provide some primary care services and may substitute as a usual source of care for some people⁹. Health systems and insurers continue

to acquire, invest in, and partner with convenience clinics as part of a broader strategy to expand access to services⁴⁷. As the convenience clinic sector continues to grow with investments by insurers and health systems, these stakeholders may further want to understand the characteristics of patients using convenience clinics regularly. Identifying the characteristics of regular convenience clinic users allows stakeholders to tailor interventions to groups frequenting convenience clinics for care, as well as outreach to populations that do not utilize these services. Stakeholders have noted the importance of building a connection between alternative sites of care, such as convenience clinics, and the broader health system. Understanding patient factors associated with the use of convenience clinics for usual care can inform business plans, strategic decision making, and outreach to connect patients back to the health system. Moreover, if people use convenience clinics as their usual source of care, they may forgo care in other settings, such as primary care, which may have consequences for their overall health. While there is some evidence describing aspects of the convenience clinic market among individuals receiving acute care services^{39,40,42}, there is very little evidence about the characteristics of patients using these services as a principal source of care. We address this research gap by identifying individual-level demographic, financial, and utilization factors associated with people choosing to regularly use convenience clinics when in need of healthcare.

Methods

Conceptual Model

Our analysis of the factors associated with convenience clinic use is guided by Andersen's behavioral model of health service use, which identifies the predisposing, enabling, and need factors associated with demand for healthcare. Originally proposed in 1968, the model was expanded in 1973 (Andersen and Newman model²⁶ to include societal and individual determinants of medical care utilization, emphasizing the characteristics of the health service delivery system, changes in social norms and technology, and individual determinants of utilization²⁵. Another component of the model proposed by Andersen and Newman in 1995 emphasized the dynamic and recurring nature of health service use²⁶. Our conceptual model adopts this fourth version to identify the dynamic and recurring enabling, predisposing and need factors that may be associated with individual's use of convenience clinics. Predisposing factors include demographics and social factors, enabling factors including income and health insurance, while need factors include perceived need and one's viewpoint of one's health status, all of which contribute to health service use in convenience clinics⁴⁸.

Data Sources

Our analysis used data from the 2022 National Health Interview Survey (NHIS), which uses a multistage probability sample to identify a nationally representative set of households in the United States to assess a wide range of health outcomes and patterns of healthcare use for the non-institutionalized US population. The NHIS has been operating continuously since 1957 with periodic updates to the survey instrument. The final adult response rate for 2022 is 47.7%. The 2022 Sample Adult Questionnaire survey includes one "sample adult" age 18 years or older from each household and was administered to 27,561 adults randomly selected from identified households of the NHIS. The NHIS provides sample weights that allow the findings to reflect the entire US adult population⁴⁹.

Study Sample

We restricted the sample of NHIS respondents to those aged 18 years and older who answered yes to the following question: “*Is there a place that you USUALLY go to if you are sick and need healthcare?*”⁴⁹. Following previously published methods, those who reported that they had a usual place where they went when they were sick and in need of care were classified as having the usual source of care^{16,50,51}. We excluded people reporting having no place or more than one place for usual care. There were six respondents with missing observations for the variable capturing type of place of usual care that were excluded from the analysis. For all other variables responses of refused, not ascertained, or unknown were categorized together and coded as ‘unknown.’ One limitation of the NHIS is that the survey combined retail clinics and urgent care centers as a single response category. Thus, our analysis refers to these facilities jointly as convenience clinics.

Outcome Variable

Among those who reported having a place they usually go to if they were sick and in need of care, our dependent variable was derived from the NHIS question: “*What kind of place [do you go]... a doctor's office or health center; an urgent care center, a clinic in a drug store or grocery store; a hospital emergency room; a VA Medical Center or VA outpatient clinic; or some other place?*” Urgent care and retail clinics were defined as: “*Urgent care centers and clinics in a drug store or grocery store are places where you do not need to make an appointment ahead of time, and do not usually see the same healthcare provider at each visit*”⁴⁹. The outcome variable was a binary indicator of type of place of usual care, either those reporting convenience clinics as a usual source of care or other settings including doctor’s office/health center, hospital emergency room, VA Medical Center or VA outpatient clinic, some other place, or does not go to one place most often.

Explanatory Variables

We chose the following demographic, financial, health insurance status, health status, and healthcare utilization variables, guided by the Andersen-Newman model:

Predisposing: Age (categorical: 18-29 years, 30-39 years, 40-49 years, 50-59 years, 60+ years), sex (male/female), race (White Only, Black/African American Only, Asian Only, American Indian/Alaska Native Only (AIAN) or AIAN and any other group, Other Single or Multiple Races), ethnicity (Hispanic/Latino), education level (less than high school, GED/high school graduation, some college, Associate degree, Bachelor’s degree, Master’s/Professional/Doctoral degree), and census region of residence (Northeast, Midwest, South, West), Urbanicity (Large Central Metro, Large Fringe Metro, Medium and Small Metro, Nonmetro).

Enabling: Health insurance status (Private, Medicaid/Other Public/Dual Eligible, Other Coverage, Medicare only or Medicare Advantage, Uninsured) worked for pay last week at a job or business (yes/no), residence/housing type (owned, rented, other), and poverty ratio (ratio of the family’s income to the federal poverty threshold).

Need: Number of comorbidities (0 or 1, 2 3+) (Comorbidities defined as having hypertension in last 12 months, high cholesterol in last 12 months, asthma currently, overweight/obese currently (based on BMI), or ever having: type 2 diabetes, depression, arthritis, cancer, chronic obstructive pulmonary disease, coronary heart disease), perceived health status (Excellent/Very Good, Good/Fair, Poor); Emergency department visits in past 12 months (0, 1, 2+times), Convenience clinic visits in past 12 months (0,1,2,3+).

Statistical analysis

We generated descriptive statistics based on whether individuals used convenience clinics as their usual source of care. We ran t-tests and Pearson's chi-square tests for independence to test for statistically significant differences between the continuous and categorical variables. We then estimated a logistic regression model to obtain the odds ratio of reporting convenience clinics for usual care compared to other places of usual care, controlling for the explanatory variables listed above. We then estimated the average marginal effects for ease of interpretation⁵². To account for appropriate variance estimation, we identified the survey design characteristics specified by the NHIS, including appropriate variance structures and population-level weights, and used Stata's estimation commands to calculate weighted descriptive statistics and conduct weighted regression analyses. Stata's survey commands automatically incorporate robust variance estimators. All statistical tests were conducted at a two-sided 5% significance level using the Stata software (version 15) to account for the complex survey design.

Results

Descriptive Results

In 2022, 24,395 adults aged 18 years and older in the US reported having a place they usually visit when they are sick and in need of care. Of those, 7.5% (weighted) went to convenience clinics for care, while 92.5% went to other places for care, including doctors' offices or health centers, hospital emergency rooms, VA medical centers, VA outpatient clinics, or some other place. In 2022, 51.43% of convenience clinic users were male compared to 46.41% people with other places for usual care ($p=0.01$). Convenience clinic users comprised 71.86% White Only, 13.58% Black or African American Only, 4.07% Asian Only, 2.11% American Indian or Alaska Native Only or AIAN and any other group, and 1.47% Other Single or Multiple Races; 6.91% of the respondents' races were unknown ($p=0.06$). Compared to people who used other types of usual care, more convenience clinic users had private insurance (63.50% vs. 61.51%), were Medicaid/dual Eligible (15.06% vs. 13.86%), were uninsured (13.94% vs. 6.03%), and fewer had Medicare/Medicare Advantage (4.47% vs. 12.02%) ($p<0.01$). Compared to people who used other sources of usual care, more convenience clinic users reported having recently worked for pay (73.36% vs. 58.61%) ($p<0.01$), while fewer reported owning homes (60.81% vs. 69.68%) ($p<0.01$). Convenience clinic users and non-users visited the emergency department in the last 12 months at similar rates (14.18% vs. 13.32% visited 1 time, and 5.55% vs. 7.21% visited two or more times in the last year) ($p=0.16$). Among people who used convenience clinics for usual care, 37.72% reported not going to a convenience clinic in the last 12 months, 30.42% reported using a convenience clinic one time in the last 12 months, 16.19 % reported 2 times and 15.60

% reported 3 or more times. Among people reporting other settings as place of usual care, 69.17% reported not going to a convenience clinic in the last 12 months, 16.39% reported going one time, 7.93% reported two times, and 6.25% reported 3 or more times ($p<0.01$). More convenience clinic users than non-users reported having 0 or 1 comorbidity (64.02% vs. 48.64%), while fewer convenience clinic users reported having three or more comorbidities (15.11% vs. 30.47%) ($p<0.01$) (Table 1).

Regression Results

Predisposing Factors: Compared with people ages 18-29 years, the odds of using convenience clinics were 35% lower for people ages 40-49 ($p<0.01$), 42% lower for people ages 50-59 years ($p<0.001$), and 62% lower for people aged ≥ 60 years ($p<0.01$), holding all other factors constant. Older age is associated with a 3, 4 and 6 percentage point decrease in the probability of convenience clinics used for usual care among those 40-49 years, 50-59 years and 60+ years, respectively ($p<0.01$). The odds of using convenience clinics for usual care were 20% higher for men than for women ($p=0.01$), holding all other variables constant. Men are, on average, 1 percentage point more likely to use convenience clinics as a place of usual care ($p=0.01$). The odds of reporting convenience clinics as a place of usual care were 45% lower among people who reported race as Asian Only compared to people who identified as White Only ($p<0.01$), holding all else constant. There were no significant differences in the use of convenience clinics among the other race categories. Compared to people who reported race as White only, people who reported race as Asian only have a 3-percentage point lower probability of using convenience clinics for usual care ($p<0.01$) (Table 2).

Enabling Factors: Holding all other factors constant, the odds of using convenience clinics were 20% lower for people who reported not working compared to those reported working for pay last week ($p=0.01$). Compared to people who worked for pay last week, people who did not work had a 2 percentage point lower probability of using convenience clinics for usual care ($p=0.01$). The odds of using convenience clinics were 80% higher among those who are uninsured compared to those with private insurance ($p<0.01$). Compared to people with private insurance, those without health insurance have a 5 percentage point higher probability of using convenience clinics for usual care ($p<0.01$). Compared to people who reside in large central metro counties, the odds of using convenience clinics for usual care were 30% lower for people residing in nonmetropolitan counties. Compared to people who reside in large central metro counties, people who reside in nonmetropolitan counties had a 2-percentage point lower probability of using convenience clinics for usual care ($p=0.01$). (Table 2).

Need Factors: Holding all other factors constant, compared to people with no comorbidities, the odds of using convenience clinics were 35% lower for people with three or more comorbidities than for those with zero or one comorbidity ($p<0.01$). Compared to people with 0 or 1 comorbidity, people with 3+ comorbidities had a 3-percentage point lower probability of using convenience clinics for usual care ($p<0.01$) (Table 2)

Discussion

In this analysis, we found several individual characteristics, including demographic, financial, and health status, as key predictors of people using convenience clinics for usual care. Many of Andersen-Newman's predisposing and enabling

factors were significantly associated with convenience clinic use, including individuals' age and sex (predisposing factors), insurance type, employment status (enabling factors), and health status (need factors)²⁶. The odds of using convenience clinics for usual care were significantly lower among older individuals, people not working, and people living in nonmetropolitan areas as well as people with more comorbidities, whereas the odds of use were higher for men and those with uninsured status. Our findings describe the characteristics of regular users of convenience clinics, inform strategies for providers investing in the convenience clinic sector, and highlight the need to ensure that healthcare services are accessible.

Previous research has reported that retail clinics appeal to younger, healthier, and higher-income patients who live close to the clinics they use, suggesting that convenience clinics satisfy the strong demand for convenience^{39,40,42}. Our findings support these previous studies and add insights that suggest convenience clinics may be an important place for usual care among a younger and healthier population, those working, men, and the uninsured living in metropolitan areas. Employees may seek the after-hours and scheduling flexibility that convenience clinics provide to accommodate inflexible work schedules. Similar to a brief study using NHIS 2019 data that looked at the number of visits to convenience clinics, we found that people regularly using convenience clinics when they were sick and in need of care were more likely to be younger adults⁴², but in contrast, we found no significant differences between those who usually use convenience clinics and non-users by ethnicity in 2022. It is possible that the population using convenience clinics as a usual source of care is different from the population that may occasionally visit a convenience clinic and seek usual care elsewhere. We also found that the odds of convenience clinic use for usual care were higher among people who reported being uninsured, an important insight as previous studies examining convenience clinics have focused primarily on the service use experience of commercially insured populations^{23,40,53}. Convenience clinics may provide an important source of regular care for the uninsured, possibly due to the transparent pricing and low-cost business model that may appeal to a price sensitive population⁴¹.

Implications for Policy and Practice

Understanding the factors that explain why individuals choose to receive usual care at a convenience clinic is necessary to inform how public and private decision makers can best meet the overall demand for care. For example, we found that men were more likely than women to use convenience clinics for regular care and, therefore, less likely to go to a doctor's office or other settings—an important population that may need greater outreach to be reconnected back into a health system's primary care network. By identifying the characteristics of convenience clinic patient populations and leveraging this information, outreach strategies can be tailored to groups that may both overutilize and underutilize these services. People who are younger, healthier, working, and uninsured tend to use convenience clinics regularly. Same-day appointments, short wait times, and price transparency may attract populations constrained by work hours, high healthcare costs, and convenience. Health systems may need to respond to consumer demands by offering greater scheduling flexibility and availability to accommodate the needs of this population. In addition, there may be a need for greater connection between convenience clinics and health systems, and greater incentives to ensure that care is streamlined. In many cases, the integration of care and referrals between urgent care and retail clinics with other health services remains

limited, and more work is needed to ensure that convenience clinics can be used as an extension of the health system rather than a stand-alone entity ⁵⁴. Furthermore, while previous studies have found that convenience clinics provide high-quality care and patient satisfaction ^{17,18}, greater monitoring of the sector is needed to ensure optimal health outcomes over time, especially among those who report convenience clinics as their usual source of care.

Limitations

Although our analyses are based on a representative sample, we cannot distinguish between and among individuals who use urgent care versus walking in retail clinics as their usual place of care. Although our study still provides an important glimpse into the factors associated with convenience clinic use, further research is needed to understand the differences in this growth between the urgent care and retail clinic markets, as the two market segments may behave differently. We were also unable to determine whether convenience clinics are affiliated with larger healthcare systems, as this may impact the continuity of care and the care quality that individuals receive. We did not examine the factors associated with the intensity of convenience clinic use, though this may be an important area of research in the future as stakeholders may be interested in understanding overall demand. Finally, our analysis is based entirely on the experiences of adults, and there remains a gap in our understanding of the degree to which children receive care through convenience clinics and, if so, the implications for their health outcomes ⁵⁵.

Conclusion

Convenience clinics represent retailers' and health systems' attempts to meet the demand for healthcare, which is often not satisfied through traditional means. This study provides insights into who uses convenience clinics for usual care including people who are younger, without health insurance and working, groups that may need further linkage to health systems and primary care. Our research fills a gap in the extant literature regarding the characteristics of regular users of convenience clinics, but more research is needed to ensure that we better understand the role of these facilities in addressing current and future healthcare demands.'

Table 1. Demographics by place of usual care

	Other (n=22,814)	Convenience Clinic (n=1,581)	P>t
Age (%)			<0.01
18-29 years	16.90	29.25	
30-39 years	15.07	26.14	
40-49 years	15.86	16.07	
50-59 years	17.14	14.15	
60+ years	34.80	14.39	
Unknown	0.18	0.00	
Sex (%)			0.01
Male	46.41	51.43	
Race (%)			0.06
White	72.25	71.86	
Black/African American	12.22	13.58	
Asian	6.35	4.07	
AIAN	1.86	2.11	
Other	1.36	1.47	
Unknown	5.94	6.91	
Ethnicity (%)			0.03
Hispanic	15.78	18.49	
Region (%)			0.44
Northeast	18.41	18.05	
Midwest	20.95	21.42	
South	36.99	39.20	
West	23.65	21.33	
Urban-Rural County (%)			0.09
Large Central Metro	29.80	31.76	
Large Fringe Metro	25.40	26.39	
Medium and Small Metro	30.13	30.46	
Nonmetropolitan	14.67	11.40	
Education (%)			0.04
No High School Diploma	10.27	10.67	
GED or High School Grad	26.42	27.78	
Some College	16.16	17.74	
Associate's Degree	13.52	13.05	
Bachelor's Degree	19.93	20.57	
Masters/Professional/Doctoral Degree	13.12	9.78	
Unknown	0.58	0.41	
Employment (%)			<0.01
Worked Last Week	58.61	73.36	
Not Working	37.58	23.10	
Unknown	3.81	3.54	
Poverty Ratio (mean)	4.35	4.10	0.01

Insurance Type (%)			<0.01
Private Insurance	61.51	63.50	
Medicaid/Other/Dual Eligible	13.86	15.06	
Other Coverage	6.26	2.51	
Uninsured	6.03	13.94	
Medicare Only/Medicare Advantage	12.02	4.47	
Unknown	0.31	0.51	
Residence Type (%)			<0.01
Owned or being bought	69.68	60.81	
Rented	24.14	32.78	
Other Arrangement	1.91	1.86	
Unknown	4.27	4.54	
Healthcare Utilization (%)			
Emergency department visits in last 12 months			0.16
0 times	79.35	80.17	
1 time	13.32	14.18	
2+ times	7.21	5.55	
Unknown	0.11	0.09	
Convenience clinic visits in the last 12 months			<0.01
0 times	69.17	37.72	
1 time	16.39	30.42	
2 times	7.93	16.19	
3+ times	6.25	15.60	
Unknown	0.07	0.25	
Number of Comorbidities (%)			<0.01
0 or 1	48.64	64.02	
2	20.88	20.87	
3+	30.47	15.11	
Self-Reported Health Status (%)			<0.01
Excellent	54.53	62.98	
Good/Fair	41.77	35.34	
Poor	3.69	1.68	
Unknown	0.01	0.00	

Table 2. Results of the logistic regression and average marginal effects

	OR	P> t	[95% Conf Int]		dy/dx	P> t	[95% Conf Int]	
Age (years)								
30-39	1.09	0.34	0.91	1.30	0.01	0.34	-0.01	0.02
40-49	0.65	<0.01	0.53	0.80	-0.03	<0.01	-0.05	-0.02
50-59	0.58	<0.01	0.47	0.72	-0.04	<0.01	-0.06	-0.02
60+	0.38	<0.01	0.30	0.48	-0.06	<0.01	-0.08	-0.05
18-29	REF							
Sex								
Male	1.20	0.01	1.05	1.36	0.01	0.01	0.00	0.02
Female	REF							
Race								
Black or African American	0.87	0.20	0.71	1.08	-0.01	0.18	-0.02	<0.01
Asian	0.55	<0.01	0.40	0.75	-0.03	<0.01	-0.05	-0.02
AIAN	0.98	0.95	0.60	1.62	0.00	0.95	-0.04	0.03
Other	0.76	0.30	0.45	1.28	-0.02	0.25	-0.05	0.01
Unknown	0.88	0.45	0.63	1.23	-0.01	0.43	-0.03	0.01
White	REF							
Ethnicity								
Hispanic	0.82	0.10	0.65	1.04	-0.01	0.08	-0.03	<0.01
Non-Hispanic	REF							
Region								
Midwest	1.03	0.78	0.82	1.30	0.00	0.78	-0.01	0.02
South	1.08	0.48	0.88	1.32	0.01	0.48	-0.01	0.02
West	0.92	0.46	0.72	1.16	-0.01	0.46	-0.02	0.01
Northeast	REF							
Urban-Rural County								
Large Fringe Metro	1.00	0.97	0.82	1.20	0.00	0.97	-0.01	0.01
Medium and Small Metro	0.94	0.56	0.76	1.16	0.00	0.56	-0.02	0.01
Nonmetropolitan	0.70	0.01	0.53	0.93	-0.02	0.01	-0.04	-0.01
Large Central Metro	REF							
Education								
GED or High School Grad	0.91	0.43	0.71	1.16	-0.01	0.44	-0.03	0.01
Some College	0.92	0.54	0.70	1.20	-0.01	0.55	-0.03	0.01
Associate’s Degree	0.87	0.34	0.65	1.16	-0.01	0.35	-0.03	0.01
Bachelor's Degree	0.84	0.21	0.65	1.10	-0.01	0.23	-0.03	0.01
Masters/Professional/Doctoral Degree	0.71	0.03	0.52	0.96	-0.02	0.03	-0.04	<0.01
Unknown	0.71	0.48	0.28	1.81	-0.02	0.42	-0.08	0.03
No High School Diploma	REF							
Employment								
Not Working	0.80	0.01	0.68	0.94	-0.02	0.01	-0.03	<0.01
Unknown	0.37	<0.01	0.19	0.70	-0.05	<0.01	-0.07	-0.03

Worked Last Week	REF							
Poverty Ratio	0.98	0.16	0.95	1.01	0.00	0.16	0.00	0.00
Insurance Type								
Medicaid/Dual Eligible	1.01	0.91	0.83	1.24	0.00	0.91	-0.01	0.01
Other Coverage	0.53	<0.01	0.37	0.77	-0.03	<0.01	-0.05	-0.02
Uninsured	1.80	<0.01	1.45	2.24	0.05	<0.01	0.03	0.07
Medicare/Medicare								
Advantage	0.87	0.29	0.66	1.13	-0.01	0.27	-0.02	0.01
Unknown	1.51	0.42	0.55	4.12	0.03	0.49	-0.06	0.12
Private Insurance	REF							
Residence Type								
Rented	1.15	0.07	0.99	1.35	0.01	0.07	0.00	0.02
Other Arrangement	0.96	0.87	0.60	1.53	0.00	0.87	-0.03	0.03
Unknown	2.26	0.01	1.22	4.19	0.07	0.04	0.00	0.14
Owned or being bought	REF							
ED visits in the last 12 months								
1 time	1.08	0.42	0.90	1.30	0.01	0.43	-0.01	0.02
2+ times	0.81	0.16	0.60	1.09	-0.01	0.14	-0.03	<0.01
Unknown	0.74	0.72	0.15	3.72	-0.02	0.68	-0.10	0.07
0 times	REF							
Number of Comorbidities								
2	0.94	0.45	0.80	1.10	0.00	0.44	-0.02	0.01
3+	0.65	<0.01	0.54	0.78	-0.03	<0.01	-0.04	-0.02
0 or 1	REF							

OR = Odds Ratio

Conf Int = Confidence Interval

GED = General Educational Development Test

Chapter 3: Receipt of preventive care and screening services among adults using convenience clinics for usual care

Abstract

Background: The use of convenience clinics, walk-in retail health clinics or urgent care centers as a usual source of care may impact whether adults receive recommended preventive care and screening services.

Objective: We examine the degree to which adults who report convenience clinics as their usual source of care, receive evidence-based preventive care and screening services relative to adults that receive usual care from other healthcare settings.

Design: Using the National Health Interview Survey (NHIS), we estimated the weighted adjusted odds ratio and average marginal effects of receipt of select preventive care and screening services.

Participants: We used the 2023 adult sample from NHIS and restricted our dataset to individuals with a usual source of care at either a convenience clinic or doctor's office/health center who have seen a health professional about their health in the last year.

Main Measures: We explored the likelihood adults have their blood pressure monitored for hypertension, receive a seasonal flu vaccine, or have a screening mammogram among recipients of usual care at convenience clinics relative to usual care at a doctor's office/health center.

Key Results: Among adults reporting they have a place of usual care and have seen a provider in the last 12 months, having a convenience clinic as a usual source of care is associated with a 2.1 percentage point decrease in the probability of having blood pressure monitored ($p < 0.01$), and a 7.6 percentage point decrease in the probability of receiving a seasonal flu vaccine ($p < 0.01$). There were no significant differences with respect to receipt of a screening mammogram.

Conclusion: Where an individual receives usual healthcare services may impact whether they receive recommended evidence-based preventive care and screening services.

Introduction

Convenience clinics, which we define as urgent care centers and walk-in retail health clinics, are part of a growing sector of alternative healthcare sites for services provided through doctor's offices and have historically focused on addressing low-acuity and time-limited healthcare needs^{1,2,17,18,20}. Convenience clinics are often open in the evenings and weekends and do not require appointments, thus providing greater access than primary care provider offices that may be closed during these times. Urgent care centers differ from retail clinics in that these facilities can provide mid-acuity care, including x-rays and laboratory testing, and may also have an on-staff physician, while retail clinics provide low-acuity

care typically from a physician assistant/associate or nurse practitioner^{19–21}. Greater access and lower costs have made convenience clinics increasingly popular among price sensitive consumers, as well as insurers intending to incent lower cost options for the populations they insure. Evidence of this growing popularity is a 200% increase in retail clinic visit volume and a 70% growth in urgent care between 2017 and 2022, and almost universal insurance coverage by both public and private payers for services provided at these facilities^{56,57}.

Several studies have examined various outcomes for patients receiving care at convenience clinics^{17,18,21,58}. Among commercially insured patients, retail clinic use may disrupt whether patients go to a primary care provider first for a new condition, and may disrupt continuity of care, but there was no impact on screening for Chlamydia and diabetes management²³. Care provided at retail clinics was 99% adherent to evidence based guidelines for treatment of acute pharyngitis¹⁷. A systematic review of the literature on retail clinic quality, cost and patient satisfaction found the majority of studies relied heavily on administrative claims data and recommended future research have greater independence from industry stakeholders⁵⁸. Utilization of urgent care centers by adults with Medicaid may result in the reduction in emergency department visits, specialist visits and primary care encounters²⁰. There is evidence of antibiotic overuse especially in urgent care centers¹⁸. Comparing visits to retail clinics versus physician offices, urgent care centers and emergency departments, research examining performance on quality indicators and receipt of preventive care services found that retail clinics provide less costly treatment than physician offices with no apparent adverse effect on quality of care or preventive care²¹.

Although this literature has contributed to our understanding of the role that convenience clinics play in America's healthcare system, gaps in the evidence base remain. Americans may be relying more heavily on convenience clinics for a source of usual care, and thus convenience clinic use may be transitioning from a complementary service to a substitute for care provided in physician offices. A 2022 report notes that a growing number of people rely on convenience clinics for primary care services, and for some, convenience clinics may be a usual source of care⁹. Previous research has documented that having a usual source of care is associated with timely access to care, better health status and greater likelihood that adults receive recommended screening and prevention services¹⁶, but to our knowledge there is no evidence about whether the benefits of having a usual source of care apply to that source being a convenience clinic.

Although some preventive services have been available through convenience clinics, the most prominent examples of which are seasonal flu and other vaccinations, historically they have not been staffed or equipped to provide comprehensive primary care services or proactively identify needed or missing services. Monitoring the receipt of preventive and screening services among regular users of convenience clinics will ensure patients are receiving timely, appropriate care as reliance on these settings grows. Health systems, responsible for process measures and quality outcomes of population health efforts and value-based care initiatives, may be particularly interested in the quality of care provided in convenience clinics. Moreover, reliance on convenience clinics may grow as these settings market themselves as resources for a broader menu of primary care services, such as blood pressure checks and medication refills at retail clinics⁵⁹, and as urgent care centers develop personalized treatment plans and provide care for chronic conditions⁶⁰. Some patients may exclusively use convenience clinics for care⁶¹, potentially leaving gaps in care delivery and quality that may need to be addressed through greater outreach and links back to health systems. Our objective of this study is to examine

the degree to which US adults, who report convenience clinics as their usual source of care, receive evidence-based preventive care and screening services relative to adults that receive usual care from other healthcare settings including physician offices and health centers (also commonly referred to as federally qualified health centers).

Methods

Data Source

Our analysis uses data from the 2023 National Health Interview Survey (NHIS) which collects data on a range of health outcomes and patterns of healthcare use for the noninstitutionalized US civilian population. In 2023, 29,522 adults were randomly selected from identified households. The NHIS provides sample weights that allow findings to generalize to the entire US adult population. The final adult sample response rate in 2023 was 47.0%³⁴.

We included adults who reported having a source of usual care based on previously published methods^{16,50,51}, and reported having seen a healthcare professional about their health in the last year. We further restricted the sample to those who received usual care at either a doctor's office or convenience clinic. Of those, 418 (<2% percent) had some missing covariate data for our outcomes of interest and were thus excluded from further analysis. This resulted in an unweighted sample size of 22,150 adults. For the analysis of receipt of mammogram, we included women ages 40-74 years who did not report having previously had breast cancer resulting in an unweighted sample size of 6,896.

Measures

The outcomes of interest were defined as the receipt of selected preventive care services and based on previously published studies and definitions- for average risk, asymptomatic people- provided by the United States Preventive Services Task Force (USPSTF), Centers for Disease Control and Prevention (CDC), and International Society of Hypertension recommendations^{16,62-64}.

- Blood pressure check at visit (International Society of Hypertension guidelines recommends all ages, regular blood pressure checks)
 - *When was the last time you had your blood pressure checked by a doctor, nurse, or other health professional?*
- Receipt of influenza vaccine in the past year (CDC recommends adults all ages, flu vaccine in last year)
 - *There are two types of flu vaccinations. One is a shot and the other is a spray, mist, or drop in the nose. During the past 12 months, have you had a flu vaccination?*
- Receipt of mammogram (USPSTF recommends women aged 40-74 screened biannually)
 - *About how long has it been since your MOST RECENT mammogram?*

Explanatory Variables

The primary predictor of interest was a binary variable capturing type of place of usual care as either convenience clinic or doctor's office/health center.

Other covariates were included based on the Andersen-Newman conceptual model of health service use, which can be used to study patterns in health seeking behavior²⁵. Covariates can be categorized as predisposing, enabling and need factors within the Andersen-Newman conceptual framework. Observations of ‘refused,’ not ascertained’ and ‘don’t know’ for all other explanatory variables were coded together as ‘unknown’.

Age (18-29, 30-39, 40-49, 50-59, 60+), sex (male/female), race (White only, Black/African American only, Asian Only, American Indian/Alaska Native Only (AIAN) or AIAN and any other group, Other single or Multiple races), ethnicity (Hispanic/Not Hispanic), education level (No High School Graduation, GED/HS Graduation, Some college, Associates Degree, Bachelors Degree, Masters/Professional/Doctoral) Employment status (worked last week, no), health insurance status (Private, Medicaid/Dual Eligible, Other Coverage, Medicare Only/Medicare Advantage, Uninsured), residence/housing type (owned or being bought, rented, other), Urbanicity (Large Central Metro, Large Fringe Metro, Medium and Small Metro, Nonmetropolitan) Number of comorbidities (0 or 1, 2 3+) (Comorbidities defined as having hypertension in last 12 months, having high cholesterol in last 12 months, having asthma currently, overweight/obese currently (based on BMI), ever having type 2 diabetes, ever having depression, ever having arthritis, ever having cancer, ever having chronic obstructive pulmonary disease, ever having coronary heart disease. Smoking status (never smoker, former smoker, current daily or sometimes smoker). Hypertension (told by a healthcare professional you had hypertension in the last 12 months and told on two or more visits you had hypertension) (yes, no)

Analysis

We report descriptive statistics for adults that report having either a doctor’s office/health center or convenience clinic as their usual source of care, and saw a healthcare professional in the last year about their health, and assessed the extent to which the two groups differed in background characteristics that are potentially associated with receipt of preventive care and screening services.

We then estimated weighted adjusted logistic regression models to estimate the likelihood of receiving preventive care and screening services and then calculated the average marginal effects for ease of interpretation⁵².

We also estimated unweighted propensity score models because of the possibility of systematic differences between those choosing convenience clinic for usual care and those choosing to go to a doctor’s office/health center⁶⁵. The technique attempts to balance the distribution of confounding variables between treatment and control groups making them more comparable and reducing bias⁶⁵. We examined the results of balancing before and after matching (Tables A-D).

All statistical tests were conducted at the two-sided 5% significance level, and percentages and standard errors were calculated using Stata software (version 15) which properly accounts for the complex survey design.

Results

There were 22,150 (unweighted) adults in 2023 who reported having a place of usual care at either a doctor’s office or convenience clinic and reported seeing a doctor or health professional about their health in the last year. Of those, 7%

(weighted) reported a convenience clinic as their type of place of usual care. In Table 1, we present the characteristics of adults stratified by place of usual care. The distribution of sex was similar across care setting. Of those going to convenience clinics, 29.9% were aged 18-29 years, 22.5% were 30-39 years, 17.7% were 40-49 years, and 29.8% were over 50 years old compared to 16.2%, 14.4%, 15.2% and 54.3% of those going to a doctor's office, respectively ($p<0.01$). Of those going to convenience clinics for usual care, 73.2% identified as White Only, 13.8% Black/African American Only, 3.4% Asian Only, 1.4% as AIAN only or AIAN and any other group, 2.1% as Other Single or Multiple Races and 6.2% unknown compared to 73.0%, 11.7%, 6.5%, 1.6%, 1.2% and 6.0% of those going to a doctor's office, respectively ($p<0.01$). Among those going to convenience clinics, 65.2% had private health insurance, 16.7% Medicaid/Dual Eligible, 4.1% other coverage, 8.0% Uninsured and 5.8% Medicare/Medicare Advantage compared to 62.8%, 14.8%, 4.5%, 3.8% and 13.8% among those who use doctor's offices, respectively ($p<0.01$) (Table 3).

The results of the regression analyses show the odds of having blood pressure monitored were 55% lower among those reporting convenience clinics as a source of usual care compared to those using doctor's offices ($p<0.01$). Having a convenience clinic as a usual source of care was associated with a 2-percentage point decrease in the probability of having blood pressure monitored ($p<0.01$). The odds of receiving a seasonal flu vaccine were 29% lower among people using a convenience clinic for usual care compared to a doctor's office. Having a convenience clinic as a usual source of care was associated with an 8-percentage point decrease in the probability of receiving a seasonal flu vaccine ($p<0.01$) (Table 4a, Table 4b)

There were 6,564 (unweighted) women who met eligibility criteria for mammography screening, and 332 (unweighted) reported convenience clinics as their usual source of care. There were no significant differences between those who go to a convenience clinic and a doctor's office with respect to receipt of a screening mammogram (Table 4c).

Propensity score models found similar results as the weighted adjusted logistic regression models in both direction and statistical significance for all outcomes (Supplemental Table 5A-D).

Limitations

We are only able to determine if respondents reported having a source of usual care, and the type of place of usual care. There is possible bias, including recall bias and risk for misclassification, when using self-reported health data. Previous studies have examined widely used self-reported measures between NHIS and other national surveys and found trends in prevalence across measures are mostly similar^{66,67}. Though, self-reported measures of utilization may vary in accuracy especially if utilization is associated with stigma⁶⁸, and there may be a lack of validity of self-reports of mammography with overestimation of mammography utilization possible⁶⁹. While we tried to use modeling techniques to account for the systematic differences of those who use convenience clinics to those who use doctor's offices/health centers, it is possible that there are other unobserved confounders that can bias treatment effects⁶⁵. Moreover, minimal research has been conducted on how to implement propensity score matching when using data from complex sample surveys^{70,71}. Our interest was in adjusting for the probability of non-random choice of convenience clinic use, therefore the results from these models are not representative of the US population.

Discussion

Reporting convenience clinics as a usual source of care compared to a doctor's office/health center is associated with a lower likelihood of receiving blood pressure checks and a flu shot in the last 12 months, but not mammogram. Our findings align with other research on receipt of preventative care and screening services. Another study found having site continuity of care is associated with receipt of preventive services including influenza vaccine and mammography⁷². One study found those who were women, currently insured, and with higher income were more likely to receive flu vaccine and other screening services⁷³. Another study found having both a usual source of care and health insurance had a strong association on receipt of preventive services including flu shots, blood pressure checks, and mammograms⁷⁴. We further these studies by suggesting that the type of place of usual care matters in the receipt of preventive and screening services. Use of convenience clinics for usual care may lead to missed opportunities for preventive care.

We found no significant difference in reports of mammography screening in the last 2 years by place of usual care. The receipt of mammography screening may be influenced by how and when mammography is recommended, as convenience clinics do not provide mammography services directly. Convenience clinic providers may or may not be engaging in conversations with women to encourage receipt of screening or to remind women about missing mammography screening. Mehrotra et al found that among people visiting retail clinics, physician offices and urgent care centers for specific conditions the receipt of preventive care including mammography in the 3 months following an initial visit were similar across all settings⁶. While we examined people reporting convenience clinics as a usual source of care, our results were similar. Our results may be difficult to interpret given changing mammography guidelines over time, challenging conversations around screening, the extent to which eligible women receive wellness services and are recommended screening, as well as a small sample size in our study.

Conclusion and Implications for practice and policy

As people rely more heavily on convenience clinics, these facilities can potentially become an alternative location for primary care rather than complementary care^{75,76}. Tracking the receipt of preventive care and screening services is relevant for healthcare providers as some convenience clinics may be used by health systems, which are accountable for care quality, as access points into the system and as part of system's broader value based care initiatives¹⁹¹⁶. Business relationships between convenience clinics and existing healthcare systems include integrated, hybrid and independent models that allow for differing levels of care coordination and information sharing between entities⁷⁷. There are various entities that own convenience clinics, and ownership structure and incentives for businesses may pose future concern for monitoring quality and outcomes of people using these services for usual care. Of all retail clinics, 85% are owned by large retail chains (with the largest retailer controlling 63% market share)⁷⁸. In 2019, 40% of urgent care clinics were operated by hospitals, 35% by corporate entities such as insurers and 6% by investors such as private equity groups that played a key role in the sector's growth^{79,80}. One report noted that as of 2024, of the 14,245 urgent care centers in the U.S., 17% of urgent care centers are owned by private equity groups⁸¹. However, previous studies have found higher charges, prices and societal spending but also poorer outcomes for hospitals acquired by private equity groups⁸². Tracking quality metrics is important as the corporatization of healthcare continues. Especially given the fragmented nature of the business

model and ownership of convenience clinics by various stakeholders, monitoring outcomes is critical as more people rely on convenience clinics for usual care.

Table 3. Demographics by type of place of usual care

	Doctor's Office (n=20,762)	Convenience Clinic (n=1,388)	P>t
Age %			<0.01
18-29 Years	16.2	29.9	
30-39 Years	14.4	22.5	
40-49 Years	15.2	17.7	
50-59 Years	16.8	12.8	
60+ Years	37.5	17.0	
Sex %			0.25
Female	55.5	52.9	
Race %			<0.01
White	73.0	73.2	
Black or African American	11.7	13.8	
Asian	6.5	3.4	
AIAN	1.6	1.4	
Other	1.2	2.1	
Unknown	6.0	6.2	
Ethnicity %			0.49
Hispanic	15.6	16.4	
Urban-Rural County %			<0.01
Large Central Metro	29.8	23.6	
Large Fringe Metro	26.1	30.4	
Medium and Small Metro	29.6	34.1	
Nonmetropolitan	14.5	11.9	
Education %			0.04
No HS Graduation	9.8	8.7	
GED/HS Graduation	25.8	26.9	
Some college	15.5	17.1	
Associate's degree	13.5	13.8	
Bachelor's Degree	21.0	22.6	
Masters/Professional/Doctoral Degree	13.8	10.6	
Unknown	<1%	<1%	
Employment %			<0.01
Worked Last Week	55.4	69.0	
No	42.0	28.0	
Unknown	2.6	2.9	
Insurance Type %			<0.01

Private	62.8	65.2	
Medicaid/Dual Eligible	14.8	16.7	
Other Coverage	4.5	4.1	
Uninsured	3.8	8.0	
Medicare/Medicare			
Advantage	13.8	5.8	
Unknown	<1%	<1%	
Residence Type %			<0.01
Owned or being bought	71.7	65.2	
Rented	23.2	29.6	
Other Arrangement	1.9	1.8	
Unknown	3.2	3.3	
Number of Comorbidities			<0.01
0 or 1	36.8	49.4	
2	22.6	23.4	
3+	40.6	27.2	
Blood Pressure Check in Last Year %			<0.01
Yes	98.2	94.8	
Flu Shot in Last Year %			<0.01
Yes	55.5	40.0	

Table 4a. Results of adjusted logistic regression and average marginal effects for receipt of blood pressure check

Type of Place of Usual Care	Odds Ratio	p-value	[95% Confidence Interval]		dy/dx	p-value	[95% Confidence Interval]	
Convenience Clinic	0.46	0.00	0.33	0.63	-0.02	<0.001	-0.03	-
Doctors' office	Ref							0.01
Age								
30-39 Years	1.22	0.29	0.85	1.75	0.01	0.30	0.00	0.01
40-49 Years	1.35	0.13	0.91	2.01	0.01	0.14	0.00	0.02
50-59 Years	1.99	0.00	1.26	3.14	0.01	0.01	0.00	0.02
60+ Years	2.50	0.00	1.57	4.00	0.02	0.00	0.01	0.03
Unknown	2.81	0.35	0.33	24.00	0.02	0.12	0.00	0.04
18-29 Years	Ref							
Sex								
Male	0.80	0.08	0.63	1.02	0.00	0.08	-0.01	0.00
Female	Ref							
Race								
Black or African American	1.46	0.14	0.89	2.39	0.01	0.09	0.00	0.01
Asian	0.87	0.55	0.56	1.36	0.00	0.57	-0.01	0.01
AIAN	0.83	0.62	0.39	1.75	0.00	0.65	-0.02	0.01
Other	2.27	0.19	0.67	7.67	0.01	0.05	0.00	0.02
Unknown	0.80	0.47	0.44	1.45	0.00	0.51	-0.02	0.01
White	Ref							

Ethnicity								
Hispanic	1.42	0.08	0.96	2.11	0.01	0.05	0.00	0.01
Not Hispanic	Ref							
Education								
GED/HS Graduation	0.99	0.98	0.60	1.65	0.00	0.98	-0.01	0.01
Some college	1.38	0.26	0.79	2.42	0.01	0.29	-0.01	0.02
Associate's degree	1.49	0.20	0.81	2.74	0.01	0.23	0.00	0.02
Bachelor's Degree	1.23	0.46	0.71	2.11	0.00	0.48	-0.01	0.02
Masters/Professional/Doctoral Degree	1.19	0.53	0.69	2.06	0.00	0.55	-0.01	0.02
Unknown	0.39	0.16	0.11	1.43	-0.03	0.31	-0.10	0.03
No High School Diploma	Ref							
Urban-Rural County								
Large Fringe Metro	1.07	0.64	0.79	1.46	0.00	0.64	0.00	0.01
Medium and Small Metro	1.16	0.38	0.83	1.61	0.00	0.38	0.00	0.01
Nonmetropolitan	1.21	0.42	0.77	1.91	0.00	0.39	0.00	0.01
Large Central Metro	Ref							
Employment								
No	0.99	0.95	0.74	1.33	0.00	0.95	-0.01	0.01
Unknown	0.68	0.60	0.16	2.84	-0.01	0.66	-0.05	0.03
Worked Last Week	Ref							
Insurance Type								
Medicaid/Dual Eligible	0.86	0.47	0.58	1.28	0.00	0.49	-0.01	0.01
Other coverage	0.73	0.36	0.38	1.42	-0.01	0.41	-0.02	0.01
Uninsured	0.43	0.00	0.28	0.66	-0.02	0.00	-0.04	0.01
Medicare/Medicare Advantage	0.94	0.83	0.56	1.58	0.00	0.83	-0.01	0.01
Private	Ref							
Residence Type								
Rented	0.79	0.08	0.61	1.03	0.00	0.09	-0.01	0.00
Other Arrangement	0.52	0.08	0.25	1.08	-0.02	0.17	-0.04	0.01
Unknown	1.01	0.99	0.27	3.82	0.00	0.99	-0.02	0.02
Owned or being bought	Ref							
Number of Comorbidities								
2	1.24	0.20	0.89	1.71	0.00	0.19	0.00	0.01
3+	2.08	0.00	1.40	3.10	0.01	<0.001	0.01	0.02
0 or 1	Ref							
Hypertension								
Yes	1.97	0.00	1.27	3.05	0.01	<0.001	0.00	0.02
No	Ref							

Table 4b. Results of adjusted logistic regression and average marginal effects for receipt of flu vaccine

	Odds Ratio	p-value	[95% Confidence Interval]		dy/dx	p-value	[95% Confidence Interval]	
Type of Place of Usual Care								
Convenience Clinic	0.71	<0.001	0.62	0.82	-0.08	<0.001	-0.11	0.05
Doctor's Office/Health Center	Ref							
Age								
30-39 Years	0.93	0.30	0.81	1.07	-0.02	0.30	-0.05	0.01
40-49 Years	0.91	0.19	0.80	1.05	-0.02	0.19	-0.05	0.01
50-59 Years	1.13	0.09	0.98	1.29	0.03	0.09	0.00	0.06
60+ Years	2.06	<0.001	1.81	2.35	0.16	<0.001	0.13	0.19
Unknown	1.37	0.39	0.67	2.82	0.07	0.39	-0.09	0.24
18-29 Years	Ref							
Sex								
Male	0.84	<0.001	0.78	0.90	-0.04	<0.001	-0.05	0.02
Unknown	0.87	0.91	0.10	8.01	-0.03	0.91	-0.52	0.46
Female	Ref							
Race								
Black or African American	0.79	<0.001	0.70	0.90	-0.05	<0.001	-0.08	0.02
Asian	1.53	<0.001	1.31	1.79	0.09	<0.001	0.06	0.13
AIAN	1.30	0.15	0.91	1.85	0.06	0.14	-0.02	0.13
Other	1.23	0.22	0.89	1.70	0.05	0.21	-0.03	0.12
Unknown	0.99	0.94	0.81	1.21	0.00	0.94	-0.05	0.04
White	Ref							
Ethnicity								
Hispanic	0.98	0.76	0.85	1.12	0.00	0.76	-0.04	0.03
Not Hispanic	Ref							
Education								
GED/HS Graduation	0.94	0.39	0.83	1.08	-0.01	0.39	-0.04	0.02
Some college	1.00	0.98	0.86	1.15	0.00	0.98	-0.03	0.03
Associate's degree	1.08	0.35	0.92	1.25	0.02	0.35	-0.02	0.05
Bachelor's Degree	1.61	<0.001	1.40	1.86	0.11	<0.001	0.08	0.14
Masters/Professional/Doctoral Degree	2.54	<0.001	2.16	2.99	0.20	<0.001	0.17	0.24
Unknown	0.86	0.52	0.53	1.37	-0.04	0.52	-0.14	0.07
No High School Diploma	Ref							
Urban-Rural County								
Large Fringe Metro	0.92	0.10	0.83	1.02	-0.02	0.10	-0.04	0.00
Medium and Small Metro	0.81	<0.001	0.73	0.89	-0.05	<0.001	-0.07	0.03
Nonmetropolitan	0.70	0.00	0.62	0.80	-0.08	<0.001	-0.11	0.05
Large Central Metro	Ref							
Employment								
No	1.20	<0.001	1.10	1.31	0.04	<0.001	0.02	0.06
Unknown	1.00	0.99	0.64	1.55	0.00	0.99	-0.10	0.10
Worked Last Week	Ref							

Insurance Type								
Medicaid/Dual Eligible	0.84	0.00	0.74	0.94	-0.04	0.00	-0.07	0.01
Other coverage	1.03	0.73	0.87	1.22	0.01	0.73	-0.03	0.05
Uninsured	0.55	<0.001	0.45	0.68	-0.13	<0.001	-0.18	0.09
Medicare/Medicare								
Advantage	1.17	0.00	1.05	1.30	0.04	0.00	0.01	0.06
Unknown	0.83	0.59	0.43	1.61	-0.04	0.59	-0.19	0.11
Private	Ref							
Residence Type								
Rented	0.88	0.01	0.81	0.96	-0.03	0.01	-0.05	0.01
Other Arrangement	0.74	0.03	0.57	0.97	-0.07	0.03	-0.13	0.01
Unknown	0.85	0.41	0.57	1.26	-0.04	0.41	-0.13	0.05
Owned or being bought	Ref							
Number of Comorbidities								
2	1.17	0.00	1.07	1.28	0.04	0.00	0.01	0.06
3+	1.57	<0.001	1.44	1.71	0.10	<0.001	0.08	0.12
0 or 1	Ref							

Table 4c. Results of adjusted logistic regression and average marginal effects for receipt mammogram

	Odds Ratio	p> t	[95% Conf Interval]		dy/dx	p> t	[95% Conf Interval]	
Type of Place of Usual Care								
Convenience Clinic	0.73	0.06	0.53	1.01	-0.03	0.06	-0.07	0.00
Doctor's Office or Health Center								
Age								
50-59	0.85	0.23	0.65	1.11	0.02	0.23	-0.05	0.01
60-74	0.83	0.16	0.64	1.07	0.02	0.14	-0.05	0.01
40-49								
Race								
Black or African American	1.50	0.01	1.11	2.03	0.04	0.00	0.01	0.07
Asian	1.03	0.89	0.69	1.55	0.00	0.89	-0.04	0.05
AIAN	1.31	0.43	0.67	2.58	0.03	0.39	-0.04	0.09
Other	0.76	0.50	0.34	1.70	0.04	0.54	-0.15	0.08
Unknown	1.13	0.63	0.70	1.81	0.01	0.61	-0.04	0.06
White								
Ethnicity								
Hispanic	1.17	0.34	0.84	1.63	0.02	0.32	-0.02	0.05
Not Hispanic								
Education								
GED/HS Graduation	0.99	0.94	0.71	1.37	0.00	0.94	-0.04	0.04
Some college	1.11	0.59	0.77	1.60	0.01	0.60	-0.03	0.05
Associate's degree	0.99	0.94	0.69	1.41	0.00	0.94	-0.04	0.04
Bachelor's Degree	1.24	0.24	0.87	1.77	0.02	0.26	-0.02	0.06

Masters/Professional/Doctoral Degree	1.42	0.08	0.96	2.10	0.04	0.09	-0.01	0.08
Unknown	1.57	0.48	0.44	5.59	0.05	0.41	-0.06	0.16
No High School Diploma								
Urban-Rural County								
Large Fringe Metro	0.77	0.05	0.59	1.00	0.03	0.05	-0.05	0.00
Medium and Small Metro	0.68	0.00	0.53	0.86	0.04	0.00	-0.06	0.02
Nonmetropolitan	0.56	<0.001	0.43	0.74	0.06	<0.001	-0.10	0.03
Large Central Metro								
Employment								
No	0.94	0.57	0.78	1.15	0.01	0.57	-0.03	0.02
Unknown	0.33	0.03	0.12	0.91	0.17	0.10	-0.37	0.03
Worked Last Week								
Insurance Type								
Medicaid/Dual Eligible	0.61	<0.001	0.47	0.79	0.06	0.00	-0.09	0.03
Other Coverage	0.91	0.66	0.61	1.36	0.01	0.66	-0.05	0.03
Uninsured	0.49	0.00	0.32	0.75	0.09	0.01	-0.16	0.03
Medicare/Medicare Advantage	0.93	0.61	0.72	1.22	0.01	0.62	-0.03	0.02
Unknown	1.96	0.56	0.20	19.17	0.05	0.44	-0.08	0.19
Private								
Residence Type								
Rented	0.64	<0.001	0.52	0.80	0.05	<0.001	-0.08	0.03
Other Arrangement	0.87	0.66	0.47	1.61	0.01	0.68	-0.09	0.06
Unknown	1.71	0.29	0.63	4.62	0.05	0.20	-0.02	0.12
Owned or being bought								
Number of Comorbidities								
2	0.94	0.60	0.74	1.19	0.01	0.60	-0.03	0.02
3+	1.10	0.39	0.89	1.36	0.01	0.39	-0.01	0.03
0 or 1								
Family History Breast Cancer								
Yes	1.28	0.05	1.00	1.64	0.03	0.05	0.00	0.05
Unknown	1.02	0.86	0.85	1.21	0.00	0.86	-0.02	0.02

Table 5A. Balance of covariates before and after matching, blood pressure check

	Standardized Difference Raw	Standardized Difference Matched	Variance Ratio Raw	Variance Ratio Matched
Age				
30-39 Years	0.25	-0.01	1.54	0.99
40-49 Years	0.13	-0.02	1.28	0.97
50-59 Years	-0.05	0.03	0.91	1.06
60+ Years	-0.52	0.00	0.75	1.00
Unknown	0.00	-0.01	1.04	0.75
18-29 Years				
Sex				
Male	0.04	-0.02	1.01	1.00
Female				
Race				
Black or African American Only	0.07	0.00	1.17	1.01
Asian Only	-0.10	0.00	0.64	0.98
AIAN Only OR AIAN and any other group	-0.02	0.01	0.83	1.12
Other Single or Multiple Races	0.06	-0.01	1.67	0.96
Unknown	0.02	0.01	1.09	1.04
White Only				
Ethnicity				
Hispanic	0.05	0.01	1.10	1.02
Not Hispanic				
Education				
GED/HS Graduation	0.03	0.00	1.03	1.00
Some college	0.04	0.03	1.08	1.05
Associate's degree	0.01	0.00	1.02	1.00
Bachelor's Degree	0.04	-0.03	1.05	0.96
Masters/Professional/Doctoral Degree	-0.08	0.01	0.85	1.03
Unknown	-0.02	0.03	0.72	2.00
No High School Diploma				
Urban-Rural County				
Large Fringe Metro	0.08	0.01	1.09	1.02
Medium and Small Metro	0.08	0.04	1.06	1.03
Nonmetropolitan	-0.08	0.01	0.86	1.02
Large Central Metro				
Employment				
No	-0.35	0.03	0.86	1.03
Unknown	0.02	0.00	1.14	1.03
Yes				
Insurance Type				
Medicaid/Dual Eligible	0.07	0.05	1.16	1.10

Other Coverage	-0.04	0.00	0.86	0.98
Uninsured	0.19	0.02	2.25	1.07
Medicare/Medicare				
Advantage	-0.30	0.03	0.52	1.08
Unknown	-0.02	0.02	0.60	2.00
Private				
Residence Type				
Rented	0.14	-0.03	1.15	0.98
Other Arrangement	0.00	0.06	1.03	1.52
Unknown	0.02	0.02	1.12	1.09
Owned or being bought				
Number of Comorbidities				
2	0.04	0.04	1.06	1.05
3+	-0.29	0.00	0.88	1.00
0 or 1				
Smoking status				
Former	-0.02	0.03	0.98	1.04
Current	0.08	0.00	1.22	1.01
Unknown	-0.02	0.02	0.89	1.17
Never				
Hypertension				
Yes	-0.32	0.04	0.68	1.08
No				

Table 5B. Balance of covariates before and after matching, flu shot

	Standardized Difference Raw	Standardized Difference Matched	Variance Ratio Raw	Variance Ratio Matched
Age				
30-39 Years	0.25	-0.05	1.54	0.94
40-49 Years	0.13	0.00	1.28	1.00
50-59 Years	-0.05	0.04	0.91	1.09
60+ Years	-0.52	0.01	0.75	1.01
Unknown	0.00	0.02	1.04	1.50
18-29 Years				
Sex				
Male	0.04	0.00	1.01	0.99
Female				
Race				
Black or African American Only	0.07	0.03	1.17	1.06
Asian Only	-0.10	0.00	0.64	1.02
AIAN Only or AIAN and any other				
group	-0.02	0.05	0.83	1.58
Other Single or Multiple Races	0.06	0.03	1.67	1.31

Unknown	0.02	0.02	1.09	1.07
White Only				
Ethnicity				
Hispanic	0.05	0.06	1.10	1.14
Not Hispanic				
Education				
GED/HS Graduation	0.03	0.00	1.03	1.00
Some college	0.04	0.06	1.08	1.12
Associate's degree	0.01	-0.03	1.02	0.94
Bachelor's Degree	0.04	-0.02	1.05	0.97
Masters/Professional/Doctoral Degree	-0.08	-0.04	0.85	0.92
Unknown	-0.02	0.05	0.72	3.99
No High School Diploma				
Urban-Rural County				
Large Fringe Metro	0.08	-0.03	1.09	0.97
Medium and Small Metro	0.08	0.03	1.06	1.02
Nonmetropolitan	-0.08	0.01	0.86	1.03
Large Central Metro				
Employment				
No	-0.35	0.03	0.86	1.02
Unknown	0.02	-0.02	1.14	0.88
Worked Last Week				
Insurance Type				
Medicaid/Dual Eligible	0.07	0.06	1.16	1.12
Other Coverage	-0.04	0.01	0.86	1.07
Uninsured	0.19	0.07	2.25	1.31
Medicare/Medicare Advantage	-0.30	0.01	0.52	1.04
Unknown	-0.02	0.05	0.60	
Private				
Residence Type				
Rented	0.14	0.00	1.15	1.00
Other Arrangement	0.00	0.03	1.03	1.20
Unknown	0.02	0.00	1.12	0.98
Owned or being bought				
Number of Comorbidities				
2	0.04	-0.01	1.06	0.99
3+	-0.29	-0.02	0.88	0.98
0 or 1				

Table 5C. Balance of covariates before and after matching, mammogram

	Standardized Difference Raw	Standardize Difference Matched	Variance Ratio raw	Variance Ratio Matched
Age				
50-59	0.07	-0.01	1.07	0.99
60-74	-0.27	0.00	0.98	1.00
40-49				
Race				
Black or African American Only	0.05	0.08	1.12	1.19
Asian Only	-0.05	0.07	0.82	1.43
AIAN Only OR AIAN and any other group	-0.08	0.00	0.51	1.00
Other Single or Multiple Races	0.11	-0.04	2.47	0.80
Unknown	0.05	0.10	1.24	1.55
White Only				
Ethnicity				
Hispanic	0.00	-0.02	1.01	0.96
Not Hispanic				
Education				
GED/HS Graduation	0.00	0.07	1.01	1.12
Some college	0.04	0.03	1.09	1.05
Associate's degree	-0.02	-0.10	0.96	0.84
Bachelor's Degree	0.01	0.04	1.01	1.06
Masters/Professional/Doctoral Degree	-0.02	-0.09	0.97	0.87
Unknown	0.03	0.00	1.63	1.00
No High School Diploma				
Urban-Rural County				
Large Fringe Metro	0.07	0.03	1.09	1.04
Medium and Small Metro	0.08	-0.09	1.06	0.95
Nonmetropolitan	-0.05	0.02	0.91	1.04
Large Central Metro				
Employment				
No	-0.15	0.02	0.97	1.01
Unknown	0.01	0.02	1.04	1.16
Worked Last Week				
Insurance Type				
Medicaid/Dual Eligible	0.06	-0.02	1.13	0.97
Other Coverage	-0.01	-0.08	0.97	0.73
Uninsured	0.20	0.00	2.53	1.00

Medicare/Medicare Advantage	-0.10	0.04	0.83	1.10
Unknown	0.04	0.00	2.68	1.00
Private				
Residence Type				
Rented	0.04	0.08	1.06	1.12
Other Arrangement	-0.07	-0.03	0.55	0.75
Unknown	-0.01	-0.02	0.94	0.89
Owned or being bought				
Number of Comorbidities				
2	0.03	-0.08	1.04	0.90
3+	-0.12	0.02	0.99	1.01
0 or 1				
Family History Breast Cancer				
Yes	0.01	0.12	1.01	1.24
Unknown	0.06	-0.08	1.01	1.00

Table 5D. Results of propensity score models

	Coefficient	p> t	[95% Confidence Interval]	
Blood Pressure	-0.017	0.009	-0.030	-0.004
Flu Shot	-0.085	<0.001	-0.116	-0.055
Mammogram	-0.003	0.908	-0.059	0.053

Chapter 4: Assessing the changing patterns in the place of usual care following COVID-19

Abstract:

Objective: The COVID-19 pandemic restrictions changed individual's access to sources of usual healthcare. Reliance on convenience clinics, including walk-in retail health clinics and urgent care centers for usual care during this period are not fully understood.

Methods: We conducted a retrospective, observational study using cross sectional data from the 2019, 2022, and 2023 National Health Interview Surveys and examined whether adults report having a usual source of care and if so, whether this was at a convenience clinic or other setting.

Results: Compared to 2019, the likelihood of having a place of usual care, compared to having no usual place, was 1.5 percentage points lower in 2023 ($p < 0.01$). Among those who reported having a place of usual care, those reporting convenience clinics, compared to other settings, as a place of usual care were 1.5 percentage points higher in 2023 compared to 2019 ($p < 0.01$).

Conclusions: After the peak of the pandemic, more people may rely on convenience clinics for usual care, and more research is needed to understand if these shifts are permanent. If convenience clinics are a solution for accessible, affordable access to care and the observed growth in demand continues, more work is needed to understand the impact of regular use on health outcomes and access to health services including primary care.

Introduction

Among the ways that the COVID-19 pandemic impacted daily life was in individual health seeking behavior for usual or routine healthcare services⁸³. During the early months of the national emergency declared in March, 2020, many people reported skipping or delaying care because their usual source of care was temporarily closed or was overwhelmed with treating COVID patients⁸⁴. As the pandemic and national emergency continued to disrupt every aspect of American life, financial constraints driven by job losses contributed to changes in the demand for routine healthcare⁸⁵. These short run changes in health seeking behavior were amplified by damaged trust in the healthcare system, which was experienced across the sociodemographic spectrum⁸⁶. The impact of this damaged trust may lead to long-term shifts in how people perceive and access sources of healthcare, such as those provided in physician offices, for both routine care and acute medical needs⁸⁶. Shifts away from primary care settings towards alternative care options may be exacerbated by a shortage in the healthcare workforce as providers leave the industry in part due to burnout caused by pandemic generated stress¹⁶.

While in-person care in physician offices and emergency departments decreased during the pandemic⁸⁷, there were increases in the use of other services, including care provided at convenience clinics¹³. Convenience clinics are stand-alone urgent care centers or walk-in retail clinics that are often located in pharmacies and big-box retail stores^{88,43}, that were initially seen as complementary to physician offices and were designed to treat low-acuity, time-limited health needs, and open during evenings and weekends when physician offices may be closed^{5 6-8}. Increased demand for convenience clinics during the pandemic was driven in part by these clinics' federally mandated role in pandemic vaccination and testing, and extended business hours compared to in-office physician care, which restricted access due to office closures and cancelled appointments. The pandemic therefore may have created greater consumer familiarity and comfort with receiving healthcare at convenience clinics,³³ while at the same time, trust in traditional care settings was falling.

A report from 2022 notes that the provision of primary care services at convenience clinics may result in people identifying these facilities as their usual source of primary care⁹. Research has demonstrated that having a usual source of care is associated with greater uptake of preventive services and more comprehensive management of chronic illness. The extant literature is focused on the role of traditional physician office visits as the primary source of usual care¹⁶⁸⁹⁹⁰. Given growing interest in convenience clinics as a place of usual care, as well as pandemic generated demand for these facilities, convenience clinics may increasingly function as a substitute for, rather than complement to, usual care in a physician office for some people. Primary healthcare providers and health systems will benefit from understanding these changing trends as they can plan for outreach to populations that may be underutilizing services, or they may develop initiatives to outreach to patients using convenience clinics for usual care. As convenience clinics are designed to address short-term acute medical needs, they may not provide for the continuity of care that supports effective delivery of preventive services and chronic disease management, which is best provided through a long-term relationship with a primary care provider^{91,92}. Therefore, groups relying heavily on convenience clinics for usual care may miss important primary care services. Our objective is to, first, understand the degree to which the COVID-19 pandemic influenced whether

individuals report having any place of usual care. Secondly, we aim to understand the degree to which the source of usual care has shifted away from traditional office settings, comparing patterns of health seeking before and after the declaration of the national emergency.

Methods

Data Sources

Our analysis is based on multiple waves of the National Health Interview Survey (NHIS), a primary source of data on the health of the nation's civilian, non-institutionalized population that captures a variety of topics including demographic, health insurance coverage and healthcare access and use^{34,93,94}. To assess whether the COVID-19 pandemic impacted respondent's usual source of care, we examined survey results for 2019, 2022 and 2023. Data from 2020 and 2021, during height of national emergency, were excluded due to potential unrepresentative, discordant trends caused by the pandemic⁹⁵. Although the formal declaration ending the national emergency occurred in March 2023, every state except for Hawaii had ended mandatory closure requirements for schools and businesses by July 2021⁹⁶. Thus, 2022 was the first full year in which pandemic-related restrictions were no longer in place, and 2022 and 2023 should reflect the pandemic's impact on care-seeking behavior after the peak of the pandemic.

For our first analysis looking at whether people had a place of usual care. We captured people who answered 'yes' to the question: *Is there a place that you usually go to if you are sick and need healthcare?*

Of these, 593 observations (<1% of total) were excluded due to unavailable data for our outcomes of interest, there were 31,830 adults 18 years and older in 2019, 27,452 adults in 2022 and 29,295 adults in 2023 with complete data.

For our second analysis, examining type of place of usual care, we further restricted our sample to adults who had a usual place of care, resulting in 28,392, 24,395, and 25,947 unweighted observations for 2019, 2022, and 2023 respectively. Type of place of usual care was captured with the question: *What kind of place is it- a doctor's office or health center; an urgent care center, a clinic in a drug store or grocery store; a hospital emergency room; a VA Medical Center or VA outpatient clinic; or some other place?*

Dependent Variable

Our first outcome of interest is the likelihood of having a source of usual care compared to having no place or more than one place (<2%), which we refer to collectively as 'no place'. Our second outcome is, among those who reported having a place of usual care, the likelihood of using convenience clinics compared to other settings as a place of usual care. Following methods published elsewhere, those who reported having a usual place to go when sick and in need of care were classified as having a usual source of care^{16,50}. Convenience clinics include urgent care centers or clinics in a drug store or grocery store. Other settings included doctor offices or health centers, hospital emergency rooms, VA medical centers or outpatient clinics, or some other place (not specified).

Independent Variable

The primary exposures in our study were the calendar years 2022 and 2023 representing the first years after the peak of pandemic.

Other Covariates

Variables listed below were chosen based on their association with individuals' use of health services²⁵. Covariates included age (categorical: 18-29 years, 30-39 years, 40-49 years, 50-59 years, 60+ years), sex (male/female), race (White only, Black/African American Only, Asian Only, American Indian/Alaska Native Only (AIAN) or AIAN and any other group, Other Single or Multiple Races), Hispanic/Latino ethnicity (yes/no), highest education level (less than high school, GED/high school graduation, some college, associate degree, bachelor's degree, master's/professional/doctoral degree), census region of residence (Northeast, Midwest, South, West), Urbanicity (Metro or Nonmetropolitan based on National Center for Health Statistics urban-rural classification scheme), health insurance status (Commercial, Other Public, Medicare Only/Medicare Advantage, Uninsured), employment (working for pay last week/not working), residence/housing type (owned, rented, other arrangement) and number of comorbidities (0 or 1, 2, 3+). Comorbidities are defined as having hypertension in last 12 months, high cholesterol in last 12 months, asthma currently, overweight/obese currently (based on BMI), or ever having any one of the following conditions: type 2 diabetes, depression, arthritis, cancer, chronic obstructive pulmonary disease, coronary heart disease. Variables with responses including refused, not ascertained, or don't know were coded together and captured as a variable called 'unknown.'

Statistical analysis

We used NHIS data and reported descriptive statistics by whether individuals reported a place of usual care for 2019, 2022 and 2023. Among those who reported a place of usual care, we reported descriptive statistics by convenience clinic or other setting for each year, using chi-square tests to identify significant differences defined at an alpha level of 0.05. To model the binary outcomes, we estimated generalized linear models with log link. We used Stata 15 (Stata Corp, College Station, Texas)⁹⁷ to adjust for survey weights and complex survey design. We then estimated the average marginal effects for ease of interpretation⁵². Given the possibility of potential resampling of households over multiple years, we also conducted a sensitivity analysis to determine if the specification risked underestimation of the standard errors and results were robust to the empirical specification.

Results

Descriptive Statistics

In 2019, 2022 and 2023 12.2%, 12.6% and 12.7% of people had no usual source of care. The sociodemographic characteristics of those who did not have usual care versus those who did follow similar patterns across all 3 years. There were consistent statistically significant differences such that those without a usual source of care tended to be younger, Hispanic, living in the South, uninsured, with fewer comorbidities ($p < 0.01$) (Table 6). Among those who had a usual source of care in 2019, 2022, and 2023, 7.0%, 7.5% and 8.1% used convenience clinics as a source of usual care. There

were consistent statistically significant differences such that those going to a convenience clinic tended to be younger, working, uninsured, with fewer comorbidities (Table 7).

Regression Results

Holding all other factors constant, the odds of having a place of usual care were 11% lower in 2022 ($p<0.01$) and 15% lower in 2023 compared to 2019 ($p<0.01$). Compared to 2019, in 2022 the likelihood of having a place of usual care, compared to having no place of usual care, was 1.0 percentage points lower and was 1.5 percentage points lower in 2023 ($p<0.01$) (Table 8 & 8A). Among those who reported having a place of usual care, the odds of having convenience clinics as a place of usual care were 14% higher in 2022 compared to 2019 ($p=0.01$), and 26% higher in 2023 compared to 2019 ($p<0.01$). Reports of convenience clinics as a usual place of care, compared to other settings, were 1 percentage point higher in 2022 ($p=0.01$) and 1.5 percentage points higher in 2023 compared to 2019 ($p<0.01$) (Table 9 & 9A)

Limitations

We cannot distinguish between and among individuals that use urgent care versus retail clinics as a usual place of care, and these two market segments may behave differently over time. The 2023 NHIS data was the most recent year of available NHIS data at the time of analysis, we do not have an extensive post-pandemic period to study. Given that there were efforts towards a return to normalcy including return-to-work efforts by major companies reopening schools, it is possible to see some post pandemic trends emerging by 2023 to better understand if people's care seeking behavior at convenience clinics will continue in a post-pandemic environment^{96,98}. There are limitations of using time fixed effects to measure post-pandemic impacts. Time fixed effects assume trends across groups would have been parallel in the absence of the pandemic, but there may have been varying regional responses to the pandemic, and fixed effects cannot account for how regions experienced the pandemic and may miss changes over time such as other unrelated policy adjustments and changes.

Discussion

While the likelihood of reporting a place of usual care in 2022 and 2023 was lower than 2019, for those who did report a place of usual care the likelihood of using convenience clinics as a place of usual care was higher. Though the magnitude of these changes is small, a small change is an important initial indicator of potential shifts in care seeking behavior that could impact primary care delivery. Our findings align with existing research that patients may have delayed routine healthcare during the pandemic and under-utilized some healthcare services including primary care^{99,100}. Another study found the share of adults with a visit to a doctor in the last 12 months dipped during the pandemic and in 2022 remains below early 2019 levels⁸⁵. Another study found that while outpatient care was delayed or avoided during the pandemic, as of mid-to-late 2022, utilization may be rebounding, though some use may be for COVID-related treatment, testing and vaccination thus non-COVID care likely remains lower than pre-pandemic trends⁸⁵. A recent report found over the last 5 years the visit volume to retail clinics and urgent care continues to grow²⁴. Rather than examining overall demand for convenience clinics and visit volume, we focused our analysis on persons identifying convenience clinics as their place of usual care and found more people were identifying convenience clinics as their place of usual care after the pandemic

peak. Our findings are also relevant as people increasingly report having no usual source of care at all or report facilities as their usual source of care¹⁰¹. Assessing continued demand for convenience clinics, and the extent that convenience clinics become a substitute for, rather than complement to, primary care warrants further research. Primary care, through which individuals have long-term relationships with a care team, establishes the continuity of care that allows for discrete healthcare events to be treated within the broader context of the patient experience.¹⁰² Care continuity has been linked to improved clinical outcomes, lower rates of hospitalization, lower long term costs and greater patient satisfaction leading to greater emphasis on team based care in chronic care management models¹⁰³. Ideally convenience clinics can extend access to care and integrate into the health system to act as an extension of primary care. If care remains siloed the increased use of convenience clinics may disrupt the care continuity best achieved through traditional primary care thus risking opportunities to address preventive and chronic medical needs^{1,23,104}.

We found that despite fewer people reporting a usual source of care, interest in convenience clinics appears to be continuing after the pandemic peak. There may also be generational differences in convenience clinic use, such as frequent use by millennials, as noted by others, but more work is needed to understand these patterns^{14,17,21,40}. We found people who were older were more likely to report having a place of usual care. Moreover, among those with a place of usual care, we found people who were younger were more likely to report convenience clinics as their place of usual care. We also found that people living in metro areas were more likely to use convenience clinics compared to those living in non-metropolitan areas. At present, convenience clinics are disproportionately located in suburban and urban areas with high population density and income^{19,105}. Though more people are reporting using convenience clinics for usual care, the continued availability of these services may be increasingly limited. There is a wave of post-pandemic retail clinic closings in low-income urban neighborhoods that may exacerbate access barriers and health inequities in these communities^{106,107}. Meanwhile, growth in the urgent care sector is continuing after the pandemic in suburban markets, using the business model of the big-box retailers by clustering in high income, densely populated areas, largely leaving out certain communities, such as rural areas⁷⁹. As reliance on convenience clinics as a usual source of care continues, limited availability in some communities may result in inequitable access to care.

Policy Implications

We found the likelihood of people reporting convenience clinics as a place of usual care in 2022 and 2023 compared to 2019 was slightly higher, an important datapoint measuring early responses in changes in health seeking behavior after the peak of the pandemic. Understanding changing patterns of where people seek care when they are sick is important for healthcare stakeholders desiring to meet consumer demands. The result may signal potential changes in people's search for primary care services that may be permanent, which warrants further monitoring. Greater reliance on convenience clinics as an alternative to primary care offices may impact healthcare access, continuity of primary care and patient outcomes over time. Providers may need to consider closer affiliation with convenience clinics, to meet patient demand with extended evening and weekend hours and expanded provider availability. The convenience clinic sector is also evolving to meet demands for care, such as providing more comprehensive primary care services and offering services

such as chronic disease management⁴⁷. If convenience clinics continue to provide more comprehensive care, it could result in greater reliance on these facilities in the future. Closer integration between health systems and convenience clinics may allow for easier information sharing and improve care continuity for more comprehensive care delivery, especially if convenience clinics endeavor to expand services offered. The pandemic may have created a temporary demand for convenience clinics, and these trends may decline, or may be shifted over time. However, tracking the growth of this sector, and the accessibility of these clinics and services requires further research to monitor quality and equity of care.

Table 6. Characteristics of people with and without a usual source of care, 2019, 2022, 2023 (weighted)

	2019 (unweighted n=31,837)			2022 (unweighted n=27,458)			2023 (unweighted n=29,306)		
	No (n=3,438)	Yes (n=28,399)	p value	No (n=3,057)	Yes (n=24,401)	p value	No (n=3,348)	Yes (n=25,958)	p value
Age, y			0.000			0.000			0.000
18-29	36%	19%		34%	18%		33%	18%	
30-39	25%	16%		27%	16%		27%	16%	
40-49	16%	16%		17%	16%		17%	16%	
50-59	11%	17%		10%	17%		11%	16%	
60+	11%	32%		13%	33%		12%	34%	
Sex			0.000			0.000			0.000
Male	63%	46%		62%	47%		61%	47%	
Race			0.000			0.000			0.000
White	70%	73%		69%	72%		68%	72%	
Black/African American	12%	12%		12%	12%		12%	12%	
Asian	6%	6%		6%	6%		7%	6%	
AIAN	2%	2%		2%	2%		2%	2%	
Other	2%	1%		2%	1%		2%	1%	
Unknown	10%	6%		10%	6%		9%	6%	
Ethnicity			0.000			0.000			0.000
Hispanic	25%	15%		26%	16%		24%	17%	
Region			0.000			0.000			0.000
Northeast	13%	18%		12%	18%		13%	18%	
Midwest	19%	21%		19%	21%		18%	21%	
South	46%	36%		44%	37%		45%	37%	
West	22%	24%		25%	24%		24%	24%	
Urban/Rural			0.000			0.000			0.000
Metro	88%	85%		90%	86%		89%	86%	

Nonmetro	12%	15%		10%	14%		11%	14%
Education			0.000			0.000		0.000
No High School Grad	12%	12%		13%	10%		13%	10%
GED or High School Grad	30%	27%		31%	26%		31%	26%
Some college	17%	18%		15%	16%		16%	16%
Associate degree	11%	13%		10%	14%		11%	13%
Bachelor's	17%	18%		21%	20%		19%	21%
Masters/Prof/Doctoral	8%	11%		8%	13%		10%	13%
Unknown	1%	1%		1%	1%		1%	1%
Employment			0.000			0.000		0.000
Worked Last Week	75%	61%		67%	57%		69%	57%
No	22%	36%		28%	39%		26%	39%
Unknown	3%	2%		5%	4%		5%	4%
Insurance			0.000			0.000		0.000
Commercial	49%	64%		51%	62%		55%	62%
Other Public	11%	19%		14%	20%		14%	20%
Uninsured	36%	8%		31%	7%		27%	6%
Medicare/Medicare Advantage	3%	10%		4%	11%		4%	12%
Unknown				1%	0%		1%	0%
Housing			0.000			0.000		0.000
Owned	47%	67%		49%	69%		50%	69%
Rented	47%	29%		44%	25%		42%	25%
Other arrangement	3%	2%		2%	2%		2%	2%
Unknown	3%	3%		5%	4%		6%	4%
ED Visits			0.000			0.000		0.000
0 times	82%	77%		84%	79%		84%	79%
1 time	11%	14%		9%	13%		10%	14%
2+ times	7%	9%		6%	7%		5%	7%
				0%	0%		0%	0%
Comorbidities			0.000			0.000		0.000
0 or 1	78%	52%		76%	50%		75%	49%

2	13%	20%	14%	21%	16%	22%
3+	9%	28%	10%	29%	10%	30%

Table 7. Characteristics of people with a usual source of care at either convenience clinic (CC) or other setting, 2019, 2022, 2023 (weighted)

	2019 (unweighted n=28,392)			2022 (unweighted n=24,395)			2023 (unweighted n= 25,947)		
	Other (n=26,613)	CC (n=1,779)	p< z	Other (22,814)	CC (1,581)	p< z	Other (n= 24,096)	CC (n=1851)	p< z
Age, y			<0.01			<0.01			<0.01
18-29	18%	30%		17%	29%		17%	31%	
30-39	15%	23%		15%	26%		15%	23%	
40-49	16%	18%		16%	16%		15%	18%	
50-59	17%	14%		17%	14%		17%	13%	
60+	34%	14%		35%	14%		35%	15%	
Sex			0.14			<0.01			0.01
Male	46%	48%		46%	51%		47%	51%	
Race			<0.01			0.06			<0.01
White	73%	72%		72%	72%		72%	74%	
Black/African American	12%	12%		12%	14%		12%	13%	
Asian	6%	3%		6%	4%		7%	3%	
AIAN	2%	1%		2%	2%		2%	1%	
Other	1%	2%		1%	1%		1%	2%	
Unknown	6%	9%		6%	7%		6%	6%	
Ethnicity			<0.01			0.03			0.29
Hispanic	15%	19%		16%	18%		16%	18%	
Region			0.07			0.43			0.01
Northeast	19%	16%		18%	18%		18%	18%	
Midwest	21%	20%		21%	21%		21%	22%	
South	36%	41%		37%	39%		37%	41%	

West	24%	24%		24%	21%		24%	19%
Urbanicity			0.53			0.02		0.07
Metro	85%	86%		85%	89%		86%	88%
Non-metro	15%	14%		15%	11%		14%	12%
Education			<0.01			0.04		<0.01
No High School Grad	12%	14%		10%	11%		10%	9%
GED or High School Grad	27%	28%		26%	28%		26%	28%
Some college	18%	20%		16%	18%		16%	18%
Associate degree	14%	13%		14%	13%		13%	13%
Bachelor's	18%	17%		20%	21%		21%	22%
Masters/Prof/Doctoral	11%	8%		13%	10%		13%	9%
Unknown	1%	1%		1%	0%		1%	0%
Employment			<0.01			<0.01		<0.01
Worked Last Week	61%	73%		56%	70%		56%	71%
Not Working	37%	25%		40%	26%		41%	26%
Unknown	2%	2%		4%	4%		4%	3%
Insurance			<0.01			<0.01		<0.01
Commercial	64%	60%		61%	64%		61%	64%
Other Public	19%	17%		20%	18%		20%	19%
Uninsured	7%	20%		6%	14%		5%	12%
Medicare/Medicare Advantage	10%	3%		12%	4%		13%	5%
Unknown	0%	0%		0%	1%		0%	0%
Housing			<0.01			<0.01		<0.01
Owned or being bought	67%	59%		70%	61%		69%	63%
Rented	28%	37%		24%	33%		24%	31%
Other arrangement	2%	2%		2%	2%		2%	2%
Unknown	3%	3%		4%	5%		4%	4%
ED Visits			0.31			0.16		0.05
0 times	77%	78%		79%	80%		78%	81%

1 time	14%	14%		13%	14%		14%	13%
2+ times	9%	8%		7%	6%		7%	6%
Unknown	0%	0%		0%	0%		0%	0%
Comorbidities			<0.01			<0.01		<0.01
0 or 1	51%	66%		49%	64%		47%	63%
2	20%	18%		21%	21%		22%	20%
3+	29%	16%		30%	15%		31%	17%

CC = Convenience Clinic

Table 8. Results of the GLM regression, likelihood of having a place of usual care

	Odds Ratio	Robust Standard Error	P > z	95% Confidence Interval	
Year					
2022	0.89	0.03	0.00	0.83	0.96
2023	0.85	0.03	0.00	0.79	0.92
2019	REF				
Age					
30-39	1.04	0.04	0.32	0.97	1.11
40-49	1.44	0.07	0.00	1.32	1.58
50-59	1.90	0.09	0.00	1.73	2.09
60+	2.25	0.12	0.00	2.03	2.49
18-29	REF				
Sex					
Male	0.58	0.02	0.00	0.55	0.62
Female	REF				
Race					
Black/African American	1.32	0.07	0.00	1.19	1.47
Asian	1.09	0.07	0.17	0.96	1.22
AIAN	1.11	0.16	0.48	0.83	1.47
Other	0.93	0.09	0.48	0.77	1.13
Unknown	1.21	0.09	0.01	1.05	1.39
White	REF				
Ethnicity					
Hispanic	1.04	0.06	0.50	0.93	1.15
Not Hispanic	REF				
Education					
GED or High School Grad	1.02	0.06	0.69	0.92	1.14
Some college	1.15	0.07	0.02	1.02	1.29
Associate degree	1.17	0.08	0.02	1.03	1.33
Bachelor's	1.09	0.07	0.15	0.97	1.23
Masters/Prof/Doctoral	1.21	0.08	0.00	1.06	1.37
Refused/DontKnow	0.59	0.09	0.00	0.43	0.79
No High School Diploma	REF				
Region					
Midwest	0.78	0.06	0.00	0.68	0.90
South	0.65	0.04	0.00	0.58	0.73
West	0.80	0.05	0.00	0.71	0.91
Northeast	REF				

Urbanicity					
Nonmetro	1.24	0.08	0.00	1.10	1.41
Metro	REF				
Employment					
Not working	1.08	0.04	0.04	1.00	1.17
Unknown	0.73	0.12	0.05	0.53	1.00
Worked Last Week	REF				
Insurance					
Other Public	1.15	0.05	0.00	1.06	1.25
Uninsured	0.25	0.01	0.00	0.23	0.27
Medicare/Medicare Advantage	1.06	0.07	0.38	0.93	1.21
Unknown	0.61	0.11	0.01	0.43	0.87
Commercial	REF				
Housing Type					
Rented	0.58	0.02	0.00	0.54	0.62
Other arrangement	0.69	0.07	0.00	0.57	0.83
Unknown	0.88	0.13	0.39	0.65	1.18
Owned	REF				
ED Visits					
1 time	1.27	0.06	0.00	1.16	1.39
2+ times	1.10	0.06	0.07	0.99	1.22
Unknown	0.92	0.27	0.78	0.52	1.64
0 times	REF				
Comorbidities					
2	1.63	0.07	0.00	1.50	1.76
3+	2.46	0.12	0.00	2.24	2.71
0-1	REF				

Table 8A. Average Marginal Effects

Year	dy/dx	SE	P> z	95% Confidence Interval	
2022	-0.010	0.004	0.004	-0.076	-0.003
2023	-0.015	0.004	0.000	-0.023	-0.008

Table 9. Results of GLM, among those with a place of usual care, likelihood of reporting convenience clinic as place of usual care

	Odds Ratio	Robust SE	P > z	95% CI	
Year					
2022	1.14	0.06	0.01	1.03	1.26
2023	1.26	0.06	0.00	1.14	1.39
2019	REF				
Age					
30-39	0.98	0.05	0.69	0.89	1.08
40-49	0.72	0.04	0.00	0.64	0.81
50-59	0.56	0.03	0.00	0.49	0.63
60+	0.37	0.03	0.00	0.32	0.42
18-29	REF				
Sex					
Male	1.10	0.04	0.01	1.03	1.18
Female	REF				
Race					
Black/African American Only	0.86	0.05	0.02	0.76	0.97
Asian Only	0.51	0.05	0.00	0.43	0.61
AIAN	0.78	0.13	0.14	0.55	1.09
Other	1.09	0.14	0.52	0.84	1.41
Unknown	0.98	0.10	0.85	0.81	1.19
White Only	REF				
Ethnicity					
Hispanic	0.81	0.06	0.00	0.71	0.93
Not Hispanic	REF				
Education					
GED or High School Grad	0.92	0.06	0.21	0.80	1.05
Some College	0.94	0.07	0.41	0.82	1.08
Associate Degree	0.86	0.07	0.06	0.74	1.00
Bachelor's Degree	0.84	0.06	0.01	0.73	0.96
Masters/Prof/Doctoral Degree	0.67	0.05	0.00	0.57	0.78
Unknown	0.77	0.22	0.37	0.44	1.35
No High School Diploma	REF				
Region					
Midwest	1.03	0.08	0.72	0.88	1.21
South	1.11	0.07	0.12	0.97	1.25
West	0.91	0.08	0.26	0.77	1.07
Northeast	REF				

Urbanicity					
Nonmetro	0.82	0.08	0.03	0.68	0.99
Metro	REF				
Employment					
Not Employed	0.77	0.03	0.00	0.70	0.84
Unknown	0.64	0.13	0.03	0.43	0.95
Worked last week	REF				
Insurance					
Other Public	1.01	0.05	0.78	0.91	1.13
Uninsured	2.08	0.13	0.00	1.84	2.35
Medicare/Medicare					
Advantage	0.88	0.07	0.12	0.74	1.03
Unknown	0.75	0.31	0.49	0.33	1.68
Commercial	REF				
Housing Type					
Rented	1.14	0.05	0.00	1.05	1.24
Other arrangement	0.94	0.11	0.57	0.74	1.18
Unknown	1.34	0.25	0.12	0.92	1.95
Owned or being bought	REF				
ED Visits					
1 time	1.03	0.05	0.61	0.93	1.14
2+ times	0.89	0.07	0.10	0.77	1.03
Unknown	0.41	0.20	0.07	0.16	1.06
0 times	REF				
Comorbidities					
2	0.88	0.04	0.01	0.80	0.97
3+	0.68	0.04	0.00	0.61	0.76
0-1	REF				

Table 9A. Average Marginal Effects

Year	dy/dx	SE	P> z	95% Confidence Interval	
2022	0.009	0.003	0.010	0.002	0.015
2023	0.015	0.003	0.000	0.009	0.022

Chapter 5: Conclusion

This research explored convenience clinics, an important evolving sector of the ambulatory care landscape. These clinics, designed to address acute, time-limited health needs, offer extended hours, walk-in availability, and transparent pricing, making them an attractive alternative to traditional primary care offices. Urgent care centers, often staffed by physicians and equipped for mid-level acuity cases (like fractures or infections), are distinct from retail clinics, which typically handle minor illnesses and vaccinations by nurse practitioners or physician assistants. The services provided at convenience clinics may also be provided in a primary care setting, yet some people may prefer the flexibility and availability convenience clinics offer or because they do not have access to a regular primary care provider. Healthcare systems may need to respond to demands for convenience with expanded hours and flexible appointments for primary care to accommodate the needs of this population. Health systems' response and accommodation of patient needs is especially critical as patients have greater options to seek convenient care, and these same populations may not have established regular care with a primary care provider which may lead to missed or delayed care.

Convenience clinics have responded to patient demand for more accessible and affordable care than is available at emergency departments or physician offices. The growing demand for these facilities accelerated during the COVID-19 with convenience clinics playing a pivotal role in testing and vaccination efforts. In 2020 alone, urgent care visits surged by 58%, with the majority related to COVID-19 services⁴³. This exposure introduced many patients to these clinics for the first time, fostering a familiarity that persisted even as the pandemic waned. By 2022, retail clinic visits had skyrocketed by 200% compared to pre-pandemic levels, while urgent care visits rose by 70%^{11,33}.

We found that people who use convenience clinics for usual care are younger adults (18–39), men, the uninsured, and those with fewer chronic health conditions. These patients often prioritize speed and accessibility over long-term relationships with a primary care provider. For instance, men—who historically delay doctor visits—are 20% more likely than women to report convenience clinics as their usual care source. Similarly, uninsured individuals, facing financial barriers to traditional care, are 80% more likely to rely on these clinics compared to those with private insurance.

While our research leveraged information on convenience clinics as a source of usual care, more research is needed to understand the frequency and intensity of convenience clinic visits among those using these facilities as a place of usual care and those using convenience clinics intermittently. While certain populations may report convenience clinics as a usual source of care, among this population the frequency of visits to convenience clinics and reasons for the visits requires further exploration. For the treatment of episodic care, the American College of Physicians has recommended retail clinics be used as a backup to primary care physicians¹⁰⁸. Yet despite this recommendation, some convenience clinics appear to be filling a need as a usual source of primary care among some populations⁹. Payers and health systems have also positioned convenience clinics as an alternative to traditional primary care sites. This has been accomplished by stakeholders in two ways: first, to incent greater use of convenience clinics, public and private payers cover services provided at convenience clinics. As of 2017, 80% of visits to convenience clinics were covered by third-party payors^{56,57}. Although convenience clinics have contracted with third party payors, we found they also remain an important source of usual care for the uninsured.

Second, health systems have either established convenience clinics in collaboration with pharmacies or national retailers or contracted with existing centers as extensions of physician office settings allowing for greater access points into care within the community. Through partnership or acquisition of convenience clinics, health systems may leverage opportunities to improve access to convenient, affordable care. However, optimizing care delivery, greater information sharing and collaboration between existing healthcare delivery systems and convenience clinics is necessary to ensure patients can access the care they need and be linked into a health systems' primary care network. Use of a common shared electronic medical record may facilitate better communication and a more seamless transition for patients using convenience clinics and aid in linkages back to a health system. There are various affiliations between health systems and convenience clinic retailers that currently exist, but ownership of these facilities and partnership arrangements, and the impact on patient health outcomes, remains largely understudied.

The business model of convenience clinics appears to be changing in the post-Covid era. Ultimately, the original retail clinic model may prove to be unprofitable and lead to de-investment by stakeholders. As of 2024, some walk-in retail health clinics were closing citing financial difficulty, and some suggest these clinics must re-design their business model to include more comprehensive primary care services⁴⁷. While, overall, urgent care centers continue to proliferate, these clinics are also expanding service offerings to provide more comprehensive services such as glucose screenings, nutrition counseling and mental health services. Our research looked at both walk-in retail health clinics and urgent care centers together, but these clinics are distinct entities and may behave differently in the marketplace and merit their own research. The urgent care center business model is much more prevalent than walk-retail health clinics, so our research may also heavily reflect the experience of those using urgent care centers as a place of usual care.

Distinct study of the patterns of utilization of both urgent care centers and retail clinics, and quality of care provided over time for both types of facilities is needed. Ideally, future datasets can parse out the type of convenience clinic used— either urgent care center or retail clinic, services offered, and ownership structure of these facilities. These factors may have significant impacts on care delivery and care quality over time for this modest, but growing, market segment. For example, the incentives driving decision making for a health system may be different from private equity groups and while both are investing in industry, investments may result in different outcomes for care delivery. And while the usual source of care measure is a helpful indicator to measure one aspect of the convenience clinic market, it does not elucidate the type and intensity of visits. Other measures of utilization are needed, in addition to robust datasets that capture changes in this market over time.

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