

Research Article

The Effect of Community Type on Access to Orthopedic Services for Medicaid-Insured Patients

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Purpose

Medicaid-insured patients have less access to specialty care compared to those who are privately insured. Limited and delayed access to orthopaedic services can affect patient outcomes, especially for patients living in rural areas. The purpose of this study was to evaluate the effect of community setting in access to orthopaedic care for Medicaid-insured patients.

Methods

The study population included board-certified orthopaedic specialists obtained from the American Academy of Orthopaedic Surgeons (AAOS) within five Florida counties, representing urban and rural communities. Investigators used the Secret Shopper methodology to schedule an appointment for a rotator cuff repair. Medicaid acceptance rate, wait time, and average distance to clinics accepting Medicaid were calculated and compared between urban and rural counties.

Results

Of the 108 clinics identified, 76.9% performed arthroscopic rotator cuff repair. The appointment rate across all counties was 100% (n=83) for privately insured patients and 9.6% (n=8) for Medicaid patients. There was no significant difference in access when comparing access to care with Medicaid in urban and rural counties (p=0.984). Medicaid patients had significantly shorter wait times in rural counties compared to urban counties (p=0.021). Rural counties encountered a significantly greater average travel distance to clinics accepting Medicaid compared to urban counties (p=0.042).

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Conclusion

Medicaid-insured patients have limited access to orthopaedic care, regardless of community setting. Medicaid-insured patients in rural counties were more likely to have shorter wait times to the appointment and travel longer distances to clinics.

INTRODUCTION

Medicaid is a public health insurance program administered by states, based on federal guidelines, and provides health-care to low-income adults, elderly adults, people with disabilities, pregnant women, and children. Passed in 2010, the Patient Protection and Affordable Care Act (PPACA) included a provision to expand Medicaid eligibility to all adults under the age of 65 with annual incomes at or below 133% of the federal poverty level. This provision granted states the opportunity to increase access to health care services with over 15 million Americans added under the Affordable Care Act Medicaid expansion, including adults without dependent children (Medicaid 2022; “Medicaid Expansion to the New Adult Group,” n.d.; Rudowitz, Musumeci, and Garfield 2021). As of February 2021, Medicaid enrollment had increased to 74.2 million from 64.0 million Americans in February 2020, making Medicaid one of the largest sources of health coverage in the United States (Medicaid 2022; “Medicaid Expansion to the New Adult Group,” n.d.; Rudowitz, Musumeci, and Garfield 2021).

Although the number of those insured is increasing, access to elective health services is not equal amongst all insurance types. Studies have shown that Medicaid-insured patients have less access to orthopaedic care compared to patients insured by Medicare and private insurance (Nguyen et al. 2019). However, little is known on how the community setting impacts insurance Medicare acceptance rates. One study using the secret shopper method demonstrated that fictitious Medicaid-insured pediatric patients presenting with a distal radius fracture were significantly less likely to secure an appointment than privately insured patients (Nguyen et al. 2019). Additionally, studies have shown that orthopaedic clinics were significantly less likely to accept Medicaid-insured patients compared to privately insured patients for a gamut of elective orthopaedic surgical issues including total joint arthroplasty, total joint revisions, anterior cruciate ligament tear, and bucket-handle meniscus repairs (Wiznia et al. 2017; McKissack et al. 2021; Lavernia, Contreras, and Alcerro 2012; Kim et al. 2015; Shi et al. 2020). There have been conflicting results concerning the correlation between state Medicaid expansion status and access to orthopaedic services for individuals insured with Medicaid (Nguyen et al. 2019; Wiznia et al. 2017; Kim et al. 2015).

Limited and delayed access to orthopaedic services can affect outcomes for patients insured by Medicaid who present with orthopaedic injuries. Studies show Medicaid patients are more likely to experience longer wait times from the initial injury to the orthopaedic evaluation and from the evaluation to the surgery (McKissack et al. 2021; Johnson et al. 2019). Such delays may increase the risk for treatment failure and complications, result in worse outcomes, and increase time required for full recovery (Uzun et al.

2017; Venkatachalam, Godsiff, and Harding 2001; Gutman et al. 2021; Patel et al. 2022; Matar et al. 2021). The continued inability of newly insured Medicaid patients to access orthopaedic care presents a new facet to an old problem faced by many who live in rural geographies (Fu et al. 2013). Orthopaedic surgeons are much less likely to practice in the rural setting and only 30% of rural hospitals provide access to a full-time orthopaedic surgeon (Fordyce et al. 2007; Weichel 2012). Therefore, patients in rural areas are required to travel further distances to obtain orthopaedic care (Chan, Hart, and Goodman 2006), which impacts access to orthopaedic care and creates an additional challenges for the Medicaid population who tend to be poorer and/or have disabilities (Nguyen et al. 2019; Wiznia et al. 2017; Lavernia, Contreras, and Alcerro 2012; Gutman et al. 2021; Patterson et al. 2013; Sood, Gonzalez-Lomas, and Gehrmann 2015). Due to the challenges Medicaid patients have experienced accessing care, and with more patients enrolled with Medicaid than ever before, it is important to evaluate how accessibility to orthopaedic care has been affected since the Medicaid expansion act. The purpose of this study was to evaluate the effect of community setting in access to orthopaedic care for Medicaid-insured patients. We hypothesized that Medicaid-insured patients and rural patients would have significantly more difficulty obtaining access to surgical consults as compared to privately insured patients in urban areas.

MATERIALS AND METHODS

The study population included board-certified orthopaedic specialists of the American Academy of Orthopaedic Surgeons (AAOS) from five Florida counties: Broward, Palm Beach, Miami Dade, Hardee, and DeSoto. These counties were selected to compare urban counties with higher mean household incomes (Broward, Palm Beach, Miami Dade) to rural counties of lower mean household income and greater proportion of Medicaid dependents (Hardee and DeSoto). Zip codes with the highest population of Medicaid-insured patients for each county in this study were then collected to query the membership directory of the AAOS website for all offices within 40 miles of the zip codes.

The previously published secret shopper method was applied to evaluate Medicaid patient access to these AAOS offices (Lavernia, Contreras, and Alcerro 2012; Kim et al. 2015). Each office was called twice to make an appointment for an evaluation of a rotator cuff repair. For each call, the caller requested the appointment for the caller’s fictitious 49-year-old mother, with the patient having private insurance or Medicaid. Florida Blue insurance was chosen as the private insurer because it is most accepted across the state of Florida. The caller used a standardized script to limit discrepancies between each call and calls to each office were made at least one week apart to avoid caller recog-



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nition. The common script was: “I’m calling on behalf of my mother who was told that she needs a rotator cuff repair. My mother’s insurance is Medicaid/Florida Blue PPO. Are you accepting new patients?” If the office responded yes, then the follow-up question was: “When is the next available appointment?”

The following data was recorded during each attempt of making an appointment: date of phone call, acceptance of insurance, and date of the next available appointment. If the office could not provide an appointment, the reason was noted. The waiting period was obtained by calculating the number of business days between the date of the phone call and the date of the next available appointment. The average distances between the zip code with the highest percentage of Medicaid-insured population and the zip codes of offices that accepted Medicaid were measured using a zip code distance calculator and compared between urban and rural counties. Medicaid appointment success, wait time, and average distance to clinics accepting Medicaid was calculated and compared between the urban and rural counties.

STATISTICAL ANALYSIS

All statistical analyses were completed using IBM SPSS version 28 (SPSS, Inc, Chicago, IL). Pearson chi-square test or Fisher’s exact test was used to analyze differences in insurance acceptance rates. To compare the time to the earliest appointment, the Wilcoxon rank test and Kruskal-Wallis test were used since the data was not evenly distributed. Comparisons of the distance to the nearest clinic accepting Medicaid were made using Student t-test. Significance was predefined at an alpha-level of 0.05.

RESULTS

Between the months of July and November 2021, a total of 108 clinics were identified and called. Out of the 108 physician’s offices contacted, 83 (76.9%) performed arthroscopic rotator cuff repair. The rate across all counties for successfully obtaining an appointment was 83 (100%) for privately insured patients and 8 (9.6%) for Medicaid patients (Table 1). Reasons for refusing to provide an appointment date included not accepting the insurance, inability to provide insurance information, and requirement of PCP referral. Eleven (10.2%) offices did not offer appointment times due to lack of pertinent patient insurance information.

When comparing access to care in urban and rural counties, there was no significant difference in access to shoulder arthroscopy based on Medicaid insurance (9.7% urban

Table 1. Appointment Success Rate for Medicaid Insurance

	Medicaid (n=83)
All Counties (n=83)	
Yes, n (%)	8 (9.6%)
No, n (%)	75 (90.4%)
Urban Counties (n=62)	
Yes, n (%)	6 (9.7%)
No, n (%)	56 (90.3%)
p*	0.984
Rural Counties (n=21)	
Yes, n (%)	2 (9.5%)
No, n (%)	19 (90.5%)
p*	0.984

*Comparison of Medicaid appointment success rates between patients in urban and rural counties

versus 9.5% rural counties, $p=0.984$) (Table 1). However, there was a trend for Broward County being more likely to accept Medicaid orthopaedic patients compared to all other counties ($p=0.056$) (Table 2). Overall, if Medicaid patients were accepted, they had significantly longer wait times to earliest appointment (46.9 ± 54.5 days) compared to privately insured patients (7.6 ± 5.8 days) ($p=0.030$). When stratifying the counties based on setting for all insurance types, rural counties had significantly shorter wait times (5.7 ± 3.1 days) compared to urban counties (14.4 ± 25.9 days) ($p<0.001$) (Table 3). With further stratification by insurance type and setting, Medicaid and privately insured patients both had significantly shorter wait times in rural settings (5.5 ± 3.5 days and 5.7 ± 3.1 days) compared to urban (55.2 ± 56.3 days and 8.3 ± 6.3 days) ($p=0.021$ and $p=0.016$). Privately insured patients were more likely to wait shorter times (8.3 ± 6.3 days) in urban settings compared to Medicaid patients (55.2 ± 56.3 days) ($p=0.027$). There was no significant difference found in wait times between insurance types in the rural setting (Table 4).

Rural counties encountered a significantly greater average distance (49.5 ± 7.5 miles) between zip codes with highest Medicaid insured population and clinics accepting Medicaid compared to urban counties (24.0 ± 19.1 miles) ($p=0.042$) (Table 5).

DISCUSSION

Medicaid is a large insurance provider in the United States with more than 81.9 million people enrolled as of May

Table 2. Medicaid Appointment Success Rate by County

	Broward (n=20)	Palm Beach (n=28)	Miami Dade (n=16)	Hardee (n=12)	Desoto (n=9)
Yes, n (%)	4	1	1	1	1
No, n (%)	16	27	14	11	8
p	0.056	0.176	0.559	0.727	0.711

Table 3. Average Waiting Period in Days to Earliest Appointment

	Waiting period (avg $\pm$ std)	p value
By insurance type		
Medicaid	46.9 $\pm$ 54.5	0.030*
Private	7.6 $\pm$ 5.8	
By setting		
Urban	14.4 $\pm$ 25.9	<0.001*
Rural	5.7 $\pm$ 3.1	

*denotes significance

Table 4. Average Waiting Period in Days to Earliest Appointment by Insurance Type by Setting

	Urban	Rural	p value
Medicaid	55.2 $\pm$ 56.3	5.5 $\pm$ 3.5	0.021*
Private	8.3 $\pm$ 6.3	5.7 $\pm$ 3.1	0.016*
p value	0.027*	0.946	

*denotes significance

Table 5. Average Distance from Zip Code of Highest Medicaid Population to Clinics Accepting Medicaid by Setting

	Urban	Rural	p val
Average Distance (in miles) ($\pm$ Std)	24.0 ($\pm$ 19.1)	49.5 ($\pm$ 7.6)	0.042*

*denotes significance

2022 (Medicaid 2022). With the increasing number of insurers relying on Medicaid, it is essential that they have proper access to both primary and specialty medical care. Unfortunately, our results and numerous other studies have demonstrated that patients with Medicaid face longer wait times to see an orthopaedic specialty provider or to receive surgical treatment (Wiznia et al. 2017; McKissack et al. 2021; Lavernia, Contreras, and Alcerro 2012; Kim et al. 2015). This delay in care may lead to unfavorable results including decreased postoperative healing, worse functional outcomes, and increased time to full recovery (McKissack et al. 2021; Johnson et al. 2019; Uzun et al. 2017; Venkatachalam, Godsiff, and Harding 2001). Our study found that patients with private insurance experienced significantly shorter wait times to the earliest available appointment

compared to patients with Medicaid. These findings are in line with previous studies that have compared private practice with academic hospitals, solo versus group practices, and states with Medicaid expansion to those without (Nguyen et al. 2019; Kim et al. 2015; Shi et al. 2020). Medicaid patients in our study were accepted by significantly fewer orthopaedic providers and experience significantly longer wait times. In addition to concerns about negative impact on patient outcomes, delays in care can come with a significant associated cost to society as these patients may be forced to take more time off work or be unable to return to work altogether.

In addition to longer wait times, our results demonstrated reduced access to care with 90% of providers in the five surveyed Florida counties not even accepting patients with Medicaid. This number is much lower than the results reported by Wiznia et al (73%), Matar et al (64%) and Shi et al (31%) (Wiznia et al. 2017; Shi et al. 2020; Fu et al. 2013). This difference may be explained by factors specific to Florida, in terms of variations in reimbursement, refusal to expand Medicaid in Florida despite federal financial assistance provided by PPACA (Norris 2021), changes brought on by the Covid-19 pandemic, or a decrease in the number of providers accepting Medicaid over time. Regardless of the reason, these results show that there is a large and growing population of Medicaid patients dependent on a limited number of orthopaedic providers. Fewer accepting providers contributes to decreased access to care for Medicaid patients who already have to travel twice as far as privately insured patients to receive orthopaedic treatment (Hinman and Bozic 2008). Additionally orthopaedic providers are required to obtain a referral from a primary care provider for certain Medicaid plans and specific to joints for each referral (Wiznia et al. 2017). These factors all contribute to the significant barriers patients with Medicaid face in order to obtain appropriate orthopaedic shoulder care.

It was hypothesized that another major factor in access to care for Medicaid patients may be the community setting. Overall, our study found that providers in both rural and urban counties accepted Medicaid at a similar rate. These findings differ from Nguyen et al, who found that urban providers were significantly more likely to accept Medicaid patients than rural providers (47% versus 13%) (Nguyen et al. 2019). Comparatively, our results showed much lower rates of Medicaid acceptance in both settings, 9.7% in urban setting and 9.5% in rural setting. It is interesting to note that in the study by Nguyen et al., Florida had the lowest Medicaid reimbursement rate (\$369.87) of the 8 states studied and this could perhaps explain the reluctance of Florida orthopaedic providers to accept Medicaid in both

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urban and rural counties (Patel et al. 2022; Decker 2012). This aligns with other studies that have shown that higher Medicaid reimbursement rates correlate with increased access to care (Polsky et al. 2015; Callison and Nguyen 2018).

The lack of access to orthopaedic care is particularly concerning for the rural counties. Providing access to orthopaedic specialists in rural areas has been a challenge for many decades (Miller and Zuckerman 1991; Rivo and Satcher 1993), as few orthopaedic surgeons practice in rural areas of the US (Fu et al. 2013; Fordyce et al. 2007). This barrier to orthopaedic care is only further accentuated considering the limited number of orthopedists accepting Medicaid in rural areas – an area that is heavily dependent on Medicaid insurance. In DeSoto County, 25% of the population utilizes Medicaid compared to 16.3% in Palm Beach County and 16.7% in Broward County. Additionally, agriculture, forestry, fishing, and mining are the largest industries in DeSoto county employing over 26% of the population compared to 1.1% of the Florida population (“DeSoto County Florida Community Health Assessment,” n.d.). These industries require strenuous labor and lead to a higher rate of orthopaedic injuries (Kirkhorn, Greenlee, and Reeser 2003; Jong et al. 2014). The shorter wait time to appointment in rural counties found in our study does alleviate the strain brought on by the limited number of clinics accepting Medicaid, however, this is negated considering the significantly greater distance needed to travel to the clinic. This provision for travel distance poses a barrier on patient presentation, treatment, and surveillance that can ultimately negatively impact morbidity and mortality for a rural patient (Wendt, Gao, and Miller 2019).

This paper demonstrates that access to orthopaedic care continues to be a difficult problem for patients with Medicaid. Our results found that even fewer orthopaedic providers accept Medicaid compared to previous studies, which may be due to the low rate of Medicaid reimbursement in Florida. A potential area for further study would be

to include all 67 Florida counties to determine if the trends discovered in this study hold true for the entire state or are confined to South Florida. Another potential limitation for this study is the comprehensive AAOS website search-engine, may not have encompassed every orthopaedic surgeon in the selected Florida counties. Further, the secret shopper methodology is unable to capture any potential delay in the time to the first appointment due to referral requirements. Finally, we did not specify to clinics whether the private insurance plan was a Health Maintenance Organization (HMO) or Preferred Provider Organization (PPO) and this could have influenced our results as only “Florida Blue” was provided as the commercial insurance. Future studies are needed to elucidate any potential differences in access between Medicaid, and commercial HMO or PPO plans.

CONCLUSION

Despite recent expansion of Medicaid under the affordable care act, patients with Medicaid were significantly more likely to be denied appointments and have longer wait times for orthopaedic care. These factors contribute to delayed treatment and decreased access to care, potentially leading to decreased patient reported and functional outcomes. Given that Medicaid is one of the largest insurance providers in the United States, this suggests that orthopaedic surgeons who are willing to accept Medicaid have a large potential patient population that is currently being underserved. To improve health inequities and remove barriers to care, orthopaedic surgeons must recognize their responsibilities to their community and must try to close the gap to access of care by accepting a larger number of Medicaid patients, despite the reimbursement gap.

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