

Does Medicaid Insurance Provide Sufficient Access to Pediatric Orthopedic Care Under the Affordable Care Act?

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Abstract

The Patient Protection and Affordable Care Act had a profound impact on health insurance coverage of children. Given the importance of pediatric specialty care, this study assessed access to pediatric orthopedic urgent care for a child's likely operative distal radius fracture. Researchers called 180 pediatric orthopedic surgeons in 8 states requesting appointments for the caller's fictitious 11-year-old child who suffered a distal radius fracture. Each office was called twice to assess the ability to obtain an appointment for Medicaid and privately insured patients. Overall, significantly fewer offices scheduled appointments for Medicaid than privately insured patients (38.3% vs 82.8%, $P < .001$). Patients with Medicaid in states without Medicaid expansion were more successful in obtaining appointments than patients with Medicaid in states with Medicaid expansion (41 [47%] vs 28 [30%]; $P < .001$; 95% confidence interval = 0.3-0.9). Pediatric Medicaid patients experienced reduced access to care, and this access was worse in states that had expanded Medicaid eligibility.

Keywords

access to care, medicaid expansion, specialty care, affordable care act, healthcare disparities, delivery of healthcare

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Introduction

One major goal of the Patient Protection and Affordable Care Act (PPACA) was to improve access to health care for children through the expansion of Medicaid and the Children's Health Insurance Program (CHIP). As of March 2014, Medicaid and CHIP coverage included all children at or above 200% of the federal poverty level (FPL) in all but 2 states, and 1 out of 3 children was covered by these programs.¹⁻⁴ The PPACA included eligibility expansions that benefitted both adults and children, enrollment simplifications, and outreach efforts. The PPACA changed how income and family size are calculated for Medicaid and CHIP. Prior to the PPACA, states participating in Medicaid were required to cover children through age 5 up to 133% of the FPL and school-age children up to 100% FPL. In addition, prior to the PPACA, CHIP provided insurance coverage to uninsured low-income children above the Medicaid income eligibility criteria.³ The PPACA transferred children from CHIP programs into Medicaid if their families

had incomes between 100% and 138% of the FPL, allowing for those who qualified to no longer pay premiums to cover their children, which resulted in increased coverage. Furthermore, the PPACA gave families with incomes up to 400% of the FPL tax credits that could be used in the new marketplaces to purchase health coverage. All of these efforts increased enrollment of eligible children in Medicaid, CHIP, and PPACA marketplace plans. At the time of this study, 31 states had expanded Medicaid coverage to include everyone whose income was below 138% of the FPL. Unfortunately, in states that did not expand Medicaid, children of parents who were too poor to qualify for tax credits to be used in the marketplace for coverage, and who did not meet the

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Medicaid eligibility requirements in their states, were unable to fully benefit from the PPACA.⁵

States that expanded Medicaid coverage to more uninsured adults observed a welcome mat effect for children, and these states also observed larger decreases in uninsured children.⁶ This is thought to be due to the fact that adults with insurance are more likely to enroll their own children in health insurance programs and take them to a physician when necessary. Newly eligible adults (especially parents) allowed for over 700 000 children to gain insurance coverage, and this effect was largest in the states in which Medicaid was expanded. It is estimated that if the remaining 19 non-expansion states expanded Medicaid, 200 000 additional children would gain coverage.⁴

Given the challenges Medicaid patients have experienced accessing care,⁷⁻⁹ and with more pediatric patients than ever before insured with Medicaid, it is important to evaluate how accessibility has been effected since the PPACA. Within orthopedic surgery, studies have demonstrated that fewer medical offices accept Medicaid, and Medicaid patients who receive appointments face longer wait times than privately insured patients.¹⁰⁻¹⁴ Our study focuses on whether insurance type affects the ability of pediatric patients to obtain an orthopedic consultation. We specifically wanted to compare patient access to pediatric orthopedic specialists in states who chose to expand Medicaid to states without Medicaid expansion. We hypothesized that, even with the PPACA's enrollment mandates, pediatric Medicaid patients would have significantly more difficulty obtaining access compared with pediatric patients with private insurance, and that the Medicaid surgical fee would remain an important determinant of timely care.

Materials and Methods

The study population included board-certified pediatric orthopedic surgeons who belonged to the Pediatric Orthopaedic Society of North America (POSNA) from 8 states: California, Massachusetts, Ohio, New York, Florida, Georgia, Texas, and North Carolina. These states were selected because they represent robust health care ecosystems that had an adequate number of listed pediatric orthopedic surgeons to support random selection of 30 orthopedic surgeons (a minimum of 30 pediatric surgeons were required per state based on our power analysis [see below]). This requirement excluded many states because pediatric orthopedics is a small subspecialty group. These states included a wide range of Medicaid spending per enrollee: US average (\$6502), California (\$6108), Massachusetts (\$11 091), Ohio (\$7075), New York (\$10 307), Florida (\$4893), Georgia

(\$4245), Texas (\$5668), and North Carolina (\$5450).¹⁵ A power analysis was conducted that demonstrated that a sample size of 88 surgeons was needed to detect an effect size of at least 0.2 between an office accepting private insurance versus Medicaid. The effect size of 0.2 was referenced from previous studies that this research team had conducted.¹⁶ The creation of our dataset, randomization, and calling technique was similar to those used in our previous work.¹⁶ The methodology differed as follows: calls were made by author JN. Thirty pediatric orthopedic surgeons were called for each state or all practitioners listed on the POSNA website for that state were called. We recorded whether the orthopedic surgeon was in a group or solo practice, in an academic or private practice, and in a rural or urban setting.

The caller attempted to make an appointment for her pretend 11-year-old son. The caller followed a script to limit variation (see Supplement 1, available online). The scenario was a request for the caller's son to be evaluated for an acute distal radius fracture, with the patient having Medicaid or BlueCross insurance. The scenario required 2 separate calls to each office (one for BlueCross and one for Medicaid), which were made at least 1 week apart. The office was told that the injury occurred out of state, and that an out-of-state emergency room took radiographs, placed the patient in a cast, and told the parents that the patient would require surgery. If the office gave an appointment, the date offered was recorded, but it was refused by the patient's mother.

BlueCross insurance was chosen as the commercial insurer because it is a commonly accepted carrier across all states included in the study. The Blue Cross Blue Shield companies insure 1 in 3 Americans and are contracted with more than 96% of hospitals and 95% of doctors and specialists. While each is a separate entity with unique rules and multiple plans per state, Blue Cross Blue Shield companies share common policy coverage determinations across states, and BlueCross was chosen to serve as a gold standard against Medicaid public payers.

Our methods to record data were similar to our previous work.¹⁶ Briefly, we recorded the date of the phone call, the date of the appointment if given, reasons for denying the appointment, and whether a referral was made to another office that accepted Medicaid. We considered the requirement for a referral from a pediatrician as a barrier to obtaining an appointment. The data were stratified into 2 groups: states with expanded Medicaid eligibility (California, Massachusetts, New York, Ohio) and states without expanded Medicaid eligibility (Florida, North Carolina, Georgia, Texas). During the study period, Florida and California had a portion of their Medicaid programs managed by insurance companies. Most office managers answering the phones understood that Medicaid

Table 1. Appointment Success Rate (n (%) of Calls That Were Granted an Appointment).

	Medicaid (n = 180)	Private (n = 180)	OR (95% CI)
All states			
Yes, n (%)	69 (38.3)	149 (82.8)	9.7 (6.2-16.1)
No, n (%)	111 (61.7)	31 (17.2)	
<i>P</i> ^a		<.001	
States with expanded Medicaid eligibility (n = 93)			
Yes, n (%)	28 (30) ^b	78 (84)	14.3 (7.2-28.4)
No, n (%)	65 (70)	15 (16)	
<i>P</i> ^a		<.001	
States without expanded Medicaid eligibility (n = 87)			
Yes, n (%)	41 (47) ^b	71 (82)	7.0 (3.6-13.9)
No, n (%)	46 (53)	16 (18)	
<i>P</i> ^a		<.001	

Abbreviations: OR, odds ratio; CI, confidence interval.

^aComparison to Medicaid.

^bComparison of Medicaid appointment success rates between patients in expanded versus non-expanded states (30% vs 47%; *P* < .001; 95% CI = 0.3-0.9).

insurance was synonymous with these managed care plans, but this was sometimes clarified by using the largest managed care plan in the state or geographic area.

The Medicaid reimbursement rates for Current Procedural Terminology code 25606 (percutaneous fixation of a distal radius fracture or epiphyseal separation) were obtained by reviewing each state’s Medicaid reimbursement rates databases.

Our statistical analysis was similar to our previous work.¹⁶ Briefly, we used SPSS version 21 (SPSS, Inc, Chicago, IL). Chi-square test or Fisher’s exact test was used to analyze differences in insurance acceptance rates. To compare the appointment waiting times, an independent samples *t* test was used after applying natural log transformation, as the data were not normally distributed. Multiple regression analysis was performed to detect whether Medicaid reimbursement was a significant predictor for successfully making an appointment for patients with Medicaid. Unless otherwise stated, all statistical testing was performed 2-tailed at an α level of .05.

Ethical Approval and Informed Consent

The study was submitted to and approved by the Institutional Review Board office, HIC# 13637. The institutional review board waived the need to obtain consent for the collection of data because informed consent would risk influencing office managers during the phone calls.

Results

Between the months of July and August 2015, a total of 180 offices were called across 8 states, 93 in 4 states

with expanded Medicaid eligibility and 87 in 4 states without expanded Medicaid eligibility. The rate across all states for successfully obtaining an appointment was 69 (38.3%) for Medicaid patients and 149 (82.8%) for BlueCross patients (*P* < .001; 95% confidence interval [CI] = 6.2-16.1; Table 1).

In states with expanded Medicaid eligibility, the success rate was 28 (30%) for Medicaid patients and 78 (84%) for BlueCross patients (*P* < .001; 95% CI = 7.2-28.4). In states without expanded Medicaid eligibility, the success rate was 41 (47%) for Medicaid patients and 71 (82%) for BlueCross patients (*P* < .001; 95% CI = 3.6-13.9). The success rate was significantly lower for Medicaid compared with BlueCross (*P* < .001). Patients with Medicaid in states without Medicaid expansion were more successful in obtaining appointments than patients with Medicaid in states with Medicaid expansion (41 [47%] vs 28 [30%]; *P* < .001; 95% CI = 0.3-0.9).

The main barrier to obtaining an appointment was when patients lacked a referral (Table 2). Offices did not request imaging as a prerequisite to obtaining an appointment. Overall, Medicaid patients were significantly more likely to be denied an initial appointment due to lack of a referral, compared with private (38 [29.0%] vs 10 [5.6%]; *P* < .001; 95% CI = 0.1-0.3). This relationship remained consistent in states with and without expanded Medicaid eligibility. No difference was seen in referral requirements for patients with Medicaid in states with and without expanded eligibility. For Medicaid patients who were not able to schedule an initial appointment because their insurance was not accepted, 60% of offices were able to refer the patient to another specialist who would accept Medicaid. The

Table 2. Rate at Which Offices Required Referrals in Order to Schedule Appointments if Insurance Was Accepted (n (%) of Offices That Required a Referral in Order to Schedule Appointments).

	Medicaid (n = 131) ^c	Private (n = 180)	OR (95% CI)
All states			
Yes, n (%)	38 (29.0)	10 (5.6)	0.1 (0.1-0.3)
No, n (%)	93 (71.0)	170 (94.4)	
<i>p</i> ^a		<.001	
States with expanded Medicaid eligibility			
Yes (%)	17/54 (32) ^b	4/93 (4)	0.1 (0.03-0.3)
No (%)	37/54 (69)	89/93 (96)	
<i>p</i> ^a		<.001	
States without expanded Medicaid eligibility			
Yes (%)	21/77 (27) ^b	6/87 (7)	0.2 (0.1 – 0.5)
No (%)	56/77 (73)	81/87 (93)	
<i>p</i> ^a		<.001	

Abbreviations: OR, odds ratio; CI, confidence interval.

^aComparison to Medicaid.

^bComparison of Medicaid referral rates between offices in expanded versus non-expanded states (32% vs 27%; *P* = .63).

^cMedicaid (n = 131) is because offices that did not accept Medicaid were excluded from the calculations of how many Medicaid-accepting offices required referrals to schedule appointments.

Table 3. Medicaid Reimbursements for Pediatric Distal Radius Fixation (Current Procedural Terminology and Healthcare Common Procedure Coding System 25606) in 2014.

State	Medicaid Reimbursement
California ^a	\$519.98
Texas	\$534.68
Florida	\$369.87
Ohio ^a	\$371.88
New York ^a	\$386.23
North Carolina	\$475.6
Massachusetts ^a	\$491.54
Georgia	\$540.05
Average	\$461.24

^aStates with expanded Medicaid eligibility.

difference between the waiting period for Medicaid and privately insured patients across all states was not statistically significant (Table 3). In addition, the difference in the waiting period for Medicaid patients in states with expanded Medicaid eligibility compared with states without expanded eligibility was not statistically significant (Table 4).

Medicaid patients were more likely to obtain an appointment at offices in urban areas compared with rural areas (47% vs 13.3%; *P* = .04; 95% CI = 0.6-2.6) and in academic practices compared with private practices (46.9% vs 30.1%; *P* = .03; 95% CI = 0.5-1.1). While the majority of offices called were part of a group practice (92.8%), we did not identify a statistically significant

Table 4. Waiting Period (Days).

Comparison by Insurance Type			
	Medicaid	Private	
All states			
Waiting period	3.5	2.8	<i>p</i> ^a
		.172	
States with expanded Medicaid eligibility			
Waiting period	3.2	2.5	<i>p</i> ^a
		.301	
States without expanded Medicaid eligibility			
Waiting period	3.6	3.2	<i>p</i> ^a
		.497	
Comparison by Affordable Care Act Expansion			
	Medicaid	Private	
States with expanded Medicaid eligibility	3.2	2.5	<i>p</i> ^a
States without expanded Medicaid eligibility	3.6	3.2	
	.866	.623	

^aComparison to Medicaid.

difference in success rates for Medicaid patients between solo and group practices. Medicaid reimbursements for distal radius fixation varied across states (Table 3). The state of Georgia paid the highest reimbursement (\$540.05) and the state of Florida paid the lowest (\$369.87). Logistic and linear regression analysis did not demonstrate a significant relationship between reimbursement and appointment success rate or waiting periods.

Discussion

This study was designed to evaluate access to subspecialty pediatric orthopedic care for a pediatric patient with a potentially surgical, semi-urgent fracture pattern, since the passage of the PPACA. Evidence has been mounting over the past few years that pediatric patients have experienced increased difficulty in accessing orthopedic specialty care, regardless of the type of insurance coverage.¹⁷ To our knowledge, this is the first study of its kind to evaluate the pediatric patient's access to specialists across multiple states since the passage of the PPACA. Below, when we are describing acceptance rates for Medicaid versus privately insured patients, it is important to note that these were not actually a group of patients calling but a sample of calls for a fictitious patient.

Regarding our study's limitations, our investigation focused on pediatric orthopedic specialists in 8 states. While a more expansive survey could have examined the entire nation, we believe we captured an accurate sample of regional health care marketplaces. There are substantial underlying differences in states with and without Medicaid expansion that may influence access, including geography, political orientation, health care market landscapes, economic differences, and employers. This was partially addressed by choosing states with a large number of pediatric orthopedic specialists. However, given the limited number of pediatric orthopedic surgeons in each state, our sample size was limited, and this may have affected the statistical significance of the regression analyses and the differences in waiting periods. In addition, although we found that there was no significant relationship between appointment success rates for surgical pediatric distal radius repair and reimbursement rates for Medicaid, it was not possible to determine private payer negotiated rates, given their confidentiality. In addition, by including the patient's insurance status up front in the script, the office may have been forewarned that the caller represented an underinsured patient, and this may have influenced encounters.

There are many potential reasons why offices may choose to not accept Medicaid. These range from increased required documentation, higher resource utilization, lower reimbursement for services, and increased medicolegal liability. Medicaid expansion did not address many of these issues and therefore may not have influenced clinic policies. In addition, these reasons may have regional differences that may not be related to Medicaid expansion or the PPACA.

Our results suggest that orthopedic practices provide varied access to pediatric orthopedic urgent care for

patients with Medicaid insurance versus private insurance. Our findings demonstrate that patients with Medicaid were considerably less successful at obtaining appointments than patients with private insurance (38.3% vs 82.8%, $P < .001$). In addition, Medicaid patients were denied more appointments because they did not have a referral (29.0% vs 5.6%, $P < .001$).

With regard to states without Medicaid expansion, our study showed that Medicaid patients were more likely to be given an appointment. This may at first be a counterintuitive finding. However, this is likely due to pediatric orthopedic surgeons in expanded states being overwhelmed with patients due to the increased insurance eligibility and subsequent enrollment. To understand the extent of the Medicaid enrollment increase for each state, the number of patients and percent increase in Medicaid enrollment pre-ACA compared with Medicaid enrollment in July 2015 is listed for states that expanded Medicaid eligibility (California [9 157 000/12 648 637] 38%, Massachusetts [1 296 359/1 649 423] 27%, Ohio [2 341 481/2 988 934] 28%, New York [5 678 417/6 512 137] 15%) and for states that did not expand Medicaid eligibility (Florida [3 104 996/3 558 092] 15%, Georgia [1 535 090/1 781 537] 16%, Texas [4 441 605/4 678 394] 5%, and North Carolina [1 595 952/1 982 496] 24%).¹⁸ In general, Medicaid enrollment increased for all states, and states that expanded Medicaid eligibility generally saw a larger percent change.

In terms of barriers to care, our assessment demonstrated that the requirement of a referral was more likely to be enforced on Medicaid patients (38 [29.0%] vs 10 [5.6%]; $P < .001$; 95% CI = 0.1-0.3). For indigent patients, it can be challenging to obtain the necessary referral paperwork due to restrictions at their work, as well as reduced means for travel and communication. While 4 states included in our study, Massachusetts, North Carolina, Texas, and New York, mandated a primary care physician referral in order to see a surgical specialist, we found that this requirement was not regularly enforced. These individual state requirements for a primary care physician referral are a legal barrier to care that was not addressed by the PPACA and unfairly burdens Medicaid patients. It is important to note that surgeons risk not being reimbursed for services if they do not receive a referral in which the insurance company requires one. However, we did not observe this behavior as much in patients with private insurance who had the same requirement for a referral.

We found that access to orthopedic care in the pediatric patient population vary across practice setting (academic, private, group, solo, urban, rural). Medicaid patients were significantly more likely to obtain appointments at

academic practices compared with private practices (46.9% vs 30.1%, $P = .026$; 95% CI = 0.5-1.1) and in urban areas compared with rural areas (47% vs 13.3%; $P = .04$; 95% CI = 0.6-2.6). These results correlate with a nationwide trend that Medicaid patients are relying more on federally funded community health centers and public and nonprofit safety net hospitals, which generally care for more uninsured and Medicaid patient populations.¹⁹

Our regression analysis did not find a statistically significant relationship between access and Medicaid surgical reimbursement rates. Although studies have stressed the importance of reimbursements on physician participation, this result is consistent with previous works on access to hand and foot and ankle specialists.^{20,21}

Conclusions

Despite the PPACA, Medicaid pediatric patients encountered significantly more barriers to care than private patients, especially in states that expanded Medicaid eligibility. Medicaid patients were significantly more likely than private patients to be denied appointments due to lack of referrals and significantly fewer offices scheduled appointments for Medicaid patients.

To improve health inequities, it is important to explore how to remove barriers to care. Medicaid reimbursement was not significantly correlated with appointment success rates, but this is likely because overall Medicaid reimbursement is significantly lower than private insurance. An increase in reimbursement rates likely would lead to increased acceptance of Medicaid insurance. As funding is limited, state Medicaid programs must find additional ways to incentivize specialists to see patients. This is especially important when it comes to the health of our nation's children. Further studies should investigate these relationships in order to maximize the ethical allocation of resources and augment health outcomes.

Author Contributions

JN: contributed to conception and design, contributed to acquisition, analysis, and interpretation, drafted manuscript, critically revised manuscript, gave final approval.

NSA: contributed to conception and design, contributed to acquisition, analysis, and interpretation, drafted manuscript, critically revised manuscript, gave final approval.

DC: contributed to conception and design, contributed to analysis and interpretation, drafted manuscript, critically revised manuscript, gave final approval.

RP: contributed to conception and design, contributed to analysis and interpretation, drafted manuscript, critically revised manuscript, gave final approval.

DHW: contributed to conception and design, contributed to acquisition, analysis, and interpretation, drafted manuscript, critically revised manuscript, gave final approval.

Declaration of Conflicting Interests

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Supplemental Material

Supplemental material for this article is available online.

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