

Medicaid Reimbursement of Pediatric Orthopaedic Surgery is 22% lower than Medicare and highly variable across states.

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Objectives: This study investigates the difference in reimbursement between Medicaid and Medicare, as well as state to state variability.

Design: Database review.

Setting: State Medicaid physician fee schedules and national Medicare fee schedule.

Intervention: Medicaid and Medicare fee reimbursements were collected from each state for 10 different common pediatric orthopedic procedures. The difference between and variability of reimbursement were calculated for both Medicaid and Medicare

Main outcome measurement: Overall Medicaid to Medicare reimbursement ratio, dispersion of reimbursement rates.

Results; There was an average difference of $-22.2\% \pm 26.9$ or $-\$184.14 \pm \226.89 in Medicaid reimbursement compared to Medicare. New Jersey had the greatest difference at 72.7% less reimbursement with Medicaid, while Delaware had the highest Medicaid reimbursement of 95.2% more than Medicare. Only three states had higher reimbursement with Medicaid compared to Medicare for all 10 procedures. Additionally, there was statistically higher coefficient of variation between Medicaid reimbursement compared to Medicare (0.26 vs 0.46) among states.

Conclusions: Medicaid reimbursement is significantly lower compared to Medicare for several common pediatric orthopedic procedures across the United States. The lower Medicaid reimbursement fees may contribute as a barrier to care access for an at-risk population of children.

Level of Evidence: IV; Economic Analysis

Keywords: Medicaid; Medicare; Reimbursement; RVU; Variation

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INTRODUCTION

Medicaid is an important part of healthcare within the United States, aimed at providing healthcare to low-income families and other at-need persons. As of September 2020, there were 77 million people enrolled in Medicaid and Children's Health Insurance Programs nation-wide. Of these 49.5% were pediatric patients, accounting for a total of 37

million beneficiaries¹. The number of children enrolled in Medicaid is projected to rise, as well as overall Medicaid enrollment which is expected to rise by 8.2% in 2021 alone^{2,3}.

Previous studies have shown that children with Medicaid, when compared to those with private insurance, face significant barriers to accessing orthopedic care^{4,5}. One proposed reason for the inequality of access is the difference in reimbursement from Medicaid compared to other private insurances.

Our study aims to evaluate the reimbursement differential between Medicaid and Medicare. While Medicare often does not often apply to pediatric patients, since inception Medicare has established many fundamentals that private insurances use today including payments, fee schedule, and global surgical periods⁶. Additionally, Medicare mirrors Medicaid as a government run source for health insurance with widely-available reimbursement information which is not possible with private insurers. We hypothesize that Medicaid reimbursement will be significantly lower than Medicare for common pediatric orthopedic conditions.

Table 1: Selected procedures, CPT codes and relative value units (RVU)

Procedure Name	CPT	RVU
Elbow		
Supracondylar fracture CRPP	24538	9.77
Medial epicondyle fracture CRPP	24566	9.06
Lateral condyle fracture ORPP	24579	11.44
Forearm		
Both radius and ulna flexible nailing	25574	8.8
Both radius and ulna casting	25565	5.85
Lower Extremity		
Femur shaft fracture flexible nailing	27506	19.65
Femur shaft fracture spica casting	27502	11.36
Tibial shaft fracture flexible nailing	27759	14.45
Tibial tubercle fracture ORIF	27540	11.3
SCFE in situ screw fixation	27176	12.92

METHODS

Ten commonly performed pediatric orthopedic procedures were selected and their Current Procedural Terminology (Fourth Edition) code was used for this study. The 2020 MCR reimbursement amount for each state was collected utilizing the Medicare Physician Fee Schedule. This was performed for each procedure individually. The primary provider without modification code amount was used. In states where multiple MCR Administrative Contractor localities were available the "rest of state" option was utilized. Facility fee schedule was used as an estimation of reimbursement for each procedure if there was a difference between facility and

non-facility fees. Each state's MCD physician fee schedule database was queried for each of the 10 CPT codes used in this study. Again, primary provider without modification code was used. Facility fee was also used in cases where there was a difference between non-facility and facility fee. MCD physician fee schedules were not obtainable from Tennessee and Ohio due to non-functioning online database. Reimbursements were then compared by assessing the ratio of MCD to MCR, the dollar difference in MCD to MCR reimbursement, and the difference per relative value unit

(RVU). The RVUs for each procedure were obtained from the American Academy of Professional Coders (AAPC) website (Table 1). For each calculation mean, standard deviation, median, value range, and the coefficient of variation (standard deviation divided by mean) were calculated. Comparisons in reimbursement were calculated using student T tests to assess the differences between the mean MCD and MCR reimbursements. Statistical analysis was performed using SPSS Version 26 (IBM Corp., Chicago, IL).

Table 2: Medicaid, Medicare Reimbursement. Data presented as Mean in dollars and SD. Dollar Difference between Medicaid and Medicare reimbursement. Data presented as Mean\$ +/- SD. Negative values indicate lower Medicaid reimbursement when compared to Medicare. Mean dollar difference in reimbursement per relative value unit (RVU)

	Mean Reimbursement		Mean difference			P value (btw means)	Coeff of var
	Medicaid Mean \$ (SD)	Medicare Mean \$ (SD)	Mean \$ Diff (SD)	Mean % Diff (SD)	Mean Diff \$/RVU (SD)		
Supracondylar elbow fracture CRPP	577.87 (228.125)	770.95 (48.83)	-194.20 (223.09)	-25.2% (27.7)	-19.88 (23.08)	p<0.0001	-1.10
Medial epicondyle elbow fracture CRPP	522.88 (214.98)	725.31 (45.95)	-203.51 (207.82)	-28.2% (27.4)	-22.46 (23.19)	p<0.0001	-0.91
Lateral condyle elbow fracture ORPP	649.37 (240.58)	841.80 (53.08)	-193.60 (234.29)	-23.0% (26.6)	-16.92 (20.70)	p<0.0001	-1.16
Both radius and ulna flexible nailing	539.61 (189.50)	680.69 (42.96)	-142.06 (183.76)	-20.9% (26.2)	-16.14 (21.10)	p<0.0001	-1.25
Radius ulna casting & manipulation	381.86 (149.89)	519.80 (33.02)	-138.76 (147.45)	-26.6% (27.0)	-23.72 (25.48)	p<0.0001	-1.01
Femur shaft fracture flexible nailing	1064.97 (409.62)	1355.55 (86.07)	-292.38 (404.42)	-21.5% (28.8)	-14.88 (20.80)	p<0.0001	-1.34
Femur shaft spica & manipulation	599.57 (222.86)	769.81 (48.97)	-171.25 (216.58)	-22.3% (26.9)	-15.07 (19.27)	p<0.0001	-1.21
Tibial shaft fracture flexible nailing	824.11 (284.04)	1011.89 (64.21)	-189.14 (276.70)	-18.7% (26.4)	-13.09 (19.35)	p=0.021	-1.41
Tibial tubercle fracture ORIF	690.99 (223.07)	820.20 (51.89)	-130.35 (218.56)	-15.8% (25.6)	-11.52 (19.54)	p<0.0001	-1.62
SCFE in situ screw fixation	746.63 (261.25)	931.52 (59.08)	-186.17 (254.34)	-20.0% (26.6)	-14.41 (19.90)	p<0.0001	-1.33
Total	659.78 (306.60)	842.75 (220.34)	-184.14 (226.89)	-22.2% (26.8)	-16.81 (21.25)	p<0.0001	1.33

RESULTS

The mean and median reimbursement values of Medicare and Medicaid are demonstrated in Table 2. There was a statistically significant difference in reimbursement in all 10 procedures examined ($p<0.05$) with an average difference of $-\$184.14 \pm \226.89 between Medicaid and Medicare reimbursement (Table 3). Per RVU, this averages to $-\$16.81 \pm$ difference from Medicare to Medicaid treatment (Table 4).

This difference surmounts to Medicaid reimbursement being $22.2\% \pm 26.9$ less than Medicare reimbursement on average. The maximum amount difference was found in New Jersey, where Medicaid paid 72.7% less than Medicare on average. This was followed by Rhode Island at 60.3% less and New Hampshire at 53.4% less. Only three states were identified to have higher reimbursement higher with Medicaid compared to Medicare for all procedures.

Delaware averaged 95.2% higher Medicaid reimbursement compared to Medicare, followed by Alaska at 26.9% higher, and Montana at 15.1% higher.

There was significantly more variation between states in reimbursement with Medicaid compared to Medicare (0.26 vs 0.46, $p<0.0001$). The highest coefficient of variance was with medial epicondyle elbow fracture CRPP (0.41), while the greatest reimbursement range was with femur shaft flexible nailing with a total range of $\$2507.04$ ($\$272.00 - \2779.04).

DISCUSSION

Reimbursement for pediatric orthopedic procedures is widely variable across states with an overall lower rate of reimbursement with Medicaid when compared to Medicare. The findings of our study are consistent with Lalezari et al. who demonstrated significant variability across states in Medicaid reimbursement compared to a relatively uniform rate of reimbursement for Medicare⁷. Green et al found that

Medicaid reimbursed on average 65% of Medicare for 10 commonly performed orthopaedic procedures⁸. Casper et al. determined overall Medicaid reimbursement at 81.9% compared to Medicare for the procedures they evaluated⁹. Within our study only 3 states uniformly reimbursed higher with Medicaid than Medicare for all 10 procedures: Delaware, Alaska, and Montana.

An important implication of the lower rate of Medicaid reimbursement is its effect on access to care. Skaggs et al. found that Medicaid insurance was a limiting factor in access to orthopedic care at 38% of orthopedic clinics nation-wide, and was completely refused in 18% of orthopedic clinics⁴. Another study found that only 8% of children with Medicaid and forearm fractures would be able to obtain an appointment within 1 week, while 36% of children with private insurance were able to obtain appointments within 1 week¹⁰. This same study found that 38% of clinics do not see Medicaid patients. An earlier study found that only 2% of Medicaid patients would be able to obtain an appointment within a week for a fracture appointment, while 100% of private insurance pediatric patients were able to make appointments⁵. A study by Iobst et al. best illustrates the impact of Medicaid reimbursement on access to care found only 6% of clinics in the lowest 10 Medicaid-reimbursing states offered an appoint, while 44% of those in the top 10 Medicaid-reimbursing states offered an appointment¹¹.

Limitations in our study include the inability to obtain Medicaid information for two out of the fifty states. Another limitation is that there may be misrepresentation of certain areas within states as we used the “rest of state” Medicare Administrative Contractor (MAC) option for all states in which multiple MACs exist. Thirdly, our study uses Medicare as the comparative benchmark to Medicaid, however typically children do not qualify for Medicare as it is for patients with disability and over the age of 65. However, Medicare does provide a reliable form of government-run insurance that most closely parallels Medicaid, and forms the basis for many private insurance company policy and reimbursements⁶.

CONCLUSION

In conclusion, our study found substantial variability between individual state Medicaid reimbursement rates for 10 common pediatric procedures when compared to Medicare. We found, with the exception of 3 states (Delaware, Alaska, and Montana), Medicaid reimbursed significantly less per procedure than Medicare. These findings may help explain the results of previous investigations that found Medicaid to be a significant barrier to patients’ ability to access pediatric orthopedic care. Currently the disparities in reimbursement between Medicaid, Medicare, and private insurance create difficult obstacles for some of the most vulnerable and at-risk populations of children to access healthcare for their musculoskeletal needs. Our study identifies another factor

contributing to healthcare inequality in the United States today.

REFERENCES

1. Medicaid Facts and Figures | CMS. Accessed July 8, 2020.
2. Medicaid Enrollment & Spending Growth: FY 2019 & 2020 | KFF. Accessed July 8, 2020.
3. Wilensky SE, Teitelbaum JB. *Essentials of Health Policy and Law*. Vol Fourth edi. Jones & Bartlett Learning; 2020.
4. Iglehart JK, Sommers BD. Medicaid at 50 - From welfare program to nation’s largest health insurer. *N Engl J Med*. 2015;372(22):2152-2159.
5. Casper DS, Schroeder GD, Zmistowski B, et al. Medicaid reimbursement for common orthopedic procedures is not consistent. *Orthopedics*. 2019;42(2):E193-E196.
6. Casper DS, Schroeder GD, McKenzie J, et al. Medicaid Reimbursement for Common Spine Procedures: Are Compensation Rates Consistent? *Spine*. 2019;44(22):1585-1590.
7. Mabry CD, Gurien LA, Smith SD, Mehl SC. Are Surgeons Being Paid Fairly by Medicaid? A National Comparison of Typical Payments for General Surgeons. *J Am Coll Surg*. 2016;222(4):387-394.
8. Lalezari RM, Pozen A, Dy CJ. State variation in Medicaid reimbursements for orthopaedic surgery. *J Bone Jt Surg - Am Vol*. 2018;100(3):236-242.
9. Draeger RW, Patterson BM, Olsson EC, et. al. The Influence of Patient Insurance Status on Access to Outpatient Orthopedic Care for Flexor Tendon Lacerations. *J Hand Surg Am*. 2014;39(3):527-533.
10. Wiznia DH, Nwachuku E, Roth A, et al. Influence of Medical Insurance on Patient Access to Orthopaedic Surgery Sports Medicine Appointments Under the Affordable Care Act. *Orthop J Sport Med*. 2017;5(7)
11. Baraga MG, Smith MK, Tanner JP, Kaplan LD, Lesniak BP. Anterior cruciate ligament injury and access to care in South Florida: Does insurance status play a role? *J Bone Jt Surg - Ser A*. 2012;94(24):e183(1).
12. Kim C-Y, Wiznia DH, Roth AS, Walls RJ, Pelker RR. Survey of Patient Insurance Status on Access to Specialty Foot and Ankle Care Under the Affordable Care Act. *Foot ankle Int*. 2016;37(7):776-781.
13. Kim CY, Wiznia DH, Hsiang WR, Pelker RR. The Effect of Insurance Type on Patient Access to Knee Arthroplasty and Revision under the Affordable Care Act. *J Arthroplasty*. 2015;30(9):1498-1501.
14. Kim CY, Wiznia DH, Wang Y, et al. The Effect of Insurance Type on Patient Access to Carpal Tunnel Release under the Affordable Care Act. *J Hand Surg Am*. 2016;41(4):503-509.e1.
15. Medford-Davis LN, Lin F, Greenstein A, Rhodes K V. “I Broke My Ankle”: Access to Orthopedic Follow-up Care by Insurance Status. Gerson LW, ed. *Acad Emerg Med*. 2017;24(1):98-105.
16. Ayoade OF, Fowler JR. Effect of Insurance Type on Access to Orthopedic Care for Pediatric Trigger Thumb. *J Hand Surg Am*. May 17, 2020.
17. Segal DN, Grabel ZJ, Shi WJ, et. al. The impact of insurance coverage on access to orthopedic spine care. *JSpineSurg*. 2018;4(2):260-263.
18. Nguyen J, Anandasivam NS, Cooperman D, Pelker R, Wiznia DH. Does Medicaid Insurance Provide Sufficient Access to Pediatric Orthopedic Care Under the Affordable Care Act? *Glob Pediatr Heal*. 2019;6
19. Polsky D, Richards M, Basseyn S, et al. Appointment Availability after Increases in Medicaid Payments for Primary Care. *N Engl J Med*. 2015;372(6):537-545.
20. Decker SL. Two-thirds of primary care physicians accepted new Medicaid patients in 2011-12: A baseline to measure future acceptance rates. *Health Aff*. 2013;32(7):1183-1187