Care of low-income patients with sports injuries disincentivized by government reimbursement

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Objectives: The purpose of this study is to compare Medicaid reimbursement rates with regional Medicare reimbursement for 10 commonly performed orthopaedic sports medicine procedures.

Design: Database review.

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

Intervention: Medicaid and Medicare reimbursement for meniscus debridement (medial or lateral), meniscus repair (medial or lateral), anterior cruciate ligament (ACL) reconstruction, posterior cruciate ligament (PCL) reconstruction, anterior labral (Bankart) repair, rotator cuff repair, biceps tenodesis, femoral osteochondroplasty, acetabular osteoplasty, and acetabular labral repair.

Main outcome measurement: Overall Medicaid to Medicare reimbursement ratio, dollar difference between Medicaid and Medicare reimbursement, dollar difference between Medicaid and Medicare per relative value unit (RVU), dispersion of reimbursement rates.

Results and conclusions: Significant discrepancies were found between Medicaid and Medicare reimbursement for all 10 procedures, with Medicaid reimbursing on average 65.15% of the Medicare rate. Medicaid reimbursement also exhibited substantial variation between individual state programs. Financial incentives matter and between these two government programs, orthopaedic surgeons are incentivized to provide care to elderly patients over poorer patients.

Level of Evidence: IV; Economic Analysis

Keywords: Medicaid; Medicare; Reimbursement; RVU; Variation

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INTRODUCTION

Demand for orthopedic care for older patients, who are typically insured by Medicare (MCR), and patients covered by Medicaid (MCD) is expected to increase.[1] MCR is a federally administered program that insures primarily individuals 65 years of age and older. In contrast, MCD is a program in which block grants are given from the Federal government to primarily state-run programs that assist low-income individuals and families. The 2010 Patient Protection and Affordable Care Act lead to the expansion of MCD programs by many states and MCD patients now account for approximately one sixth of health care spending in the United States.[2–4] The growing number of MCD beneficiaries highlights the need for an adequate number of orthopaedic surgeons who participate with MCD. However, the Centers for Medicare and Medicaid Services (CMS) provides only guidance regarding MCD reimbursement, and allows each state to determine reimbursement rates and access.[3] MCD reimbursement rates have been shown to vary significantly between states. Additionally, multiple studies have reported disparities between MCD and MCR reimbursement.[5–8] These discrepancies may act as a barrier for low income patients seeking orthopedic surgical specialty care.[9–18]

The purpose of this study is to compare MCR and MCD reimbursement rates by state for 10 commonly performed sports medicine procedures. To our knowledge, no prior studies have assessed this relationship within the subspecialty of sports medicine. We hypothesized that MCD reimbursement rates would vary substantially between states and would be lower on average than MCR payments for the same procedure.

Table 1: Selected procedures, CPT codes and RVU

Procedure Name	CPT Code	RVU
Knee		
Meniscus debridement	29881	7.03
Meniscus repair	29883	9.6
ACL Reconstruction	29888	14.3
PCL Reconstruction	29889	17.31
Shoulder		
Anterior Labral (Bankart) Repair	29806	15.14
Rotator Cuff Repair	29827	15.59
Biceps Tenodesis	29828	13.16
Hip		
Femoral Osteochondroplasty	29914	14.67
Acetabular Osteoplasty	29915	15
Acetabular Labral Repair	29916	15
Mean		**13.69**

METHODS

Ten commonly performed orthopaedic sports medicine procedures were selected for this study. Procedures included were meniscus debridement (medial or lateral), meniscus repair (medial or lateral), anterior cruciate ligament (ACL) reconstruction, posterior cruciate ligament (PCL) reconstruction, anterior labral (Bankart) repair, rotator cuff repair, biceps tenodesis, femoral osteochondroplasty, acetabular osteoplasty,

and acetabular labral repair. Utilizing the Medicare Physician Fee Schedule, the 2020 MCR reimbursement for the primary provider without modification codes was collected for each procedure in each state. Facility fee was used as an estimation of reimbursement for each procedure. MCD reimbursement rates were obtained from each state's physician fee schedule database. Facility fee was again used. 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.

The MCR wage index was calculated to normalize for the cost of living in each state to create a MCR wage index adjusted MCD reimbursement. The range of variation in MCD reimbursement and MCR wage index adjusted MCD reimbursement was calculated.

RESULTS

There was a statistically significant difference in reimbursement rates for all 10 procedures between MCD and MCR (Table 2). The average MCD reimbursement was 65.15% of the MCR. The largest variations in MCD reimbursement were seen in New Jersey (Posterior Cruciate Ligament Reconstruction, $1356.07 for MCR versus $225.00 for MCD, $1131.07 difference) and South Dakota (Anterior Cruciate Ligament Reconstruction, $960.02 for MCR versus $2304.09 for MCD, $1344.07 difference). The range in MCD reimbursement exceeded $750.00 for all procedures investigated, with the largest range being seen in reimbursement for ACL reconstruction ($2079.09).

In 37 states, MCD reimbursement was lower than MCR reimbursement for all 10 procedures studied. In 4 states (Alaska, Montana, Arkansas and Ohio), MCD reimbursement was higher than MCR for all 10 procedures.

When investigating the dollar difference per RVU, the largest discrepancy was observed for biceps tenodesis, in which MCR paid on average $17.90 higher per RVU when compared to MCD. Reimbursement variation per RVU was highly variable, ranging from $66.84 less per RVU (biceps tenodesis) to $93.99 more per RVU (ACL reconstruction) for MCD.

Table 2: Dollar Difference between Medicaid and Medicare reimbursement. Negative values indicate lower Medicaid reimbursement when compared to Medicare.

	$ Mean (SD)	$ Median (range)	% Difference (Mean, SD)	P value (between means)	Coefficient of variation
Meniscus Debridement	-$50.94 (165.65)	-$55.07 (-318 to 548)	-20.31% (32.98)	0.023	-3.25
Meniscus Repair	-$118.96 (208.21)	-$153.02 (-599 to 542)	-37.41% (59.86)	< 0.001	-1.75
Anterior Cruciate Ligament (ACL) Reconstruction	-$140.03 (371.39)	-$200.78 (-861 to 1344)	-36.25% (65.88)	0.005	-2.65
Posterior Cruciate Ligament (PCL) Reconstruction	-$300.02 (349.42)	-$307.28 (-1131 to 789)	-57.82% (87.59)	< 0.001	-1.16
Anterior Labral (Bankart) Repair	-$223.69 (212.53)	-$240.37 (-784 to 341)	-35.97% (37.53)	< 0.001	-0.95
Rotator Cuff Repair	-$227.17 (223.65)	-$243.48 (-741 to 360)	-36.42% (36.05)	< 0.001	-0.98
Biceps Tenodesis	-$235.60 (219.89)	-$232.51 (-880 to 383)	-42.89% (36.68)	< 0.001	-0.93
Femoral Osteochondroplasty	-$177.75 (250.85)	-$196.54 (-585 to 665)	-33.61% (38.49)	< 0.001	-1.41
Acetabular Osteoplasty	-$187.88 (257.43)	-$210.22 (-605 to 668)	-34.49% (38.89)	< 0.001	-1.37
Acetabular Labral Repair	-$193.60 (257.38)	-$217.41 (-606 to 667)	-32.57% (41.31)	< 0.001	-1.33
Mean	**-$185.57 (264.83)**	**-$197.25 (-1131 – 1344)**	**-34.85% (52.19)**	**< 0.001**	**-1.43**

Table 3: Medicare Wage Index Adjusted Medicaid Reimbursement.

	$ Mean (SD)	$ Median (Range)	CV
Meniscus Debridement	$454.95 (174.43)	$394.41 (260 – 1080)	0.38
Meniscus Repair	$530.81 (218.93)	$469.70 (189 – 1272)	0.41
ACL Reconstruction	$780.42 (370.74)	$669.49 (251 – 2304)	0.48
PCL Reconstruction	$843.88 (355.74)	$768.70 (251 – 2241)	0.42
Anterior Labral Repair	$773.17 (263.44)	$713.08 (433 – 1943)	0.34
Rotator Cuff Repair	$778.51 (260.00)	$679.20 (453 – 1951)	0.33
Biceps Tenodesis	$645.69 (173.31)	$569.29 (309 – 1674)	0.27
Femoral Osteochondroplasty	$753.24 (275.85)	$676.88 (345 – 1821)	0.37
Acetabular Osteoplasty	$770.36 (282.99)	$687.53 (351 – 1875)	0.37
Acetabular Labral Repair	$767.11 (280.49)	$686.11 (351 – 1871)	0.37
Mean	**$709.73 (299.51)**	**$654.98 (189 – 2304)**	**0.42**

CV = Coefficient of variation

The coefficient of variation represents the state-level dispersion in reimbursement. A larger absolute value is indicative of more dispersion. The highest coefficient for MCD reimbursement was for ACL reconstruction (0.42), while the lowest was for anterior labral (Bankart) repair (0.24). After adjusting for the MCR Wage Index, the largest coefficient was for ACL reconstruction (0.48) while the lowest was for biceps tenodesis (0.27) (Table 3). These coefficients contrast with the low dispersion observed in MCR reimbursement (0.06). The coefficient of variation increases when comparing differences in reimbursement. The highest coefficient was for meniscus debridement (3.25) while the lowest was for biceps tenodesis (0.93).

DISCUSSION

To better understand the extent of reimbursement disparities within orthopedics, this study compared MCD with regional MCR reimbursement rates for 10 commonly performed sports medicine procedures. Our analysis found significant variation between MCD and MCR for all 10 procedures, with MCD reimbursing on average 65.15% of the MCR rate. Per RVU, MCD paid an average of $13.15 less than MCR and, in 37 states, MCD reimbursed less than MCR for all 10 procedures. These findings are in agreement with those reported by *Casper et al.* and *Lalezari et al.* and support the presumption that many physicians may not accept new MCD patients due to low reimbursement rates.[5,6,8] A 2012 survey reported that 40% of orthopaedic surgeons were not accepting new MCD patients.[20] Low participation likely contributes to the difficulty accessing orthopedic care faced by low-income populations.

MCD patients commonly experience longer wait times and have greater difficulty obtaining appointments when compared to patients with MCR or private insurance.[9–18] In the primary care setting, raising MCD reimbursement rates has been correlated with increased appointment availability for MCD patients.[19] More robust reimbursement models may increase access to orthopaedic care for the many Americans who are covered by MCD.

There was also notable dispersion in MCD reimbursement rates between states. The coefficient of variation after wage adjustment for MCD procedures ranged from 0.27 (biceps tenodesis) to 0.48 (ACL reconstruction).

In contrast, MCR reimbursement for all procedures had a coefficient of variation of 0.06. These findings support a pattern of inconsistent reimbursement between state MCD programs that can likely be explained by CMS guidelines that do not regulate MCD reimbursement.[3] Significant dispersion in reimbursement rates between MCD programs may give rise to disparities experienced between MCD patients in different states.

Table 4: Dollar difference in reimbursement per (RVU).

Procedure	$/ RVU Mean (SD)	$/ RVU Median (range)	% Diff (SD)	P value	CV
Meniscus Debridement	-$7.25 (23.56)	-$7.83 (-45 – 78)	-20.3% (32.9)	0.023	-3.25
Meniscus Repair	-$12.39 (21.69)	-$15.94 (-62 – 56)	-37.4% (59.8)	< 0.01	-1.75
ACL Reconstruction	-$9.79 (25.97)	-$14.04 (-60 – 94)	-36.2% (65.8)	0.005	-2.65
PCL Reconstruction	-$17.23 (20.07)	-$17.65 (-65 – 45)	-57.8% (87.5)	< 0.01	-1.16
Anterior Labral Repair	-$14.77 (14.04)	-$15.88 (-52 – 23)	-35.9% (37.5)	< 0.01	-0.95
Rotator Cuff Repair	-$14.57 (14.35)	-$15.62 (-48 – 23)	-36.4% (36.1)	< 0.01	-0.98
Biceps Tenodesis	-$17.90 (16.71)	-$19.19 (-67 – 29)	-42.8% (36.6)	< 0.01	-0.93
Femoral Chondroplasty	-$12.12 (17.10)	-$13.40 (-40 – 45)	-33.6% (38.4)	< 0.01	-1.41
Acetabular Osteoplasty	-$12.53 (17.16)	-$14.01 (-40 – 45)	-34.4% (38.8)	< 0.01	-1.37
Acetabular Labral Repair	-$12.91 (17.16)	-$14.49 (-40 – 44)	-35.3% (38.9)	< 0.01	-1.33
Mean	-$13.15 (19.22)	-$15.12 (-67 – 94)	-37.1% (50.6)	< 0.01	-1.46

CV = Coefficient of variation

Our analysis was not without its limitations. Many of the procedures we included are performed primarily on patients younger than those in the 65 plus age demographic that accounts for the majority of MCR beneficiaries. However, the variable payments for these procedures still serve to highlight discrepancies in reimbursement between the state and Federal levels.

CONCLUSION

The results of this study highlight the variability that exists between MCD and regional MCR reimbursement for 10 commonly performed orthopedic procedures. Such discrepancies may disincentivize orthopaedic surgeons, impeding low-income patients from receiving timely orthopedic care.

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