

Potential Patient Bias by Insurance Coverage on CG-CAHPS Surveys: Impact on Physician Reimbursement

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Objectives: Investigate the relationship between payor type and patient experience scores.

Design: Cross-sectional retrospective study.

Setting: Academic orthopaedic outpatient clinic.

Patients: All patients seen in our clinic were given a Press Ganey survey. 2,934 surveys were collected between January 1, 2016 and December 31, 2020.

Intervention: Press Ganey patient satisfaction survey overall satisfaction with physician.

Main outcome measurement: Physician overall rating by patients stratified according to payor type.

Results and conclusions: Medicare patients reported the highest satisfaction scores (91.98 ± 0.06), followed by Worker's Compensation (90.49 ± 0.12), other government coverage (89.91 ± 0.45), commercial insurance (89.36 ± 0.12), Medicaid (88.74 ± 0.30), and self-pay/uncompensated (88.26 ± 0.48). ANOVA analysis resulted in an F value of 270.2205 ($p < 0.001$). Tukey-Kramer demonstrated statistically significant difference between the means of all payor groups except Medicaid vs. self-pay/uncompensated. Our data indicates that patient experience scores are influenced by payor type. These biases may negatively impact physician reimbursement, even in the setting of high-quality care. Thus, orthopedic physicians should be mindful of payor type bias when selecting MIPS quality reporting metrics, and policymakers should consider adjusting reimbursement models according to payor-mix.

Level of Evidence: Level III

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INTRODUCTION

Physician reimbursement from the Centers for Medicare and Medicaid Services (CMS) has changed dramatically over the past decade, especially with the passage of the Medicare Access and CHIP Reauthorization Act (MACRA).^[1] Previously reimbursed in a fee-for-service model, physician reimbursement system began to be shifted towards a fee-for-performance system called Merit-Based Incentive Payment System (MIPS). Reimbursement through MIPS is

Table 1. Descriptive statistics of each payor type.

Payor	Mean Satisfaction Score	Surveys (n)	Std Dev
Medicare	91.98	923	0.92
Worker's Comp	90.49	238	0.94
Other Govt	89.91	164	2.92
Commercial	89.36	1178	2.09
Medicaid	88.74	306	2.70
Self-Pay	88.26	91	2.36

based upon the four pillars of: quality measures, advancing care information, clinical practice improvement activities, and resource use. Quality measures accounts for 60% of reimbursement, with physician performance most often being assessed by standardized patient experience surveys (e.g., Clinician and Group Consumer Assessment of Healthcare (CG-CAHPS)).^[2]

Although it is unnecessary for physicians to have a comprehensive knowledge of MACRA, there are certain aspects of MACRA that are important for healthcare providers to understand. MACRA law is described as "budget neutral", meaning that physicians who perform poorly will have negative reimbursement adjustments, which are then used to fund the positive reimbursement bonuses for physicians who meet target quality measures.^[3] Physician scoring is based on a scale that ranges from 0-100, with set thresholds for penalty or bonus that are established by the mean or median performance value from the previous year.^[4] Numerous commercial insurance corporations such as Anthem, UnitedHealth Group, Aetna, and Cigna have adopted similar reimbursement models patterned after MIPS, and it is likely that more payors will follow suit.^[5]

Several studies in other medical specialties have indicated that factors such as ethnicity, gender, education level, travel distance, and even insurance status may impact patient survey responses, raising concerns that factors outside a physician's control may negatively impact reimbursement rates.^[6] In light of these reports, the influence of payor type on patient experience surveys within the field of orthopedics has become a relevant topic.^[7-10] Thus, the aim of this study is to investigate payor type-based bias in an academic orthopedic outpatient clinic.

Table 2. Mean satisfaction score difference between payer types. Tukey-Kramer intergroup results. 95% confidence interval of the difference between groups is represented in the lower and upper columns. P-values less than 0.05 are considered significant.

Groups	Difference	Confidence Interval		<i>p</i>
Commercial vs Other Government Coverage	0.55	0.1028	0.9972	<0.05
Commercial vs Medicaid	-0.62	-0.9643	-0.2757	<0.001
Commercial vs Medicare	2.62	2.3841	2.8559	<0.001
Commercial vs Self-Pay/Uncompensated	-1.1	-1.6838	-0.5162	<0.001
Commercial vs Worker's Compensation	1.13	0.7487	1.5113	<0.001
Other Government Coverage vs Medicaid	-1.17	-1.6893	-0.6507	<0.001
Other Government Coverage vs Medicare	2.07	1.6153	2.5247	<0.001
Other Government Coverage vs Self-Pay/Uncompensated	-1.65	-2.3514	-0.9486	<0.001
Other Government Coverage vs Worker's Compensation	0.58	0.0355	1.1245	<0.05
Medicaid vs Medicare	3.24	2.8861	3.5939	<0.001
Medicaid vs Self-Pay/Uncompensated	-0.48	-1.1207	0.1607	0.2687
Medicaid vs Worker's Compensation	1.75	1.2863	2.2137	<0.001
Medicare vs Self-Pay/Uncompensated	-3.72	-4.3095	-3.1305	<0.001
Medicare vs Worker's Compensation	-1.49	-1.8801	-1.0999	<0.001
Self-Pay/Uncompensated vs Worker's Compensation	2.23	1.5687	2.8913	<0.001

METHODS

This is a cross-sectional, retrospective study investigating self-reported, de-identified patient satisfaction surveys completed from the Texas Tech University Health Sciences Center (TTUHSC) Orthopedic Clinic. All patients received a Press Ganey (PG) survey for each clinical and surgical encounter. Inclusion criteria entailed completion of a PG survey, either electronic or paper, between January 1st, 2016, and December 31st, 2020. Billing code software at TTUHSC was used to categorize payor plans into six segments: Medicare, Medicaid, other government coverage (e.g., Veteran's Affairs, Tricare), commercial insurance, Worker's Compensation, and self-pay/uncompensated. Any patient with secondary insurance coverage was still categorized by their primary insurance.

A weighted mean \pm standard deviation was calculated for each payor category, followed by one-way analysis of variance (ANOVA) to determine if any statistically significant difference was present in our data. After obtaining statistically significant ANOVA results, post-hoc analysis was performed using the Tukey-Kramer Honestly Significant Difference test to compare weighted means between groups in every variation.

These results were used to calculate a 95% confidence interval, with a $p \leq 0.05$ indicating statistical significance.

RESULTS

A total of 2,934 patient experience surveys were analyzed in this study, with the greatest percentage of patients being covered by commercial insurance (40.1%, $n=1,178$), then Medicare (31.5%, $n=923$), Medicaid (10.4%, $n=306$), Worker's Compensation (8.1%, $n=238$), other government coverage (5.6%, $n=164$), and self-pay/uninsured (3.1%, $n=91$). 62 individual payors were represented in this study, with commercial insurance having the most plans (23), followed by Medicaid (15), then other government plans (9), Medicare (7), self-pay/uncompensated (5), and lastly, Worker's Compensation (3). The five sub-groups of self-pay/uncompensated plans were local county indigent, non-local county indigent, student health account, liability insurance, and self-pay.

Using the 0-100 scale of the PG survey instrument, Medicare patients reported the highest satisfaction scores (91.98 ± 0.06), followed by Worker's Compensation (90.49 ± 0.12), other government coverage (89.91 ± 0.45), commercial

insurance (89.36 ± 0.12), Medicaid (88.74 ± 0.30), and self-pay/uncompensated (88.26 ± 0.48) (Table 1).

ANOVA analysis resulted in an F value of 270.2205 ($p < 0.001$). Tukey-Kramer demonstrated statistical significance in the difference between the means of the following groups: commercial insurance vs. Medicare, Medicaid, Worker's Compensation, or self-pay/uncompensated with $p < 0.01$ in each of these comparisons as well as commercial insurance vs. other government coverage ($p < 0.05$). Other government coverage also showed statistically significant differences when compared to all remaining payor types including Medicare, Medicaid, and self-pay/uninsured ($p < 0.001$ in each group comparison), as well as when compared to Worker's Compensation ($p < 0.05$). Of the remaining groups, Worker's Compensation demonstrated significant difference from Medicare, Medicaid, and self-pay/uncompensated ($p < 0.001$). Medicare was different from Medicaid and self-pay/uncompensated ($p < 0.001$). The only groups to not be significantly different were the Medicaid vs. self-pay/uncompensated payor types ($p = 0.2687$) (Table 2).

DISCUSSION

The movement from fee-for-service reimbursement to fee-for-performance relies heavily on patient experience to determine physician compensation. Although this model has potential benefits by holding physicians to higher standards of accountability and encouraging a collaborative experience with patients, it may be impacted by non-modifiable patient demographics affecting the physician's score and reimbursement. If the impact of such non-modifiable patient demographics on physician surveys would be proven, then MIPS and other similar models would have to be adjusted to provide a true reflection of the physician's performance.

The results of our study on payor type bias are consistent with previous findings in outpatient clinics of different specialties.^[7-13] Our study showed the highest CG-CAHPS for patients with Medicare in comparison to other payor types. Tisano et al. reached a similar conclusion when PG scores from 2,527 patients in academic adult reconstructive, sports medicine, and general orthopedic clinics demonstrated higher satisfaction for Medicare patients vs. non-Medicare patients (OR 1.257, $p = 0.03$).^[8] A retrospective analysis conducted by Rane et al. of 4,216 PG scores in an orthopedic outpatient clinic found Medicare patients to be more satisfied with their experience in comparison to commercial insurance patients (OR 1.35, $p < 0.01$).^[9] Medicare patients in our study had significantly higher mean scores ($+3.24$, $p < 0.001$) than Medicaid patients. In this context, it should be mentioned that the true difference in means is likely even greater than this value, as the Business Offices at TTUHSC estimate that approximately 35% of Medicare patients have Medicaid as a secondary coverage. However, this could not be further specified by the TTUHSC PG system.

The lower patient satisfaction scores found in the Medicaid group are not surprising, as this has also been observed in previous reports.^[9, 10, 14, 15] For example, Liu et al. found that Medicaid patients reported a less satisfactory patient experience than patients with other payor types, and emphasized the need for more research to understand the underlying causes of this disparity.^[16] Although patient demographics are complex and multifactorial, Medicaid patients often represent medically underserved and disadvantaged populations. Physicians may feel a sense of obligation to provide care for these patients, but as observed in our report, systems such as MIPS may inadvertently penalize these providers, further disincentivizing and discouraging clinicians from serving this patient population.

In our report, self-pay/uninsured patients reported the lowest satisfaction scores. This negative relationship between self-pay and patient experience has been observed in previous studies as well, and may exemplify the financial stress of affording healthcare on this patient group, rather than serving as an indicator of the quality of care being provided.^[17, 18]

The results of our study indicate that patient satisfaction in an academic orthopedic setting may be significantly influenced by payor type. Additional studies are needed to determine the causes for this phenomenon, especially in patients with Medicaid. Patient experience surveys play an integral part in the current reimbursement model for physicians, despite substantial evidence in the literature showing a lack of association between patient satisfaction scores and improved clinical outcomes.^[17,18] Thus, we have the following recommendations for physicians and for policymakers: a) Physicians should take into consideration the various payor types represented in their clinic when submitting quality metrics in their MIPS report; and b) policymakers should recognize payor type bias in satisfaction surveys and adjust reimbursement algorithms to ensure fair and unbiased compensation.

We acknowledge several limitations to our study. First, research has shown poor response rates to survey instruments, often leading to inherent selection and non-response biases.^[10, 11, 19] Second, surveys in the TTUHSC system are sent primarily by email, with one in five patients being selected at random to receive paper copies of the PG survey, thus potentially excluding patients without email. Third, we were unable to attain comprehensive patient demographic data such as age, gender, ethnicity, or education status through the TTUHSC PG system, leaving the potential for confounding demographic variables in this report.

CONCLUSION

Our data indicates that patient experience scores are influenced by payor type. These biases may negatively impact physician reimbursement, even in the setting of high-quality care. Thus, orthopedic physicians should be mindful of payor type bias when selecting MIPS quality reporting metrics, and

policymakers should consider adjusting reimbursement models according to payor-mix.

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