Higher Volume Orthopaedic Surgeons Are More Likely to be Penalized on the Merit-based Incentive Payment System (MIPS) Compared to Lower Volume Surgeons

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INTRODUCTION: The Merit-based Incentive Payment System (MIPS) financially rewards or penalizes physicians based on their performance across four domains: quality, cost, promoting interoperability, and improvement activities. Prior studies have shown that higher-volume surgeons receive greater reimbursement, but the impact of volume on MIPS performance has not been studied. Therefore, the purpose of this study was to assess whether higher-volume orthopaedic surgeons perform better on MIPS compared to lower-volume surgeons.

METHODS: Centers for Medicare and Medicaid Services (CMS) datasets were used to examine all U.S. orthopaedic surgeons who participated in MIPS in 2022, the most recent year with published data. Physician gender, US census region, years in practice, patient demographics, and MIPS performance were assessed. Surgeons were separated into quartiles based on the number of services billed to Medicare in 2022. Differences between volume quartiles were assessed utilizing chi-square test, student t-test for parametric continuous data, and Wilcoxon signed-rank test for nonparametric continuous data. Multivariable logistic regressions controlling for all surgeon and patient demographics were performed to determine the relationship of billing volume quartile to receiving a MIPS payment adjustment.

RESULTS: A total of 12,197 orthopaedic surgeons participated in MIPS in 2022 (Table 1). Surgeons in the highest volume quartile had a mean (SD) MIPS score of 77.5 (18.7), while those in the lowest volume quartile had a mean (SD) MIPS score of 85.0 (11.2) (p<0.001). Among surgeons in the highest volume quartile, 19.6% received a MIPS penalty while 28.8% received an exceptional performance bonus, compared to 11.1% of surgeons receiving a penalty and 41.5% receiving an exceptional performance bonus among surgeons in the lowest volume quartile (p<0.001) (Figure 1). Upon regression controlling for physician and patient characteristics, surgeons in the highest quartile had an increased chance of receiving a penalty (OR 1.05, p=0.003) and a decreased chance of receiving an exceptional bonus (OR 0.92, p<0.001) compared to those in the lowest quartile (Table 2).

DISCUSSION AND CONCLUSION: Higher-volume surgeons perform worse on MIPS and are more likely to be financially penalized compared to lower-volume surgeons. One possible explanation is that greater patient numbers create more opportunities to lose points across the four MIPS domains. This highlights a potential flaw in how MIPS scoring penalizes surgical volume rather than rewarding efficiency.

Figure 1: Proportion of Orthopaedic Surgeons Receiving a MIPS Penalty or Bonus Based on Volume Quartile

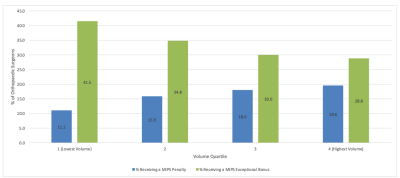

Table 1: Demographics of Orthopaedic Surgeons Participating in the 2022 MIPS Based on Billing Volume Quartile

Variable	Quartile 1 (Lowest Volume)	Quartile 2	Quartile 3	Quartile 4 (Highest Volume)	p-value (comparing quartile 1 to 4)
Number of Surgeons	3,050	3,049	3,049	3,049	N/A
Gender					<0.001
Men	2,722	2,846	2,914	2,935	
Women	328	203	135	114	
Region					<0.001
Northeast	639	598	532	497	
Midwest	782	753	634	505	
South	874	1,023	1,294	1,566	
West	755	675	589	481	
Mean Years Since Medical School Graduation (SD)	18.9 (12.3)	21.9 (10.9)	23.1 (10.4)	25.1 (10.1)	<0.001
Mean # of Beneficiaries (SD)	108.5 (68.8)	273.8 (100.1)	403.0 (145.9)	986.4 (286.2)	<0.001
Median Number of Services (IQR)	273 (124-433)	1,034 (822-1,276)	2,170 (1,936-2,570)	5,133 (3,876-7,876)	0
% Dual Medicare-Medicaid Beneficiaries (SD)	24.2 (14.6)	14.9 (10.4)	11.3 (8.9)	10.0 (9.6)	<0.001
% White Beneficiaries (SD)	77.7 (15.2)	83.8 (12.2)	85.9 (10.4)	86.2 (10.1)	<0.001
% Female Beneficiaries (SD)	99.8 (7.9)	60.8 (5.7)	61.4 (4.8)	61.9 (4.2)	0.02
Mean Beneficiary HCC (SD)	1.34 (0.42)	1.16 (0.27)	1.09 (0.18)	1.07 (0.18)	<0.001
Mean MIPS Performance Score (SD)	85.0 (11.2)	80.9 (16.4)	78.6 (17.6)	77.5 (18.7)	<0.001
% Receiving a MIPS Penalty	11.1%	15.9%	18.0%	19.6%	<0.001
% Receiving a MIPS Exceptional Bonus	41.5%	34.8%	30.0%	28.8%	<0.001

*HCC scores can range from 0 to 20 based on age, sex, Medicaid eligibility, and diagnoses and are calculated per beneficiary. A score of 1.0 represents the health status of an average Medicare beneficiary. Scores > 1 indicate greater medical complexity, while scores <1 indicate better health.

Table 2: Multivariable Regression Examining the Impact of Billing Volume on Receiving Either a MIPS Penalty or Exceptional Bonus While Controlling for Surgeon Characteristics, Billing Practices, and Patient Demographics

	MIPS Penalty		MIPS Exceptional Bonus	
Billing Volume Quartile	Odds Ratio (95% CI)	p-value	Odds Ratio (95% CI)	p-value
1 (Lowest Volume)	1 (Reference)		1 (Reference)	
2	1.03 (1.00 – 1.05)	0.052	0.96 (0.93 – 1.00)	0.039
3	1.03 (1.01 – 1.06)	0.02	0.93 (0.90 – 0.97)	<0.001
4 (Highest Volume)	1.05 (1.02 – 1.08)	0.003	0.92 (0.89 – 0.96)	<0.001