Orthopaedic Surgeons are Receiving More Financial Penalties and Fewer Bonuses on the Merit-based Incentive Payment System (MIPS): A Longitudinal Analysis from 2017 to 2022

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INTRODUCTION: The Merit-based Incentive Payment System (MIPS) aims to improve patient care while reducing costs. Since its incorporation in 2017, MIPS has undergone numerous changes to its scoring methodology. Therefore, the purpose of this study was to determine whether Merit-based Incentive Payment System (MIPS) performance among orthopaedic surgeons changed from 2017, the first year MIPS was incorporated, to 2022, the most recent year with published data.

METHODS: Centers for Medicare and Medicaid Services (CMS) datasets were queried to examine all U.S. orthopaedic surgeons who participated in MIPS each year between 2017 and 2022. Physician gender, US census region, billing practices, patient demographics, and MIPS performance were collected for each year. Payment adjustments, which are determined based on overall MIPS performance score, were derived for each surgeon (Table 1). Differences between years were assessed using chi-square tests for categorical data, student t-tests for parametric continuous data, and Wilcoxon signed-rank test for nonparametric continuous data. Multivariable logistic regression were utilized to assess the impact of surgeon characteristics and patient demographics on MIPS performance.

RESULTS: The mean MIPS overall performance score among orthopaedic surgeons increased from 75.9 (SD: 29.2) in 2017 to 80.5 (SD: 16.5) in 2022 ($p<0.001$, Figure 1). However, between 2017 and 2022, the proportion of surgeons receiving a MIPS penalty increased from 0% to 16.2% ($p<0.001$), while the proportion receiving an exceptional bonus decreased from 74.8% to 33.8% ($p<0.001$). The only year where less than 50% of orthopaedic surgeons received an exceptional bonus was 2022 (Figure 2). Upon multivariable regression controlling for physician characteristics and patient demographics, higher operative volume was the only variable associated with a lower chance of receiving a bonus in all years (2022: OR 0.91, $p<0.001$) (Table 2).

DISCUSSION AND CONCLUSION: Orthopaedic surgeons are receiving fewer financial bonuses and more financial penalties in MIPS in 2022 compared to all previous years of the MIPS. This may be due to changes in the MIPS scoring methodology since its introduction in 2017, such as increasing the weight of the cost metric and reducing the weight of the quality metric, along with major shifts in the penalty and bonus cut-off scores. The only consistent predictor of decreased MIPS performance across all years was higher operative volume. One possible explanation is that higher operative volume results in greater opportunities for mistakes in the categories assessed by MIPS, but further research is necessary to evaluate this.

Figure 1: Percentage of Orthopaedic Surgeons Receiving Either a Penalty or Exceptional Bonus on MIPS From 2017 to 2022

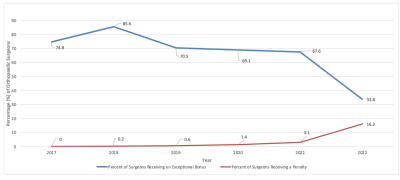

Table 1: MIPS Payment Adjustment Cut-Offs Based on Overall MIPS Performance Score for Each Year, Derived from CMS Databases

Year	Penalty	Neutral	Bonus	Exceptional Bonus
2017	0 – 2.9	3.0	3.1 – 69.9	70.0 – 100
2018	0 – 14.9	15.0	15.1 – 69.9	70.0 – 100
2019	0 – 29.9	30.0	30.1 – 74.9	75.0 – 100
2020	0 – 44.9	45.0	45.1 – 84.9	85.0 – 100
2021	0 – 59.9	60.0	60.1 – 84.9	85.0 – 100
2022	0 – 74.9	75.0	75.0 – 88.9	89.0 – 100

Table 2: Multivariable Logistic Regression of Surgeon and Medicare Beneficiary Characteristics Associated With Receiving an Exceptional Bonus in 2017 and 2022

	Year 2017		Year 2022	
Variable	Odds Ratio (95% CI)	p-value	Odds Ratio (95% CI)	p-value
Surgeon Gender				
Male	1 (Reference)		1 (Reference)	
Women	1.02 (0.98-1.06)	0.27	0.98 (0.94-1.02)	0.35
Surgeon Region				
Northeast	1 (Reference)		1 (Reference)	
Midwest	1.04 (1.02-1.07)	**0.001**	1.00 (0.97-1.04)	0.81
South	0.95 (0.93-0.97)	**<0.001**	1.04 (1.01-1.07)	**0.005**
West	0.96 (0.94-0.99)	**<0.001**	0.91 (0.89-0.94)	**<0.001**
Number of Medicare Beneficiaries				
0-199	1 (Reference)		1 (Reference)	
200-399	1.09 (1.06-1.13)	**<0.001**	0.98 (0.94-1.01)	0.15
400+	1.17 (1.14-1.21)	**<0.001**	0.97 (0.93-1.01)	0.17
Number of Annual Services Billed to Medicare				
0-999	1 (Reference)		1 (Reference)	
1,000-2,999	0.91 (0.89-0.94)	**<0.001**	0.94 (0.91-0.97)	**<0.001**
2,000+	0.77 (0.66-0.91)	**<0.001**	0.91 (0.88-0.96)	**<0.001**
Proportion of Beneficiaries who are White	1.01 (1.00-1.02)	**<0.001**	1.0 (1.00-1.01)	0.16
Proportion of Beneficiaries who are Women	1.0 (0.99-1.01)	0.27	1.0 (0.99-1.00)	0.19
Mean Beneficiary HCC Score	1.12 (1.06-1.18)	**<0.001**	1.0 (0.96-1.05)	0.93

*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.