Differences in Orthopaedic Surgeon Demographics, Patient Populations, and MIPS Performance Based on Patient Population Social Risk

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INTRODUCTION: Recent policy implementation in the United States (U.S.) such as the Merit-based Incentive Payment System (MIPS) aimed to promote value-based care over volume-based care. The earliest versions of MIPS had been shown to negatively affect physicians with higher social risk patient populations, but this has not been evaluated in recent years and specifically to orthopaedic surgeons. In order to best evaluate these differences, it is important to also consider differences in surgeons and patient characteristics. Therefore, the purpose of this study was to evaluate how orthopaedic surgeon demographics, patient characteristics, MIPS scores, and MIPS payment adjustments vary based on the social risk of their patient populations in 2017, the first year MIPS was introduced, and 2021, one year following significant revisions to the MIPS scoring methodology.

METHODS:

Databases published by the Centers for Medicare and Medicaid Services (CMS) were utilized to examine all U.S. orthopaedic surgeons who submit at least 11 Medicare claims in a given year. Surgeons were placed into quintiles of social risk based on the proportion of their patients who were dual enrolled in Medicare and Medicaid, with the highest quintile representing the highest social risk and the lowest quintile representing the lowest social risk. Demographics, practice location characteristics including Distressed Community Index (DCI) scores, patient population information, and MIPS performance were assessed for each orthopaedic surgeon in years 2017 and 2021. Differences between social risk quintiles and years were assessed utilizing chi-square, student *t*-test, Wilcoxon signed rank test, and multivariable logistic regressions.

RESULTS:

18,645 orthopaedic surgeons were included in 2017 and 17,327 orthopaedic surgeons in 2021. In 2021, orthopaedic surgeons with the highest social risk caseload, compared to the lowest social risk caseload, were more often women (9.2% vs 3.6%, p<0.001), more often worked in the Pacific West region (24.2% vs 7.4%, p<0.001), more often D.O trained (11.2% vs 6.6%, p<0.001), more recently graduated from medical school (mean years since graduation [standard deviation or SD]: 23.0 [12.9] vs 25.7 [10.9], p<0.001), worked in larger practices (median number of partners in practice [IQR]: 168 [27-649] vs 78 [25-322], p<0.001), saw fewer Medicare beneficiaries (mean [SD]: 198 [157] vs 494 [288], p<0.001), performed fewer annual services (median [IQR]: 535 [249-1,253] vs 2,562 [1,467-4,570], p<0.001), and worked in areas with higher DCI distress scores (mean [SD]: 56.9 [27.3] vs 35.1 [25.2], p<0.001). Similar findings were present in 2017 (Table 1). In 2017, surgeons with the highest social risk caseload, compared with surgeons with the lowest social risk caseload had significantly lower mean MIPS performance scores (mean [SD], 66.0 [37.6] vs 70.1 [33.5], p<0.001], an increased likelihood of negative payment adjustment (odds ratio [CI], 1.48 [1.07 - 2.06], p=0.019), and a decreased likelihood of receiving an exceptional performance bonus (odds ratio [CI], 0.75 [0.63 – 0.90], p=0.002) (Table 2, Figure 1). In 2021, orthopaedic surgeons with the highest social risk caseload had significantly higher final mean MIPS performance scores compared with surgeons caring for patients at the lowest risk (mean [SD], 88.7 [16.9] vs 81.5 [18.3], p<0.001). No relationship between social risk caseload quintile and MIPS payment adjustments was seen in 2021 (Table 2, Figure 2). DISCUSSION AND CONCLUSION: In 2017, the first year of the MIPS, orthopaedic surgeons caring for high social risk

populations had significantly lower MIPS scores, were more likely to receive a negative payment adjustment, and less likely to receive an exceptional performance bonus compared to orthopaedic surgeons caring for low social risk populations. This partially reversed in 2021, where orthopaedic surgeons caring for high social risk populations had significantly higher MIPS scores. This change is likely attributed to a change in MIPS methodology in 2020, where Medicare implemented a "complex patient bonus" of up to 10 points for physicians caring for "high risk" patients. Despite these changes, demographics and practice patterns of orthopaedic surgeons with high social risk caseloads remained largely consistent over time, as women surgeons, D.O trained surgeons, and surgeons working in areas with higher DCI distress scores had the highest social risk patient populations in both 2017 and 2021.

