

90-Day Reoperations and/or Readmissions Following Primary Total Knee Arthroplasty Significantly Impact 1-Year PROMs and Satisfaction: Implications for the New CMS PRO-PM Mandate

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INTRODUCTION: The Centers for Medicare & Medicaid Services (CMS) has mandated the collection of patient-reported outcome measures (PROMs) as a part of the Patient-Reported Outcome Performance Measure (PRO-PM) policy and the Transforming Episode Accountability Model (TEAM). However, little is known about the impact of readmission and/or reoperation following primary total knee arthroplasty (TKA) on PROMs. We aimed to investigate clinically meaningful improvements in 1-year PROMs after TKA among patients with and without reoperation and/or readmission following surgery.

METHODS:

We conducted a prospective cohort analysis of 6315 Medicare patients who underwent primary TKA between 2016-2023 within a single healthcare system. Patients were divided into four groups based on reoperation and/or readmission following surgery into: (1) no readmission or reoperation (n=5649), (2) reoperation only (n=174), (3) readmission only (n=447), and (4) readmission and reoperation (n=45). Multivariable logistic regression models were used to compare 1-year PROMs using odds ratio (OR) and 95% confidence interval (CI). The included PROMs were the Knee disability and Osteoarthritis Outcome Score (KOOS) Pain, Physical function Shortform (PS), Joint Replacement (JR), and Veterans RAND 12-Item Health Survey (VR-12). Clinically relevant improvements were assessed through minimal clinically important difference (MCID), substantial clinical benefit (SCB), and Patient Acceptable Symptom State (PASS) threshold achievement. The models were controlled for pre-specified demographics, baseline PROMS, and surgical confounding variables. Failure to reach the threshold was modeled and considered as the event of interest in all the models. Additionally, 1-year satisfaction using the PASS questions was compared. A p-value <0.05 was considered statistically significant.

RESULTS:

Patients who underwent reoperation only had significantly higher odds of not achieving MCID for pain (OR=3.36, p<0.001), PS (OR=2.72, p<0.001), and JR (OR=2.8, p<0.01). They had the highest risk of not achieving PASS for pain (OR=3.02, p<0.001), PS (OR=2.44, p<0.001), and JR (OR=3.19, p<0.001), as well as the highest odds of dissatisfaction (OR=2.79, p<0.001) and failure to achieve SCB for KOOS-JR (OR=2.91, p<0.001). Patients with readmission only had increased odds of not achieving MCID for PS (OR=1.62, p<0.01), but not pain and JR (p>0.05 for all). These patients also had a higher risk of not achieving PASS for PS (OR=1.36, p<0.01) and JR (OR=1.33, p<0.01), but not pain (p=0.07). Additionally, readmitted patients had a higher risk of dissatisfaction (OR=1.3, p=0.04) and not achieving the SCB for KOOS-JR (OR=1.4, p<0.01). Patients with both readmission and reoperation were at risk of not achieving MCID for pain (OR=2.85, p=0.01), but not PS and JR (p>0.05 for all). They were also significantly more likely to fail PASS for pain (OR=2.4, p=0.003), PS (OR=2.04, p=0.04), but not JR (p=0.07). These patients are also at higher risk of dissatisfaction (OR=2.2, p=0.04), and not achieving the SCB for KOOS-JR (OR=2.7, p=0.01).

DISCUSSION AND CONCLUSION:

Readmission and/or reoperation after primary TKA were significantly associated with poorer 1-year PROMs, especially failure to achieve SCB on LOOS-JR. These findings are highly relevant under the new CMS PRO-PM and TEAM models, which tie reimbursement to PROM performance. Given the importance of SCB in both clinical outcomes and value-based reimbursement, stratifying patients by their postoperative course may enhance the effective implementation of CMS PROM mandates.