

The Virtual Appointment: Can a Mobile-Based Survey Predict Interventions at 10 weeks Following Total Joint Arthroplasty?

Introduction:

The Comprehensive Care for Joint Replacement (CJR) model reimburses hospitals for total joint replacements based on a 90-day episode of care. All hospital costs and outpatient visits incurred during this time are covered under this episode. As total joint arthroplasty techniques become more refined, many patients are recovering more rapidly and may not require in-office visits at 10-12 weeks postoperatively. However, there are certain patients that necessitate closer monitoring and potential intervention. Therefore, this study aims to determine if a mobile-based survey can predict which patients will require intervention at 10-12 weeks postoperatively.

Methods:

All total joint arthroplasty patients performed by a single-surgeon were prospectively followed in 2018-2019. The surgeon's typical protocol involves office visits at 2-weeks, 4-weeks, 12-weeks and 1-year postoperatively. Patients were administered a 6-question function and pain-based questionnaire at 10-weeks postoperatively. Variables collected included patient demographics, Body Mass Index (BMI) and interventions at the third postoperative visit. Interventions were defined as new X-Rays, assistive devices, physical therapy (PT) prescriptions, pain medication or antibiotic prescriptions, follow up appointment outside normal protocol, readmission and surgical interventions. Statistical analyses were performed using independent student t-tests, Chi-square tests and linear regressions to determine the relationship between survey answers and intervention.

Results:

A total of 172 patients participated in the survey, 127 of which had a third-postoperative visit between 8-12 weeks postoperatively and were included in analysis. There were 24 new X-Rays, 83 PT prescriptions, 19 pain medication, 2 assistive devices, 2 antibiotic prescriptions and 34 patients recommended for earlier follow up. Chi square analysis of the survey showed that patients still requiring pain medication ($p=0.034$), patients taking gabapentin ($p=0.036$) and those that could not ambulate 100 feet were more likely to require intervention at follow up. Driving ($p=0.455$), bathing ($p=0.602$) and stair climbing ($p=0.195$) were not associated with intervention. Multivariate analysis found that patients requiring pain medications were 2.41 times more likely to need intervention ($p=0.035$). Patients with a pain score greater than 4 were 3.82 times more likely to need intervention ($p=0.045$).

Conclusions:

With the implementation of CJR and increasing demand for total joint arthroplasty, there is a need to recognize which patients do and do not need closer follow up. This enables surgeons to focus on patients that require closer monitoring while allowing stable patients to continue to recover without the need for persistent follow up. The use of a mobile-based survey may be able to identify those patients that will require intervention at follow up visits. Further follow

up will be required to definitively identify patients that do not need 90-day follow up and can be monitored remotely.