## Longer Surgical Times but No Difference in Patient Reported Outcomes with Fellow Assistance in Reverse Total Shoulder Arthroplasty

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INTRODUCTION:

Training the next generation of orthopaedic surgeons requires hands-on training and oversight from attending surgeons. This surgical training has been shown to increase surgical times in hip and knee arthroplasty without affecting outcomes. To our knowledge, there is no similar study in patients undergoing reverse total shoulder arthroplasty (RSA). The purpose of this study was to evaluate the impact of teaching fellows on surgical time and its impact on two-year patient reported outcomes (PROs) in patients undergoing RSA. We hypothesized that fellow involvement would increase surgical times without affecting outcomes. The potential cofounding effects of age, sex, pre-op ASES, pre-op VR-12 Mental (MCS) and Physical (PCS) Component scores, and Weighted Charlson comorbidity Index (CCI) on surgical times and patient outcomes were also analyzed.

## METHODS:

This was a retrospective cohort study of patients who underwent RSA at a single, academic institution. The faculty cycled on and off teaching fellows, allowing a comparison of the differences with and without fellow involvement. Patients undergoing revision surgery were excluded. Surgical data was obtained by data entered by the surgical team at the time of surgery (RedCap), radiographic images, and chart review. The ASES scores were recorded using the SOS survey platform. Analyses of Covariance (ANCOVAs) compared patients with and without fellow involvement while controlling for age, sex, pre-op ASES, pre-op VR-12 Mental (MCS) and Physical (PCS) Component scores, and weighted Charlson comorbidity Index (CCI).

RESULTS: The final cohort included 149 patients with a mean age of 70.8+/-7.0 years. Fellows were involved in 106 procedures (71.1%). The ASES scores Fellow involvement was associated with a significant increase in OR time (9.9 minutes, p=0.037). Fellow involvement in a surgery was not associated with a significant difference in two-year ASES scores (p=0.744). Male sex (p=0.035) and VR-12 MCS (p=0.002) were found to have a significant association with higher ASES scores. Age was found to have a significant association with increased OR time (p<0.001).

DISCUSSION AND CONCLUSION: Fellow involvement during RSA was associated with statistically significant increased surgical times but no difference in two-year ASES scores. The clinical relevance suggests that the additional time spent with fellow teaching increases cost but does not impact outcomes.