

#196 Weston Buehring

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Comparing Relative Value Units among Shoulder Arthroplasty, Hemiarthroplasty, and ORIF for Proximal Humerus Fractures in the Elderly: Which is Most Worth Your Time?

Introduction: Data pertaining to the cost effectiveness of various surgical management options for proximal humerus fractures in the elderly population has yet to be addressed. This study aimed to compare the relative economic value, represented by relative value unit (RVU) reimbursements, of 3 surgical options for proximal humerus fractures, which include arthroplasty (reverse [RSA] and total [TSA]), hemiarthroplasty (HA), and open reduction and internal fixation (ORIF).

Methods: The National Surgical Quality Improvement Program (NSQIP) database was queried to identify the surgical management provided for proximal humerus fractures in patients > 65 years of age from 2008 to 2016. Operative times were also queried. Univariate analysis compared RVU per minute, reimbursement rate, and the average annual revenue across cohorts based on respective operative times.

Results: A total of 1,437 patients were included (RSA/TSA, n=259; HA, n=418; ORIF, n=760). RSA/TSA generated a mean RVU per minute of 0.197 (SD 0.078; 95%CI [0.188, 0.207]), which was significantly greater than the mean RVU per minute for 23470 HA (0.156; SD 0.057; 95%CI [0.148, 0.163]), 23616 HA (0.166; SD 0.065; 95%CI [0.005, 0.156]), and ORIF (0.135; SD 0.048; 95%CI [0.132, 0.138]; P<0.001). This converted to respective reimbursement rates of \$6.97/min (SD 2.78; 95%CI [6.63, 7.31]), \$5.48/min (SD 2.05; 95%CI [5.22, 5.74]), \$5.83/min (SD 2.28; 95%CI [5.49, 6.16]) and \$4.74/min (SD 1.69; 95%CI [4.62, 4.87]). After extrapolation, respective average annual revenues were \$580,385.84, \$456,632.77, \$475,076.82, and \$395,608.48.

Discussion: Our study found RSA/TSA provides significantly greater reimbursement rates compared to HA and ORIF. Orthopaedic surgeons can use this information to optimize daily procedural cost-effectiveness in their practices.