



## Differences in Hospital Billing for Total Joint Arthroplasty Based on Hospital Profit Status

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**Introduction:** Regional variations in hospital billing for total joint arthroplasty (TJA) have been previously reported. It is unclear however, what differences exist in hospital charges for TJA based on hospital profit status.

**Methods:** CMS Inpatient Provider Utilization and Payment Data were used for Medicare Severity Diagnosis Related Group (MS-DRGs) 469 (Major Joint Replacement with Major Complicating or Comorbid Condition) and 470 (Major Joint Replacement without Major Complicating or Comorbid Condition) for the fiscal year 2011 were analyzed. Generalized estimating equations (GEE) were used to determine the association of hospital profit status (Non-profit, Government supported, and Proprietary) with CMS charges and payment controlling for census region, MS-DRG, and total number of discharges. Due to nonnormality, charges and payments were log-transformed and inflation adjusted using the Consumer Price Index 2011 factor of 1.043491791.

**Results:** Data from 932 hospitals was available for DRG 469 and 2,750 hospitals for DRG 470. Significant differences in billing between institutions existed with median average hospital charges for non-profit, government, and proprietary institutions being \$70,513.96, \$73,541.13, and \$113,204.25 ( $p < .0001$ ) respectively for DRG 469 and \$45,363.72, \$44,956.76, and \$62,714.90 ( $p < .0001$ ) respectively for DRG 470. Median average CMS payments for non-profit, government, and proprietary institutions for DRG 469 were \$22,333.85, \$21,346.71, and \$21,280.97 ( $p = .017$ ) respectively and \$14,461.75, \$14,465.93, and \$13,733.40 ( $p < .0001$ ) respectively for DRG 470. Multivariate analyses indicate that nonprofit hospitals charge 5% more ( $p = .021$ ) and receive 3% less ( $p = .011$ ) payment compared to Government hospitals. Proprietary hospitals charge 34% more ( $p < .0001$ ) and receive 7% less ( $p < .0001$ ) payment compared to Government hospitals.

**Conclusion:** Significant differences in hospital charges based on institution profit status were found, with proprietary institutions charging significantly more than non-profit and government supported institutions. However, proprietary institutions had the lowest median average reimbursement. The reasoning behind the billing practices of hospital charging 4-5 times their expected reimbursement remains unclear.