

# Contemporary Trends in Hospital and Surgeon Reimbursement for Revision Hip and Knee Total Joint Arthroplasty

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**INTRODUCTION:** Revision hip and knee total joint arthroplasty (TJA) is associated with an estimated 76% higher cost burden than primary TJAs. However, previous studies have shown that the value of reimbursements has been decreasing, causing growing concerns for hospitals and surgeons regarding the financial sustainability of these resource-expensive procedures. The contemporary trends of hospital and physician reimbursement would be important to assess given the recent significant changes in the economic landscape of arthroplasty due to the COVID-19 pandemic and Medicare policy changes. This study aims to investigate the trends of Medicare hospital and surgeon reimbursements for revision total TJA between 2017 and 2021.

**METHODS:** Medicare claims and payments for revision TJA were identified from the Centers for Medicare and Medicaid Services (CMS) Part A and B databases. Hospital claims for revision TJA were identified through Diagnostic-Related Groups (DRGs 467, 468). Surgeon claims were identified using Current Procedural Terminology (CPT) codes for revision hip (27134, 27137, 27138) and knee (27486, 27487) TJA. Yearly submitted charges and reimbursements per procedure were analyzed. All monetary values were adjusted to the 2021 US Dollar based on inflation rates.

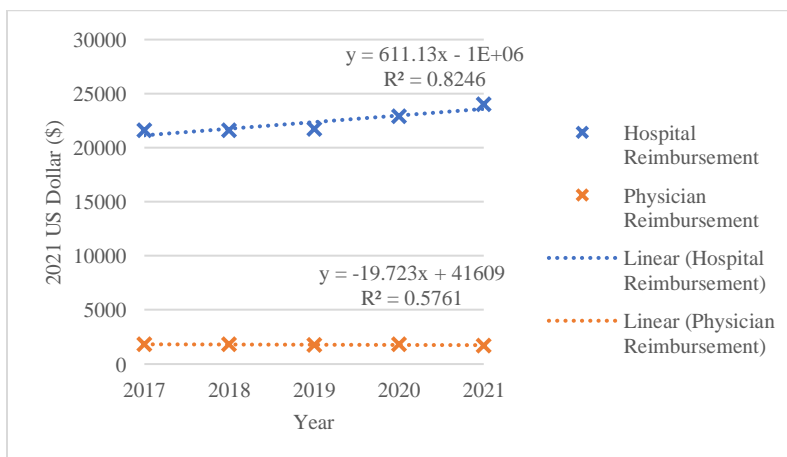
**RESULTS:** A total of 36,309 surgeon claims and 5,208 hospital claims were included in this study. The average hospital reimbursement increased steadily from 2017 to 2021, with an overall change of 11.1% (+\$2,389,  $R^2 = 0.82$ , **Table 1**). The average surgeon reimbursement decreased by -5.2% (-\$95,  $R^2 = 0.58$ , **Fig. 1**). A similar pattern was observed for submitted charges. Hospital charges increased by 21.4% (+\$22,983,  $R^2 = 0.86$ ), whereas surgeon charges decreased by -8.3% (-\$722,  $R^2 = 0.84$ ). The ratio of surgeon reimbursement to hospital reimbursement decreased from 8.43% to 7.19%.

**DISCUSSION:** In the setting of revision TJA, hospital charges and reimbursements have increased significantly; in contrast, surgeon reimbursements have continued to decline despite the unchanged work burden for surgeons. The results of this study suggest that greater efforts should be made to provide fair surgeon reimbursement and reemphasize the need to provide proper financial incentives for surgeons performing revision TJA. Moreover, the rising hospital charges may pose a financial burden for uninsured, underinsured, or privately insured patients who need to negotiate rates based on the submitted hospital charges. Strategies are needed to control hospital charges through cost containment methods and improvements to the value of care.

**SIGNIFICANCE/CLINICAL RELEVANCE:** The decreasing value of surgeon reimbursement for revision TJAs, in the setting of increasing charge and reimbursement for hospitals, indicates the need to provide fair financial incentives for surgeons performing revision TJA.

**Table 1.** Trends in revision total joint arthroplasty associated charge and reimbursement per procedure for hospitals and surgeons from 2017 to 2021, adjusted to the 2021 US \$.

		2017	2018	2019	2020	2021	% Change	R <sup>2</sup>
Hospital (Medicare Part A)	Charge (\$)	107,620	111,436	114,374	122,650	130,603	21.4	0.96
	Reimbursement (\$)	21,599	21,594	21,734	22,928	23,988	11.1	0.82
Surgeon (Medicare Part B)	Charge (\$)	8,743	8,519	8,207	7,835	8,021	-8.3	0.84
	Reimbursement (\$)	1,820	1,818	1,771	1,811	1,725	-5.2	0.58



**Figure 1.** Trends in hospital reimbursement (blue) and surgeon reimbursement (orange) of revision total hip and knee joint arthroplasty from 2017 to 2021, adjusted to the 2021 US \$.