

# Decreased Payment for Sicker Patients: Government Significantly Reduced Episodic Reimbursement for Complex Surgical Hip Fracture Treatment from 2011 to 2019

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**INTRODUCTION:** There is a current interest regarding episodic-based reimbursement models in orthopaedic surgery. In particular, the current Bundled Payments for Care Improvement (BPCI) bundle for hip fractures has undergone vast evolution throughout the last decade. The currently voluntary bundle continues to undergo evaluation, after the planned mandatory Surgical Hip and Femur Fracture Treatment (SHFFT) hip fracture bundle was repealed by prior administration just before its initialization. Given the ongoing change occurring within hospital payment for hip fractures in the United States, the purpose of this study was to evaluate actual Medicare reimbursement to hospitals for all hip fractures billed to Medicare from 2011 to 2019.

**METHODS:** The Inpatient Utilization and Payment Public Use File from the Centers for Medicare & Medicaid Services was queried for all diagnostic related groups (DRGs) included in current hip fracture BPCI bundle (480: Hip and femur procedure except major joint with major CC (complication or comorbidity); 481: Hip and femur procedure except major joint with CC; 482: Hip and femur procedure except major joint without CC). Extracted data included cost submitted by the hospital and amount paid by Medicare for each admission for all hip fractures billed to Medicare for each year. All data was adjusted for inflation to 2019 US dollars and averaged. The mean percentage of the submitted cost covered by Medicare and the total percentage change for each variable throughout the study period were calculated. A student's t-test was utilized to compare variables with p<.05 indicating significance.

## RESULTS:

From 2011 to 2019, 1,140,269 surgical hip fracture repairs were billed to Medicare, totaling over \$15.5 Billion in payments to hospitals. All episodes were included in this analysis. The mean adjusted Medicare payment for DRG 480 decreased by \$2134.08 (-9.6%, p<.001), and remained stable for DRGs 481 and 482 throughout the study. For all DRGs, the mean cost submitted by the hospital increased by 25.5% throughout the study period (p<.001). Meanwhile, the mean percentage of the total submitted cost of admission covered by Medicare across all DRGs decreased by 5.5% throughout the study period (p<.001) (Table 1).

## DISCUSSION AND CONCLUSION:

Mean Medicare reimbursement to hospitals for hip fracture episodes of care decreased by nearly 10 percent for DRG 480 (the most problematic patients), and remained stable for DRGs 481 and 482 throughout the study. Meanwhile, the average total cost submitted by hospitals per admission increased for all DRGs. Further, for all included admissions, Medicare reimbursed a decreasing percentage of the hospital's total submitted costs throughout the study period across all admission types. It is unclear what effect decreasing reimbursement for complex health care conditions will have on patient care. Consideration of these findings will be important for policy-makers, hospitals, and surgeons as continued progress is made to advance agreeable reimbursement models in surgical hip fracture care.

DRG Code	DRG Description	Number of Admissions	Mean cost submitted by hospital (2019 US\$)	Mean amount paid by Medicare (2019 US\$)	Percent of submitted cost covered by Medicare
<b>2011</b>					
480	Hip and femur procedures except major joint w MCC	17,851	\$80,387.37	\$20,931.29	26.0%
481	Hip and femur procedures except major joint w CC	77,525	\$52,307.88	\$12,211.48	23.4%
482	Hip and femur procedures except major joint w/o CC	20,739	\$42,399.68	\$9,795.26	23.1%
<b>2011 Average</b>		116,115	\$58,364.98	\$14,312.68	24.2%
<b>2019</b>					
480	Hip and femur procedures except major joint w MCC	28,823	\$103,635.33	\$20,161.93	19.5%
481	Hip and femur procedures except major joint w CC	79,224	\$72,784.11	\$13,367.34	18.4%
482	Hip and femur procedures except major joint w/o CC	22,098	\$57,735.94	\$10,508.99	18.2%
<b>2019 Average</b>		130,145	\$78,051.79	\$14,679.42	18.7%
<b>Mean % Change from 2011-2019 (±SD, p-value)</b>					
480		+61.5%	+21.0% p<.001**	-9.6% p<.001**	-6.6% p<.001**
481		+2.2%	+30.6% p<.001**	+2.8% p=.276	-5.0% p<.001**
482		+6.6%	+27.8% p<.001**	+0.7% p=.654	-4.9% p<.001**
<b>Total Average Change 2011-2019</b>		+12.1%	+25.5% p<.001**	-5.1% p<.001**	-5.5% p<.001**

Table 1. Adjusted Reimbursement Trends. All values adjusted for inflation to 2019 US dollars.  
(MCC = major comorbidity or complication, CC = comorbidity or complication)  
\*\* = significant p-value <.05