

Ambulatory Payment Reclassification of Total Shoulder Arthroplasty Driven by Implant Cost Reduces Total Hip Arthroplasty and Total Knee Arthroplasty Reimbursement

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INTRODUCTION: In 2024, the Centers for Medicare and Medicaid Services (CMS) reassigned total shoulder arthroplasty (TSA) procedures to a new ambulatory payment classification (APC) group, resulting in a \$4,727 (36%) increase in facility reimbursement. Conversely, both total knee arthroplasty (TKA) and total hip arthroplasty (THA) remain classified under the same APC code with reimbursements decreasing by approximately \$265. The purpose of this study was to determine whether the CMS reclassification was justified by comparing facility costs between the three procedures.

METHODS: We reviewed a consecutive series of 24,513 patients undergoing primary THA, TKA, and TSA from 2015 through March 2024 at four orthopaedic specialty hospitals. Data on supply costs including individual implant and medication costs was recorded. Itemized facility costs were analyzed using a time-driven activity-based costing (TDABC) algorithm and subsequently compared between THA, TKA, and TSA.

RESULTS: Of the study population, 11,422 (47%) underwent THA, 11,595 (47%) TKA, and 1,496 (6%) TSA. TSA patients had higher overall facility (\$9437 vs. \$6220 vs. \$5735, p<0.001), personnel (\$2652 vs. \$2055 vs. \$2172, p<0.001), supply (\$725 vs. \$482 vs. \$688, p<0.001), and implant costs (\$6015 vs. \$3635 vs. \$2812, p<0.001) when compared to THA and TKA patients. From 2015-2024, implant cost increased the most for TSA (109%), followed by TKA (41%), and THA (33%). Conversely, non-implant costs decreased over the study period for TKA (20%), TSA (14%), and THA (8%).

DISCUSSION AND CONCLUSION:

While facilities should be appropriately reimbursed for TSA, which had approximately \$500 more personnel and supply costs compared to THA and TKA, the rapid increase in implant pricing is the largest driver for facility costs for TSA. CMS should consider alternative reimbursement methodology to APC, such as negotiating directly with implant companies as they do with prescription drug pricing, as to not penalize facilities for high quality THA and TKA care.

Table 1. Overall personnel and supply costs for THA, TKA, and TSA performed at orthopaedic specialty hospitals from 2015 to 2024 (n=24,513)

	THA	TKA	TSA	p-value
	(n=11,422)	(n=11,595)	(n=1,496)	
Personnel Cost (\$)				
Total	2053 ± 429	2172 ± 465	2652 ± 457	<0.001
Preoperative	248 ± 55.5	277 ± 45.1	298 ± 36.6	<0.001
Surgery	1133 ± 225	1225 ± 256	1882 ± 250	<0.001
Postoperative	120 ± 45.7	122 ± 50.0	123 ± 45.4	<0.001
Implant Cost (\$)				
Total	3693 ± 800	2802 ± 1078	4055 ± 1022	<0.001
Medication Cost (\$)				
Total	46.4 ± 75.3	42.6 ± 87.9	45.8 ± 102	<0.001
Additional Supply Cost (\$)				
Total	482 ± 239	488 ± 311	725 ± 286	<0.001
Total Cost (\$)	6220 ± 961	5735 ± 1148	9437 ± 1461	<0.001
Where to Incision (mm)				
Where to Close (mm)				
Close to Where to Incision (mm)				
Total OR Time (min)				
Time to PACU (min)				
Length of Stay (days)				
Values given as mean ± SD				
APC/C: Post-operative Care Units, OR: Operating Rooms				

Table 2. Implant costs for THA, TKA, and TSA performed at orthopaedic specialty hospitals from 2015 to 2024 (n=24,513)

	THA	TKA	TSA	p-value
	(n=11,422)	(n=11,595)	(n=1,496)	
2015				
Implant Cost (\$)	3157 ± 433	2397 ± 441	3264 ± 1509	<0.001
Total Cost (\$)	3855 ± 605	2582 ± 796	7120 ± 1541	<0.001
% of Total Cost	34.2 ± 4.57	20.0 ± 6.10	45.9 ± 9.14	<0.001
2016				
Implant Cost (\$)	3596 ± 389	2810 ± 1033	4128 ± 972	<0.001
Total Cost (\$)	4221 ± 959	3441 ± 1098	7822 ± 1094	<0.001
% of Total Cost	37.2 ± 6.69	46.8 ± 8.57	52.7 ± 8.64	<0.001
2017				
Implant Cost (\$)	3696 ± 959	2922 ± 1240	4582 ± 967	<0.001
Total Cost (\$)	4274 ± 978	4058 ± 1375	8067 ± 1191	<0.001
% of Total Cost	36.7 ± 7.28	46.8 ± 11.7	56.2 ± 7.19	<0.001
2018				
Implant Cost (\$)	3361 ± 1222	2883 ± 1247	3780 ± 1394	<0.001
Total Cost (\$)	4051 ± 1273	3888 ± 1528	6120 ± 1522	<0.001
% of Total Cost	34.8 ± 6.91	46.0 ± 10.6	61.2 ± 8.23	<0.001
2019				
Implant Cost (\$)	3222 ± 824	2363 ± 1022	4087 ± 1393	<0.001
Total Cost (\$)	3960 ± 922	3111 ± 1032	6328 ± 1461	<0.001
% of Total Cost	46.2 ± 6.65	45.8 ± 11.6	64.5 ± 8.14	<0.001
2020				
Implant Cost (\$)	3486 ± 658	2262 ± 914	4111 ± 1286	<0.001
Total Cost (\$)	4268 ± 831	2382 ± 980	8861 ± 1440	<0.001
% of Total Cost	55.6 ± 6.67	46.0 ± 10.9	45.2 ± 8.11	<0.001
2021				
Implant Cost (\$)	3782 ± 813	2977 ± 1089	4488 ± 1415	<0.001
Total Cost (\$)	4294 ± 794	3888 ± 1052	9760 ± 1441	<0.001
% of Total Cost	60.1 ± 5.54	76.7 ± 9.38	45.6 ± 8.72	<0.001
2022				
Implant Cost (\$)	3680 ± 659	3122 ± 926	4340 ± 1515	<0.001
Total Cost (\$)	4256 ± 867	3933 ± 1148	9636 ± 1584	<0.001
% of Total Cost	42.4 ± 5.49	52.4 ± 7.80	45.3 ± 8.52	<0.001
2023				
Implant Cost (\$)	4130 ± 786	3126 ± 898	4796 ± 1489	<0.001
Total Cost (\$)	4523 ± 885	3938 ± 1122	10222 ± 1731	<0.001
% of Total Cost	45.2 ± 6.51	52.4 ± 7.80	45.7 ± 8.72	<0.001
2024				
Implant Cost (\$)	4258 ± 723	3084 ± 715	4832 ± 1118	<0.001
Total Cost (\$)	6699 ± 962	3888 ± 1052	10124 ± 1176	<0.001
% of Total Cost	45.4 ± 5.67	53.3 ± 5.99	47.9 ± 5.35	<0.001
Values given as mean ± SD				

Table 3. Itemized supply and facility costs for THA, TKA, and TSA performed at orthopaedic specialty hospitals from 2015 to 2024 (n=24,513)

	THA	TKA	TSA	p-value
	(n=11,422)	(n=11,595)	(n=1,496)	
2015				
Personnel Cost (\$)	2053 ± 429	2172 ± 465	2652 ± 457	<0.001
Supply Cost (\$)	482 ± 239	488 ± 311	725 ± 286	<0.001
Medication Cost (\$)	46.4 ± 75.3	42.6 ± 87.9	45.8 ± 102	<0.001
Implant Cost (\$)	3157 ± 433	2397 ± 441	3264 ± 1509	<0.001
Total Cost (\$)	3855 ± 605	2582 ± 796	7120 ± 1541	<0.001
% of Total Cost	34.2 ± 4.57	20.0 ± 6.10	45.9 ± 9.14	<0.001
2016				
Personnel Cost (\$)	2172 ± 465	2283 ± 478	2810 ± 1033	<0.001
Supply Cost (\$)	482 ± 239	488 ± 311	725 ± 286	<0.001
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OR: Operating Rooms.