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.

	THA (n=11,422)	TKA (u=11,595)	TSA (n=1496)	p-value
Personnel Cost (\$)				
Total	2055 ± 429	2172 ± 465	2652 ± 457	<0.001
Preoperative	268 ± 53.5	257 ± 63.1	298 ± 34.6	<0.001
Surgery	1133 ± 253	1215 ± 316	1582 ± 330	<0.001
PACU	130 ± 45.7	122 ± 50.0	133 ± 45.4	<0.001
Postoperative	523 ± 375	579 ± 398	639 ± 11.5	<0.001
Implant Cost (5)	3635 ± 869	2812 ± 1058	6015 ± 1622	<0.001
Medication Cost (S)	48.4 ± 75.5	62.6 ± 87.9	45.8 ± 102	< 0.001
Additional Supplies Cost (\$)	482 ± 219	688 ± 311	725 ± 286	<0.001
Total Cost (\$)	6220 ± 941	5735 ± 1144	9437 ± 1661	<0.001
Wheels In to Incision (min)	25.8 ± 7.38	25.2 ± 7.54	40.2 ± 8.06	< 0.001
Cut to Close (min)	65.8 ± 16.6	72.6 ± 17.7	107 ± 24.3	<0.001
Close to Wheels Out (min)	4.55 ± 3.01	4.73 ± 2.63	6.71 ± 3.71	< 0.001
Total OR Time (min)	96.1 ± 19.8	103 ± 20.4	154 ± 25.5	<0.001
Time in PACU (min)	64.3 ± 32.3	64.5 ± 30.4	101 ± 49.8	< 0.001
Length of Stay (days)	0.98 ± 0.59	1.07 ± 0.62	0.92 ± 0.50	-0.001

- Contract	s from 2015 to 2021	THA	TKA	TSA		
		(m=11,422)	(n=11,595)	(n=1,496)	p-value	
2015						
	Implant Cost (\$)	3157 ± 433	2197 ± 641	3264 ± 1599	< 0.001	
	Total Cost (5)	5835 ± 635	5582 ± 798	7130 ± 1741	< 0.001	
	% of Total Cost	54.2 ± 4.57	39.0 ± 6.10	43.9 ± 9.14	< 0.001	
2016						
	Implant Cost (\$)	3596 ± 889	2\$10 ± 1013	4128 ± 975	< 0.001	
	Total Cost (\$)	6231 ± 950	5941 ± 1098	7632 ± 1084	<0.001	
	% of Total Cost	57.2 + 6.69	46.4 ± 9.57	53.7 ± 8.64	-10.000	
2017						
	Implant Cost (S)	3600 ± 959	2932 ± 1343	4392 ± 965	<0.001	
	Total Cost (\$)	6274 ± 978	6058 ± 1373	8067 ± 1191	<0.001	
	% of Total Cost	56.7 ± 7.25	46.6 ± 11.7	54.2 ± 7.19	< 0.001	
2018						
	Implant Cost (\$)	3363 ± 1222	2693 ± 1247	5705 ± 1394	-0.001	
	Total Cost (\$)	6051 ± 1273	5668 ± 1315	9220 ± 1522	<0.001	
	% of Total Cost	54.8 ± 6.91	46.0 ± 10.6	61.2 ± 6.25	-0.001	
2019						
	Implant Cost (S)	3225 ± 824	2363 ± 1022	6087 ± 1393	<0.001	
	Total Cost (\$)	5900 ± 922	5311 ± 1032	9520 ± 1461	<0.001	
	% of Total Cost	542+665	43.0 + 11.4	633+634	<0.001	
2020						
	Implant Cost (\$)	3486 ± 658	2562 ± 914	6111 ± 1286	< 0.001	
	Total Cost (\$)	6268 ± 831	5502 ± 980	9861 ± 1440	< 0.001	
	% of Total Cost	55.6 ± 6.67	46.0 ± 10.9	61.5 ± 6.11	< 0.001	
2021						
	Implant Cost (\$)	3782 ± 613	2917 ± 1009	6460 ± 1415	-0.001	
	Total Cost (\$)	6294 ± 794	5690 ± 1052	9760 ± 1441	-10.001	
	% of Total Cost	60.1 ± 5.54	50.7±9.38	65.6 ± 6.72	<0.001	
2022						
	Implant Cost (\$)	3949 ± 650	3122 ± 926	6540 ± 1515	<0.001	
	Total Cost (\$)	6326 ± 807	5933 ± 1144	9610 ± 1584	< 0.001	
	% of Total Cost	62.4 ± 5.49	52.4 ± 7.80	67.5 ± 6.52	< 0.001	
2023						
	Implant Cost (\$)	4130 ± 786	3136 ± 898	6796 ± 1669	< 0.001	
	Total Cost (\$)	6525 ± 885	5936 ± 1122	10222 ± 1731	< 0.001	
	% of Total Cost	63.2 ± 6.51	52.6 ± 7.29	65.7 ± 6.73	< 0.001	
2024						
	Implant Cost (S)	4230 ± 723	3094 ± 715	6832 ± 1118	-10.001	
	Total Cost (\$)	6699 ± 962	5906 ± 1032	10152 ± 1176	<0.001	
O.L.	% of Total Cost	63.4 ± 6.87	53.3 ± 5.99	67.0 ± 5.35	< 0.001	

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	Market Cost St.	101 - 201	28.04.100	2675 x 266 265 x 105	431 + 304	222
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