## More Money, More Problems: Prior Authorization is a Barrier to Cost-Effective Care in Patients Undergoing Primary Total Knee Arthroplasty

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INTRODUCTION: While prior authorization (PA) was originally intended to reduce unnecessary healthcare utilization, there is now evidence to suggest that its use results in increased administrative burden and delayed access to care. To our knowledge, the financial burden and cost-effectiveness of PA in total knee arthroplasty (TKA) is yet to be examined. The purpose of this prospective study was to quantify the costs associated with obtaining PA in primary TKA patients. METHODS: All commercially insured patients undergoing primary TKA from 2020 to 2022 at our institution were included.

Data on PA status, time to approval or denial, number of denials, and denial reasons was prospectively collected. Additionally, the number of office visits and overall costs of nonoperative treatment received in the year prior to TKA, and from initial PA request to date of surgery, was also recorded. RESULTS:

4,289 patients were included in the analysis. Of these, 2,906 (67.8%) patients required PA and 1,383 (32.2%) did not. Mean cost in the year prior to TKA was significantly higher in patients that required PA prior to surgery ( $$716 \pm 814$  vs.  $$645 \pm 688$ , p=0.005). We also found that mean cost from request date to date of surgery was significantly greater in the PA cohort ( $$166 \pm 238$  vs.  $$85.7 \pm 87.9$ , p=0.002). Main cost drivers in the PA cohort during the year prior to TKA were office visits followed by x-rays. Upon multivariate regression, any addendum requirement was found to increase costs from request date to date of surgery by \$102 (p=0.047).

## **DISCUSSION AND CONCLUSION:**

In the present study, obtaining PA in patients undergoing primary TKA paradoxically increased costs in both (1) the year prior to TKA and (2) from initial request date to date of surgery. Future studies are needed in order to gain a better understanding of the PA approval process.

rice authorization for	Prior	No Prior			Prior Authorization	No Prior Authorization	p-value	and costs (n=4		Prior	No Prior		Independent Variable	Coefficient	Standard Xrrar	95% CI Lower Upp	
	Authorization Required	Authorization	p-value		Required (p=2,596)	(#*1,383)	p-rank			Authorization Required	Authorization	p-value	Age SXESSED [KKT]	-1.36	1.56	-4.43	- 3
	(#=2,986)	(#+1,383)		Authorization Type			-0.001			(#=2,966)	(0~1,383)		Authorization Status [No PA]	-41.5	34.2	-49.5	- 4
pr (years)	61.5 ± 7.24	67.3 ± 8.77	-0.001				40.001	Bescing		44 (1.51%)	21 (1.52%)	0.921	Denial (No)	79.2	53.2	-25.6	
in the second seco			0.364	Inpatient	1502 (51.7%)	614 (44.4%)			Number of Encounters	1.02 + 0.15	1.00 + 0.00	0.01	Denied Inputient, Approved				
Female	1984 (54.5%)	775 (56.0%)		Outpatient	1404 (48.3%)	768 (55.6%)				531 ± 427		0.555	Outpatient [Nis]	-35.8	46.5	-123	- 3
Male	1322 (45.5%)	608 (44.0%)		Denied Insution.					Cast (5)		463 ± 444		Denied on Initial Request (No)	58.1	32.6	-4.96	
200			-8.891	Approved Outputient			0.024	BA Injection		522 (18.0%)	270(19.5%)	0.218	Addendum Required (Yes)	107	41.7	1.74	- 6
White	2109 (72.6%)	1090 (78.1%)			2779 (95.6%)	1340 (97.1%)			Number of Encounters	$3.33 \pm 1.56$	$4.97 \pm 2.85$	-0.001	SIT inpution surgery; SEO, or	The second second	24 reice sutherin	wine .	
Black	384 (13.2%)	122 (8.82%)		Yes	127 (4.37%)				Cast (5)	$793 \pm 519$	751 ± 487	0.269	and observation (all only the second	deres and the bull			
Other	433 (14,2%)	181 (13.1%)		Ye	127 (4.37%)	40 (2.89%)		Steroid Injection	18	1175 (40.4%)	610 (44,1%)	4.423					
Iduation			0.488	Denied on Initial					Number of Encounters	$1.43 \pm 0.66$	$1.73 \pm 0.76$	-0.001					
Non-Hispanic	2968 (95.7%)	1349 (99.0%)		Request			-0.001		Statoid Cast (5)	9.25 ± 9.61	8.43 ± 9.58	0.074					
Hispanio	38 (1.31%)	14 (1.81%)		Na	2840 (97.7%)	1382 (99.9%)		Injection Prefs	entered Free								
IMI (kg/ki <sup>2</sup> )	32.0+5.33	$30.8 \pm 5.20$	<0.001	Yes	66 (2.27%)	1 (0.07%)		Reimbursener	#/S)	471 ± 415	339±324	-0.001					
001	$2.78 \pm 1.28$	$3.49 \pm 1.53$	-0.001					MRI		9 (8.31%)	4 (0.29%)	0.907					
ASA	$2.58 \pm 0.52$	$2.45 \pm 0.53$	0.005	Peer-te-Peer Remained			-0.001		Number of Encounters	1.00 ± 0.00	1.00 + 0.00	1,00					
opations vs.				Peer-to-Peer Required			-0.001		Cont (5)	358 ± 236	208 + 63.9	4.55					
Outputient Sargery	1009-001-0055	41111490	<6.001	Na	2877 (99.0%)	1383 (109%)		Office Made	Case(3)	358.7.236	1165 (88 200	4.58					
Outputient	1407 (48,4%)	769 (55,8%)		Ye	29 (1.90%)	1 (0.0024)			Number of Encounters	247 ± 1.68	2.65 ± 1.80	4.00					
atenity	2407 (48.474)	169 (22,854)	0.145	Addendum Required			-0.001			247.8 138	249+152	4.00					
Left	1383 (47.6%)	692 (50.0%)	0.145	Na	2595 (89.3%)	1383 (109%)			Cent (3)								
Rinh	1523 (52.4%)	691 (50.0%)		Yes	311 (14.25)	0 (0.00%)		PT		91 (7.13%)	55 (3.5956)	4.154					
Yor	100 (0040)	and from the	-9.001	Any Denial			-96.001		Number of Encounters	$11.5 \pm 13.5$	$11.6 \pm 13.0$	4.960					
2820	929 (32,3%)	315 (22.8%)	-16.305				-4.441		Cent (3)	877 ± 799	$435 \pm 361$	4.429					
2821	977 (33.8%)	485 (35.1%)			2434 (85.1%)	1342 (97.0%)		X-Ray		2476 (85.2%)	1246 (99.1%)	-10.001					
2922	999 (34.3%)	583 (42.2%)		Ym	432 (14.9%)	41 (3.0%)			Number of Encounters	1.25 ± 0.52	1.55 ± 0.76	-0.001					
Prese KOOS-JR	44.9 ± 14.5	45.5 ± 14.1	0.003	Dava from Sunzry					Cest (3)	90.9 + 55.0	$80.2 \pm 47.1$	<0.001					
trop SF-12 PC8	33.7 ± 8.27	343±841	0.162	Respect to TKA	46.7 ± 42.4	45.8 ± 42.1	0.336	Total Cast in Y	tar Prior (5)	716 + 814	645 ± 688	1.005					
ostop KOOS-JR	73.3 ± 15.6	743 ± 15.9	0.298	Values given as mean + SD or	N (%)				Request to Surgery (\$)	166 ± 238	\$5.7 ± 87.9	4.992					
ontop SF-12 PCS	47.9 + 10.0	$42.8 \pm 10.4$	0.596						mean ± SD or N (%).		10000						
class given as mean a								PG Delection 10	valuronic Acid Injection;	MRI Marmetic Be	sense Insting	7. Physical Therapy					