

Outpatient Total Knee Arthroplasty Lowers Costs, but Leaves Medicaid Patients and Inpatient Systems with Increasingly Complex, High-Cost Care

Introduction: The Centers for Medicare and Medicaid Services (CMS) removed Total Knee Arthroplasty (TKA) from the inpatient-only list in 2018 with an aim for increased efficiency and cost savings. Payor type may influence trends and costs during this site-of-care transition period. The purpose of this study is to examine cost differences in inpatient versus outpatient TKA by payor type from 2016-2022.

Methods: The Premier Healthcare Database was queried for primary TKA procedures with a principal diagnosis of osteoarthritis from 2016-2022 (N=827,451). Index costs were adjusted for age, sex, hospital type, hospital bed size, region, rurality, and Elixhauser comorbidity index (ECI). Costs were stratified by payor type (Medicare, Medicaid, Private) and insurance structure (managed care capitated, managed care non-capitated, traditional). Adjusted inpatient and outpatient costs were analyzed temporally.

Results: Outpatient TKA was associated with significantly lower adjusted index admission costs (-2,889, $p < 0.001$). Medicaid patients demonstrated the highest costs, while Medicare traditional (-1,444), Medicare managed non-capitated (-1,679), and private payers (-1,672) were lower (all $p < 0.001$). Medicare Advantage showed no significant difference (69, $p = 0.53$). Outpatient utilization increased substantially over time but lagged among Medicaid patients. In contrast, inpatient costs rose (1,103 in 2022 vs 2016, $p < 0.001$), suggesting increasing case complexity.

Conclusion: Cost reductions are driven by site-of-care shift rather than managed care effects. Managed care, including, Medicare Advantage, does not demonstrate reduced inpatient costs. Lower outpatient adoption among Medicaid patients alongside rising inpatient costs highlights potential disparities and increasing burden on inpatient systems.

Table 1 – Adjusted Index Costs for Patients Undergoing Primary Total Knee Arthroplasty by Payer (N=827,451)

Payer Detail	Inpatient		Outpatient	
	Mean Cost	SD	Mean Cost	SD
Medicaid Managed Capitated	18,281.91	6,935	15,838.87	5,516
Medicaid Managed NonCapitated	17,283.34	6,212	15,394.29	4,818
Medicaid Traditional	16,769.62	6,056	14,656.04	5,358
Medicare Managed Capitated	18,194.50	6,852	16,189.92	7,074
Medicare Managed NonCapitated	16,454.56	4,900	15,376.06	4,627
Medicare Traditional	16,652.11	5,054	14,933.91	4,435
Private	16,414.14	5,143	15,272.31	4,839
1-Way ANOVA	<i>p</i> <0.001		<i>p</i> <0.001	

*costs adjusted for age, sex, race, ethnicity, rurality, teaching status, census region, and Elixhauser Comorbidity Index

Figure 1 – Mean Adjusted Costs for Inpatient and Outpatient Primary Total Knee Arthroplasty by Payer Type (2016-2022) (N=827,451)

