MarketScan

WHITE PAPER

Examining variations in elective surgery prices across the U.S.

Manjusha Gokhale, M.A., Principal Data Scientist

merative

Abstract

We examined six common elective surgeries (knee replacement, hip replacement, knee arthroscopy, anterior cervical disc fusion, and gallbladder removal) by component (facility inpatient, facility outpatient, surgeon, anesthesiologist, and implant fee) to see differences by geographic area for the commercially insured population. This analysis uses the Merative MarketScan Commercial Claims and Encounters research database for calendar years 2021-2023 to compare average allowed amount ("price") to the Medicare allowed amount.

Nationally, the selected surgeries in the commercially insured population were: 175% above Medicare for facility price; 180% above Medicare for physician price; 290% above Medicare for anesthesia price; and 185% above Medicare for inpatient DRG price.

Examination by Metropolitan Statistical Area (MSA) and site showed that these averages masked a wide range in prices: New York City was the market leader in reimbursement rate for DRG, outpatient facility rate, outpatient facility provider rate, and anesthesiology rate; Minneapolis had the highest rates for the ambulatory surgical center (ASC) with ASC provider rates exceeding 1000% of Medicare; Chicago usually had the lowest percentage of Medicare for most components. We also found that implant costs were rarely in the claims data nationally. Finally, we found that anesthesiology rates were many multiples of Medicare average, across all geographies.

The findings suggest that price variation does exist by health service components at MSA level and that providers are very aware of their regulatory and reimbursement environment. Both providers and payors seem to seek to maximize as much as their regulatory environment and market strength allows.

Introduction

For decades, studies have shown regional variation in the price of health services in the United States, leading to some patients paying more for surgeries based solely on the city in which they lived. Studies have shown this is due to several factors including regional health policy, market share on the part of payers and providers and changing payment incentives.

In recent years, there have been several initiatives to make health prices for health services address the cost of healthcare. First, state and federal government have passed legislation with bipartisan support aimed at providing price information to consumers, who are increasingly bearing a larger portion of bills due to enrollment in high-deductible health plans.

Next, payers are increasingly moving to bundled payment for both inpatient and outpatient procedures, with the idea that this bundling would create incentives for providers to perform more cost-effective surgery. Finally, more complex surgeries are moving to the outpatient setting, an existing trend that gained in frequency following the limitations on inpatient admissions in early 2020 at the beginning of the COVID-19 pandemic in the United States.

This study deconstructs common elective surgeries into their individual components and then uses them to compare the price across representative MSAs. Examination of prices by bundle, code, setting, and location, allows us to examine both overall regional price differences as well as identify any cost-shifting behavior.

Methods

Data

This analysis uses the Merative MarketScan Commercial Claims and Enrollment research databases, which is a research grade nationally representative sample of over 300 million claims from 350 large employer and health plan contributors. MarketScan is considered the "gold standard" of medical data with over 4,000 PubMed citations based on its content.

Time period

The analysis has inpatient and outpatient claims for 2021-2023.

Population

The eligible population was restricted to adult commercial enrollees over age 18 and under age 65. To ensure the entire claims experience for a surgery was captured, people enrolled in HMO or high-deductible health plans were excluded as these plans often have alternative billing arrangements or might not submit claims once either the bundle payment or capitation amount has been reached.

Encounters

We restricted encounters to claims occurring at inpatient facilities, on-campus outpatient facilities, and ambulatory care centers (ASCs). The total allowed amount associated with each encounter was calculated by summarizing the pay field for records associated with the encounter by person, date of encounter, type of provider, geography, type of surgery, site of care, and health service component.

Encounters included those with procedure modifiers that denote non-standard care from this analysis, such as those involving trainees or nurse-practitioners, two or more surgeons, or those occurring as part of several concurrent surgeries.

Common elective surgeries

We chose six surgeries (total knee replacement, total hip replacement, lap sleeve gastrectomy, anterior cervical disc fusion, knee arthroscopy, gallbladder removal) that represent a large share of commercial elective surgical expenditure.

To allow reliable benchmarking across similar patients, the surgeries were restricted to those procedures without surgical complications or patient comorbidities.

Surgery components

Each of the six surgeries were broken down into five price components: facility non-inpatient, implant (where applicable), provider, anesthesia, and facility inpatient.

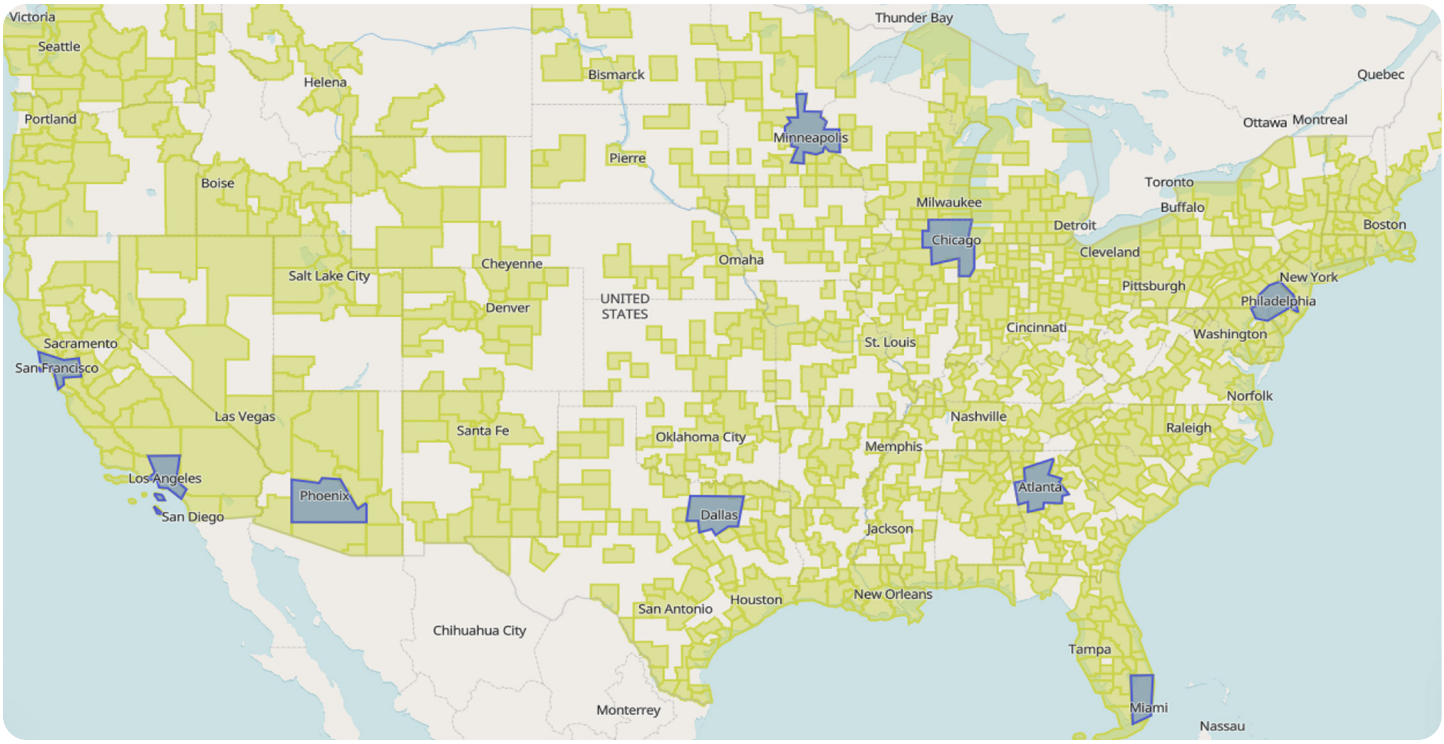
We identified the component for each encounter using the DRG codes for the inpatient acute care facility encounters and the American Medical Association Current Procedure Terminology (CPT) codes and Center for Medicare and Medicaid Services (CMS) Health Care Procedure Codes II (HCPCS) for non-acute care facility encounters. Table 1 shows the codes that define each component of each surgery.

For claims where the same CPT code has both a facility and provider component, we used records from facility encounters to estimate facility amount and records from provider encounters to estimate provider amount.

Figure 1.

Component	Knee Replacement	Hip Replacement	Lap sleeve Gastrectomy	Cervical Disc Fusion	Knee Meniscectomy	Gallbladder Removal
Facility*	Total Knee Arthroplasty (27447)	Total Hip Arthroplasty (27130)	Laparoscopic sleeve gastrectomy (43775)	Anterior interbody arthrodesis (CPT 22551)	Knee Arthroscopy w/ meniscectomy (29881)	Laparoscopic cholecystectomy (47562)
Implant	Implantable Joint Device (C1776)	Implantable Joint Device (C1776)		Prosthetic implant not otherwise specified. (HCPCS L8699)		
Provider**	Total Knee Arthroplasty (27447)	Total Hip Arthroplasty (27130)	Laparoscopic sleeve gastrectomy (43775)	Anterior interbody arthrodesis (CPT 22551)**	Knee Arthroscopy w/ meniscectomy (29881)	Laparoscopic cholecystectomy (47562)
Anesthesia	Anesthesia Total Knee Arthroplasty (01402)	Anesthesia Open Total Hip	Anesthesia for Procedures on Upper Abdomen (00797)	Anesthesia for Procedures on the Cervical Neck and Spine (00600)	Anesthesia Knee Arthroscopy NOS (01402)	anesthesia for intraperitoneal procedures in the upper abdomen, NOS (00790)
Inpatient	Major Hip and Knee Joint Replacement or Reattachment of Lower Extremity w/o Major Complications or Comorbidities (470)		OR Procedures for Obesity w/o CC/MCC (621)	Cervical Spinal Fusion w/o CC/MCC (473)	Knee Procedures w/o PDX of infection and w/o CC/MCC (489)	Laparoscopic cholecystectomy w/o CDE and w/o CC/MCC (419)

* Use service line from facility claims only
** Use service line from professional services claims only



Geography

Price variation across country was estimated by examining both the national data and to 10 geographically disparate Metropolitan Statistical areas (MSAs): Atlanta-Sandy Springs GA; Chicago-Naperville, IL-IN-WI; Dallas-Fort Worth, TX-OK; Los Angeles-Long Beach CA; Miami-Port St Lucie-Fort Lauderdale FL; Minneapolis-St Paul, MN-WI; New York-Newark, NY-NJ-CT-PA; Philadelphia-Reading-Camden, PA-NJ-DE-MD; Phoenix-Mesa, AZ; and San Francisco-Oakland-Fremont, CA. Together, these MSAs had over 83 million residents or 25% of the U.S. population in 2024 (Source: US Census Annual Estimates of the Resident Population for the Metropolitan Statistical Areas in the US and Puerto Rico: April 1, 2020, to July 1, 2024). These geographies are in blue in Figure 2.

Price Rate

As the prices for medical services do not follow a normal distribution and to better reflect the allowed amounts that seemed reasonable, the analysis excluded encounters for prices which were above the 99th percentile for the nation for 2021-2023 for each component.

As standard Medicare is mandated by federal statute to be the lowest priced payer of health services and because many payers and providers set their own price relative to Medicare reimbursement, price is reported both as a percentage of the MarketScan total but also as a percentage of Medicare payment rates for the service, site and MSA.

These Medicare rates, which depend on several factors including: facility type, provider specialty, disparate or underserved provider designation, geographic area, were provided by Lantern for use in this white paper. The detailed Lantern TrueRate methodology is in Appendix 1.

The Dallas-Fort Worth MSA served as a proxy national price for facility outpatient, provider and inpatient as Lantern found the overall rates for each component of interest, after application of factor weights were close to one. For anesthesia there is a singular national rate applied for each MSA.

Figure 3.

Component	Minimum Rate (Medicare)	Maximum Rate (MarketScan)
Facility outpatient price*	Annual ASC rate by MSA for ASCs Annual APC rate by MSA for Outpatient	99th percentile for year (national)
Provider price*	Average professional price by MSA	99th percentile for year (national)
Anesthesia price	Average national Medicare by year	99th percentile for year (national)
Implant price*	No minimum rate	No maximum rate
Inpatient price*	Average Medicare DRG rate for MSA	99th percentile for 2021-2023 (national)

.* Dallas-Fort Worth serves as a proxy for the national minimum MarketScan rate.

Results

The full list of components, geography, and price rates relative to national rates and to percentage of Medicare rates for the MSA is available in Appendix 2. Outlined below are the key findings from this analysis. To allow for robust and reliable analyses, comparisons of average price are limited to those encounters with at least 30 encounters in the MSA for the surgical component of interest.

Encounters

There were 702,505 encounters that met the inclusion criteria and exclusion criteria for the surgical component. Most occurred in the outpatient setting (66%), followed by ASC (29%) and inpatient facility (5%).

Figure 4 shows that the Atlanta MSA has the most surgical encounters (16,925), with 52% of surgical encounters occurring in the outpatient setting. The Dallas MSA has 13,480 surgical encounters with 69% of surgical encounters occurring in the hospital outpatient setting. The New York City MSA has 10,279 encounters, primarily in the hospital outpatient setting (61%). Finally, Phoenix rounded out the top MSAs with 9,734 encounters, with the majority in the hospital outpatient setting (62%).

Examination of encounters by site of service shows some impact of regulatory barriers. Minneapolis has no certificate of need (CON) requirement for opening new surgical facilities and has 53% of all encounters occurring at ASCs. Georgia waives their CON when the ASCs owners are entities independent of existing facilities; 46% of surgical encounters in Atlanta occurred at ASCs. Inpatient encounters may also reflect the patient preference and provider practice patterns more than weather as the inpatient setting was responsible for 13% of encounters in the Philadelphia MSA and 11% of encounters occurred in the New York City MSA, double that of chilly Chicago (5% inpatient encounters) and Minneapolis (4% inpatient encounters).

Figure 4.

Component	Hospital Outpatient (AOP)	Ambulatory Surgery Center (ASC)	Acute Inpatient (IP)	All
MSA	Encounters, N(%)	Encounters, N(%)	Encounters, N(%)	Encounters, N
Atlanta	8,785(52)	7,711(46)	429(3)	16,925
Chicago	5,572(66)	2,507(29)	422(5)	8,501
Dallas	9,309(69)	3,521(26)	650(5)	13,480
Los Angeles	3,216(62)	1,746(34)	247(5)	5,209
Miami	2,248(64)	880(25)	361(10)	3,489
Minneapolis	2,138(44)	2,587(53)	174(4)	4,899
New York City	6,239(61)	2,863(28)	1,177(11)	10,279
Philadelphia	2,056(74)	341(12)	371(13)	2,768
Phoenix	6,038(62)	3,137(32)	559(6)	9,734
San Francisco	660(53)	525(42)	66(5)	1,251
National	466,623(66)	201,156(29)	34,726(5)	702,505

Implants

Examination of rates associated with the price of implants associated with hip and knee surgery or back surgery showed that very few encounters existed in the administrative claims data submitted by facilities and physicians. Nationally, between 2021-2023, there were only 170 administrative claims encounters with joint implant codes and 17,967 with spinal implant codes. Most MSAs had no encounters associated with implant codes, but there was regional variation in coding: Minneapolis MSA was responsible for 19 of the joint implants encounters and 590 of the spinal implant encounters.

Due to this limitation in number of encounters in the claims, the price of implants is not in this market basket of surgical components. However, implants are complicated devices and often include expensive metals such as titanium for strength. One thing is clear: implant prices are not reported separately in the administrative claims.

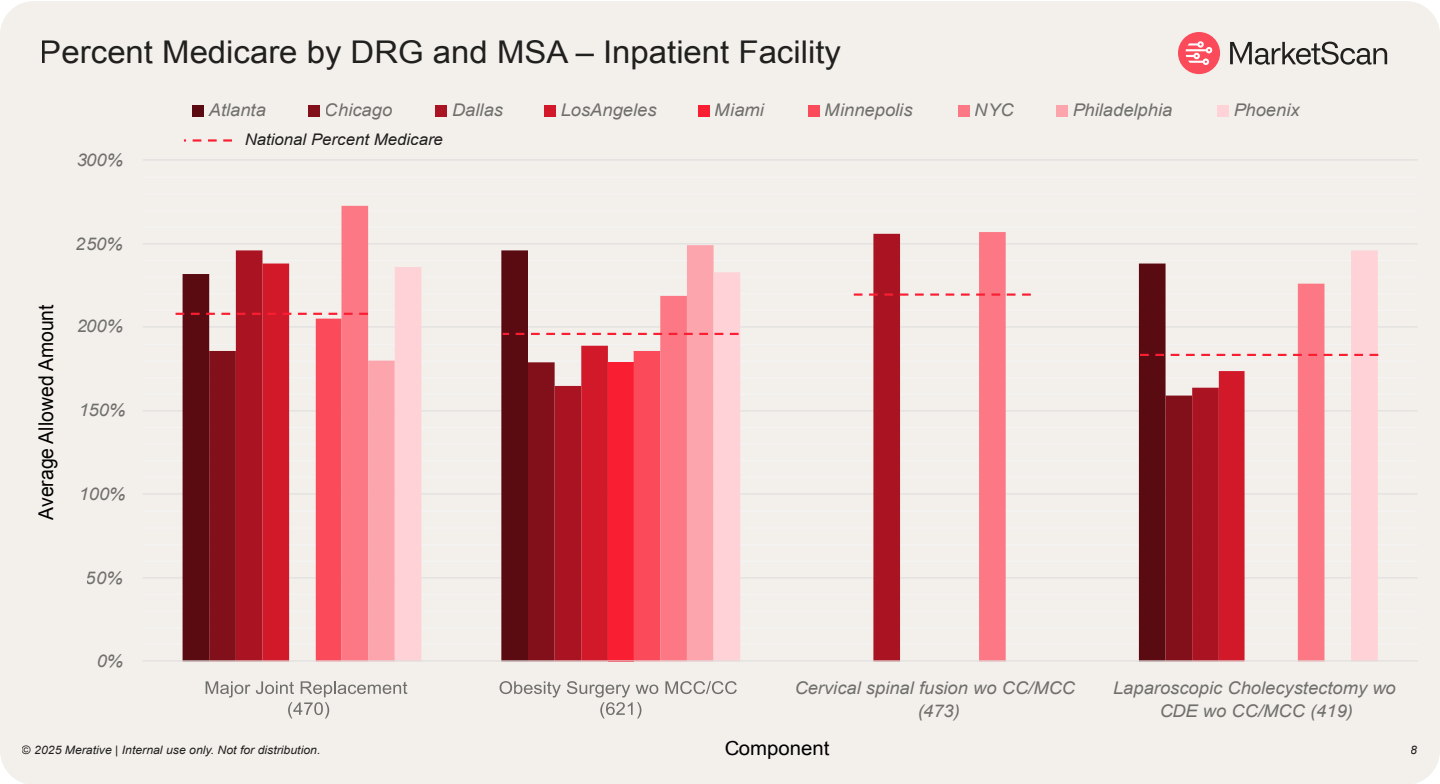
Facility inpatient rate

There were 34,726 admissions for inpatient surgery as defined by facility bills with DRGs. Most of these common surgeries had shifted the outpatient setting, leaving fewer admissions for these uncomplicated elective procedures. To ensure reliable and robust price estimates, price variation analyses were limited to those components where there were more than 30 encounters for 2021-2023 in the MSA.

Nationally, the most common inpatient surgery was for obesity surgery (60% of all surgeries) followed by major joint replacement (26%). While there were 333 admissions for knee arthroscopy nationwide, none of the selected markets had more than 30 admissions in 2021-2023. Cervical spine fusion had only 1,899 admissions with only the New York City MSA and the Dallas MSA having over 30 admissions (63 and 40, respectively).

Examination of average facility price for the DRGs of interest showed that while the New York City MSA market had the highest nominal mean price for **every single DRG**, there was a more complicated story when looking at the DRGs relative to percentage of Medicare (Figure 5). For these, the national averages by surgery ranged from 189% of Medicare for laparoscopic cholecystectomy to 218% for cervical spinal fusion.

Figure 5.



While the New York City MSA had the highest reimbursement rate as a percentage of Medicare for major joint replacement (236% of Medicare) and anterior disc fusion (257% of Medicare), the Philadelphia MSA had the highest rates for obesity surgery (249% of Medicare), and the Phoenix MSA had the highest rate for laparoscopic cholecystectomy (246% of Medicare). By contrast, the Chicago MSA had reimbursement rates spanning 157% for laparoscopic cholecystectomy to 186% for cervical spinal fusion. Chicago was also the only region where inpatient rates were below 200% of Medicare across all surgeries of interest.

Some of these surgeries had low incidence in the inpatient setting: inpatient cervical spinal fusion might reflect the move away from spinal fusion surgery altogether absent any comorbid conditions, while uncomplicated knee procedures may reflect replacement of the outpatient setting for these surgeries.

While 2021-2023 data do have sufficient admissions for bariatric surgery, future analyses may show that the incidence of this has declined due to the rapid adoption of pharmaceutical treatments for obesity.

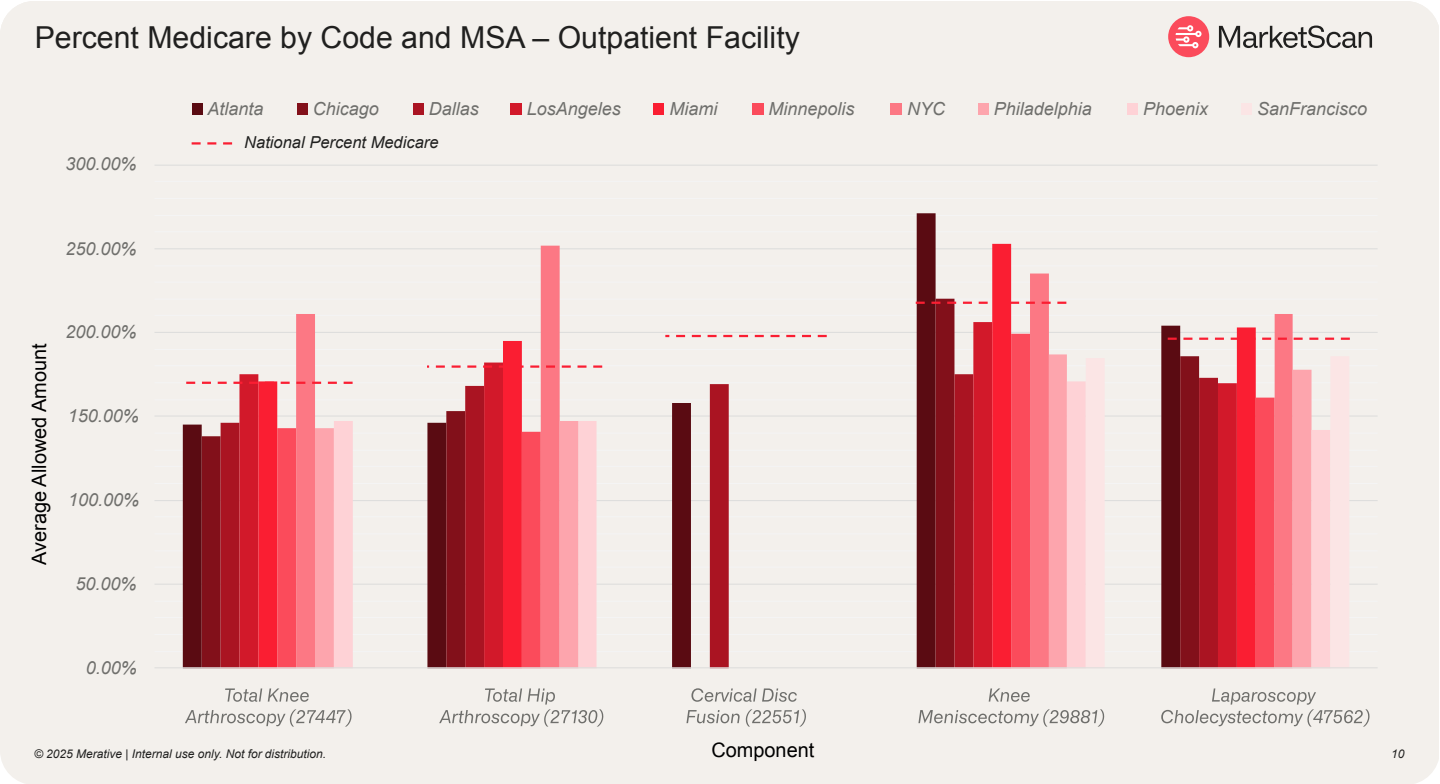
Facility and ASC outpatient rates

In the outpatient setting, the New York City MSA continued to have the highest average allowed amount. Total hip and total knee arthroplasty were the costliest surgical component in New York MSA, which represented 211% and 252% of Medicare, respectively. The New York City MSA also had the highest average allowed amount for knee arthroscopy in the outpatient setting (235% of Medicare).

Knee and hip arthroplasty were also the costliest surgical components in the ASC setting with the Minneapolis MSA showing the highest price with 236% of Medicare for knee replacement and 244% for hip replacement.

Examination of the outpatient facility rates by percentage Medicare (Figure 6a) showed that, for knee surgeries, the Atlanta MSA had the highest percentage with allowed amounts of 271% of Medicare followed by the Philadelphia MSA with allowed amounts of 253% of Medicare, well above the New York City MSA (235% of Medicare) and the national average (216% of Medicare).

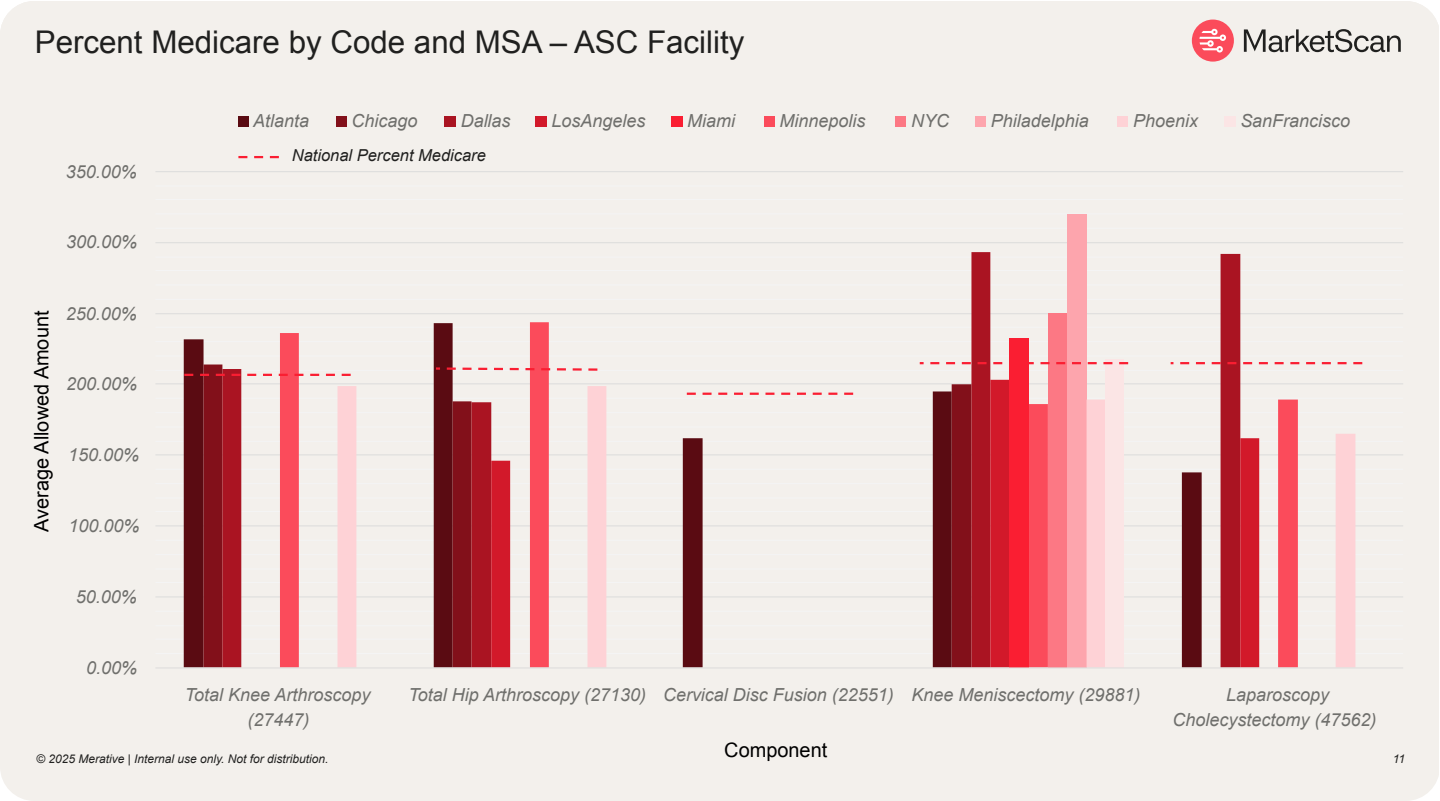
Figure 6a.



In the ASC setting (Figure 6b), the Atlanta MSA once again vied with Minneapolis for highest percentage Medicare for total knee arthroplasty (232% of Medicare for Atlanta vs 236% for Minneapolis) and for total hip arthroplasty (243% of Medicare for Atlanta vs. 244% for Minneapolis). The Philadelphia MSA had an average allowed amount of 320% of Medicare for knee arthroscopy in the ASC setting followed by the Dallas MSA with 293% of Medicare.

Dallas also had the highest average allowed amount percentage for laparoscopic cholecystectomy (292% of Medicare). Finally, the Atlanta and Dallas MSAs were also the two MSAs that performed cervical disc fusion in the facility outpatient setting in sufficient volume for reporting (158% of Medicare for Atlanta, 169% Medicare for Dallas) and, for Dallas, in the ASC setting also (162% of Medicare).

Figure 6b.



Physician (surgeon) rate

Examination of the surgical encounters associated with the claims submitted by surgeons by MSA by site of care and CPT code, again limiting the geographic analysis to those where the number of encounters was greater than 30, the New York City MSA was again the most expensive overall for most surgeries.

The New York MSA was the most expensive MSA for outpatient physician fees (Table 7a) for knee replacement (289% Medicare), hip replacement (286% Medicare), disc fusion, (287% Medicare) and meniscectomy (266% Medicare).

The Atlanta MSA was highest for lap sleeve gastrectomy (177% Medicare), and the Minneapolis MSA was highest for gallbladder removal (309% Medicare). The Dallas MSA had the lowest rate for this setting for nearly all procedures.

The ASC setting told a different, highly lucrative story (Table 7b). National rates compared to Medicare for this setting for physicians ranged from 183% for laparoscopic cholecystectomy to 330% for lap sleeve gastrectomy.

These national figures hid huge variations by MSA with the Minneapolis MSA setting showing the highest prices for knee replacement (1475% of Medicare), hip replacement (1,560% of Medicare), knee arthroplasty (405% of Medicare), and laparoscopic cholecystectomy (307% of Medicare). The Phoenix MSA was highest for gallbladder removal (1,240% of Medicare), and the Atlanta MSA was highest for disc fusion (158% of Medicare).

Figure 7a.

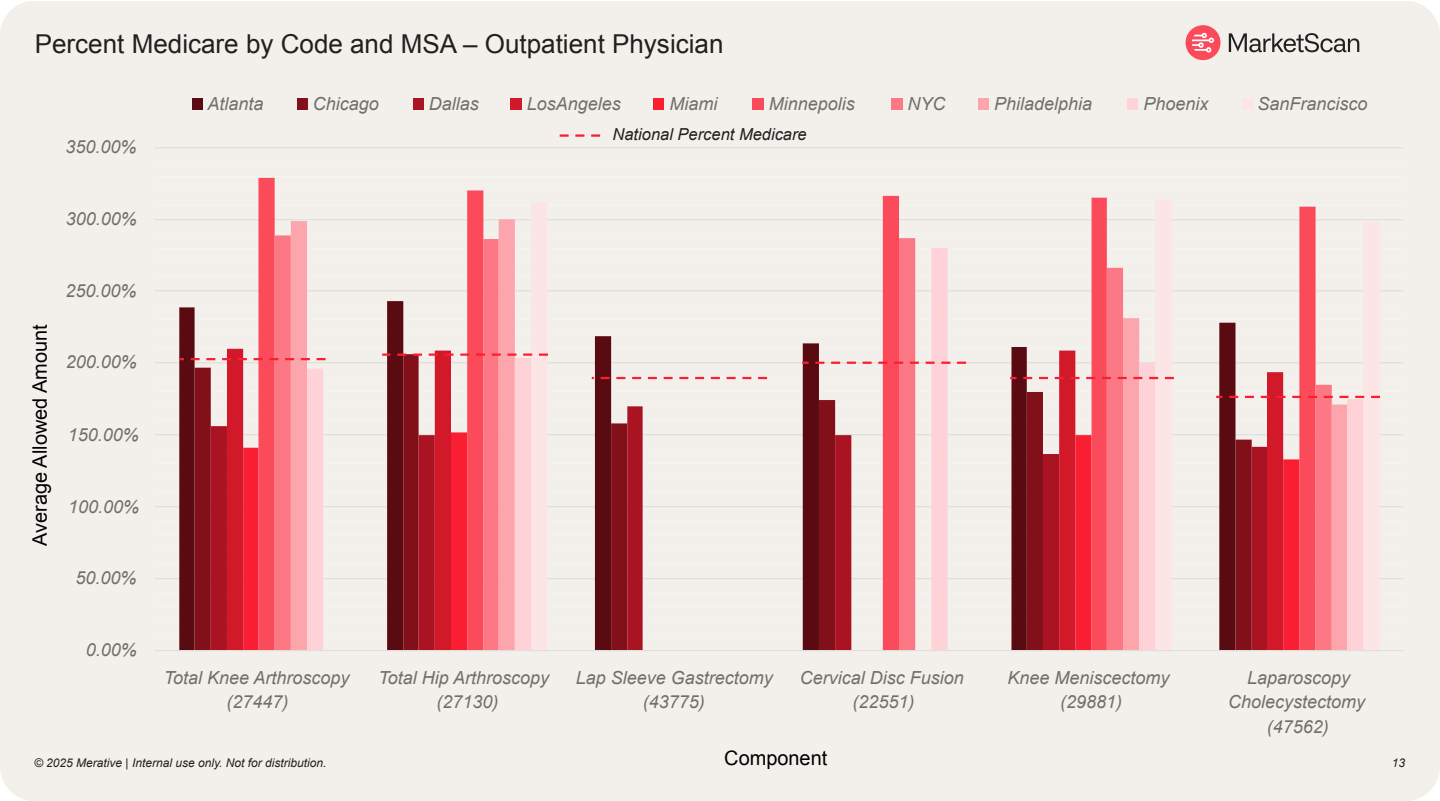
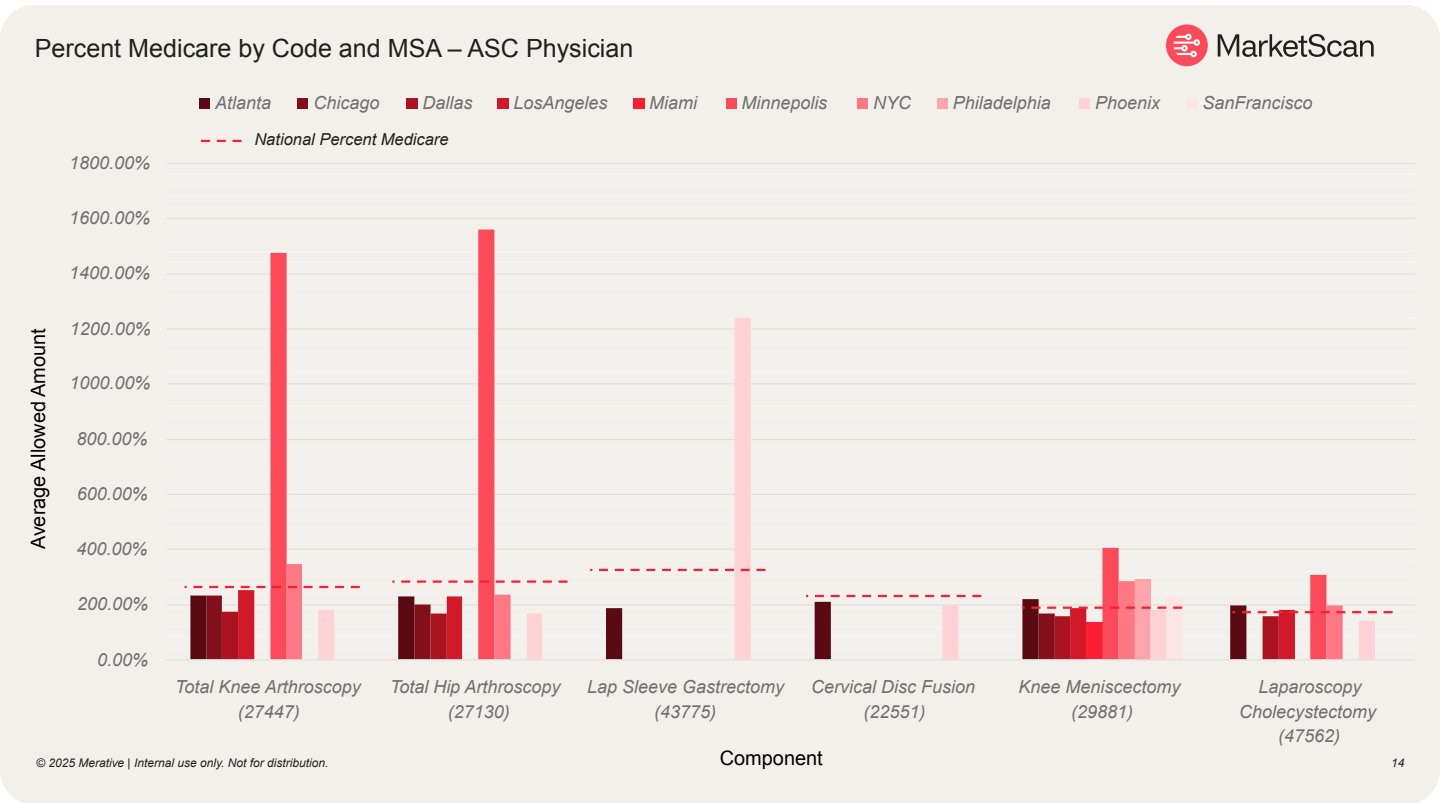


Figure 7b.



Anesthesiology rate

Comparison of anesthesiology rates found that for the outpatient setting (Figure 8a), the New York City MSA again had the highest rates with average surgery rates ranging from 879% of Medicare average for anesthesia for knee replacement, 731% of Medicare average for anesthesia for hip replacement, 728% of Medicare average for anesthesia for knee arthroscopy, 623% of Medicare average for anesthesia for laparoscopy, 585% of Medicare average for anesthesia for lap sleeve gastrectomy and 536% of Medicare average for anesthesia for spinal fusion. By contrast, the anesthesiology fees associated with the outpatient setting in Chicago were the lowest, with average rates of 427% of Medicare average for anesthesia for knee replacement, 334% of Medicare average for anesthesia for hip replacement, 337% of Medicare average for anesthesia for knee arthroscopy, 329% of Medicare average for anesthesia for laparoscopy, and 288% of Medicare average for anesthesia for lap sleeve gastrectomy.

Turning to the ASC setting (Figure 8b), there was no clear market leader: the Dallas MSA had the highest rates for anesthesia for knee arthroscopy (572% of Medicare) and anesthesia for hip replacement (571% of Medicare) and anesthesia for lap sleeve gastrectomy (491% of Medicare); New York City had the highest rates for anesthesia for knee replacement (722% of Medicare) and anesthesia for laparoscopy (473% of Medicare).

Overall, average anesthesiology rates, regardless of setting or geographic location, were many magnitudes higher than the Medicare average. And this is only a comparison of the encounter allowed amount to the average Medicare reimbursement; for more skilled providers, this ratio would undoubtable be much higher.

Figure 8a.

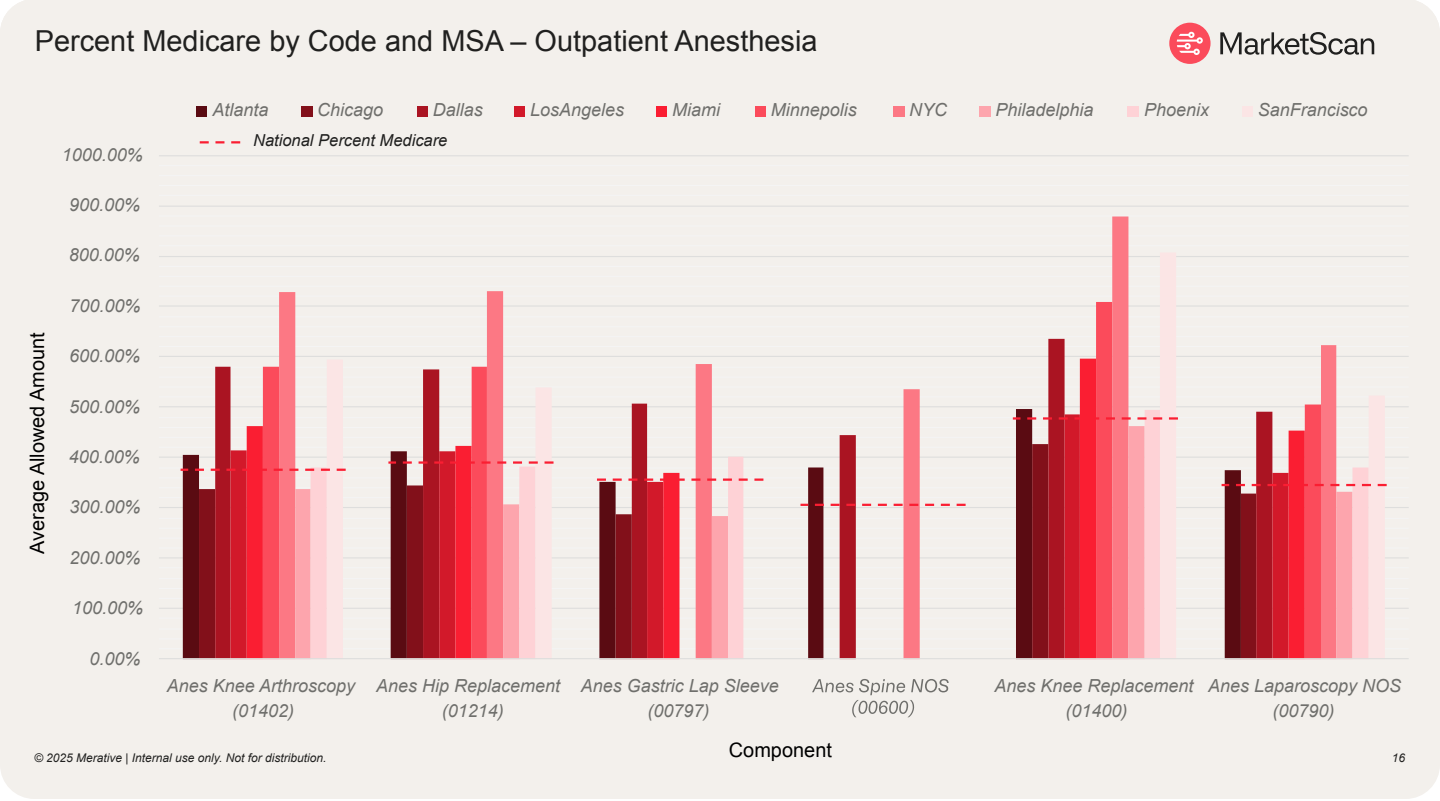
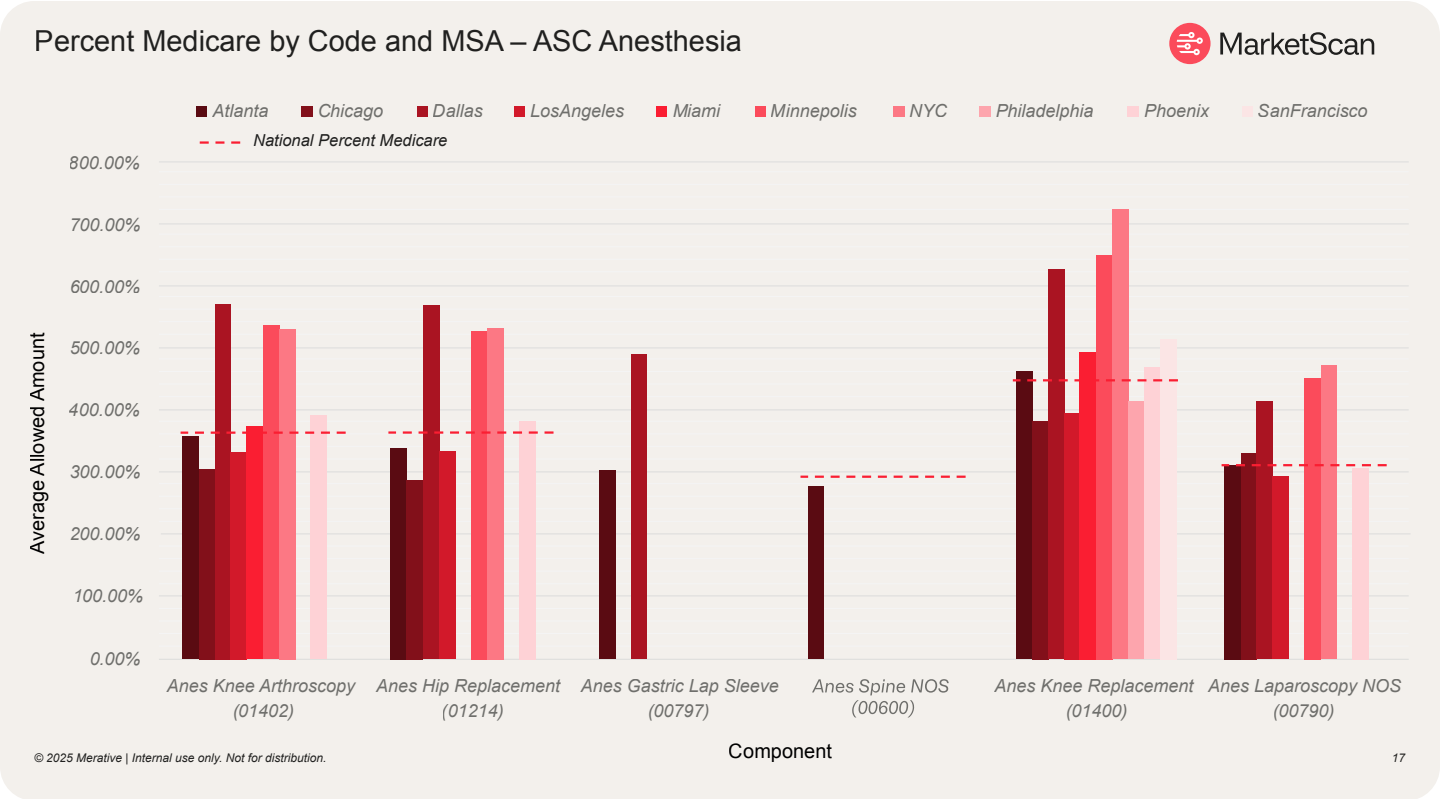


Figure 8b.



Conclusion

This analysis shows that market price variation in price by provider and site of service for small geographies continues to exist, despite the mandates towards price transparency and movement to less-intensive sites of care. This suggests several factors. One, that providers and payors are very aware of their own local regulatory environment and that the transparency initiatives (including Medicare rates) act as a floor rather than a ceiling. Next, as provider and payer consolidation continues to grow, pricing seems increasingly driven by the relative market power of the entities.

Finally, that providers who have a dominant market position in an MSA will try to maintain or even increase their revenue percentage in their negotiation, and less-intensive sites of service might not yield the cost savings that were originally predicted.

Further research is needed to see whether these regional price differences continue to hold true for different patient populations, different surgeries, different MSAs, or a more recent time period.

Appendix 1

Lantern Medicare Episode Pricing Methodology

This document describes the methodology for calculating standardized Medicare fee-for-service (FFS) episode prices for selected procedures across multiple geographies and sites of service. Episodes are anchored on a primary CPT or HCPCS code and include the relevant facility, professional, and anesthesia components, priced under the applicable Medicare payment systems and adjusted to local markets. Calculations for each component are detailed below.

Hospital Outpatient Departments (OPPS / APCs)

For procedures performed in hospital outpatient departments, Lantern applies the Hospital Outpatient Prospective Payment System (OPPS), which pays hospitals based on Ambulatory Payment Classifications (APCs), which group clinically similar services that are expected to involve comparable resource use.

For each HCPCS or CPT code, Lantern identifies the assigned APC, status indicator, and national unadjusted OPPS payment rate for the calendar year. Next, the appropriate wage index and other standard OPPS adjustments for each Medicare geography is applied to geographically adjusted hospital outpatient allowed amount for the primary procedure code and any packaged or separately payable services that are included within the episode. This process yields a site-specific OPPS facility price for the outpatient hospital setting in each market.

Ambulatory Surgical Centers (ASC Payment System)

For procedures performed in ambulatory surgical centers, Lantern used the Ambulatory Surgical Center (ASC) Payment System and its associated ASC fee schedule addenda. They use the ASC payment rate, drug addenda for the calendar year, HCPCS/CPT ASC relative payment weight, and national ASC payment rate.

Finally, the wage index and other standard ASC adjustments are applied for each Medicare geography. The result is a geographically adjusted ASC facility allowed amount associated with the primary procedure code and any bundled services for each market.

Professional Services (Medicare Physician Fee Schedule)

Professional services are priced under the Medicare Physician Fee Schedule (MPFS), which is based on the Resource-Based Relative Value Scale and geographic practice cost indices. For each procedure, Lantern uses the MPFS files for the year of interest.

For each CPT or HCPCS code and Medicare locality, allowed amount are calculated by combining the work relative value units (RVU), practice expense RVU, and malpractice RVU with the corresponding geographic practice cost indices. This sum is multiplied by the MPFS conversion factor for the year. Where applicable, modifiers, global period rules, and site-of-service differentials between facility and non-facility settings are applied in accordance with MPFS policy.

This produces geographically adjusted professional fees tied to the primary procedure code and the associated physician services included in the episode.

Inpatient Component (IPPS / MS-DRGs)

For procedures requiring an inpatient stay, Lantern priced the facility component under the Inpatient Prospective Payment System. Each discharge is assigned to a Medicare Severity Diagnosis-Related Group, and payment is determined by the MS-DRG relative weight and the hospital-specific base rates for operating and capital, adjusted by the wage index and other factors.

The CMS IPPS files are used to calculate facility-specific allowed amount by MS-DRG using MS-DRG relative weights, the hospital's standardized operating and capital base rates and the applicable wage index and other IPPS adjustments, such as DSH designation.

Finally, to derive market-level DRG prices, DRG payment are weighted by bed size for all IPPS hospitals to assign an IPPS price for each MS-DRG.

For episodes anchored in an inpatient stay, we map the primary CPT procedure to the most common MS-DRG without complications or major complications.

Anesthesia Component

Anesthesia payments under Medicare are determined by anesthesia base units, time units, and a geographically specific anesthesia conversion factor. For each anesthesia CPT code, anesthesia base units, such as time values are calculated as the sum of base units and time units.

Appendix 2

Inpatient Facility By DRG	MSA	Acute Care Hospital Admissions		
		N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography
Laparoscopic Cholecystectomy wo CDE wo CC/MCC (419)	National	2,704	$26,850	189%
	Atlanta	49	113%	238%
	Chicago	40	77%	159%
	Dallas	67	86%	164%
	Los Angeles	30	99%	174%
	Miami	19		
	Minneapolis	13		
	NYC	90	148%	226%
	Philadelphia	20		
	Phoenix	45	102%	246%
	San Francisco	8		
Major Joint Replacement (470)	National	8,909	$37,660	210%
	Atlanta	42	103%	232%
	Chicago	132	85%	186%
	Dallas	228	116%	246%
	Los Angeles	72	131%	238%
	Miami	15		
	Minneapolis	54	82%	205%
	NYC	332	169%	273%
	Philadelphia	142	87%	180%
	Phoenix	96	95%	236%
	San Francisco	37	161%	252%
Cervical spinal fusion wo CC/MCC (473)	National	1,899	$48,065	218%
	Atlanta	20		
	Chicago	20		
	Dallas	63	117%	256%
	Los Angeles	10		
	Miami	6		
	Minneapolis	14		
	NYC	40	158%	257%
	Philadelphia	12		
	Phoenix	23		
	San Francisco	1		

Appendix 2 (cont'd)

Inpatient Facility By DRG	MSA	Acute Care Hospital Admissions		
		N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography
Knee Procedures wo PDX INFECTION wo CC/MCC (489)	National	333	$31,869	233%
	Atlanta	5		
	Chicago	5		
	Dallas	5		
	Los Angeles	1		
	Miami	4		
	Minneapolis	3		
	NYC	15		
	Philadelphia	2		
	Phoenix	5		
	San Francisco	4		
Obesity Surgery wo MCC/CC (621)	National	20,881	$30,125	195%
	Atlanta	313	113%	246%
	Chicago	225	85%	179%
	Dallas	287	84%	165%
	Los Angeles	134	107%	189%
	Miami	317	89%	179%
	Minneapolis	90	75%	186%
	NYC	700	139%	219%
	Philadelphia	195	121%	249%
	Phoenix	390	96%	233%
	San Francisco	16		

Appendix 2 (cont'd)

Outpatient Facility By Code and Site	MSA	Hospital Based Outpatient Encounters			Ambulatory Surgical Center Encounters		
		N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography	N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography
Cervical Disc Fusion (22551)	National	2,395	$23,810	199%	1,236	$16,602	196%
	Atlanta	47	80%	158%	44	84%	162%
	Chicago	3			10		
	Dallas	34	85%	169%	21		
	Los Angeles	8			1		
	Miami	2			1		
	Minneapolis	8			4		
	NYC	27			4		
	Philadelphia	8			1		
	Phoenix	1			25		
	San Francisco	3					
Total Hip Arthroscopy (27130)	National	11,910	$22,060	184%	7,520	$18,659	213%
	Atlanta	184	81%	146%	431	116%	243%
	Chicago	96	88%	153%	115	92%	188%
	Dallas	150	91%	168%	70	88%	187%
	Los Angeles	56	123%	182%	32	82%	146%
	Miami	62	121%	195%	6		
	Minneapolis	49	85%	141%	49	125%	244%
	NYC	198	173%	252%	27		
	Philadelphia	57	83%	147%	8		
	Phoenix	236	84%	147%	57	97%	199%
	San Francisco	15			26		
Total Knee Arthroscopy (27447)	National	16,085	$21,268	178%	11,066	$18,352	212%
	Atlanta	191	84%	145%	519	111%	232%
	Chicago	80	82%	138%	170	105%	214%
	Dallas	177	82%	146%	123	100%	211%
	Los Angeles	68	122%	175%	25		
	Miami	52	109%	171%	12		
	Minneapolis	50	89%	143%	56	122%	236%
	NYC	121	150%	211%	22		
	Philadelphia	83	85%	143%	26		
	Phoenix	266	88%	147%	83	97%	199%
	San Francisco	9			7		

Appendix 2 (cont'd)

Outpatient Facility By Code and Site	MSA	Hospital Based Outpatient Encounters			Ambulatory Surgical Center Encounters		
		N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography	N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography
Knee Meniscectomy (29881)	National	19,049	$5,930	216%	25,936	$2,903	220%
	Atlanta	293	127%	271%	867	89%	195%
	Chicago	226	107%	220%	436	94%	200%
	Dallas	411	81%	175%	639	133%	293%
	Los Angeles	129	118%	206%	266	110%	203%
	Miami	64	137%	253%	186	119%	233%
	Minneapolis	61	101%	199%	182	91%	186%
	NYC	497	148%	235%	599	153%	250%
	Philadelphia	219	91%	187%	61	152%	320%
	Phoenix	153	84%	171%	512	88%	189%
	San Francisco	53	136%	185%	88	149%	218%
Lap Sleeve Gastrectomy (43775)	National	4,188	$7,913		754	$12,612	
	Atlanta	96	131%		121	66%	
	Chicago	27					
	Dallas	378	71%		27		
	Los Angeles	8			17		
	Miami	5					
	Minneapolis	2			1		
	NYC	15			21		
	Philadelphia	6					
	Phoenix	13			5		
	San Francisco	2					
Laparoscopy Cholecystectomy (47562)	National	31,994	$9,638	198%	4,461	$4,927	214%
	Atlanta	563	105%	204%	43	65%	138%
	Chicago	259	99%	186%	17		
	Dallas	588	87%	173%	237	136%	292%
	Los Angeles	263	107%	170%	57	90%	162%
	Miami	280	119%	203%	15		
	Minneapolis	184	90%	161%	40	95%	189%
	NYC	410	146%	211%	16		
	Philadelphia	262	95%	178%			
	Phoenix	476	76%	142%	200	79%	165%
	San Francisco	35	150%	186%	18		

Appendix 2 (cont'd)

Physician (Surgeon) By Code and Site	MSA	Hospital Based Outpatient Encounters			Ambulatory Surgical Center Encounters		
		N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography	N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography
Cervical Disc Fusion (22551)	National	10,754	$3,284	197%	2,175	$3,927	235%
	Atlanta	232	113%	214%	85	92%	209%
	Chicago	64	100%	174%	14		
	Dallas	209	76%	150%	27		
	Los Angeles	28			1		
	Miami	25			1		
	Minneapolis	36	152%	316%	5		
	NYC	72	205%	287%	6		
	Philadelphia	22			1		
	Phoenix	127	143%	280%	37	84%	197%
	San Francisco	3			2		
Total Hip Arthroscopy (27130)	National	25,062	$2,673	208%	8,336	$3,785	295%
	Atlanta	594	119%	243%	429	80%	231%
	Chicago	429	105%	206%	132	72%	200%
	Dallas	416	72%	150%	63	57%	168%
	Los Angeles	243	109%	209%	43	85%	229%
	Miami	91	83%	152%	8		
	Minneapolis	115	147%	320%	158	507%	1560%
	NYC	409	179%	286%	32	103%	235%
	Philadelphia	137	156%	300%	6		
	Phoenix	386	97%	204%	61	56%	166%
	San Francisco	33	175%	312%	20		
Total Knee Arthroscopy (27447)	National	37,407	$2,603	203%	12,145	$3,546	276%
	Atlanta	698	120%	239%	540	86%	234%
	Chicago	433	103%	197%	170	89%	232%
	Dallas	527	77%	156%	93	63%	173%
	Los Angeles	230	113%	210%	47	99%	252%
	Miami	105	79%	141%	10		
	Minneapolis	134	155%	329%	207	512%	1475%
	NYC	307	185%	289%	38	163%	346%
	Philadelphia	172	160%	299%	21		
	Phoenix	531	95%	196%	83	65%	182%
	San Francisco	29			9		

Appendix 2 (cont'd)

Physician (Surgeon) By Code and Site	MSA	Hospital Based Outpatient Encounters			Ambulatory Surgical Center Encounters		
		N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography	N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography
Knee Meniscectomy (29881)	National	23,676	$1,065	194%	24,740	$1,112	203%
	Atlanta	432	110%	211%	1,002	110%	220%
	Chicago	397	97%	180%	279	86%	169%
	Dallas	412	71%	137%	269	78%	158%
	Los Angeles	177	118%	209%	203	102%	187%
	Miami	43	87%	150%	82	75%	135%
	Minneapolis	81	157%	315%	323	193%	405%
	NYC	366	175%	266%	483	181%	286%
	Philadelphia	223	128%	231%	65	156%	293%
	Phoenix	283	101%	200%	350	87%	181%
	San Francisco	66	194%	314%	52	133%	225%
Lap Sleeve Gastrectomy (43775)	National	4,562	$2,039	188%	488	$3,580	330%
	Atlanta	128	121%	219%	111	59%	187%
	Chicago	47	95%	158%			
	Dallas	364	91%	170%	18		
	Los Angeles	9			16		
	Miami	2					
	Minneapolis	8			1		
	NYC	19			19		
	Philadelphia	4			1		
	Phoenix	11			39	379%	1240%
	San Francisco	1					
Laparoscopy Cholecystectomy (47562)	National	46,297	$1,176	179%	5,041	$1,200	183%
	Atlanta	830	130%	228%	51	110%	196%
	Chicago	430	89%	147%	28		
	Dallas	687	79%	142%	209	87%	159%
	Los Angeles	285	118%	194%	47	107%	180%
	Miami	229	85%	133%	8		
	Minneapolis	250	164%	309%	41	160%	307%
	NYC	464	140%	185%	38	147%	198%
	Philadelphia	189	105%	171%			
	Phoenix	597	97%	175%	194	78%	142%
	San Francisco	48	191%	298%	18		

Appendix 2 (cont'd)

Anesthesia By Code and Site	MSA	Hospital Based Outpatient Encounters			Ambulatory Surgical Center Encounters		
		N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography	N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography
Anes Spine NOS (00600)	National	2,891	$1,589	314%	1,069	$1,497	296%
	Atlanta	44	121%	380%	47	94%	278%
	Chicago	27			8		
	Dallas	58	142%	445%	25		
	Los Angeles	15			7		
	Miami	23			1		
	Minneapolis	28			10		
	NYC	59	170%	536%	16		
	Philadelphia	3					
	Phoenix	22			24		
	San Francisco	4			2		
Anes Laparoscopy NOS (00790)	National	88,588	$1,115	362%	8,271	$972	316%
	Atlanta	1,929	103%	375%	134	99%	313%
	Chicago	933	91%	329%	43	105%	332%
	Dallas	1,655	136%	491%	325	131%	414%
	Los Angeles	600	102%	369%	116	93%	293%
	Miami	671	125%	454%	24		
	Minneapolis	457	140%	506%	87	143%	452%
	NYC	1,153	172%	623%	65	150%	473%
	Philadelphia	221	91%	331%	2		
	Phoenix	1,190	105%	380%	294	97%	308%
	San Francisco	75	144%	523%	22		
Anes Gastric Lap Sleeve (00797)	National	10,003	$1,678	363%	886	$1,362	295%
	Atlanta	228	97%	351%	154	103%	303%
	Chicago	83	79%	288%			
	Dallas	632	140%	507%	38	166%	491%
	Los Angeles	57	97%	352%	19		
	Miami	34	102%	369%	1		
	Minneapolis	7			1		
	NYC	172	161%	585%	23		
	Philadelphia	37	78%	284%			
	Phoenix	112	110%	401%	18		
	San Francisco	2					

Appendix 2 (cont'd)

Physician (Surgeon) By Code and Site	MSA	Hospital Based Outpatient Encounters			Ambulatory Surgical Center Encounters		
		N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography	N	Trimmed Average Allowed Amount (National) and Percent of MarketScan National Rate (MSA)	Trimmed Average Allowed Amount as Percent of Medicare Rate for Geography
Anes Hip Replacement (01214)	National	25,356	$1,435	400%	8,513	$1,307	364%
	Atlanta	528	103%	412%	444	93%	339%
	Chicago	471	86%	344%	135	79%	288%
	Dallas	415	144%	574%	119	157%	571%
	Los Angeles	221	103%	412%	54	92%	334%
	Miami	152	106%	423%	9		
	Minneapolis	140	145%	580%	53	145%	528%
	NYC	431	183%	731%	34	147%	533%
	Philadelphia	66	77%	307%	3		
	Phoenix	327	95%	381%	72	106%	385%
	San Francisco	30	135%	540%	25		
Anes Knee Replacement (01400)	National	65,582	$813	482%	64,436	$772	458%
	Atlanta	1,070	103%	496%	2,118	101%	463%
	Chicago	1,077	89%	427%	761	84%	384%
	Dallas	1,606	132%	636%	1,094	137%	628%
	Los Angeles	584	101%	486%	742	86%	396%
	Miami	237	124%	596%	504	108%	495%
	Minneapolis	234	147%	708%	817	142%	651%
	NYC	1,193	182%	879%	1,373	158%	722%
	Philadelphia	248	96%	463%	133	91%	415%
	Phoenix	855	103%	494%	969	103%	470%
	San Francisco	215	167%	807%	224	113%	517%
Anes Knee Arthroscopy (01402)	National	40,164	$1,295	384%	12,811	$1,227	364%
	Atlanta	698	105%	405%	569	98%	358%
	Chicago	489	88%	337%	188	84%	306%
	Dallas	590	151%	580%	122	157%	572%
	Los Angeles	234	108%	414%	53	92%	334%
	Miami	171	121%	463%	12		
	Minneapolis	168	151%	581%	69	148%	537%
	NYC	325	190%	728%	46	146%	531%
	Philadelphia	99	88%	337%	13		
	Phoenix	447	99%	380%	108	107%	391%
	San Francisco	37	155%	595%	12		

About MarketScan

MarketScan by Merative provides deidentified, longitudinal, patient-level closed claims and specialty data for 300M+ patients sourced directly from a diverse pool of payers. Industry-leading researchers rely on MarketScan to derive valuable insights pertaining to health economics and outcomes research, treatment patterns, and disease progression across the industry resulting in more than 4,500 peer reviewed manuscripts.

Learn more at merative.com/marketscan

About Merative

Merative provides data, analytics, and software for healthcare and government social services. With focused innovation and deep expertise, Merative works with providers, employers, health plans, governments, and life sciences companies to drive real progress. Merative helps clients orient information and insights around the people they serve to improve decision-making and performance.

Learn more at merative.com

Produced in the United States of America
March 2026

MSN-000000049 Rev 1.0