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Appendix 1 – CMS primary CPT codes and associated description

Primary THA CPT Codes	CMS Description
27130	Arthroplasty, acetabular and proximal femoral prosthetic replacement (total hip arthroplasty), with or without autograft or allograft
Primary TKA CPT Codes	CMS Description
27447	Arthroplasty, knee, condyle and plateau; medial AND lateral compartments with or without patella resurfacing (total knee arthroplasty)
27445	Arthroplasty, knee, hinge prosthesis (eg, Walldius type)

Appendix 2 – Primary Total Hip Arthroplasty (THA) and Primary Total Knee Arthroplasty (TKA) volumes between 2000 and 2019 grouped by CMS CPT codes

Year	Primary THAs			Primary TKAs		
	Volume (CPT: 27130)	YOY change	Annual percentage Change	Volume (CPT: 27445 + 27447)	YOY change	Annual percentage Change
2000 - CMS	78,722	-	-	156,138	-	-
2001 - CMS	88,113	9,391	11.93%	173,835	17,697	11.33%
2002 - CMS	93,250	5,137	5.83%	189,690	15,855	9.12%
2003 - CMS	100,700	7,450	7.99%	210,820	21,130	11.14%
2004 - CMS	106,989	6,289	6.25%	239,429	28,609	13.57%
2005 - CMS	107,836	847	0.79%	260,223	20,794	8.68%
2006 - CMS	105,139	-2,697	-2.50%	256,826	-3,397	-1.31%
2007 - CMS	105,037	-102	-0.10%	253,718	-3,108	-1.21%
2008 - CMS	105,401	364	0.35%	250,746	-2,972	-1.17%
2009 - CMS	110,001	4,600	4.36%	255,358	4,612	1.84%
2010 - CMS	113,697	3,696	3.36%	264,697	9,339	3.66%
2011 - CMS	115,103	1,406	1.24%	255,264	-9,433	-3.56%
2012 - CMS	122,873	7,770	6.75%	262,026	6,762	2.65%
2013 - CMS	129,625	6,752	5.50%	269,561	7,535	2.88%
2014 - CMS	133,443	3,818	2.95%	264,118	-5,443	-2.02%
2015 - CMS	141,854	8,411	6.30%	272,039	7,921	3.00%
2016 - CMS	150,199	8,345	5.88%	292,793	20,754	7.63%
2017 - CMS	154,904	4,705	3.13%	297,608	4,815	1.64%
2018 - CMS	160,583	5,679	3.67%	301,331	3,723	1.25%
2019 - CMS	167,916	7,333	4.57%	307,813	6,482	2.15%

Appendix 3 – Study comparison of approximated primary procedure annual growth rates

Estimation Method/Procedure	Approximate Annual Growth Rates in Procedures							
	Current study (CMS part B)		Sloan et al. (NIS)		Kurtz et al. (NIS)		Singh et al. (NIS)	
	THA	TKA	THA	TKA	THA	TKA	THA	TKA
OLS (log-linear)	5.20%	4.44%	-	-	-	-	-	-
OLS (linear)	-	-	3.42%	3.92%	-	-	-	-
GLM (Poisson & negative binomial)	5.35%	4.28%	5.77%	5.81%	4.12%	8.53%	5.32%	6.40%
ARIMA (0,1,1)	5.71%	5.09%	-	-	-	-	-	-