

Case Volume & Economic Burden of Revision Arthroplasty for Hip Aseptic Loosening

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INTRODUCTION: Aseptic loosening after hip arthroplasty is a major complication often requiring surgical revision. The national case volumes and associated economic burden of revision hip arthroplasty for aseptic loosening are not well-established.

METHODS: The National Inpatient Sample (NIS), a nationally representative weighted database of inpatient admissions, was queried to identify admissions for inpatient revision hip arthroplasty in the setting of aseptic loosening. The national annual incidence of such admissions and associated inpatient costs were estimated. Average cost results were then projected to 2032. Costs were adjusted for inflation to 2022 dollars using Consumer Price Index data.

RESULTS SECTION: The inflation-adjusted average cost per admission increased from \$28,810 in 2012 to \$31,461 in 2022 and was projected to rise to \$36,424 by 2032. In the pre-pandemic period, incidence gradually declined from 11,070 in 2012 to 9,650 in 2019. Volumes fell in the pandemic period to a low of 5,894 in 2021. National total costs fell from \$318,924,352 in 2012 to \$296,561,705 in 2019 and a pandemic low of \$198,713,285 in 2021, due to decreasing volumes.

DISCUSSION: The average cost per admission for revision hip arthroplasty for aseptic loosening was projected to rise to \$36,424 per case by 2032 (26% higher than 2012), while case volumes are in decline. Projections suggest that costs per case will continue to rise, posing a potential challenge for orthopaedic surgeons in coming years.

SIGNIFICANCE/CLINICAL RELEVANCE: (1-2 sentences): Revision hip arthroplasty for aseptic loosening imposes a growing financial burden on the healthcare system, with per-case costs projected to rise 26% by 2032. These findings highlight the need for targeted strategies to reduce implant failure and optimize resource allocation in orthopaedic care.

REFERENCES:

ACKNOWLEDGEMENTS:

IMAGES AND TABLES:

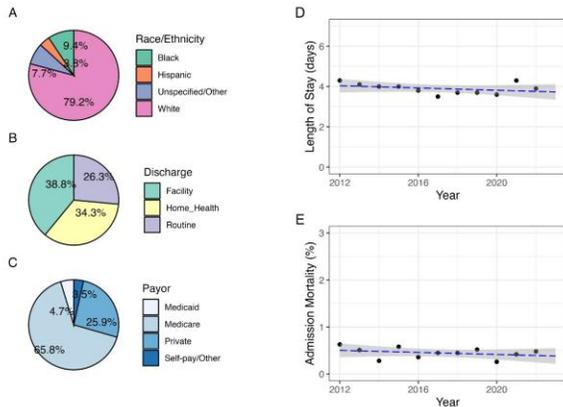


Figure 1. A. Race/ethnicity. B. Discharge disposition. C. Payer mix. D. Mean length of stay. E. Inpatient mortality rate

Year	Number of Admissions	Std Error	Cost per admission (2022\$)	Std Error	Total Cost (\$)	Inflation-adjusted Total Cost (2022\$)
2012	11,070	420	\$28,810	\$547	250,170,930	318,924,352
2013	10,790	433	\$28,658	\$469	246,152,270	309,222,186
2014	10,645	406	\$29,004	\$535	249,678,475	308,749,006
2015	9,759	343	\$29,124	\$512	230,136,738	284,223,727
2016	9,795	351	\$30,147	\$525	242,122,60	295,288,820
2017	10,110	400	\$29,349	\$578	248,463,360	296,716,546
2018	9,909	379	\$29,334	\$556	249,359,985	290,671,715
2019	9,650	364	\$30,732	\$749	259,073,550	296,561,705
2020	7,819	309	\$32,186	\$575	222,513,102	251,659,911
2021	5,894	261	\$33,715	\$692	183,981,210	198,713,285
2022	7,224	298	\$31,461	\$562	227,274,264	227,274,264
Mean	10,566	401	\$30,229	\$573	239,074,558	279,818,683

Table 1. Costs and volumes, 2012-2022.

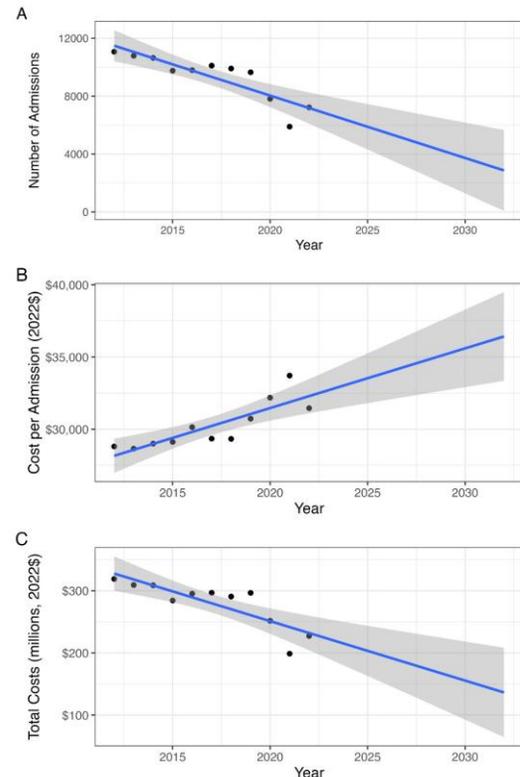


Figure 2. A. Estimated annual number of admissions 2012 to 2022, with linear projections to 2032. B. Cost per admission. C. Total costs. Costs are adjusted to 2022 dollars.