

Outpatient Anterior Cervical Discectomy and Fusion on the Rise: Changing Economics and Utilization Patterns in U.S. Ambulatory Surgical Centers

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INTRODUCTION: The migration of spine surgery to ambulatory surgical centers (ASCs) continues to expand, but national trends in the utilization and cost of anterior cervical discectomy and fusion (ACDF) in these settings remain understudied. This study evaluates trends in volume, payer mix, and inflation-adjusted charges for single-level ACDF procedures performed in freestanding ASCs across the United States.

METHODS: We conducted a retrospective cross-sectional analysis of the National Ambulatory Surgery Sample (NASS) from 2016 to 2022, identifying single-level ACDF procedures using CPT code 22551. Adult patients undergoing outpatient surgery were included. Survey-weighted methods were used to generate national estimates. Generalized linear models assessed differences in inflation-adjusted per-procedure costs by payer, geographic region, and season. Volume and market share trends were evaluated using linear regression.

RESULTS SECTION: A total of 399,939 weighted single-level ACDF procedures were identified. Around 52% of patients were female. Case volume increased from 33,687 in 2016 to 73,024 in 2021, with a slight decline in 2022. Median patient age increased from 52 to 57 years. The share of Medicare patients grew from 8.6% to 29%, while private insurance declined from 74% to 53%. The overall geometric mean cost was \$57,600. Costs varied significantly by payer ($P < 0.001$), region ($P < 0.001$), and season ($P < 0.001$). Procedures in the West were 41% more expensive than in the Northeast. Medicare exhibited the fastest growth in both volume and cost.

DISCUSSION: ASC-based ACDF procedures have increased substantially, with increasing median patient age, Medicare relative to private patients, and regional cost variation. These findings have important implications for surgical planning, reimbursement, and policy development.

SIGNIFICANCE/CLINICAL RELEVANCE: The increasing migration of ACDF to ASCs, with a growing number of older patients and a shift toward Medicare, highlights a significant trend in spine surgery toward cost-effective, outpatient care, with notable regional variations in cost.