Ankle Fracture Care at Ambulatory Surgery Centers in the United States: An Untapped Cost Reduction Resource to Drive Value-Based Care

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INTRODUCTION:

Orthopaedic surgery is transitioning to the outpatient setting as safety evidence compounds, creating value-based care and cost-saving opportunities in the US healthcare market. Multiple barriers exist to freestanding ambulatory surgery center (ASC) adoption, including 1) lack of incentives for surgeons and healthcare systems to utilize ASCs and 2) inadequate ASC reimbursement to cover costs for Medicaid and Medicare patients. We hypothesize that 1) Total charges are highest for ankle fractures fixation in the inpatient setting and lowest at an ASC, 2) Privately insured patients are more frequently undergoing ankle fracture fixation at ASCs than other payer classes, and 3) Medicaid cases are less frequently performed at ASCs than both privately insured and Medicare cases.

METHODS: Data in patients 16+ years old were sourced from the State Inpatient Database and Healthcare Utilization Project State Ambulatory Surgery Database (SASD) (for Florida, North Carolina, and Wisconsin) from 2016-2019. These states were selected because their SASDs include a variable categorizing ASCs as freestanding or hospital owned (HOPD). A total of 85,749 cases (50,411 (59%) inpatient, 28,536 (33%) HOPD, and 6802 (8%) ASC) were identified using CPT codes (27792, 27814, 27822, 27823 +/- 27829) converted to ICD-10 procedural codes for ankle fracture open reduction and internal fixation (ORIF). Patient and facility characteristics were abstracted. Upper and lower 5% outliers of total charges were excluded. In total, 23,896 Medicare, 8,256 Medicaid, 37,690 privately insured, and 16,437 other cases were included. Statistical tests appropriate for data type were used to describe and compare differences between facility type and patient characteristics.

RESULTS:

Median age (53 years) at time of surgery differed by facility and payor (48/49/56 years old for ASC/HOPD/inpatient cases; 48/70/38 years old for Private/Medicare/Medicaid, $p<0.0001$). The majority of patients were female (56.1%). The race of patients was 71.2% white, 13.8% black, and 15% other. Median length of stay was 0 days for ASC and HOPD vs. 4 (2-6 IQR) for inpatient cases.

Median total charges ($51,177 across all payors) were $15,704 for ASC (IQR $11,412-24,083), $28,527 for HOPD (IQR $20,396-39,383), $80,782 for Inpatient (IQR $54,099-126,477) ($p<0.0001$). Median total charges increased substantially (12.3%) from $47,995 to $54,732 from 2016-19.

Private insurance was the most common insurance form (43.7%), followed by Medicare (27.7%), Medicaid (9.6%), and other (19.1%). From 2016-2019, ASC utilization (7.9% of cases) increased from 6.9 to 8.8%, 0.5% per year. From 2016-19, the distribution of HOPD and inpatient cases fell 0.6% and 1.2%, respectively ($p<0.0001$, $p<0.0001$). ASC utilization by payer was 12.0% private vs. 3.8% Medicare, 2.2% Medicaid, and 7.2% other ($p<0.0001$). Privately insured patients were least likely to undergo ankle ORIF as an inpatient: 49.0% vs. 71.6% Medicare, 60.3% Medicaid, and 62.9% other.

Adjusting for patient and facility characteristics in a multivariable regression model, payer type differed by facility. Compared to Medicare, privately insured ankle ORIF was 1.7/3.0 times more likely to be performed at an ASC vs. HOPD/inpatient ($p<0.0001$). Private ORIF was 5.2/7.2 times more likely to be performed at an ASC vs. HOPD/inpatient vs. Medicaid cases ($p<0.0001$). Controlling the same characteristics, total charges remained lower in ASCs and HOPDs compared to inpatient ($p<0.0001$).

DISCUSSION AND CONCLUSION:

Total charges are 1.8 and 5.1 times higher for ankle ORIF performed at a HOPD or as an inpatient compared to a freestanding ASC. Transition of HOPD to ASC site of service represents a $275 million potential annual charge reduction opportunity for the analyzed states. Extrapolated further, national charge reduction potential from a thoughtful, safe transition of outpatient care to ASCs is enormous. Private payer adoption of ASCs is outpacing Medicare and Medicaid utilization. Despite advanced age of the cohort, Medicare (median age 70) ankle ORIF is more commonly performed at a freestanding ASC than Medicaid (median age 38).

Private insurers are driving value-based care through increased ASC utilization, outpacing Medicare and Medicaid utilization. Inherently, there is a subgroup of patients, more predominant in Medicare, who medically require inpatient admission for ankle ORIF. Nevertheless, transitioning care to ASCs creates opportunities to improve the value of care delivery, particularly for Medicare and Medicaid patients.