Trends in arthroplasty cases across orthopaedic specialties: Who is performing hip replacements and on what patient population?

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INTRODUCTION: Following the removal of total joint arthroplasty from the CMS Inpatient Only List, arthroplasty practice has strongly shifted towards outpatient care, reducing the footprint of arthroplasty surgeons at large academic medical centers. Meanwhile, the incidence of hip fractures continues to rise, with an associated demand for urgent arthroplasty services to manage displaced femoral neck fractures. The shift of arthroplasty surgeons to elective outpatient locations and the urgency associated with hip fracture management may transfer more emergency arthroplasty care to on-call surgeons at trauma centers. The purpose of this study was to compare the rates, patient populations, and outcomes of total hip arthroplasty (THA) performed by early-career arthroplasty, trauma, and general orthopaedic surgeons.

METHODS: Data was collected from the American Board of Orthopaedic Surgery (ABOS) Part II Oral Examination Case List database from self-identified arthroplasty, trauma, and general orthopedics subspecialty candidate submissions between 2003 and 2023. Cases of interest were identified by CPT Codes for THA. Indications for THA, particularly osteoarthritis (OA) and fracture, were identified using ICD9 and ICD10 codes. Self-reported post-operative outcomes were collected, including wound complications, implant failure, dislocation, hematoma, infection, and malunion/nonunion.

RESULTS:

1,506 early-career arthroplasty surgeons, 356 early-career trauma surgeons, and 2,525 early-career general orthopedists reported performing at least 1 THA during their 6-month collection period. The overall number of arthroplasty and trauma candidates performing THA increased 7-fold and 5-fold respectively between 2003 and 2023, while generalist candidates decreased 69% (Figure 1). Over the 20-year period, 59,154 THA cases were performed by early-career arthroplasty surgeons, 2,597 were performed by early-career trauma surgeons, and 18,810 were performed by early-career general orthopaedists. The proportion of surgeons' practices dedicated to THA increased from 22% to 37% in arthroplasty surgeons, 1% to 4% in trauma surgeons, and 3% to 10% among generalists.

Indications for THA differed across subspecialties, with 71% for OA and 8% for fracture among arthroplasty surgeons, 35% and 41% respectively among trauma surgeons, and 67% and 16% among generalists ($p < 0.0001$). Total complication rate for all-comers was higher among trauma surgeons compared to generalists and arthroplasty surgeons ($p < 0.005$); however, there was no difference in rate of dislocation between any group ($p = 0.76$). Trauma surgeons reported a higher rate of infection among all-comers compared to arthroplasty surgeons and generalists ($p < 0.005$); however, this difference disappeared between trauma and arthroplasty surgeons when comparing fracture cases only ($p = 0.23$).

DISCUSSION AND CONCLUSION: Over the last 20 years, early-career arthroplasty, trauma, and general orthopaedic surgeons are dedicating a growing proportion of their practices to total hip arthroplasty. With an active aging population and a growing geriatric population, the demand for THA for both osteoarthritis and fracture will continue to rise. Trauma surgeons perform more THA for fracture than for arthritis compared to their peers, which has been associated with higher complication rates than for arthritis; however, they report similar dislocation and infection rates when treating these higher risk patients. As elective arthroplasty care continues to shift towards outpatient settings, trauma surgeons will likely bear more of the burden of urgent THA for fracture care. Hospitals should support trauma surgeons with clear protocols, training, and further research to optimize THA outcomes following fracture and to improve patient access to quality care.