The Accuracy of Hip Fracture Data Entered Into the National Surgical Quality Improvement Program (NSQIP) Database

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Purpose: Internal validation studies of National Surgical Quality Improvement Program (NSQIP) registry data have reported potential inaccuracies. The purpose of this study was to determine the accuracy of hip fracture CPT codes and complications entered into NSQIP for a single participating center.

Methods: A retrospective study identified patients with a hip fracture CPT code from NSQIP data at a single institution over a two-year period. CPT codes included 27235 (percutaneous fixation of femoral neck fracture (Perc FNFX)), 27236 (open treatment of femoral neck fracture, internal fixation/prosthetic replacement (Open FNFX)), 27244 (open treatment of inter/peri/subtrochanteric femoral fracture with plate (Plate ITFX)), 27245 (treatment of inter/peri/subtrochanteric femoral fracture, with intramedullary implant (IMN ITFX)), and 27125 (hemiarthroplasty (HA)). The institutional medical record was reviewed to determine the accuracy of CPT code and 30-day complication data entered into the registry.

Result: 12.8% (n = 20/156) of patients had an inaccurate CPT code. The proportion of inaccurate CPT codes varied significantly by procedure: Plate ITFX (76.9%), Open FNFX (13.8%), IMN ITFX (7.0%), and HA (0%) ($p < 0.0001$). A total of 82 complications were identified in 66 patients via the medical record. 43.9% (n = 36/82) of these complications were not documented in the NSQIP data. The proportion of missing complications varied significantly by type: renal (100%), UTI (53.8%), infection (50%), bleeding (30%), death (25%), respiratory (25%), cardiac (0%), stroke (0%), and VTE (0%) ($p < 0.0001$).

Conclusion: Hip fracture CPT codes and 30-day complication data entered into the NSQIP registry were frequently inaccurate. Studies incorporating NSQIP data should acknowledge these potential limitations of the registry, and future research to validate NSQIP orthopedic data across procedures and institutions is necessary.

Level of Evidence: Level III, Diagnostic study