



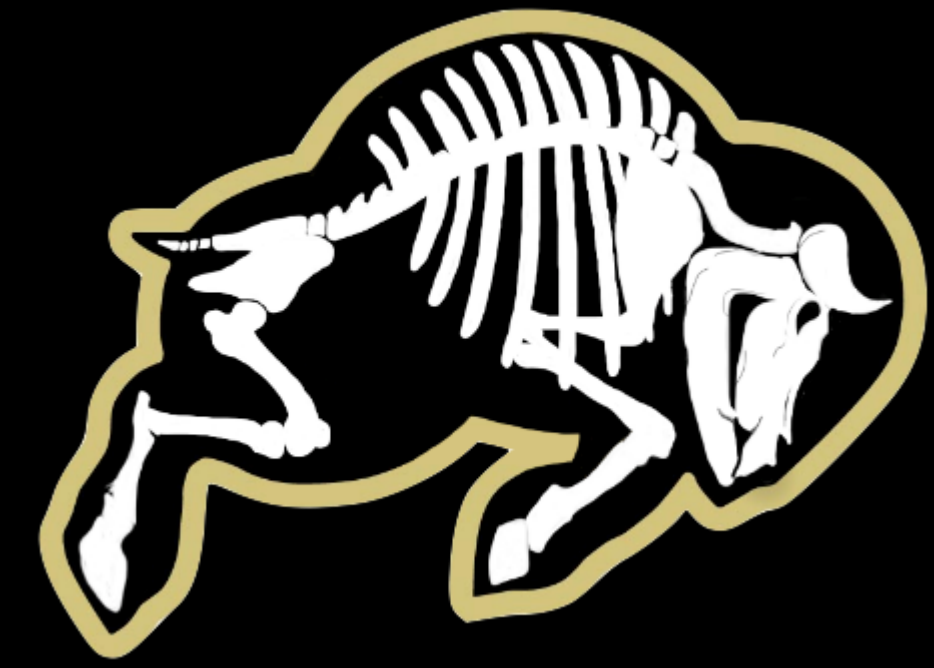
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Validation of Orthopedic Hip Fracture Data from the National Surgical Quality Improvement Program (NSQIP) Database

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Background

The NSQIP registry was developed in 1994 by the United States Department of Veterans Affairs to better understand preoperative risk factors and outcomes and has been used in an exponential number of studies across specialties.¹

Internal validation studies of NSQIP data for general surgery and neurosurgery have found inaccuracies in the data.²⁻⁵

The purpose of this study was to examine the validity of the NSQIP database for hip fracture patients at a single level one trauma institution.

Methods

A retrospective study was performed of adult patients who underwent surgery for hip fracture at a single level one trauma center between April 2016 and April 2018.

CPT coding and 30-day complications reported in the NSQIP database were validated for accuracy in the medical records.

The non-hip fracture hemiarthroplasty CPT code was included to identify miscoded hip fracture procedures, as this code is specifically reserved for elective surgeries per the CPT manual.

Tables/Figures

Table 1: Accuracy of NSQIP CPT Coding for Hip Fracture Surgeries

Initial CPT Code	Description	Number of Cases	Number of incorrectly coded cases	Correct CPT Codes
27125	Hemiarthroplasty, hip	28	26 (92.9%)	27236
27236	Open treatment of femoral fracture, proximal end, neck, <u>internal fixation or prosthetic replacement</u>	29	4 (13.8%)	27235 27244 27245
27244	Treatment of intertrochanteric, peritrochanteric, or subtrochanteric femoral fracture; <u>with plate/screw type implant</u>	13	10 (76.9%)	27245 27235
27245	Treatment of intertrochanteric, peritrochanteric, or subtrochanteric femoral fracture; with <u>intramedullary implant</u>	86	6 (9.8%)	27236 27235 27495
27235	Percutaneous skeletal fixation of femoral fracture, proximal end, neck	0	N/A	N/A
27495	Prophylactic treatment (nailing, pinning, plating, or wiring) with or without methylmethacrylate, femur	0	N/A	N/A

NSQIP – National Surgical Quality Improvement Program
CPT – Current Procedural Terminology

Table 2: Missing Complications in NSQIP

Complications	Complications (n=82)	
	Complications in NSQIP (n=46, 56%)	Missing complications in NSQIP data (n=36, 43%)
Bleeding requiring transfusion	21 (46%)	9 (25%)
Renal		
AKI	0 (0%)	14 (39%)
Infection	3 (6.5%)	
Sepsis		2 (5.6%)
Acute cystitis		1 (2.8%)
UTI	6 (13%)	7 (19%)
Respiratory	6 (13%)	
Respiratory Failure		1 (2.8%)
Aspiration Pneumonia		1 (2.8%)
Death	3 (6.5%)	1 (2.8%)
Stroke	1 (2.2%)	0 (0%)
Cardiac	2 (6.5%)	0 (0%)
VTE	3 (6.5%)	0 (0%)

AKI – Acute Kidney Injury
UTI – Urinary Tract Infection
VTE – Venous Thromboembolism

Results

156 patients with hip fractures were identified in the NSQIP database.

29.5% of these procedures were incorrectly coded (**Table 1**).

Of the 82 complications documented in the electronic medical record, 36 (43%) were not documented in the NSQIP database (**Table 2**).

Conclusions

Miscoding and missed complications were prevalent in hip fracture NSQIP data.

Future research is necessary to investigate the validity of orthopaedic NSQIP data across procedures and institutions.

References

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