Hospital Service Burden After Internal Fixation: An Analysis of Nationally Linked Hospital Care Records

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Purpose: Hospital length of stay (LOS) is a major driver of healthcare costs. Understanding patterns in LOS after fracture reduction and identifying preoperative patient characteristics associated with prolonged hospitalization can inform clinical decision-making and resource allocation.

Methods: An analysis of linked hospital episode statistics and emergency episode statistics was conducted, including all admissions with a primary OPCS code for open reduction and other internal fixation procedures. The study population consisted of 630,589 admissions of adults (age 18 or older) between 2013 and 2023 in National Health Service (NHS) hospitals and independent sector providers funded by the NHS in England. The primary outcome measure was post-procedure LOS in days and factors predicting LOS.

Results: Post-procedure LOS varied with the anatomic site of fracture and procedure type. Femoral and pelvic internal fixation procedures had the longest median LOS, ranging from 6 to 15 days and 4 to 9 days, respectively. Several factors were associated with increased LOS, including demographic variables (age, sex, ethnic group), emergency admission status, presence of delirium, comorbidity burden, frailty, anatomic site, and procedure type.

Conclusion: Patient characteristics, the anatomic site of fracture, and the type of orthopaedic procedure performed significantly impact post-procedure LOS. A deeper understanding of these factors, as well as the identification of additional determinants, is crucial for improving patient care quality and optimizing healthcare costs for health services.