The Returner: Characterizing Social Determinants of Health in Orthopaedic Readmissions

Reginald Chinweze, MD, LLM[1]; David Dallas-Orr, MD, MBA, MTM[1]; Matthew Frederickson, MD[1], Shannon Tse, BMBS[1]; Michelle Scott MD[1], Zachary Lum, DO[1].

Affiliations:

1. Department of Orthopaedic Surgery, University of California Davis, Sacramento, CA.

Corresponding Author:

Reginald O. Chinweze

Email: obichinweze@outlook.com

4860 Y Street

Suite 3800

Sacramento, CA 95817

INTRODUCTION: Readmission rates serve as key quality indicators and drive financial incentives in healthcare systems. The purpose of this study was to analyze the social determinants of health that are associated with readmissions of patients within our centers large and diverse catchment area.

METHODS: We conducted a retrospective observational study examining orthopaedic readmissions over a 6 year period. Analyzed variables encompassed patient demographics, insurance type, primary language, social determinants of health via Area Deprivation Index (ADI), and medical complexity using the Charlson Comorbidity Index (CCI) and Elixhauser Comorbidity Index (ECI). Readmissions were stratified by admission classification: elective admissions served as surrogates for planned readmissions, while urgent/emergency/trauma admissions represented unplanned readmissions.

RESULTS: Analysis of 30-day and 90-day readmissions were reviewed based on index procedure. 1,559 readmission encounters revealed a mean patient age of 57.1±17.8 years with 57% male predominance. Insurance coverage skewed heavily toward public programs: Medicare Fee-for-Service (37.7%) and Medi-Cal managed care (29.4%). Social vulnerability was pronounced (ADI mean 7.28±2.25, median 8), reflecting significant neighborhood-level deprivation. Admission classification breakdown showed 39.2% elective, 27.8% urgent, 28.5% emergency, and 4.4% trauma encounters, indicating approximately 60.7% represented unplanned readmissions. Medical complexity was substantial (mean CCI 2.93±2.46; mean ECI 8.98±5.74). Readmission duration demonstrated positive skew (mean 6.73 days, median 4.81, maximum 65.78). Sub-analyses were conducted by index procedure type and revision procedure.

DISCUSSION and CONCLUSION: Orthopaedic readmissions concentrate among medically complex, socioeconomically disadvantaged, publicly insured populations

and contain a substantial planned component (~39%). These findings underscore the necessity of distinguishing planned from unplanned readmissions for quality assessment or developing targeted interventions.