

A High Percentage of Miscoding in the NIS Database Raises Questions about Validity for Arthroplasty Research

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INTRODUCTION: The use of administrative databases in arthroplasty research has increased in the past decade. The Nationwide Inpatient Sample (NIS) was one of the first and one of the most used. Despite the many published articles, there is no standard for using this resource with the potential of biased results. The purpose of our study is to assess the accuracy of the content and propose a standard for using this database in primary total hip (THA) and knee (TKA) arthroplasty.

METHODS: A total of 3,562,819 patients were included. Using DRGs, 5.3% were revision surgeries, 4.7% were not elective, 2.3% did not have THA or TKA as their primary procedure for hospitalization, 2.9% of THA and 9.7% of TKA were bilateral, 6.2% of the surgeries were done day(s) before or after admission, 10.8% of THA and 6.3% of TKA were missing an orthopedic diagnosis for admission and 3.2% of THA and 0.7% of TKA had multiple orthopedic diagnosis for admission. Overall miscoding 20.8%.

RESULTS: Using DRGs 5.3% were revision surgeries, 4.7% were not elective, 2.3% did not have THA or TKA as their primary procedure for hospitalization, 2.9% of THA and 9.7% of TKA were bilateral, 6.2% of the surgeries were done day(s) before or after admission, 10.8% of THA and 6.3% of TKA were missing an orthopedic diagnosis for admission and 3.2% of THA and 0.7% of TKA had multiple orthopedic diagnosis for admission. Overall miscoding 20.8%.

DISCUSSION AND CONCLUSION: Using unprocessed data from the NIS to study elective, unilateral, primary THA and TKA introduces significant bias. A logical and stepwise approach to curate the data before analysis is proposed to improve research quality when using this database in hip and knee arthroplasty studies.