

Technology Powered by Artificial Intelligence Reduces Clinical Documentation Burden in Orthopaedic Surgery

Halimatu Sadiyya Ingawa, Nikhil Vallabhaneni, Brenna Blackburn, Christopher Earl Pelt

INTRODUCTION:

Physician burnout, reported in up to 60% of orthopaedic surgeons, is a significant challenge in healthcare. Excessive time spent on electronic medical record (EMR) documentation contributes to this issue. Artificial intelligence (AI)-powered tools, such as automated charting assistants, may enhance provider efficiency by reducing documentation time. This study evaluates whether implementing an AI listening tool in an orthopaedic clinic decreases documentation time for providers.

METHODS:

A retrospective, nonexperimental analysis was conducted following the adoption of Doximity Scribe, a HIPAA-compliant AI charting assistant. Active EMR (Epic) time per clinic day was measured for a team comprising one orthopaedic surgeon, one physician associate, and one orthopaedic surgery fellow. Resident physicians were excluded due to frequent rotation changes. Paired t-tests were used to compare the groups and significance was defined as $p < 0.05$.

RESULTS:

Before AI implementation, providers saw an average of $38.7 (\pm 2.2)$ patients over 34 clinic days, compared to $39.8 (\pm 2.4)$ patients over 16 clinic days post-implementation ($p=0.1194$). Visit types, including new patient visits (9.5 ± 1.8 vs. 8.2 ± 1.5 ; $p=0.0126$), post-operative visits (11.9 ± 5.5 vs. 14.2 ± 4.2 ; $p=0.1255$), and return visits (17.4 ± 4.1 vs. 17.4 ± 3.3 ; $p=0.978$), were similar pre- and post-implementation, respectively. Total active EMR time per clinic day significantly decreased post-implementation (Post: 369.4 ± 66.7 vs. Pre: 458.8 ± 95.6 minutes; $p=0.0012$), as did average EMR time per patient (Post: 9.4 ± 2.2 vs. Pre: 11.9 ± 2.5 minutes; $p=0.0011$).

DISCUSSION AND CONCLUSION:

The use of an AI-powered documentation assistant significantly reduced documentation time in an orthopaedic clinic, enhancing provider efficiency. These findings suggest a promising strategy for alleviating documentation burden, potentially mitigating burnout and improving physician well-being. Larger, multicenter studies are needed to confirm these benefits and explore long-term impacts on provider workload and patient care.