

## **AI-Generated Clinical Notes in Arthroplasty: How Do They Compare to Physician and Scribe Documentation?**

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**INTRODUCTION:** Introduction: High-quality clinical documentation is critical in arthroplasty for guiding care, surgical planning, and medicolegal protection. However, the documentation burden can contribute to physician burnout and reduce time spent with patients. Artificial intelligence (AI)-based ambient scribe technology may help alleviate this strain by generating clinical notes in real time with minimal provider effort. This study aimed to evaluate whether AI-generated notes are comparable in accuracy and quality to those written by physicians and hired medical scribes (HMS).

**METHODS:** Methods: We retrospectively reviewed 194 clinical notes from a single arthroplasty surgeon (January–September 2024): 97 AI-generated, 50 HMS-generated, and 47 physician-authored. Two blinded reviewers rated each note on a 1–5 Likert scale for overall quality, accuracy, conciseness, detail, and medical language. Subgroup analysis was conducted by visit type (new, preoperative, postoperative, follow-up), with significance set at  $P < 0.05$ .

**RESULTS:** Results: Accuracy did not differ significantly between groups. AI notes were rated slightly less concise than physician notes (4.5 vs. 4.8) and had marginally lower medical language scores than both physician (4.8 vs. 4.9) and HMS notes (4.8 vs. 5.0). HMS notes scored higher than AI notes in overall quality (4.8 vs. 4.4) and detail (4.7 vs. 4.4). In postoperative visits, AI notes were notably less concise and detailed. However, AI notes required significantly less editing time (45.6 vs. 105.6 seconds) compared to physician-written notes.

**DISCUSSION AND CONCLUSION:** Conclusion: AI-generated clinical notes demonstrated comparable accuracy and overall quality to traditional documentation methods, with significant advantages in time efficiency. Although current AI tools show slight deficits in conciseness, medical language, and detail, especially in postoperative contexts, they hold strong potential to reduce documentation burden and improve provider workflow. With further refinement, ambient AI scribes may become a reliable, scalable solution in orthopedic and arthroplasty practice.