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The Impacts of Electronic Health Record Note Usage by Physicians on Quality of Care: An Analysis using EHR Audit Logs

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Abstract

This study investigates the impact of clinical note usage by lead physicians on inpatient length of stay (LOS) and 30-day readmission rates. Utilizing a substantial dataset of EHR audit logs from a major teaching hospital in the US, we employ an instrumental variable approach to address potential endogeneity concerns. Our findings indicate that increased EHR note activity by lead physicians significantly reduces both LOS and 30-day readmission rates. Specifically, a 1% increase in lead physician EHR note activity results in a 1.06% decrease in LOS and a 0.34% reduction in the probability of 30-day readmission. Additionally, our mechanism tests reveal two key insights: first, timely non-note EHR activity by other care providers following lead physician note activity further reduces LOS; second, the impact of lead physician EHR note activity on 30-day readmission rates is moderated by the clinical complexity of the inpatient stay. More clinically complex inpatient stays, as evidenced by the number of procedures, experience a greater reduction in the probability of 30-day readmission compared to less complex stays due to increased lead physician EHR note activity. These results highlight the critical role of EHR clinical notes in enhancing operational efficiency and patient outcomes. This study contributes to healthcare operations management literature by demonstrating the significant influence of EHR clinical note usage on service time and readmission rates. Practical implications include optimizing EHR note utilization, implementing tailored training programs, and investing in user-friendly EHR infrastructure to balance QoC improvements and time constraints, ultimately improving care quality and patient outcomes.

Conference Track

MIS and Business Analytics