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Comparative EHR Metrics: Insights Into Physician Usage & Efficiency

Electronic health records (EHRs) have revolutionised physicians' daily work, yet concerns persist regarding their negative impact on patient safety, work-life balance, and burnout. Physicians spend a considerable portion of their time on EHR-related tasks, often exceeding the time spent directly with patients. Standardising EHR use measurement is crucial for equitable comparisons and progress tracking. The 21st Century Cures Act mandates an EHR reporting programme focused on usability, necessitating standardised EHR use measures. Sinsky et al. previously proposed seven core metrics to standardise measurement, aiming to improve patient and physician experiences, practice efficiency, and retention. Large-scale cross-sectional analyses of standardised EHR use are lacking, but EHR audit logs offer the potential for such analysis. A recent study published in the Journal of Informatics in Health and Biomedicine aims to derive and report the seven proposed core EHR use metrics across two healthcare systems with different EHR vendor products, with a secondary objective of examining factors associated with EHR time.

Comparison of EHR Use Across Healthcare Systems with Different Vendor Products

This cross-sectional analysis examined ambulatory physician EHR use in August 2019 across Yale-New Haven Health and MedStar Health Systems. Yale-New Haven Health operates on Epic EHR, while MedStar Health uses Cerner Millennium EHR. Vendor-derived EHR use data platforms were utilised as the primary data source to optimise metric quality and replication feasibility. Physician demographic data were obtained from human resources rosters, with identities blinded to investigators. Among 1355 physicians at Yale-New Haven Health and 1693 physicians at MedStar, a subset met the criteria for analysis. The sample included physicians from various specialities, with females comprising a significant proportion. Five of the seven proposed core EHR metrics could be calculated using available data. However, there are limitations to using EHR audit logs and vendor-derived EHR use platform data, which hinder the derivation of all proposed core EHR metrics and comparisons across vendor products. Five out of the seven proposed core EHR metrics were measurable, but two were not.

Focus on Nonteaching Physicians: Insights into EHR Use and Efficiency

This analysis focused on nonteaching physicians in outpatient medicine due to inaccuracies in determining work context and teaching physicians' schedules within vendor platforms. Calculations for some metrics were underestimated due to challenges in each vendor's product. Until measure specifications are harmonised, comparisons across vendors are limited. Variations in EHR use may stem from differences in physician efficiency, EHR proficiency, and patient panels. Among exclusively ambulatory, nonteaching attending physicians, it was found that for every 8 hours of scheduled clinical time, physicians spent over 5 hours on the EHR. On average, about 33% of this time was spent on documentation, 13% on inbox activity, and 12% on orders. The variability in EHR time by speciality suggests that EHR needs vary across medical specialities, with procedural specialities spending less time overall in the EHR. A team-based approach to EHR activities appears to decrease physician EHR burden, consistent with assertions that team-based care models reduce clerical burden and enable increased patient engagement. Positive correlations between documentation time, work outside of work, and other EHR activities suggest predictive relationships that warrant further study. Additionally, the association between increased clinical hours scheduled per month and reduced normalised EHR time suggests implications for physician proficiency and satisfaction with the EHR.

Implications of Vendor Differences in EHR Use: Insights from Epic and Cerner Systems

The findings of this study, encompassing Epic and Cerner EHR systems, likely extend to a significant portion of healthcare organizations due to the prominence of these vendors in the EHR market. While the proposed core EHR use metrics offer potential for meaningful comparisons over time and across groups, current audit logs and vendor-derived EHR use data platforms face limitations in adequately distinguishing clinical context, teaching physicians' schedules, and deriving all proposed metrics. To enhance standardisation, vendors must refine specifications for various aspects, including work outside scheduled hours, time-out intervals, visit times, clinical context, and distinguishing between prescriptions and orders. Despite differences in measure specifications, physician EHR time did not significantly differ between vendors after controlling for relevant factors. Further harmonisation across vendors and health systems could facilitate quality improvement and research exploring the relationship between EHR use and physician well-being and retention. Until then, uncertainties remain regarding differences in reported metrics, whether real or due to measurement limitations.

This study is likely the first to standardise the measurement of EHR use across different vendor products. While audit logs hold promise for EHR research, this study highlights challenges in using vendor-derived EHR use data platforms to measure EHR use in a normalised manner with proposed core metrics. Further transparency, granularity, and standardisation of metrics across vendors are crucial for accurate assessment and comparison of EHR use. Interpretation of findings across systems should be cautious due to these limitations. Nonetheless, persistent differences in EHR use by speciality and physician gender have important implications for EHR design, implementation, and policy. Understanding EHR use at scale can facilitate monitoring, benchmarking, and improving care delivery and physician wellness.

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