



Navigating the Digital Frontier: Enhancing EHR Training and Utilization Among Medical Students.

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Background

- Electronic health records are a central component of clinical practice and a core part of student training.
- EHR implementation has been associated with improvements in healthcare quality and efficiency, yet usability challenges and workflow complexity remain significant concerns [1-4]
- Medical students enter clinical training with variable levels of EHR experience and often encounter multiple systems across clinical sites. Learner comfort with EHRs is influenced by prior exposure and experience, with additional barriers including interface design, workflow burden, and inconsistent training [5-8].
- Although structured training interventions can improve confidence and perceived competence, most studies assess outcomes immediately after intervention rather than over time, and few examine differences across multiple EHR platforms [9,10].

Project Objective

- This study aims to assess medical student comfort with EHR systems over the course of a clinical year, including both the most familiar system (Epic) and each student's least familiar EHR.

Methods

Design: Retrospective pretest-posttest survey

Participants: 20 second-year medical students in the Colorado Springs LIC at CUSOM

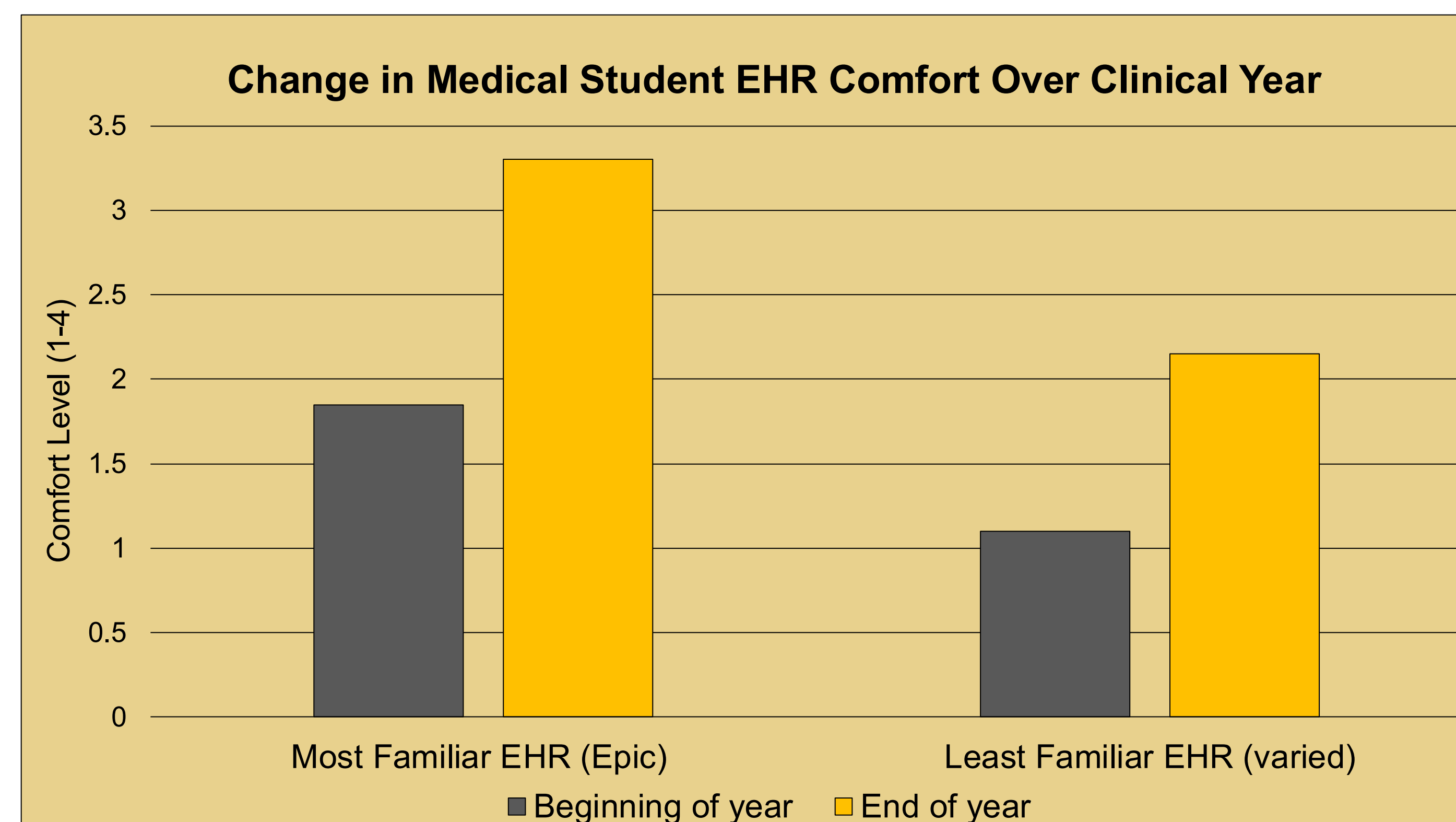
- Students rated comfort with EHR systems at the beginning and end of the year using a 4-point Likert scale (1 = not comfortable, 4 = completely comfortable).

- ❖ Most familiar EHR: Epic (all students)
- ❖ Least familiar EHR: varied across students (Genesis, NextGen, Athena, eClinicalWorks, CPRS, Oracle Health EHR [formerly Cerner], etc.)

Analysis: Changes in comfort analyzed using Wilcoxon signed-rank test

- Qualitative responses reviewed descriptively to provide context

Results



- **Figure:** Mean self-reported comfort levels with most familiar (Epic) and least familiar EHR systems at the beginning and end of the clinical year. Both groups demonstrated significant improvement over time ($p < 0.05$). Although mean improvement was numerically higher for Epic, there was no statistically significant difference in magnitude of change between EHR systems ($p = 0.12$).

Quantitative Results

- Students demonstrated **statistically significant improvements in comfort** with:
 - ❖ their most familiar EHR (Epic) ($p < 0.05$)
 - ❖ their least familiar EHR ($p < 0.05$)
- **No statistically significant difference** was observed between the degree of improvement in comfort across different EHR systems ($p = 0.12$)
 - ❖ Students reported increased comfort over time, **regardless of platform**

Qualitative findings:

- Students described increased familiarity with workflows over time
- Persistent challenges included:
 - ❖ documentation burden
 - ❖ excessive “button clicking” for routine tasks
 - ❖ variability in training/orientation across sites

Limitations

- Single-site study with small sample size
- Retrospective self-reported data → potential recall bias
- Variation in least familiar EHR systems greatly limited platform-specific comparisons
- Qualitative responses analyzed descriptively without formal thematic analysis

Conclusion & Implications

- Medical student comfort with EHR systems improves significantly over time, regardless of platform
 - ❖ Could suggest that increased comfort is more associated with repeated exposure and workflow familiarity rather than with characteristics of a specific EHR.
 - ❖ These findings align with prior work demonstrating that EHR experience and exposure are key contributors to learner comfort and perceived readiness [5,6].
- Although students reported improved comfort over time, persistent usability challenges still existed.
 - ❖ Earlier exposure and structured training may help accelerate this process.
- Future studies should focus on identifying which specific aspects of clinical exposure drive improvements in EHR comfort, and whether early training can accelerate this process.

References

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