Challenges and Lessons Learned in the Transition of an Electronic Health Record at a Pediatric Tertiary Center within an Academic Health System

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Background/Significance

The Electronic Health Record (EHR) is the standard of care and has been shown to reduce documentation time, improve guideline adherence and lower the number of medication errors.[1] While many benefits are known, there are risks intrinsic to individual EHRs and with implementation. Pediatrics presents a unique set of risks. Adult-oriented systems may lack functionalities required in the Pediatrics setting.[2] Standardization within an enterprise that incorporates multiple institutions and patient populations creates difficulty due to differences in level of care, equipment, medication practices and support systems.

Methods

Prior to implementation the enterprise established a multi-institutional and departmental group for clinical content development and site-specific interdisciplinary teams for workflows. Implementation was staggered in hospitals with our institution being the second group to roll-out after a tertiary care center which supported neonatal but no other pediatric services. Medication error rates were followed for pediatric-specific errors across all pediatric departments within our institution prior and after implementation. A pediatric-specific medication error prevention team was developed which compiled themes and mitigated issues in real time.

Results

At baseline, there was an average number of 26 medication safety reports per month. After roll-out, there was a 5-fold increase: 123 events the month of implementation. By month 3 post roll-out, the rate of reported medication errors had been restored to baseline. Issues identified that led to medication risks: 1) lack of congruency between EHR order, age context, pump library and stock availability; 2) lack of standardized medication concentrations across the enterprise; 3) computerized rounding without sensitivity for pediatric needs; 4) medication administration instructions not aligning with departmental or institutional policy; 5) the implementation of terminology for weights.

Conclusions

Review of safety reports and system fix requests highlighted themes related to both the need and risks associated with standardization. Prior to implementation there needs to be a clear pathway for rapid escalation and resolutions in place. Decisions and changes to the EHR, equipment, workflow and policies need to have pediatric representation and be examined from all age contexts. Future research and work needs to be focused on standards and guidelines on implementing an EHR that encompasses all age contexts.

References

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