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Implementing Tap-to-Witness Technology in the Electronic Medical Record

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Abstract. The implementation of an organisation-wide EMR system in 2019 included single sign-on technology for nurses and midwives. This first-in-Australia study extended the use of this technology to enable nurses and midwives to tap-to-witness for high-risk medications, blood and blood products, and expressed breast milk. A saving of 7 seconds per interaction was observed with nurses and midwives reporting appreciation for ongoing EMR enhancement to reduce EMR-related documentation burden.

Keywords. Electronic medical record, human-computer interaction, medication safety, midwifery, nursing

1. Introduction

The implementation of an electronic medical record (EMR) throughout our healthcare organisation in 2019 changed nurses' and midwives' work and workflows by replacing paper-based records with a comprehensive computerized system for patient care assessment, planning, delivery, and continuous evaluation.

In accordance with Australian nursing and midwifery registration and regulation requirements, double-checking of high-risk medications, blood and blood products, and expressed breast milk by two nurses or midwives is recommended to reduce medication errors and minimise harm [1]. However, in hospitals controlled drugs or drugs of dependence require double-checking by two nurses or midwives (e.g. substances with strict legislative controls or can be misused) [2]. The double-signing of medications within the EMR can be time consuming and frustrating for nurses and midwives as it requires them to manually type in their username and password. Tap-to-witness technology was implemented throughout our organisation in early 2022, where the second nurse or midwife performing the check is able to tap their identification card, replacing the requirement of typing out their username and password.

The purpose of this first-in-Australia study was to evaluate whether tap-to-witness technology supports: more accurate and timely nurse and midwifery medication, blood and blood products and expressed breast milk administration and documentation; and nurses' and midwives' work and workflows by reducing documentation burden.

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2. Methods

Mixed-methods data were collected to evaluate the implementation of tap-to-witness technology. EMR data and observations were used to assess: the number of double-signed events using the tap-to-witness technology; and time taken for double-checking from before and after the tap-to-witness technology was implemented. Nurses and midwives in clinical settings were also be asked about their satisfaction with tap-to-witness technology. Ethics approval was granted from the healthcare organisation as a quality improvement study (Ref: QA/84176/MonH-2022-300830(v1)).

3. Results

Nurses and midwives were observed to save approximately 7 seconds per double-checking interaction by using tap-to-witness technology. In June and July 2022, 94% of nurses and midwives were using tap-to-witness for double-checking (n=136,220). All double-checks using an identification card were successful (n=136,220; 94.4%), 7,517 double-checks using a password were successful (5.2%), whilst all failed sign-ins were nurses and midwives manually typing their password (n=621; 0.4%).

Feedback was anonymised and put into a separate spreadsheet for content analysis. Feedback related to enablers and barriers for tap-to-witness use. Enablers included ease of use, compliance, and saving time for staff. Quotes related to enablers include: "Improves compliance of double checking since the process is so easy"; and "It is very easy to use, time-saver, efficient, saves you having to type in your password each time". Barriers often related to the system logging off, lack of tap-to-witness access (including casual staff) and slowness of the hardware: "At times it logs the user off when tapping to witness, resulting in extended time delay"; and "Takes way too long to register…extremely slow to load. It is quicker to select the type username and password option".

4. Conclusions

The implementation of tap-to-witness technology to support nurses' and midwives' medication administration has the potential to decrease EMR-related documentation burden.

Acknowledgements

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References

[1] Australian Commission of Safety and Quality in Health Care, Evidence briefings on interventions to improve medication safety: Double-checking medication administration. 2013.
[2] Victorian Therapeutics Advisory Group, Recommendations on the security and custody of Schedule 8 and Schedule 4 drugs within hospitals, Department of Human Services, Editor. 2003.