

RNSAFE: A Remote Way to Witness High Risk Medications

Stephanie Altavilla, MSMI, RN; Sara Gibbons, MSN, RN-BC, CPN; Jowell Sabino, MSN, RN, CPNP; Jennifer Taylor, M.Ed, BSN, RN-BC, CPN

Boston Children's Hospital Boston, MA;

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Introduction/Background

Medications errors (wrong drug, dose, route, concentration, and/or rate) are the largest source of errors within the hospital. The administration of certain high-risk medications requires an independent double check for verification. According to Bataille et al, (2015), high-alert medications are those that are associated with high risk of serious harm if administered improperly. This witness/double check requires engaging a second nurse to independently calculate dose and volume, visually inspect the label, review pump settings and reconcile lines, which can be very time consuming and takes the second nurse away from patient care. It is often difficult to find an additional nurse during busy medication administration times. These issues have led to inconsistency in the quality of double checks. As a result, medication errors, including wrong dose, wrong rate, and wrong medication have happened. Stavroudis et al, (2010) state that "a large number of administering errors that occur in the NICU show that human factors surface as the most frequent cause and contributory factor to medication errors." Medication/fluid errors continue to be the largest type of errors seen. During Morbidity and Mortality Rounds at our hospital in 2013, a team peer-reviewed a case in which a patient received the incorrect medicine, despite a process that required two nurses to conduct safety checks.

Methods

This error inspired a group of nurses to develop RNSafe, a telehealth-based solution. Using a "fast-track" Innovation Technology Grant from Boston Children's the team developed an application using a camera-equipped, tablet-like device for nurses to use at the bedside that allows another nurse to remotely conduct the second safety check. RNSAFE (Remote Nurse Witness Supporting Medication Administration For Efficient Care) allows the administering nurse the ability to consult with a remote nurse to carry out the visualization and double check using a webcam or mobile device. This would provide the administering nurse with a second nurse immediately, without having to pull a colleague from the bedside. Additional safety benefits of having a remote nurse include lack of interruption and/or distraction for the witnessing nurse. The application uses an Apple iPod for the bedside nurse and a Microsoft Surface for the witnessing nurse and provides bedside nurses access to Microsoft Lync 2013.

Results

Testing of this prototype has begun with the design team. Educational materials are being created to assist the bedside nurse. Testing has indicated that a focused, detailed camera for the iPods is required in order to see small volume (e.g., 1mL or smaller) syringes. Testing has also suggested that verbal communication between nurses is still needed. While RNSafe is a telehealth solution, it does not take away the importance of verbal nurse-to-nurse communication. The project aims to decrease time to medication administration and provide more time at the bedside for Nurses as well as to increase patient safety by decreasing adverse drug events.

Discussion/Conclusion

The team foresees that having a remote nurse available will be useful in situations in which an in-person nurse is not immediately available or when there are many distractions near the bedside. The team is building options for scheduled remote checks as well as emergent cases. Emergent cases will move to the top of the request queue.

References

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