eMAR Development for the Emergency Department

The Problem

Emergency Department (ED) nursing care is frequently provided in a fast-paced, high-acuity environment. During a single visit it is not uncommon for a patient to receive a number of medications; these may also include medications considered to be high risk. The medication administration process in the Emergency Department includes provider order entry (POE), but not pharmacy processing, electronic documentation or barcode medication administration.

Aim/Goal

A collaborative development and implementation of an eMAR for the ED. This ED eMAR would provide increased medication safety measures via barcode scanning and documentation without adversely affecting workflow in critical events.

The Team

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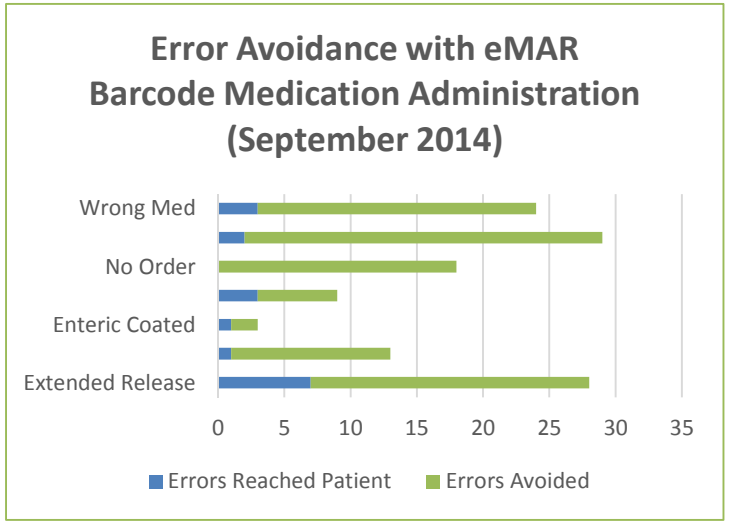
The Interventions

- Weekly stakeholder meetings: ED and eTesting Teams
- Observation and workflow mapping
- Iterative development by modifying inpatient & PACU eMAR versions
- Preliminary testing with eMAR team followed by in-depth testing by end-users
- Modifications to ED-POE to map to standard POE medication order format
- Simulations of critical events
- Label printing from Omnicell
- Creation of drip kits by pharmacy for medications mixed in the ED
- Training of 94 ED staff by ED leadership with eTesting Team support
- 24/7 Support during go-live by eTesting Team and ED Superusers
- eMAR feedback log in real-time to identify bugs & ongoing training needs
- Review of scanning reports to identify issues

The Results/Progress to Date

During go-live in the Emergency department, eMAR alerted RNs to potential medication errors, averting them before they reached the patient. These errors likely would have been unrecognized prior to barcode scanning and electronic documentation. In the first month,

- 86% of potential med errors identified by scanning were stopped before reaching the patient.
- 41% of errors that reached patient related to extended release doses.



Lessons Learned

- Simulation is an effective and essential development tool
- Ability to collect and incorporate end user feedback and suggestions is critical to end product development
- Time spent on development and testing is time well spent, even if it means delaying implementation.
- Staged implementation allows for early benefits while time is given to development of more complex functionality.

Next Steps

- Develop and implement 'critical event' process for ED
- Expand 'critical event' process to Intensive Care and PACU
- Analyze documentation without barcodes to track near misses, identify barriers to scanning and potential solutions
- Improve reporting system

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