Preventing Med Errors: Benefits of Bar-Coding at the Bedside
Cori Bolger, BSN, RN; Jessica E. Burton, BSN, RN; Katherine Kaciupska, BSN, RN; Meghan Wilson, BSN, RN
3 Women’s Health, 6 Acute Care Medicine & 4 Acute Care Surgical

Introduction
Medication errors are a common problem that can account for an increased length of stay, injuries or fatalities and increased cost for healthcare systems. One research study found that med errors occurred in 5.7% of all episodes of drug administration. Errors can be made throughout the med preparation process, with administration at the bedside counting for half of all errors. Research has shown, however, that bar-coded systems used at the bedside have significantly lowered the rate of med errors. One VA hospital reduced their med errors by 69% and reported no adverse effects with bar-coding. Hershey Medical Center utilizes bar-code technology in the pharmacy, blood bank and lab but not at the bedside. To prevent med errors, RNs must rely on the “five rights” of medication use combined with eMAR software.

P - Nurses administering medications to adult patients in medical, surgical and ICU settings in an academic medical center.
I - Use of bar-code medication administration technology by the RN to administer meds at the bedside.
C - Use of eMAR software and the “five rights” by the RN to administer meds at the bedside.
O - Utilization of bar-coding technology will reduce medication errors made at the bedside and thus prove to be an important intervention to improve patient safety and reduce adverse events.

Methods
• Six applicable research articles were obtained via PubMed and OVID using keywords: “bar-code,” “error,” “technology,” “medication,” “safety” and “nursing.”
• RNs on 6 Acute Care, 4 Acute Care, and 3 Women’s Health were surveyed to determine if nurses believe that bar-coding technology would have prevented the med error(s) they made or witnessed.

RN Surveys
46 completed RN surveys obtained.
78% of RNs stated that they have made a medication error in their career.
85% of RNs stated that they discovered a medication error made by someone else in their career.
The top reasons RNs believed the error occurred were: poor time management causing a rush to pass medications on time and incorrect documenting and/or rescheduling of medications.
72% of RNs said that using a bar-code scanning system would have prevented the med error they made or witnessed.

Cons of Bar-Coding System
- Present new challenges to implement bar-coding system-wide.
- Significant resources needed to put system into place.
- RNs must be trained and adapt to change.
- Some med errors cannot be prevented despite bar-coding technology.
- Technology can actually cause med errors (mislabeling, poor printing, software and equipment malfunction, etc.).

Discussion
Currently, the HMC pharmacy uses bar-coding technology to check meds before sending them to the floors. RNs then collect patient-specific meds in a med room and check them with eMAR and at the bedside. Surveyed nurses felt that the feeling of being rushed to administer the medications and/or poor time management were the top reasons they made a med error. A bar-coding scanning system could cut down on the number of med errors made at the bedside by alerting nurses of mistakes that could potentially occur while the nurses are feeling rushed.

By scanning the bar-codes on patient’s wristband and the med, the RN can check all “five rights”: right patient, right med, right dose, right route and right time - at once. HMC is currently considering the introduction of a similar system in 2013.

References