Medication Administration Errors- An Observation and Intervention Study (An Ongoing Study).

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1 Background

Non adherence to the five rights of medication and the six medication administration safety processes contribute to making medication errors in hospitals. The five rights include right patient, right medication, right dose, right route, and right time. According to Kliger et al., the six safety processes include comparing medication to MAR, keeping medication labeled throughout, explaining drug to patient, charting immediately after administration, checking two patient IDs and staying free of distractions and interruptions (Kliger et al., 2009). It is important to address this issue because medication errors remain among the most common errors in hospitals and have been documented in a wide range of studies and surveys, harming at least 1.5 million people and causing approximately 7,000 preventable deaths a year in the United States. Estimates of the annual costs of medication errors in hospitals range between $3.5 and $29 billion (Kliger et al., 2009). According to the Institute of Medicine, medication errors are the 4th leading cause of sentinel events that lead to adverse drug events or patient death. These errors not only compromise the health and safety of patients but the costs incurred due to adverse drug events is estimated to be $3.5 billion annually (IOM, 2007).

•**Purpose:** Observing nurses during medication administration will increase adherence to the five rights of medication and six safety processes for medication administration which will decrease medication errors on 2 medical and 2 surgical units at the Johns Hopkins Hospital.

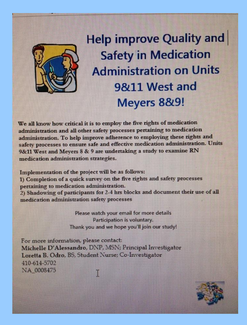
•**Aims**: To observe the level of adherence to the five rights of medication administration and six safety process by RNs on 2 medical and surgical units during medication administration and to determine the effects of this observation on medication errors.

2 Methods

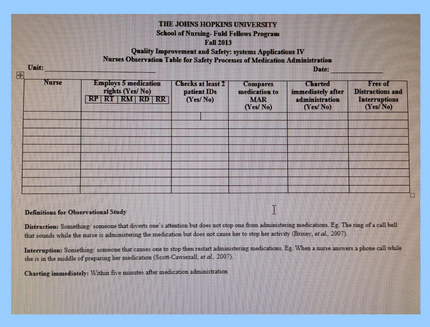
Recruitment: All RN staff on 2 medical and 2 surgical units at Hopkins hospital will receive an email script informing them of the study. Nurses interested will participate in the study. Recruitment flyers will also be posted on the units.

Observation: A trained observer will observe nurses during entire medication administration process.

- Prior to each direct observation period, a script describing the study and the approved written consent form will be given to staff nurses who agree to participate in this study.
- A study co-investigator, who is not staff on the unit, will choose names out of the container and review these with the observer. Any nurse who has chosen not to participate in the study will not be shadowed by the observer. Nurses will not be blinded to this study.
- The trained observer will shadow one RN until medication administration is complete. The observer will use the observational document to record data. The observer can shadow more than one RN during the observation period, but each observation must represent one complete medication cycle. It is anticipated that each observation period will last about 15-30 minutes.
- Names of nurses, patients and anyone else involved in the process will not be recorded. Each observation will be identified by a number only, not associated with a name or any other identifying factor of the RN being observed or the patient receiving the medication.
- If a medication error that would cause harm is witnessed the observer will intervene with the nurse and contact the PI.



Recruitment Flyer


THE JOHNS HOPKINS UNIVERSITY
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Quality Improvement and Safety: systems Applications IV
Nurses Observation Table for Safety Processes of Medication Administration

Unit: _____ Date: _____

Nurse	Employs 5 medication rights (Yes/ No) RP / RT / RM / RD / RR	Checks at least 2 patient IDs (Yes/ No)	Compares medication to MAR (Yes/ No)	Charted immediately after administration (Yes/ No)	Free of Distractions and Interruptions (Yes/ No)

Definitions for Observational Study

Distraction: Something/ someone that diverts one's attention but does not stop one from administering medications. Eg. The ring of a call bell that sounds while the nurse is administering the medication but does not cause her to stop her activity (Birney, et al., 2007).

Interruption: Something/ someone that causes one to stop then restart administering medications. Eg. When a nurse answers a phone call while she is in the middle of preparing her medications (Scott-Cawiezell, et al., 2007).

Charting immediately: Within five minutes after medication administration

Observation Data Sheet

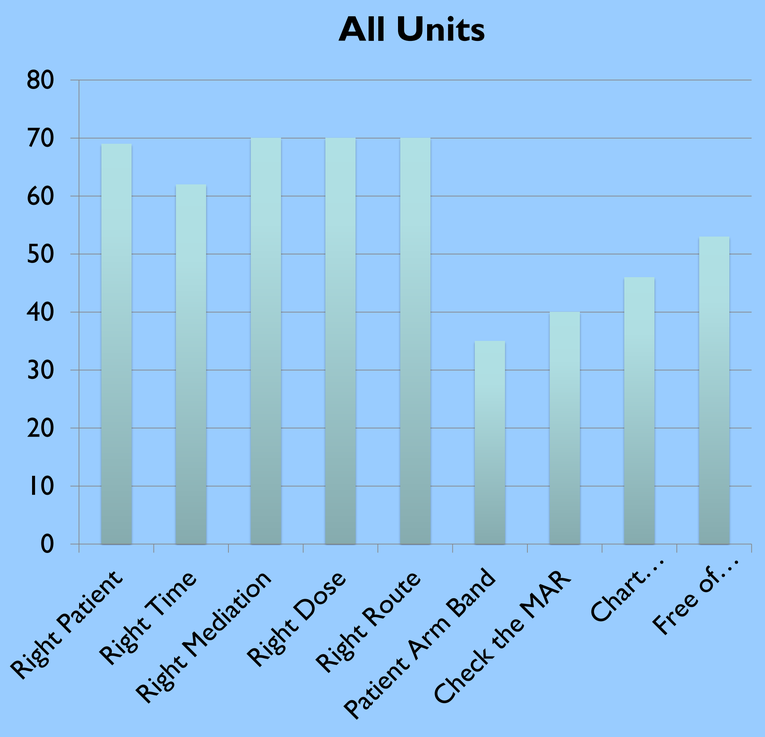
3 Results

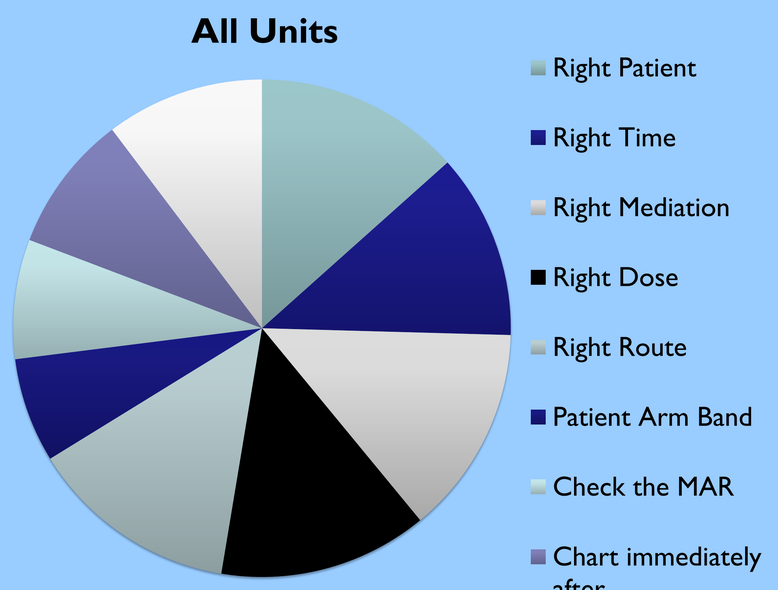
From over 70 observations on 2 medical and 2 surgery units, the most prevalent workarounds that contribute to costly medication errors include:

- Checking the patient arm band (50% Adherence)
- Charting immediately after (65% Adherence)
- Checking the MAR in the computer w/in the patient's room before administering (75% Adherence)
- Nurse free of distractions (75% Adherence)
- Medication given at the right time (88% Adherence)

These workarounds that are impacting patient safety could be prevented through the use of a Bar Code Medication Administration (BCMA) program.

Now that the 2 medical units have recently implemented the new BCMA program on their units, the study will be returning not only compare the workarounds to the EMR but also look for new workarounds.





The above results graphics are of the current data collected from 2 medical and 2 surgical units at Hopkins hospital.

4 Conclusions

Thus far, this study has shown that there is a significant level of non adherence of Kliger's six safety processes. The most apparent safety process that is being compromised is the patient identifier. If patient's are not identified correctly, it exponentially increases the chance of the wrong medication given to the wrong patient. Additionally, charting immediately afterwards was the second most significant workaround. This could also lead to a medication error as a nurse could give a patient the same medication twice or forget which medications were administered. These are extremely important processes that are in place for the patient's well being that are being overlooked within the current system.

5 Future Directions

The study is now moving forward into the second phase to observe these 4 units as they receive the new barcoding system. The study will proceed to compare the data between the workarounds of these two systems of medication administration. The results will provide information as to what workarounds are being performed to ultimately design a strategy that targets those specific workarounds in order to create a safer healthcare environment.

6 References

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