

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

Loretta B. Odro, BSPH, FULD Fellow
Michelle D'Alessandro, DNP, MSN, RN
Center for Kidney Transplant
The Johns Hopkins Hospital.

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).

Evidently, medication errors is still a major problem that not only affects patients; but nurses and the units they serve in tremendous ways.

Two medical and surgical units at the Johns Hopkins Hospital were selected to for this observational study. These units were selected because of the similarity in size and most importantly, the patient population they serve. Many of the patients on these units are very sick and most have undergone major surgeries like organ transplants. Hence, it is crucial to ensure that medications are being administered properly and with precision to ensure good health outcomes. Errors in medication administration can lead to tremendous health issues and major health setbacks.

- **Problem:** RN little to no adherence to five rights of medication and six safety processes during medication administration leads to medication errors.
- **Research hypothesis:** Observing nurses during medication administration will increase adherence to five rights of medication and six safety processes for medication administration which will decrease medication errors on 2 medical and surgical units at the Johns Hopkins Hospital.
- **Primary Objective:** 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.
- **Secondary Objective:** To assess reasons for non-adherence to the medication rights and safety processes.



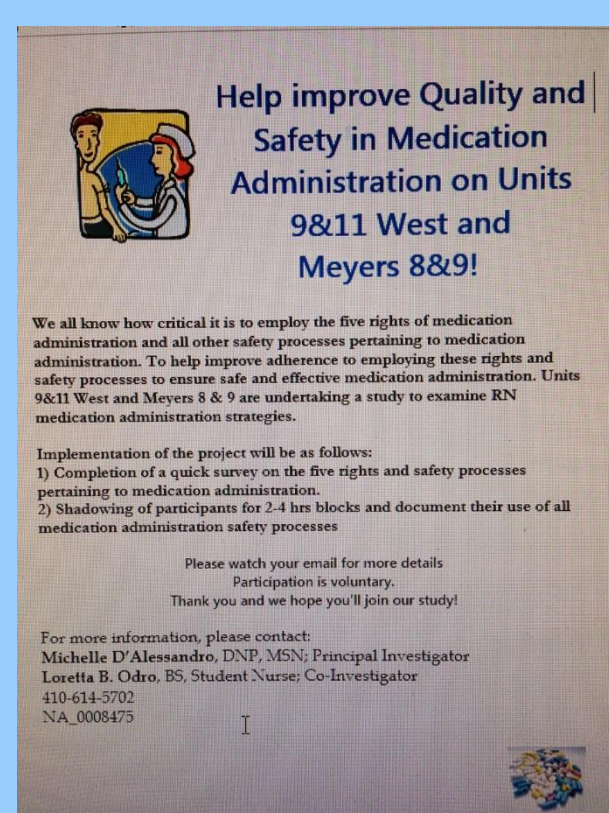
2 Methods

Recruitment: All RN staff on Units 9 & 11 West and Meyers 8 & 9 will receive an email script informing them of the study. Nurses interested will participate in the

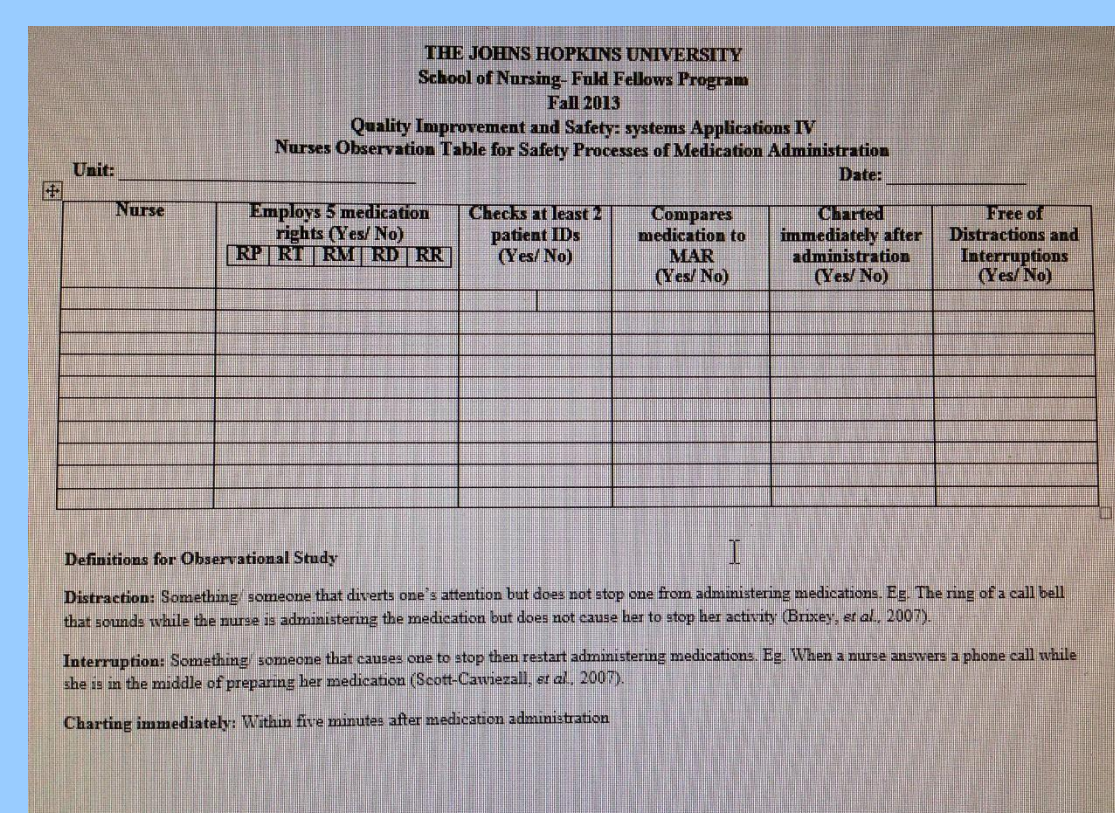
study. Recruitment flyers will also be posted on the units.

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. A total number of medication cycles observed \geq 16 will be observed.
- If a medication error that would cause harm is witnessed the observer will intervene with the nurse and contact the PI.



Recruitment Flyer



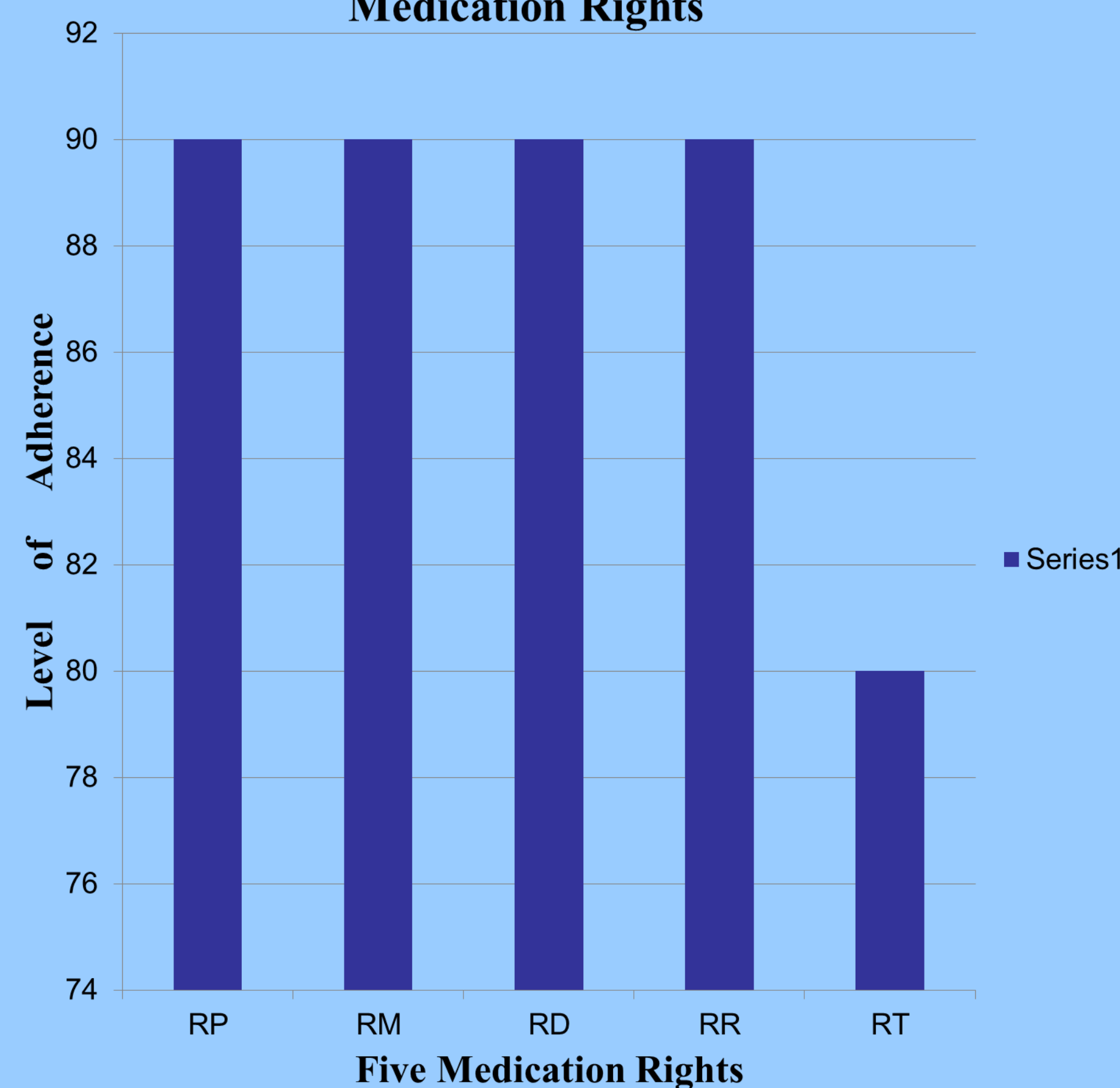
Observation Data Sheet

3 Results

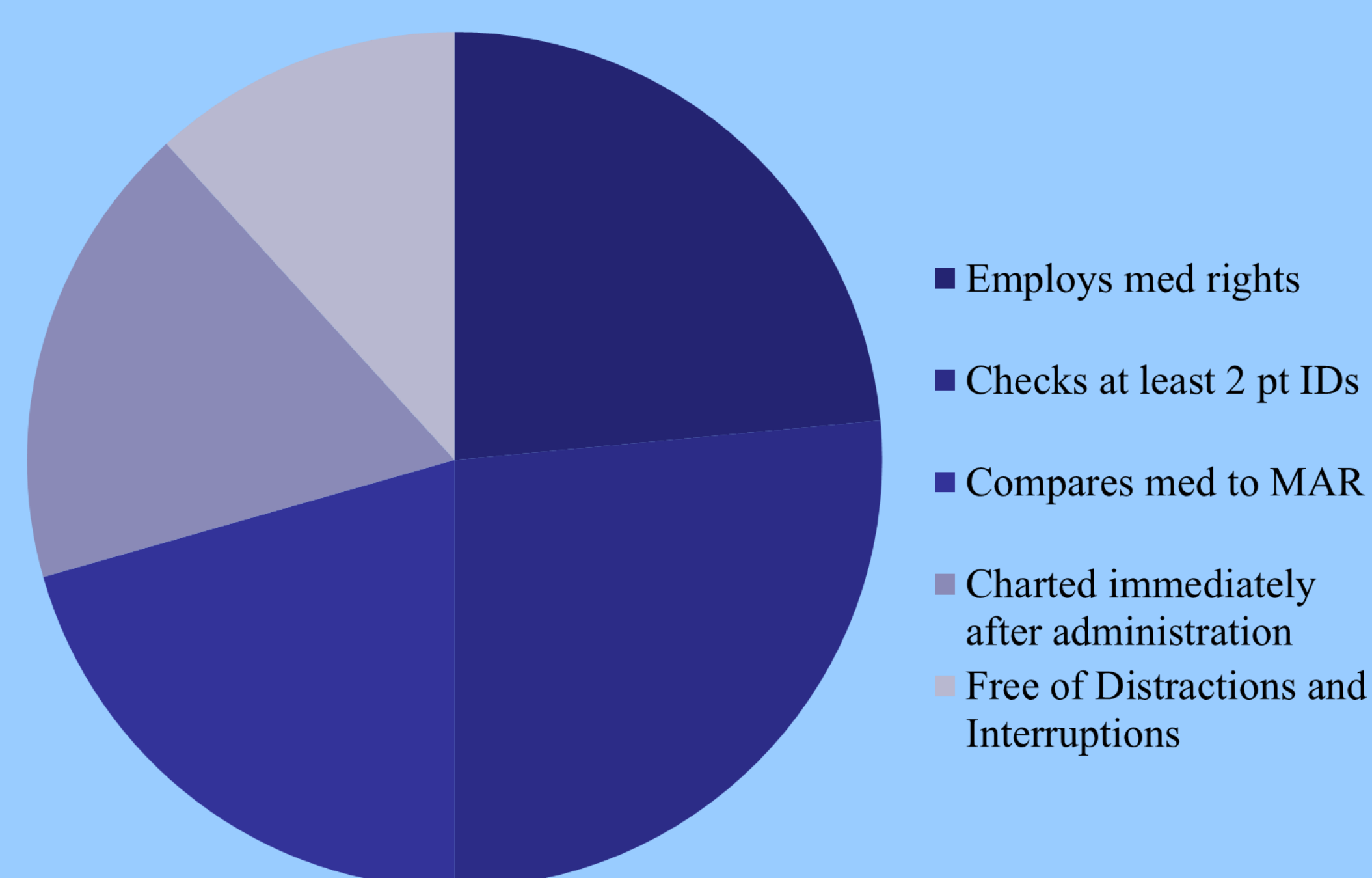
The study is currently awaiting IRB approval. It will proceed after IRB approval has been obtained. Results will be written out; and also mapped out in a table format (or a graph) outlining findings from the observation for visual purposes.

Based on conversations and meetings with nurse managers and nurses of the participating units, we anticipate to find satisfying levels of adherence to the medication rights and safety processes; and higher levels of possible distractions and interruptions. This is anticipated because of the constant interruptions and distractions nurses encounter from patients, colleagues, and other staff members during and throughout their shifts.

Assumed Preliminary Adherence Level to Medication Rights



Assumed Preliminary Adherence Level to Medication Safety Processes



The above results graphics are only anticipated and are subject to change after actual observations take place.

4 Conclusions

Conclusions from the study will focus on observations made during medication administration by nurses and the relation/impact on patient safety and quality. The level of adherence of the five medication rights and Kliger's six safety processes will be discussed. To make comparisons, the differences in adherence to each right and safety process will also be discussed.

5 Future Directions

Future directions for this project include

1. Developing interventions to combat medication administration errors on the participating units based on results from observations.
2. Determining the effectiveness of the interventions developed and ways by which these interventions minimize errors.

6 References

- Brixey J.J., Robinson D.J., MS; Johnson C.W., Johnson T.R., Turley, J.P., Zhang, J. (2007). A Concept Analysis of the Phenomenon Interruption. *Advances in Nursing Science*, 30(1), E26-E42.
- Davidhizar R. & Lonser G. (2003). Strategies to Decrease Medication Errors. *Health Care Manager*, 22(3), 211-218.
- Institute of Medicine (2007). Preventing Medication Errors: Quality Chasm Series. *Institute of Medicine*.
- Kliger, J., Blegan, M.A., Goatees, D., O'Neil, E. (2009). Empowering Frontline Nurses: A structured Intervention Enables Nurses to Improve Medication Administration Accuracy. *The Joint Commission Journal on Quality and Patient Safety*, 35 (12), 604-611.
- Pape T.M. (2003). Applying airline safety practices to medication administration. *MedSurg Nursing*, 12(2),77-93.
- Potter P., Wolf L., Boxerman S., Grayson D., Sledge J. (2005). Understanding the cognitive work of nursing in the acute care environment. *Journal of Nursing Administration*, 35(7-8), 327-35.
- Scott-Cawiezell J., Pepper G.A., Madsen R.W., Petroski G., Vogelsmeier A., Zellmer D. (2007). Nursing Home Error and Level of Staff Credentials. *Clinical Nursing Research*, 16(1), 72-78

Funding Source:

The Helene Fuld Leadership Program for the Advancement of Patient Care Quality and Safety