SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

The purpose of this project was to improve the physical design and organizational layout of the medication room, reduce nurse interruptions and distractions, and create a standard medication administration process for enhanced efficiency and patient safety. This article describes a case study.

Medication Room Madness: Calming the Chaos

Conrad, C., Fields, W., McNamara, T., Cone, M., Atkins, P.
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Key Concepts/Context

This article describes a medication safety project that wanted to improve the physical design and organizational layout of the medication room, reduce nurse interruptions and distractions, and create a standard medication process for enhanced patient safety and efficiency. This successful change improved the medication administration process, decreased medication errors, and enhanced nursing satisfaction.

Methods

This case study took place at Sharp Grossmont Hospital, a 481-bed tertiary care, not-for-profit, Magnet-designated community hospital in San Diego County, CA.

The hospital piloted the medication safety project on a 41-bed progressive care unit, which has an average daily census of 35, an average length of stay of 4.1 days, and approximately eight discharges and admissions per day. There are two medication rooms, 29 private rooms, and six semiprivate rooms in the unit. Patients generally have cardiac, pulmonary, and renal diseases. They get an average of 19 scheduled medications with a range of 7 to 32 and an average of 10 PRN medications with a range of 1 to 15 in a 24-hour period. During the day, there are 72 registered nurses (RNs) with a patient-to-nurse ratio of 4:1 and a 5:1 ratio during the night.

The project team surveyed clinical nurses about their perceptions of the medication administration process before and after the project The team also created a 7-question survey, using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree) to rate statements about the efficiency of
the medication process, obstacles confronted, distractions and interruptions, team support,

available resources, and performing mandatory double checks. Respondents were asked to comment on obstacles they experienced while administering medications at the end of the survey.

After reviewing the survey results, the safety improvement team identified five strategies:

1. Create a standard environment for medication room design and processes.
2. Minimize unnecessary distractions and interruptions during medication administration.
3. Develop a standard protocol for medication administration that includes checking for the 7Rs (right patient, medication, route, dose, time, reason, and documentation).
4. Establish mandatory double-check process for insulin, heparin, and warfarin.
5. Provide education on the medication administration guideline, double-check procedure, new medication administration environment, technology supports in the automated medication dispensing unit, and the electronic nursing documentation system.

After the improvements were implemented, medication errors were tracked and the survey of the staff repeated.

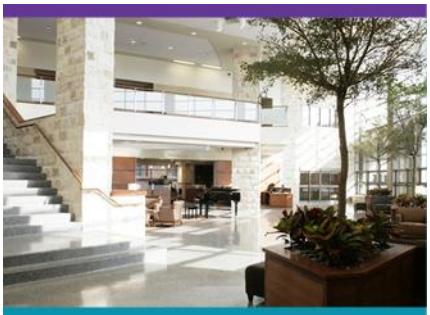
Findings

According to the results, unnecessary interruptions dropped from a median of 4 interruptions before the project to a median of 1 interruption per medication administration after the project finished. Medication administration time also lessened from a median of 15 minutes (SD = 5.9) to a median of 10 minutes (SD = 4.7). There was no statistical difference pre- and post-project for the number or route of medications. Finally, medication errors dropped 22% the first year, and by the end of the third year, the medication error rate had plummeted a total of 53%.

This medication safety project demonstrated that environmental and process improvements can be achieved with leadership support, empowered clinical nurses, and multidisciplinary teams, using a structured improvement processes such as Lean Six Sigma.

Limitations

This study was a case study of a single process improvement. Therefore, results are not generalizable.



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Design Implications

This study reported on a quality improvement projected related to medication errors. The authors recognized that to be successful they needed to address multiple parts of the process including the designed environment of the medication room. The goal was to organize the medication room for efficient workflow, accessible supplies and equipment, reduction in distractions, and improvement of ergonomic safety.