KEY POINT SUMMARY

OBJECTIVES

To evaluate the effect of separate medication rooms on interruptions during medication preparation routines and on rates of self-reported medication errors.

DESIGN IMPLICATIONS

The results of this study imply that designing medication preparation areas as open, shared workspaces can be detrimental to the quality of work and overall productivity of employees. Separate medication areas or rooms should be carefully considered for the sake of patient safety as well as staff effectiveness.

Separate medication preparation rooms reduce interruptions and medication errors in the hospital setting: A prospective observational study

Key Concepts/Context

Errors and interruptions are commonplace during medication preparation procedures in healthcare environments. One study found that one interruption occurred for every 3.2 drugs administered during nurses' medication rounds. Errors are somewhat understandable due to the complex nature of medication processes, which typically involve prescription, transcription, preparation, double-checking, administration, and monitoring, spread among a variety of professionals. Few previous studies have examined whether separate medication rooms effectively reduce the rates of errors and interruptions in these settings.

Methods

The study took place in a 900-bed hospital supported by 46 nurses on a 3-shift system. Two wards (each with 18 beds in 11 patient rooms) were selected for the study. In both wards, one nurse was responsible for all medication preparations, while a second nurse acted as a double-checker. The study design entailed pre-intervention and post-intervention observations of the nurses by an external researcher. Pre-intervention conditions did not include a separate medication room, while post-intervention conditions did include a separate medication room. Errors were self-reported by the nurses participating in the study over the span of 122 days (61 pre-intervention, 61 post-intervention). Interruptions were noted by external observers over the span of 17 hours, or 72 different medication preparation cycles.
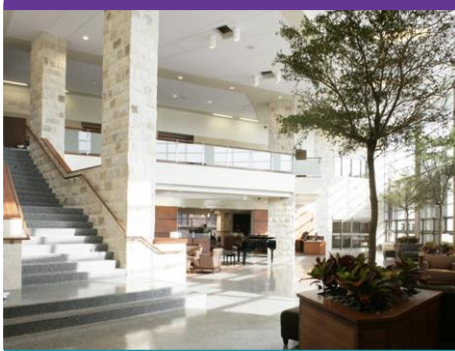
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Findings

Analysis of collected observations and self-reported data revealed that 47.1% of interruptions originated from colleagues, 36.5% of interruptions were specifically staff interruptions by other nurses, and 28.6% were self-initiated interruptions. All forms of interruption decreased in overall number in the post-intervention phase; however, after the implementation of a separate medication room, the mean interruption rate decreased from 51.8 to 30 interruptions per hour. Additionally, a mean duration of 33 seconds was found per each interruption. Medication error rates per day were significantly reduced in the post-intervention setting.

Limitations

The authors note a few limitations in their study. Research was conducted in only one hospital; therefore, not every aspect of the study's design may be universally applicable. Participant behavior during observation may have changed due to the condition of being observed. Lastly, the use of self-reporting could arguably result in underrepresented actual figures.