



## KEY POINT SUMMARY

### OBJECTIVES

This study set out to examine workload interruptions for nurses in medical-surgical hospital units, with the intent to identify methods for reducing interruptions and improving the nurses' cognitive work efficiency.

## Interruptions and Geographic Challenges to Nurses' Cognitive Workload

Redding, D., Robinson, S.  
2009 | *Journal of Nursing Care Quality*  
Volume 24, Issue 3, Pages 194-200

### Key Concepts/Context

Inpatient care is fast-paced and requires nurses to constantly shift their attention to make clinical decisions and care for patients in a constantly environment. Nurses integrate complex thinking with psychomotor and affective skills to deliver interventions. This thinking is continually disrupted by interruptions and distractions, which compete for their attention and can lead to errors or omissions and potentially pose a risk to patient safety. Earlier studies estimate that each interruption reflected an operational loss and cost \$95. The research methods used in this study replicated a prior study.

### Methods

The study was conducted in medical-surgical nursing units at a 562-bed, tertiary care, urban hospital in the Midwest. The units comprised two medical units, two surgical units, and two cardiology units (one medical, one surgical). The units ranged from 30 beds (medical oncology) to 37 beds (cardiology surgical). Three of the units (medical, surgical, and cardiology medical) included intermediate care beds with invasive monitoring capacity.

The descriptive study included quantitative and qualitative observation techniques. Data collection tools included observations by two trained nurse faculty practitioners who tracked nurses' paths on floor plans as well as kept field notes on the nurses' actions and communication with others.

A convenience sample of 32 staff nurses was observed during the day shift, working in six medical-surgical nursing units.



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The study calculated interruption frequencies by type and qualitatively assessed subjects' travel patterns to identify possible sources of interruptions and cumbersome processes interfering with patient care.

## Findings

Observers recorded 244 interruptions and found six major themes: (1) employees asking questions, (2) distracting peripheral conversations, (3) unavailable supplies that required the nurse to get them, (4) phone calls, (5) family questions, and (6) patient call lights.

Travel patterns also contributed to workflow interruptions. Nurses traveled frequently between patient rooms, medication carts or stations, and centralized equipment and care supplies locations, responding to requests from patients and other caregivers.

Reviewer note: This article discusses many findings relative to nursing unit design than can be represented here. Therefore, review of this article is recommended.

## Limitations

This study is limited in that it was conducted at only one hospital where the system of care, operations, equipment, and staffing patterns may be unique to this environment. Further, the observations were all made on the day shift.

The observers did not enter patient rooms to avoid creating yet another distraction; thus, some interruptions may not have been recorded. Finally, it is possible that observers classified observations into different categories, despite their training.

## Design Implications

Many interruptions occurred while nurses were in the process of performing intervention activities such as traveling to patient rooms, gathering supplies, preparing or administering medication, and patient teaching, creating a risk for medication error and the potential for unintentional omissions in care. As the authors note, "Any improvements to minimize the number of interruptions experienced by nurses will improve healthcare quality and will help ensure patient safety."

The data from this study suggest that nurses' travel paths on a unit create interruptions in their ability to carry out efficient patient care. Designers might consider the results of this study as they work with staff planning for their work flow.