



KEY POINT SUMMARY

OBJECTIVES

The study analyzed the location, frequency, and environmental problems associated with activities that nurses typically carry out in acute care patient rooms.

DESIGN IMPLICATIONS

Understanding the relationship of the physical environment to nursing activities in an acute care setting was enhanced by the multiphase multimethod study design. The preliminary review of the literature was supplemented by real-world insight from nurses as well as researcher observations.

This process for data collection informed design decisions related to layout and adjacencies as well as equipment and finish selection.

Using a Task Analysis to Describe Nursing Work in Acute Care Patient Environments

Battisto, D., Pak, R., Vander Wood, M. A., Pilcher, J. J.
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Key Concepts/Context

A growing body of research demonstrates linkages between workplace design and processes in healthcare facilities with staff and patient safety, operational efficiency, staff satisfaction, and medical errors. There has been less emphasis on the role of the built environment in helping or hindering care delivery. Research is needed on the contextualized activities performed by nurses and how nurses spend their time to measure the effects of interventions aimed at redesigning care to improve safety or efficiency or to understand the implications of policy changes for nursing practice. Without knowing the range of common and uncommon nursing activities performed in patient rooms in hospitals, it is not possible to create a knowledge-informed patient-room design that can support the delivery of complex nursing activities.

Methods

To better understand the full breadth of nursing activities, three complementary activities comprised the task analysis. The first source of information came from a literature review of nursing education textbooks to understand the complexity of common nursing activities in acute care settings. The second phase involved conducting observations to record the relative frequency of the nurses' activities, the materials required to perform the activities, the locations in which they occurred, and any sources of task errors. The third phase used structured interviews to discuss nurses' routine tasks, the sequential steps, how they prepared, problems they encounter, and how they solve those problems.



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Findings

The most frequently observed activities were: patient assessment (15.7%), documentation (25.2%), administering medication (21.2%), and assisting the patient (7.8%). The primary locations of nursing activities were: bedroom (42.0%), nursing station (22.5%), outside room (14.4%), med station (7.4%), supply area (5.9%), and hallway (5.1%). The frequencies of equipment used in nursing tasks: computer (29.1%), chart in which patient information is documented (14.2%), intravenous (IV) pump (11.1%), miscellaneous equipment (9.3%), paperwork (4.3%), and syringes (4.1%). The percentage of time a piece of equipment was located and used in a patient's room also revealed what remained in the patient rooms and what nurses had to take in and out. Computers (most of which were located on movable carts) were the most often used piece of equipment; yet, computers were located in the patient's bedroom only 12.4% of the time they were used because of the variations across how nurses use the computers for documentation. Most problems occurred at the bedside, comprising 44.1% of the total locations in which problems were encountered. Environmental examples observed included nurses stepping over cords and equipment, nurses leaving the room to go search for medical equipment, inadequate space for preparing medications to be administered, nurses having to move around the clutter in the room to the far side of the bed to assess the patient, and the bedside table being used by the patient so the nurse had to place objects on the bed when administering care. Of all of the activities performed, administering medication and assessing patients both involved the most number of problems. Documenting incurred the next highest number of problems, followed by assisting patients, communicating, moving, and cleaning/organizing/ gathering.

Limitations

Although only one hospital system was included, one floor plan typology was investigated, and a limited number of nurses were shadowed, the findings are consistent with those of other studies. The data came primarily from observational and self-reported data collection methods, which may undermine the collection of sensitive information (i.e., errors and mistakes). As is common with qualitative data analysis, no statistical analysis was conducted, and the study involved a smaller sample size from medical surgical units in one hospital system, which may limit generalizability. To gain confidence in the generalizability of design principles, further research regarding the contribution of problematic areas of patient rooms and the role physical environments and technology in enhancing performance and mitigating errors that jeopardize personal safety must be investigated in multiple hospitals and/or in various operational contexts.