SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

This study sought to observe adult and pediatric ICU nurses to quantify and compare the length and frequency of nursing tasks across four ICUs and within two discrete workflows: nurse handoffs at shift change and patient interdisciplinary rounds.

DESIGN IMPLICATIONS

This study provides useful information about how nurses spend their time in various ICUs. The methodology can be used in future research to examine changes in work related to, for example, implementation of health information technology. It could also be used as a benchmark to compare different unit layouts and work flows.

The Work of Adult and Pediatric Intensive Care Unit Nurses

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2013 | Nursing Research
Volume 62, Issue 1, Pages 50-58

Key Concepts/Context

Over the years, researchers have employed a variety of methods to describe and quantify nursing work. However, much of this research looked at nursing in general care settings and not at the unique work nurses perform in intensive care units (ICUs). This study uses behavioral task analysis to observe activities performed by adult ICU (AICU) and pediatric ICU (PICU) nurses as well as to compare the time they spent on various tasks across four different ICUs.

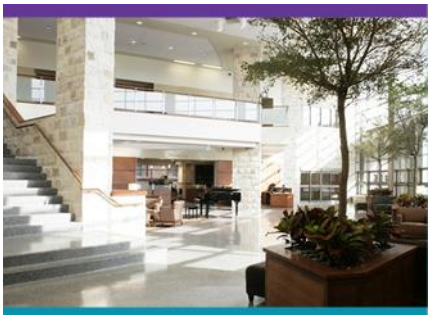
Methods

Researchers used a behavioral task analysis of adult and pediatric nurses to allow unobtrusive, real-time observation. Over a 3-month period, they conducted a total of 147 hours of observation in four ICUs of a 400-bed, rural, tertiary care, community teaching hospital in the Northeastern United States: a medical-surgical AICU, a cardiac ICU (CICU), a PICU, and a neonatal ICU (NICU).

They used an existing software tool on a portable tablet computer to observe and document nurses' activities.

The data output was presented in a simple spreadsheet format that was exported in SPSS (version 20) for data analysis. Early iterations of the task list were pilot-tested in ICUs by observers using
paper prototypes.

Two observers collected data during this large observational study. The observers were trained, and their inter-observer agreement was at 73% for capturing tasks within a 10-second window.



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Observation periods ranged from 1.5 to 3 hours. During continuous periods, researchers shadowed the nurses at a distance to observe the nurse's activities without interfering with natural movement, patient care, or workflow. Observers minimized nurse interaction.

Findings

Two researchers conducted 147 hours of observations over 3 months: 37 hours in the AICU, 35 hours in the CICU, 38 hours in the NICU, and 37 hours in the PICU. During the study period, patient census did not vary significantly in the AICU (23–24patients), CICU(16–17 patients), or the NICU (22–29 patients). There was greater variation in the PICU (2–8 patients).

Not surprisingly, the majority (75%) of ICU nurses' time was spent on patient care activities. Just about half of this time was spent on direct patient care, more than 20% on care coordination, 28% on nonpatient care, and approximately 2% on indirect patient care activities. The observers noted variations between units. For example, nurses in the two adult units spent more time using monitors and devices. The data also showed a high rate and variety of tasks: Nurses performed about 125 activities per hour, averaging a switch between tasks every 29 seconds.

Limitations

Observational methodology has limitations, most significantly in that the nurses' cognitive work is not measured. To understand these cognitive demands, researchers would need to use other methods, such as interviews and questionnaires.