



## KEY POINT SUMMARY

### OBJECTIVES

The objective of this study was to explore the care environment from nurses' perspectives, identify safety Practices, and prioritize safety issues in a hemodialysis unit.

### DESIGN IMPLICATIONS

When designing a hemodialysis unit, the following may be considered:

- Adequate storage for equipment and supplies
- Provision for storage of patient belongings
- Adequate electrical outlets for plugging in computers
- Charging stations for CoWs
- Stations to be designed for patient privacy

## Exploring safety and quality in a hemodialysis environment with participatory photographic methods: A restorative approach

Marck, P., Molzahn, A., Berry-Hauf, R., Hutchings, L.G., & Hughes, S. 2014 | *Nephrology Nursing Journal*. Volume 41, Issue 1, Pages 25-35

### Key Concepts/Context

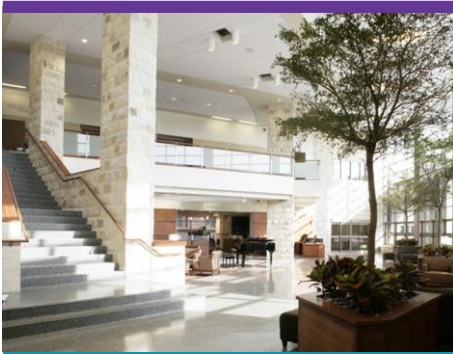
The authors indicate that hemodialysis units can be fraught with numerous safety issues related to medication errors, lapses in communication, patient falls, equipment issues, infection control, etc. These issues can be critical in high-acuity units. This study used qualitative methods to identify existing and potential safety issues in a hemodialysis unit in a tertiary care hospital in Canada. The study identified the following aspects of the physical environment as issues that created a potential risk to patient and staff safety – lack of adequate storage, unit design, patient falls, and infection control.

### Methods

This was a qualitative study in which data collection took place via environmental assessments, multiple visual methods, and focus groups. Data was collected in three phases. In the first phase, a focus group was conducted with 11 nurses from the renal care unit. Based on the data from this phase, two staff nurses captured digital photographs of the unit and the research team recorded their verbal narrative during the photo walkabout. Preliminary themes were developed from the photographic and verbal data. In the last phase, four members from the patient care team participated with the research team in a focus group discussion to review the themes and the photographs. The collected data was subjected to thematic analysis.

### Findings

The findings pertaining to the physical environment that emerged from this study as potential risks and priority for improvement were – clutter, infection control, unit design, chemicals and air quality, lack of storage space, and safety hazards.



### The Center for Health Design: Moving Healthcare Forward

The Center for Health Design advances best practices and empowers healthcare leaders with quality research that demonstrates the value of design to improve health outcomes, patient experience of care, and provider/staff satisfaction and performance.

Learn more at  
[www.healthdesign.org](http://www.healthdesign.org)

- Clutter – garbage bins, supply carts, and Computer-on-Wheels (CoWs) were randomly parked across the unit. Multiple containers of supplies (tissues, hand lotion, calendars, saline, etc.) were in multiple places in the nurse station; some of these adversely affected visibility. Face shields were also lying at random places on the desk at the nurses' station.
- Lack of storage – storage spaces were overflowing with wheelchairs, IV poles, blood pressure cuffs, computers, scales, and more. In some places, equipment restricted access to doors and to the eye wash station. Carts were parked in front of the fire extinguisher.
- Infection control – patient brought blankets from home as there were none provided in the unit; this posed a potential for bed bug infestation.
- Unit design –
  - The unit had only two enclosed rooms for isolation. There was an identified need for more isolation rooms.
  - Because of increase in patient volume, the number of dialysis stations had to be increased from 12 to 20. The reduced space per station heightened the chances of contamination of carts.
  - Patient privacy was compromised when patients were placed so close to each other.
- Poor air quality – multiple open containers of acid concentrate in the units
- Hazards
  - From hoses – Patients walked behind the dialysis machine to hang their coats on the hanger provided there. There are hoses behind the machine, creating potential for trips and falls. For the staff, the potential to trip on the hoses arose when they had to reach behind the limited space of the dialysis machine to plug in their CoWs.
  - From moving furniture – Staff were always moving furniture as patients preferred certain chairs. This created the potential for both back injury and tripping.

## Limitations

The authors identify the following to be limitations to their study:

- Sample size was limited.
- No diversity in sample – only nurses participated in the study.
- Only one unit was studied.
- Other areas that potentially pose a risk, like staffing patterns, were not studied.

The Knowledge Repository is provided with the funding support of:



Additional key point summaries provided by:



RESEARCH-DESIGN  
CONNECTIONS