SYNOPSIS

# KEY POINT SUMMARY

OBJECTIVES

To determine if patient room distance from nursing stations and ward entrances is associated with potential healthcare risks.

## Association between room location and adverse outcomes in hospitalized patients

*Mayampurath, A., Ward, C., Fahrenbach, J., LaFond, C., Howell, M., Churpek, M. M.* 2018 /*HERD: Health Environments Research & Design Journal, Volume 12, Issue 2, Pages 21-29*

### Key Concepts/Context

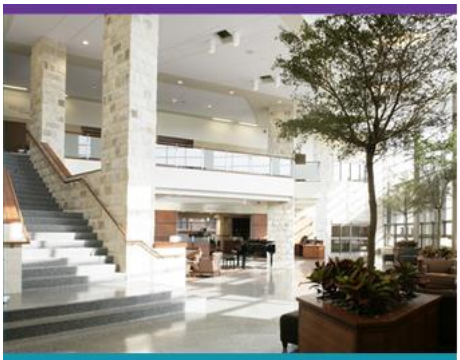
Previous studies have found that placing patient rooms far away and/or out of sight from nursing stations can lead to adverse health outcomes. This seems logical, since closer proximity to nursing stations ideally should lead to faster delivery of healthcare services. However, no research has investigated what happens when patient rooms are instead located closer to ward entrances under this context. Since every healthcare facility might not be able to group patients immediately near nursing stations, it is important to understand what happens when patients are located in rooms near ward entrances as well. The authors hypothesize that patients in rooms that are far away from both nursing stations as well as ward entrances are susceptible to adverse health outcomes.

### Methods

Four years' worth of patient data from a 500-bed hospital were analyzed. This data included patient information from 13 medical-surgical wards, and excluded ICU and post-partum ward patients. Patient location within the hospital, demographics, and discharge information were included in the data. The primary outcomes measured in this study were hospital length-of-stay (LOS), occurrence of critical illness, and in-hospital mortality.

### Findings

Data analysis showed no relationship between amounts of patient critical illnesses, mortalities, or lengths of stay and their respective proximities to nursing stations at admission. However, patients admitted into locations distant from the ward



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entrance saw a 15% higher risk of critical illness, 16% higher risk for in-hospital mortality, and 13 hours longer lengths of stay on average.

## Limitations

This study was conducted in a single hospital ward; due to floor plan differences and design features that may be found in different environments, the associations drawn between this study's outcomes and their implications for design decisions may not be relevant to all facilities. The authors also note that patient room transfers may have affected some of the outcome data.

## Design Implications

In hospitals where nursing stations are not highly visible and ward entrances are located at the ends of double rows of linear patient rooms, designers looking to reconfigure ward floor plans might consider how patient room adjacency to ward entrances affects important health outcomes. This study indicates that in such situations, providing patient rooms closer to ward entrances may help avoid higher rates of patient critical illness, mortality, and length of stay.