SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

The objective of the study was to focus on IHT and identify the type, severity, and frequency of complications in ICU patients with various medical and surgical treatments and understand the reasons causing the complications. The authors posed and attempted to answer the following questions:

1- What are the complications associated with IHT?

2- How frequent and severe are these complications?

3- Do they happen more often for certain types of patients, or certain origins, destinations, and transport purposes?

4- Is transport the real reason for complications and worsened outcomes or simply a proxy for the severity of illness?

Medical Complications of Intra-Hospital Patient Transports: Implications for Architectural Design and Research

Ulrich, R., Zhu, X., 2007 | *HERD: Health Environments Research & Design Journal*. Volume 1, Issue 1, Pages 31-43

Key Concepts/Context

The transportation of patients inside a hospital, or intra-hospital transit (IHT), has received little attention in literature relating to hospital design despite having a negative impact. The layout and design can negatively affect travel distance and time, which can be reflected in patient complications and health outcomes. Studies showed that many transports were unnecessary because they were done for diagnostic purposes that could have been performed at the same location. This study was based on research relating to IHT with a concentration of adult groups mostly admitted to intensive care units (ICU).

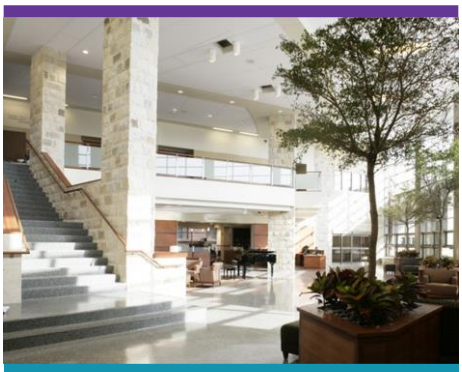
Methods

The authors conducted a literature review that resulted in reviewing 22 studies from 1970 to 2005 and later added three more. They had various research designs ranging from prospective observation without control groups and prospective cohort with control groups to cross-sectional case review of ICU incident reports. The studies indicated that IHT causes a range of complications regarding health outcomes.

At the end the authors focused on the implications of evidence-based design on IHT and found that the information available was minimal, so they suggested a direction for further studies on the architecture.

Findings

The most common origin of IHT was the ICU with destinations for imaging, surgery, and diagnostic and therapeutic purposes, or to discharge from the facility. The types of complications associated with IHT were divided into four categories:



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1- Adverse medical or clinical changes – Respiratory or cardiovascular and other problems

2- Mechanical problems – Infusion or monitoring equipment failure

3- Environment-related difficulties – Inadequate temporary room or space

4- Patient and staff management issues – Inadequate or unavailability of staff

Several studies emphasized that longer IHT times resulted in more complications. The lack of available literature on the relationship between the architecture and complications with IHT would necessitate having more studies to explore the topic.

Limitations

The study was based on a literature review instead of actual data collection. Ironically, the authors made suggestions at the end for further studies targeting the hospital architecture.

Design Implications

The authors found that some spaces, elevators, and travel distances were inadequate (too far). Therefore, architects should take into account travel distance and proximity of the different units to the ICU. In addition, inadequate spaces and difficulty accessing elevators increased complications. The need for IHT can be reduced or eliminated with the addition of acuity-adaptable rooms that are flexible enough to deal with a patient's changing condition.