



KEY POINT SUMMARY

OBJECTIVES

This pilot study sought to explore the impact of a single-room, acuity-adaptable patient room on patient outcomes and satisfaction during renal transplantation.

DESIGN IMPLICATIONS

This study is an excellent opportunity for a nurse researcher and fellow scientists to explore the need for acuity adaptable patient rooms in the future. Studies previously mentioned the need to replicate research designs and gather more evidence to support that the acuity-adaptable patient room concept is feasible, meaningful, and an important priority for administrators or healthcare designers to meet the challenges of the healthcare trends that are coming to the industry with lightning-bolt speed.

Acuity-Adaptable Patient Room Improves Length of Stay and Cost of Patients Undergoing Renal Transplant: A Pilot Study

Bonuel, N., Degracia, A., Cesario, S.
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Key Concepts/Context

As patient room design has evolved to accommodate changes in clinical services, operational trends, and new technologies, the acuity-adaptable patient room concept has emerged. In an acuity-adaptable room, patients are cared for across the continuum, from intake to discharge regardless of their progress or condition. This is a departure from the current standard care delivery, where patients move from unit to unit and room to room depending on the level of care acuity.

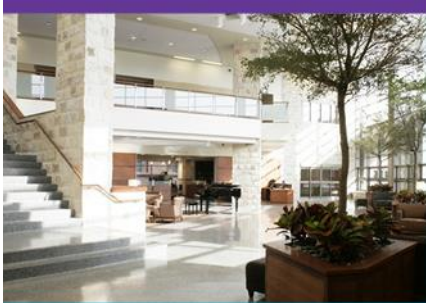
Methods

The author and principal investigator conducted a retrospective chart review of 100 patients undergoing renal transplant from January 2006 to March 2007 and prospective review of patients undergoing renal transplant starting October 2007.

The researchers conducted the study in a designated magnet facility—a 1,500-bed, tertiary hospital in the Houston area with a 30-bed multi organ transplant unit that has four acuity-adaptable patient rooms.

They developed a kidney transplant nursing CORE curriculum, which was completed by 11 transplant nurses. The principal investigator developed a data collection tool to reflect the demographic of the sample population as well as the outcome variables measured in the study. The investigators also:

- Determined average length of stay through prospective chart reviews
- Gathered costs data from the hospital operating data system
- Measured nursing care through prospective chart review



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- Measured patient comfort through prospective chart review
- Measured physiologic measures through prospective chart review
- Measured nosocomial infections through prospective chart review
- Measured patient satisfaction

The researchers performed student *t* test and Mann-Whitney test to determine significant differences in the average length of stay and cost. They determined differences in nursing care, patient comfort, physiologic measures, and nosocomial infection using chi-square and McNemar tests.

Findings

The authors found that, after 6 months of operation, the acuity-adaptable care delivery model showed improvement in the length of stay and cost in renal transplantation outcomes. Using a descriptive method for this pilot study, the researchers found that length of stay of kidney transplant patients decreased from 9.6 (Standard Deviation = 11) days (before acuity-adaptable patient room) to 4.1 (Standard Deviation = 1.3) days (acuity-adaptable patient room), demonstrating improvement in patient care outcomes and, ultimately, cost.

In addition to the acuity-adaptable rooms contributing to improved patient outcomes and costs, the authors state that the nursing competency strategies they implemented to support the introduction of the acuity-adaptable patient room created a hybrid nurse who possessed both critical care and medical-surgical skills and thereby also contributed to the positive outcomes.

The authors note that combination of the care cluster, critical care skill preparation of the transplant nurses, and the acuity-adaptable patient room shows promise for this kind of care delivery to support efficient care coordination.

Limitations

The authors note that it is difficult to conduct rigorous research on the impact of the acuity-adaptable patient room because the hospital system is so complex, making it challenging to try to isolate the impact of a single entity. However, they point out the research on this delivery model does seem to show positive effects and could make a significant contribution to patient safety and quality of care. Changing the traditional design focus and adapting new design principles based on systems engineering, human factors, and patient safety culture principles.