



## KEY POINT SUMMARY

### OBJECTIVES

To compare several different healthcare environments through nurse perspectives in order to gauge the impact of various design features and floor unit plans on patient care time, safety, documentation time, and overall effectiveness.

### DESIGN IMPLICATIONS

Decisions concerning decentralization and the storage of medication supplies should center around reducing the amount of different spaces staff members must access while also maintaining proper resource organization protocols. Decentralized satellite EMR stations could increase direct patient care time and boost staff morale.

## A Study of Hospital Inpatient Unit Design Factors Impacting Direct Patient Care Time, Documentation Time, and Patient Safety

Clark, T., & Combs, S. 2009 |

### Key Concepts/Context

Architects have experimented with numerous inpatient care unit (IPU) designs, such as racetracks, “T-shapes,” “L-shapes,” triangular forms, and many others. There is no clear consensus on how the designs of these spaces and other physical features within IPUs influence healthcare provider productivity, safety, and overall effectiveness. The authors of this study hypothesize that the location of electronic medical record (EMR) collaboration spaces, documentation areas, and support resources (such as medications and equipment) all directly affect nurses’ patient care time, safety, documentation time, and overall effectiveness.

### Methods

The authors first conducted a literature review concerning previous IPU configurations and IPU nurses’ documentation time and safety protocols. 14 different IPU floor plans featuring various designs, including racetracks, L-shapes, T-shapes, and triangular formations, as well as a variety of approaches to decentralization, were observed in this study. A total of 135 nurses working within these different spaces completed surveys in order to correlate healthcare provider perspectives with floor plan designs.

### Findings

Analysis of the data revealed several ways that IPU designs could positively influence patient care goals. While reducing the distance between patient care areas and medication storage spaces is important, medication storage spaces themselves could also be built so that all medications and other related supplies are within one area. This could prevent unnecessary time consumption and potential demoralization, as survey results indicated that the size of medication rooms



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significantly impacts nurse perceptions of patient safety. Decentralization of equipment produced varying levels of efficacy; the results of this study indicated that further research is required to better assess which pieces of equipment belong in different levels of decentralization (in room, central, or satellite). Decentralized EMR locations were always correlated with positive responses from nursing staff, especially fixed EMR workstations.

### Limitations

The authors noted several limitations in this study. All surveys included four nurses per shift, with some hospitals featuring three shifts and others featuring two shifts. The personal attitudes of nursing staff may have played a role in survey scores. Since this is a qualitative study, the data are subjective and may not be applicable to all healthcare environments. The floor plans analyzed in this study were done so digitally, rather than in person.

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