



## KEY POINT SUMMARY

### OBJECTIVES

To examine one institution's approach to designing a facility's layout of a small hospital pharmacy.

## Selecting a pharmacy layout design using a weighted scoring system

McDowell, A. L., & Huang, Y. L. 2012 | *American Journal of Health-System Pharmacy*. Volume 69, Issue 9, Pages 796-804

### Key Concepts/Context

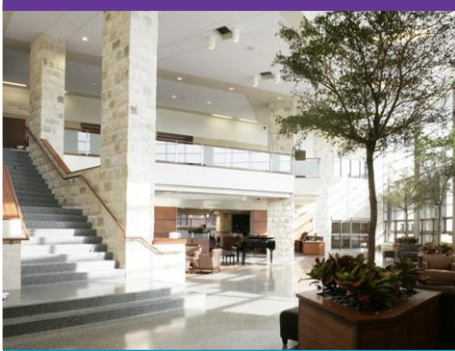
Previous studies have found that effectively planning the construction of a facility can reduce operational inefficiencies and lower costs by as much as 30%. Since pharmacies are focused on the distribution of supplies rather than interactions with patients, they could hypothetically benefit from process-improvement techniques that are often used in manufacturing industries for layout designs. While there are many studies that examine the nature of facility layout designs and how they are implemented during construction, there is a lack of research exploring these designs in the context of a hospital pharmacy.

### Methods

This study took place in three ORs within three hospitals over one weekend. ORs A and B were part of academic medical institutions, while OR C was part of a private community hospital. Throughout the study, microbial contamination and particle contamination were measured from operating tables and back tables where surgical instruments were prepared. Mock surgical procedures were performed in each OR, and mechanical experts were included in the process to help properly calibrate HVAC systems and measure air quality.

### Findings

After assessing the new designs according to the 12 categories, all three were found to be worth implementing in place of the current design. Since these new designs incorporated engineering tools and methodologies in their layouts, the authors infer that the application of engineering perspectives to pharmacy layouts can indeed prove beneficial. The design category of "Feasibility" often received low scores from staff and engineers due to the hospital's available budget. One design in particular, "Design 4," was designated the most beneficial because of improved safety and its ability to work with increased patient volume.



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Limitations

The authors note that staffing pattern changes within the pharmacy as well as overall costs for each new design were not assessed during research. This study considered applying engineering concepts to the layout of only one pharmacy in a relatively small city; the results may not be universally applicable to all hospital pharmacies.

Design Implications

When designing hospital pharmacies that focus on supply distribution rather than patient interaction, it could be beneficial to apply engineering perspectives and techniques to newer pharmacy designs and layouts so that productivity and safety can be maximized.

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