SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

To describe the implementation of ORF (Operating Room of the Future) designs and analyze the impact of these designs on patient throughput and facility finances.

Deliberate Perioperative Systems Design Improves Operating Room Throughput

Sandberg, W. S., Daily, B., Egan, M., Stahl, J. E., Goldman, J. M., Wiklund, R. A., Rattner, D. 2005 | *Anesthesiology: The Journal of the American Society of Anesthesiologists, Volume 103, Issue 2, Pages 406-418*

Key Concepts/Context

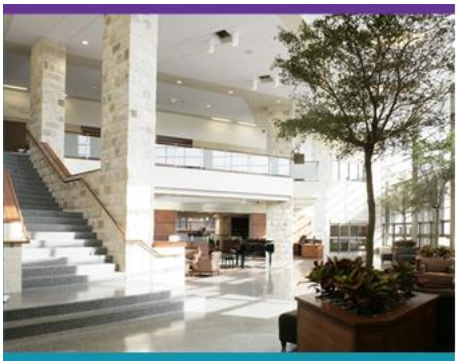
Operating rooms (ORs) are complex and sensitive environments that are typically expensive to operate and maintain. Minimally invasive surgical procedures are becoming increasingly more prevalent in many OR environments, while the costs of operating and maintaining OR environments are simultaneously increasing. To counteract these issues, the authors of this study propose a novel OR design and workflow known as an Operating Room of the Future (ORF). The ORF will seek to increase overall throughput, or the movement of patients and resources through complete surgical treatment processes.

Methods

The ORF constructed and observed in this study consisted of a three-room suite (1,315 ft^2 in total size) housing an OR, an early recovery space, and an induction room. A new workflow was used in the ORF, which entailed using additional nursing and anesthesia personnel to help manage the anticipated higher throughput levels. Hospital records showing the total amount of time required for four specific surgeons to treat patients, as well as the number of patients treated over the course of a year, were used as a basis for gauging the performance of the ORF design and workflow.

Findings

When compared to hospital records related to the previous OR design and workflow, the new ORF design resulted in reduced overall operation times and increased overall throughput of both patients and facility resources. Although implementation of the ORF design incurred higher operational costs through the use of additional personnel and newer OR technology, these costs were offset by



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increased overall revenue and higher numbers of patients receiving surgical treatment in an efficient and timely manner.

Limitations

This study was conducted at a single location over a relatively short period of time; the results may not translate identically to other redesigned ORs and may depend largely on staff efficiency, hospital resources, and a variety of environmental factors related to a given facility's operations. The authors note that their methods for documenting and comparing overall costs could have produced additional limitations.

Design Implications

The Operating Room of the Future described in this study could act as a conceptual blueprint for designers and healthcare professionals seeking to improve OR throughput while counteracting operational costs. Through the use of dedicated spaces for specific OR processes, additional personnel, and state-of-the-art (or "streamlined") OR technologies where possible, designers could provide enhanced OR environments that may provide increasing economic returns and overall patient treatments over time