



## KEY POINT SUMMARY

### OBJECTIVES

This study looked to see if using IFD to design and build a new ambulatory surgery center could create an excellent flow for patient, family, and provider, while decreasing cost through reduced space, attaining project completion deadlines, hitting target costs, and a reduction in construction requests for information (RFI).

### DESIGN IMPLICATIONS

This study represents the cost savings, design innovations, and patient health outcomes that can be realized through an IFD process. Consideration to utilizing an integrated team approach throughout the design/build process should be given when designing an ambulatory surgical center.

## Utilizing Integrated Facility Design to Improve the Quality of a Pediatric Ambulatory Surgery Center

Pelly, N., Zealle, B., B., Reed, M., Martin, L. 2013 | Pediatric Anesthesia. Pages 1-5

### Key Concepts/Context

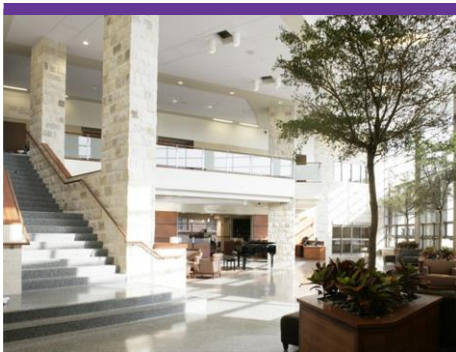
Integrated Facility Design (IFD) comes from the Toyota 3P (Production, Preparation, Process) program used to reduce initial cost, while accelerating development time.

### Methods

Two teams, the Design Core Team and the Facilities Core Team, were created to integrate IFD into the design/build process. The Facilities Core Team participated in 24 months of design and construction events, and consisted of members from the Design Core Team, hospital facility employees, and subcontractors. The Design Core Team consisted of the architect, general contractor, clinicians, and other hospital employees, and participated in five months of progressive design events. The design events were periods of time lasting between two and five days, with full-time attention given to the event by all parties. The events included:

- The initial event, Governance, was used to create the guiding principles for the project.
- Conceptual Design, the second event, focused on conceptual space planning, demand and major flow analysis, and value stream identification.
- The third event, Macro Design, utilized findings from the first two events to assess adjacencies, building configuration, and system constraints. Full-scale mockups were used to test the design decisions and provide feedback to The Design Core Team.

Following the Macro Design event, Micro Design events were held to gain insight into interdepartmental relationships. Utilizing full-scale mockups of individual rooms, simulated patient scenarios were run to assess proposed patterns of flow. Throughout the design events, the Facilities Core Team was present to provide guidance and key input. Evaluation for this project was through building outcomes



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associated with reductions in cost, space, and RFIs, and patient outcomes regarding non-operative, surgical, and recovery times.

### Findings

By using the IFD process, this project saw a 28% reduction in square footage from the initial projection of 110,000 square feet. An overall total cost savings of \$30 million was seen due to a \$10 million reduction in cost from RFIs and \$20 million savings attributed to decreased square footage. The project was completed 2.5 months ahead of schedule. Total construction costs reported a 10% reduction, while square footage saw a three% increase due to the inclusion of a garage. The number of RFIs were reduced from a projected 562 to 43, a 92% reduction. Non-operative time within the new facility was reduced by 50% across six different specialties. Actual procedural time reported between a 26% and 43% reduction within the new facility, and recovery times within the PACU were reduced between 38% and 62%, depending on the type of surgery.

### Limitations

Limitations to this study are that the numbers being compared are actual numbers from a completed project with projected numbers derived from industry professionals. Therefore, actual cost savings could be skewed. Also, the patient outcomes could have been impacted by variables other than IFD due to the lack of an appropriate control group.

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