



The Children's Hospital

Research News

A newsletter dedicated to nursing research at The Children's Hospital

Volume 15, Number 4

Fall 2008

Evidence-Based Design: Evaluation of a New Children's Hospital

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Background: The United States is engaged in one of the largest hospital building booms in history targeted to replace aging hospitals, accommodate population shifts, advance technology, and provide for the graying of the baby boom generation. There is a growing body of evidence to support the relationship between the physical or "built" environment and optimal patient outcomes, staff satisfaction with the work setting, and organizational performance. Given the chance to build a total replacement pediatric hospital on a new site, there was a once-in-a-lifetime opportunity to evaluate the outcomes of a facility that was designed and built with the best available evidence during the design process.

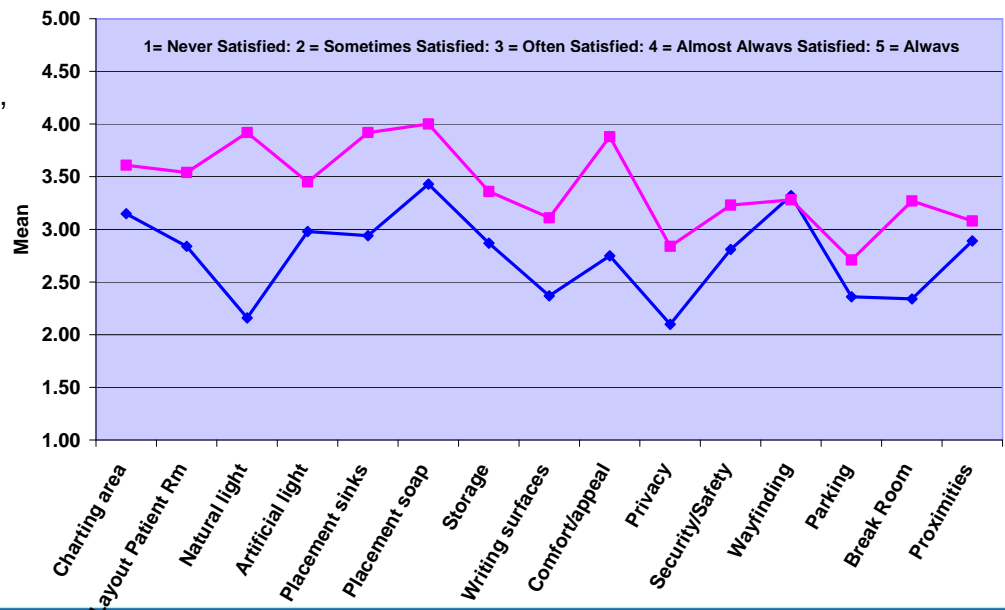
Purpose: The purpose of this study was to evaluate and compare the impact of an existing (TCH downtown campus) and newly-built (TCH Fitzsimons campus) hospital environment on patients, families, and staff.

Specific aims:

- Measure family and staff satisfaction with light, noise, temperature, and aesthetics.
- Assess family use of amenities.
- Evaluate staff and family perceptions of safety, security, and privacy.
- Compare nosocomial infection rates between the two facilities.
- Track work flow and staff efficiency.

Design/Methodology: Using a pre-post repeated measures survey design, a convenience sample of all nursing, social work, therapy, environmental services staff, and families on selected inpatient units were invited to participate. A brief demographic form, a Family and Staff Satisfaction Survey, and selected questions from the Press, Ganey Inpatient Pediatric Survey were administered prior to moving to the new facility and 6 months post-occupancy to assess the short-term impact of the newly-built environment.

Selected Findings: During Phase I of the study (pre-move), 812 surveys were mailed to professional staff with 306 returned for a response rate of 37.68%. At six months post-occupancy, 890 surveys were distributed to staff and 434 were returned for a response rate of 48.76%.

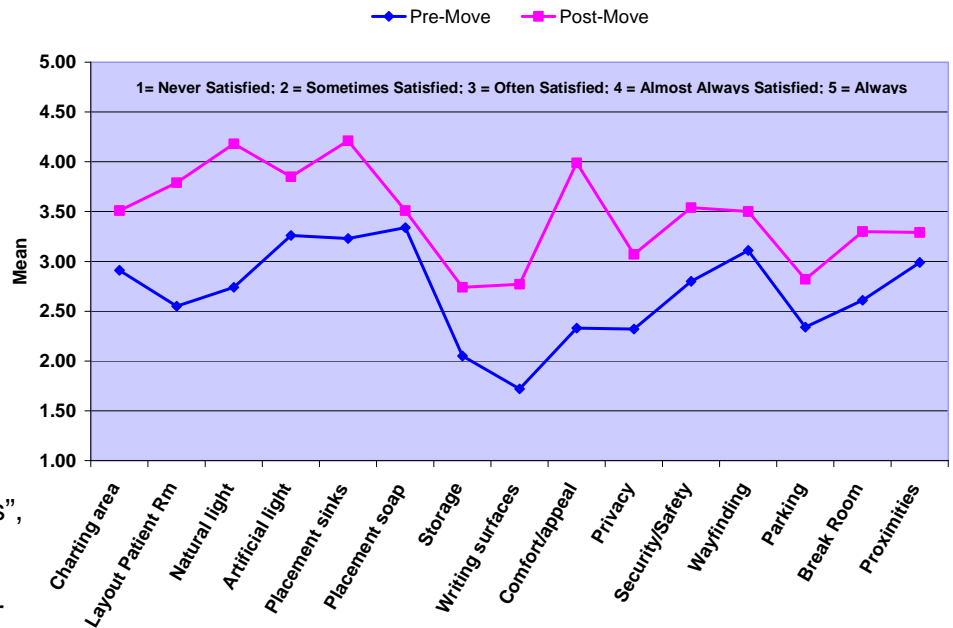


- Attract and retain staff at a world class facility.
Staff Satisfaction--Acute Care

Reported here are the pre and six month post-move data from staff in the ICUs, acute care units, and therapies.

As shown in the three graphs, the mean score for staff satisfaction (y-axis) improved on all of the survey subscales (x-axis) among all staff with one exception: way finding for the ICUs remained the same pre and post move. Items showing the most improvement were “layout of the patient room”, the “amount of natural light”, “placement of the sinks”, and “overall comfort and appeal”.

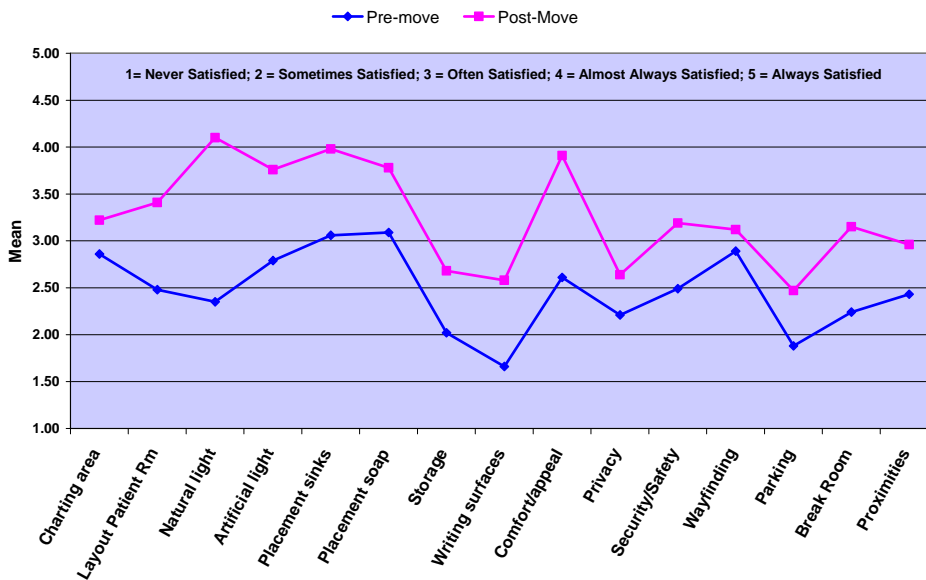
Also collected were hospital turnover data for 7 quarters before the move compared to 3 quarters post-move. Overall, *turnover* either remained stable or *declined* since relocation to the Fitzsimons Campus.



“Evidence-based design is the process of basing decisions about the built environment on credible research to achieve the best possible outcomes.”

Debra J. Levin, President, The Center for Health Design

Staff Satisfaction--Therapies



Data from the family satisfaction surveys are currently being analyzed. However, reports from our Press Ganey inpatient parent satisfaction surveys have shown improvement in selected categories, most notably, “visitor accommodations”, “comfort of overnight facilities”, and “room appearance”.

Some of the comments related to the new hospital made by parents include:

Significance: Study results will provide evidence to guide future architectural design decision-making in order to:

- Support the best possible outcomes for children and families in a cost effective manner;
- Enhance the healing environment;

- *The room was bigger than we expected and had a good view. My son enjoyed the TV and x-box.*
- *Not only were the CICU & PICU clean, but they were filled with natural light—very much appreciated.*
- *LOVE new rooms-much more open and colorful. Great to have*



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separate, private bathroom.
Love the amount of storage
space.

○ We had a private room which
was SOOO much nicer.

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