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A Room of One's Own: An Innovative Model for Patient-Centered Surgical Care



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In recent years there has been a dramatic shift in surgery departments from inpatient to outpatient procedures. The Department of Surgical Services at the Children's Medical Center in Dayton, Ohio, has experienced this change with an increased overall volume of 32 percent since the last department renovation in 1989. The existing open-bay preop and postop units were found to be inefficient in terms of space and staffing, and lack of privacy was problematic.

A team of architects, consultants, and hospital staff was formed to investigate the possibilities for improvement, given the limited space available in and around the existing surgery department. It was determined, after a preliminary analysis of the spatial requirements, that a new model of care would be the best solution for the renovated suite. The new model of care would allow nurses and staff, who formerly cared for many patients in open-bay bed configurations, to be assigned to a small group of patients in single rooms. The single room model therefore became the desired spatial model for the renovated suite floor plan.

The benefits of the single room model include:

- Greater privacy for patients and parents
 - Auditory
 - Physical and visual
 - Olfactory
- Enhanced confidentiality
- Improved infection control
- Better room flexibility
- Increased customer satisfaction.

The opportunity to test early space planning solutions arose during the design process. A computer simulation program was used to model the traffic flows of patients and staff at different times of the day. In this case the simulation reinforced the space planning theories.

Design issues such as wayfinding, lighting, and color selection were addressed with the patients and parents in mind. A theme of travel was selected early in the project as it appealed to young and old alike. In terms of navigating through the Day Surgery Area, compasses in the flooring and framed maps on the walls act as landmarks. The lighting throughout the corridors and patient rooms is indirect, allowing patients to be transported on gurneys without the glare of fixtures directly above them. The color palette of blues, greens, and beiges is calming and relates to the framed maps on the walls.

The single room model is proving to be successful on many levels at this facility. Patients and parents appreciate the privacy and amenities offered in the individual rooms. The nurses and staff can now focus on a few patients for an entire day, allowing better quality and continuity of care. Finally, from a marketing standpoint, the renovated suite with private rooms provides features that exceed those of other area outpatient surgery centers.

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Reasons for Renovation

The Children's Medical Center is a 155-bed pediatric acute-care facility located in Dayton, Ohio. The hospital is a primary referral center for a 20-county area in west central Ohio, and the Department of Surgical Services is the primary center for children needing surgery within this area. Since the last department renovation in 1989, the volume of surgical procedures had increased 32 percent with a major shift from the traditional inpatient status to outpatient status. More than 9,000 procedures a year are performed in the Day Surgery Department, with about 8,000 of those being outpatient procedures. The increase in volume alone provided sufficient need to renovate the Day Surgery Area.

Additionally, the existing environment consisted of seven separate multipatient open rooms with several entrances. The patient cubicles had limited space, making it difficult for parents, nursing staff, and medical staff to provide quality patient care.

Another negative feature of the open-bay configuration was its difficulty in maintaining proper infection control. When one child had a communicable disease such as chicken pox, a room with six beds had to be closed off and occupied by one infected patient. And if a child underwent surgery before evidence of a communicable disease was determined, all patients and staff present on the day of surgery were potentially exposed to the disease.

In terms of privacy, there were several problems. Separated only by cubicle curtains, sights, smells, and sounds from neighboring cubicles were distracting to patients and parents. Another child's crying could be interpreted as a lack of care. At times crying infants were placed beside teenage patients. During peak hours the open bed units were crowded, which gave the perception of rushed rather than individualized care.

The lack of olfactory privacy was also a hindrance in the open plan. This element is often overlooked in healthcare environments, where patients may have adverse reactions to anesthesia such as vomiting.

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Confidentiality was also difficult to maintain, as staff communications with their colleagues and parents were easily overheard and sometimes misinterpreted.

Efficient utilization of space and staff were also a concern in the existing open model design. The multiple rooms required duplication of staff and support spaces. A new model of care was needed to decrease the number of different patient/staff interactions and to provide opportunities to improve the clinical care.

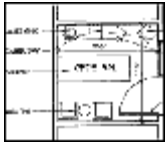
With the proliferation of outpatient surgery centers in the area, the need to design a facility that was customer-focused for children, parents, and surgeons became a necessity from a competitive perspective.

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[Figure 1](#)
(6k)



[Figure 2](#)
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Single Room Floor Plan

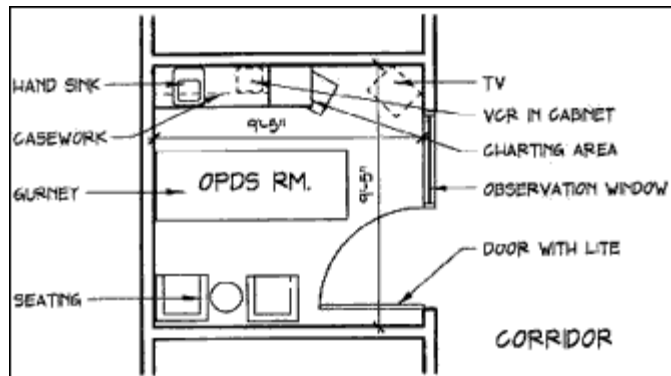


Figure 1: Single room floor plan.

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Suite Floor Plan

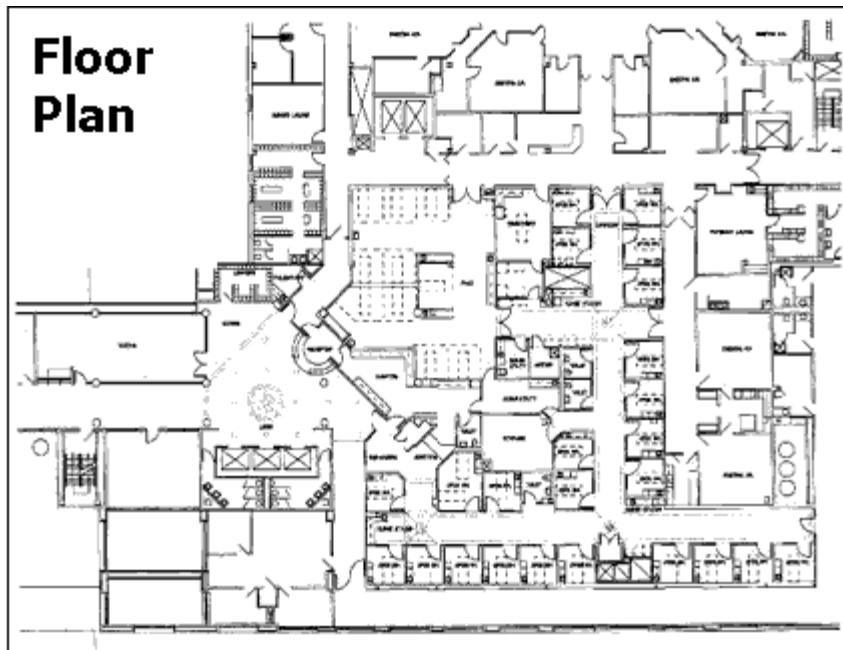


Figure 2: Suite floor plan. The patient rooms are served by a common corridor, which features three nurse stations at primary circulation nodes.

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Children's Medical Center, Dayton



Figure 3: A single room as seen from the corridor.

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Children's Medical Center, Dayton



Figure 4: Main corridor.

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