

Step into the Patient Room of the Future

Terri Zborowsky



Terri Zborowsky

Ms. Zborowsky is armed with a very unique set of qualifications. She is a registered nurse and spent time working in an orthopedic/acute spinal cord injury unit at a large teaching hospital in Canada. Since then, she has focused her energy on design-oriented degrees at the University of Minnesota where she is currently a PhD candidate. Terri has now become a seasoned interior designer, health-care planner and medical equipment planner at Ellerbe Becket.

When sixth century Greek philosopher Heraclitus said “nothing endures but change,” he easily could have been referring to the healthcare field, an arena in which advances come quickly as medical technology improves and caregiving methods evolve. The business side of healthcare delivery also has seen dramatic changes. This constant transition is perhaps most evident in hospital patient rooms, where creating flexible designs is becoming critical to cost-effectively staying atop quality care.

Looking Ahead

The patient room is a key element of a hospital. What will the adaptable patient room of the future be like? That’s the question Ellerbe Becket medical planners, architects, interior designers and engineers set out to answer. Continuing education exercises were conducted to stimulate discussion about what will be important to the

hospital room during the next several decades to explore the possibilities to better ourselves for our clients.

During charettes (intense work sessions yielding resolutions and action steps), Ellerbe Becket professionals worked through key issues to arrive at an optimum design. The process started with consideration of healthcare trends that will influence the room’s features, including

- Change in Consumer,
- Change in Nurse Demographics,
- Information Age,
- Advances in Medicine & Technology,
- Spiraling Healthcare Cost/Shrinking Reimbursement,
- Patient and Staff Safety, and
- Sustainable Design

Aging Boomers, Limited nurses

Hospital patients during the next 30 to 40 years largely will come from the baby boomer generation. As these individuals grow older they’ll have a greater need for healthcare and will frequently have multiple problems. They also may be having elective procedures and a general expectation of a higher level of care, including spa-like amenities. Obesity also will be a factor among patients.

Meanwhile, the nursing shortage will continue and existing nurses will age, making professional caregivers scarce and tasks more strenuous. This creates concern for staff and patient safety. For example, overweight patients are harder to move, potentially harming caregivers and the patient. Placing room functionalities, such as sinks and storage space, where they aid ef-

iciency will save time and therefore labor costs. Additionally, family members will become an important part of the caregiving network so the future patient room must have space for them during all hours.

Ready for Anything

The room must be universal enough to allow changes dependent upon hospital needs. During a 30 year period a room may be part of a labor and delivery, pediatric, or an intensive care unit. The room even could be used for minor procedures making it a treatment room and more of a profit center. The key is to make the room flexible so transitional expenses are minimized. Additionally, using 'green' building techniques will continue to be important for environmental preservation and to cost-effectively construct facilities long term.

When you consider that the medical technology of today did not exist even 10 years ago, it is easy to understand how important it is to build

a room that can accommodate advances. Buildings need to be adaptable enough to work well without knowing exactly what the future holds. The building's structural, mechanical and electrical infrastructure has to be in place to support these changes.

Optimum Design

With all these factors in mind, Ellerbe Becket's healthcare contingent considered inboard toilet room designs (where the toilet is located along the corridor wall thereby allowing more natural light and extra space for family members) and outboard toilet designs (where the toilet is located along the exterior wall to provide maximum patient visibility for hospital staff) before deciding on a room design with toilet areas side-by-side between patient rooms.

Three distinct zones make up the oval-shaped side-toilet room design: one each for caregivers (blue), the patient (purple) and family members (green).

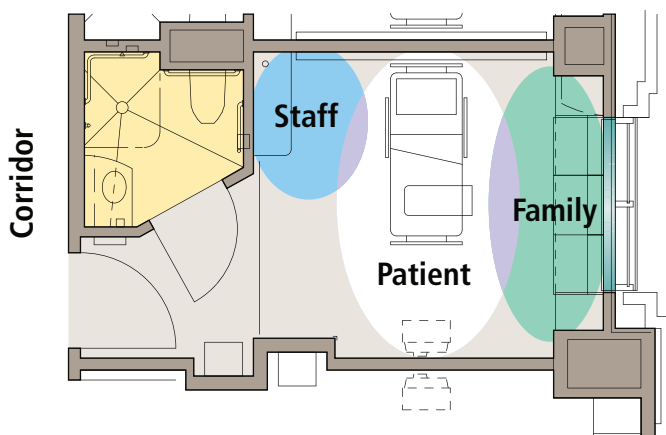


Figure 1 Patient room layout with toilet along the corridor wall

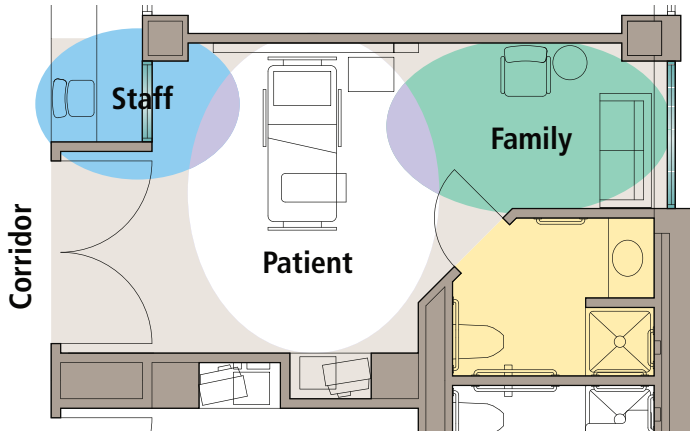


Figure 2 Patient room layout with toilet along the exterior wall

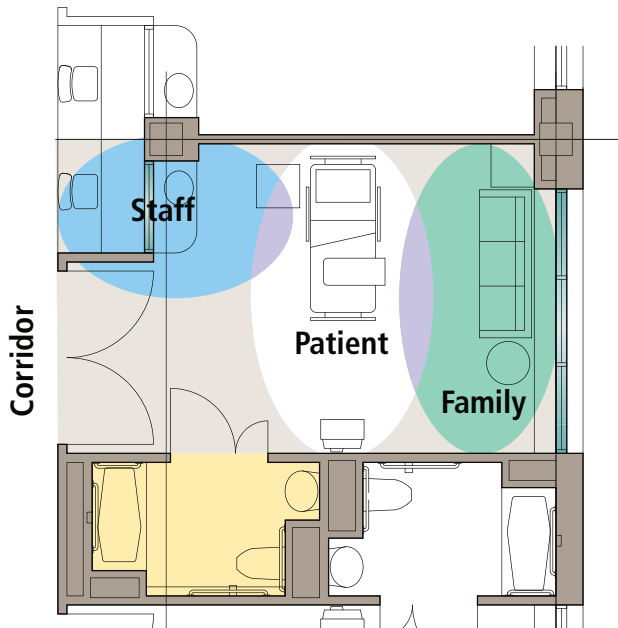


Figure 3 Patient room layout with toilet between patient rooms

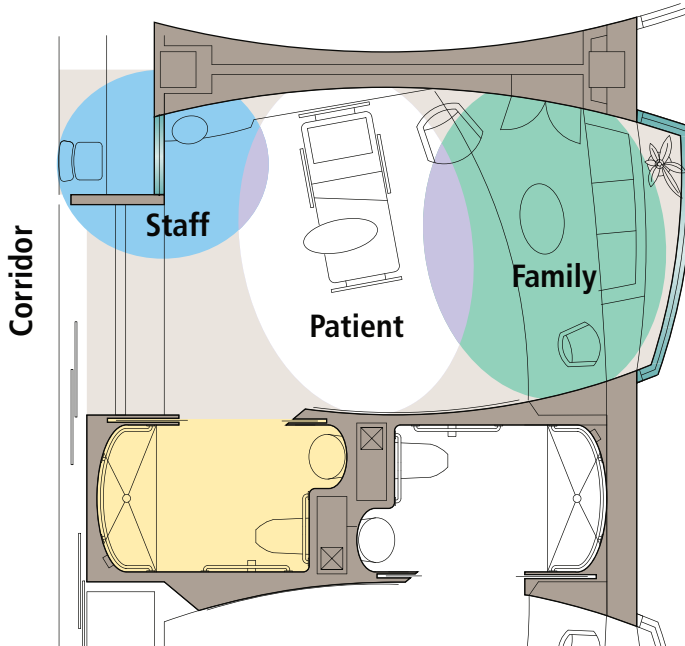


Figure 4 New Patient Room layout



Figure 5 Patient Room view



Figure 6 *Patient Room view*

The portion of the caregiver zone outside the room entrance includes space for staff to perform electronic charting with a view into the room. Nurses could monitor several patients from this location. Inside the room, the caregiver has a hand-wash sink and work counter, plus easy access to the patient headwall.

The bed is the main feature of the patient zone, one that allows easy transporting to the bathroom to prevent caregiver injuries. A flat screen television and large window for visual access to the outdoors. In the family zone, a day bed provides sleeping arrangements, while a desk enables family members to continue work while supporting their loved one. Wireless technology gives online access throughout the room. With fewer nurses, family members will assume more and more patient-care responsibilities, they need space and amenities to be comfortable and continue their lives while in the hospital.

While both inboard and outboard toilet rooms have merit, the side version allows the best of both worlds — a view to the outdoors and family space, while maintaining staff visibility into the room for better patient care. This layout is also flexible enough that remodeling to accommodate unit changes would be minimal. Only interior features would require changing. No plumbing needs to be relocated.

The side toilet room plan also marries high tech with high touch. While it can accommodate the latest medical technology, its interior design characteristics are serene, comfortable and conducive to healing. The environment is like a spa — calming and simple. The curved wall and ceiling forms are a departure from the traditional institutional feel. Surfaces on walls, floors and furniture are textured but easily cleaned. Sights, sounds and smells are appealing.

Positive visual and auditory elements can be introduced on the room's video screen. From their bed, a patient can pull up a wooded scene with a babbling brook, which can lower stress and aid recovery. This is especially important for hospitals in urban settings where there are no views of nature. The video screen allows some patient control and also can be used for videoconferencing with their children at home, speaking to medical specialists, communicating with nursing staff and more.

Assessing Size

One drawback of the side toilet version may be that the overall nursing unit becomes longer. The floor plan has 18 linear feet versus the typical 15 linear feet of corridor space per room. This equates to longer travel times to support spaces for already busy nurses. However, this is assuming a 28 to 32 bed unit. In the future, units

may be smaller making the increased size not as much of an issue. Overall, buildings with side-toilet rooms will be longer but not quite as wide, meaning costs typically won't increase.

Flexibility in design has always been a goal of healthcare visionaries. Durable, sustainable design, if implemented properly, will allow future healthcare executives to hold the line on costs and continually improve the quality of patient care.

A case study of the application of this prototype was also discussed. St. Rita's Hospital Suite of the Future in Lima, Ohio was developed from a Patient Room of Future and the reality of constructing this concept revealed an ever evolving patient room of the future -- one that holds true to the original concept of high tech and high touch, flexibility, adaptability and efficiency.



Figure 7 Patient Room view

Sources Cited

Buerhaus, P.I., Staiger, D.O., Auerbach, M.S. *Implications of an aging registered nurse workforce.* JAMA. 2000; 283:2948-2954.

Cain, M., Mittman, R. (2002). *Diffusion of innovation in health care.* Oakland, CA: California Health Care Foundation.

IOM (Institute of Medicine), 2001. *Keeping Patients Safe: Transforming the Work Environment of Nurses.* Washington, DC: National Academy Press.

JCAHO (Joint Commission on Accreditation of Healthcare Organizations). 2000 *Health Care at the Crossroads: Strategies for Addressing the Evolving Nursing Crisis.* (White Paper).

Staiger, D.O., Auerbach, D.I., Buerhaus, P.I. *Expanding career opportunities for women and the declining interest in nursing as a career.* Nursing Economics. 2000;18(5):230-236.

The Institute for the Future. (2000). *Health and health care 2010: The forecast, the challenge.* Princeton, NJ: Jossey-Bass Publishers.

Credit

The author would like to acknowledge the following people who contributed to this article, John Waugh, AIA, Senior Vice President, Design Principal; Craig Hall, Planning Director; Christine Devens, Interior Project Designer; Dan Dickenson, Senior Project Mechanical Engineer of the Ellerbe Becket Minneapolis office, as well as the team who worked on this design charette.