

Safety by Design

David B. Nash, MD, MBA
Editor

Regular readers of this column will remember that the 16th Annual Grandon Lecture, held on the Jefferson campus, was delivered by Dr. John Reiling.¹ Reiling, whose innovative work has been featured in the *Wall Street Journal*, is helping to design the safest hospital in America on the grounds of the current Boca Raton Community Hospital in Boca Raton, Florida. We featured aspects of Dr. Reiling's 2007 presentation in the *Health Policy Newsletter* and in *Prescriptions for Excellence in Healthcare*,³ a supplement devoted to quality. This topic was also featured at a recent leadership conference in a presentation by Blair Sadler.⁴ In my view, Reiling and Sadler represent an important trend in the design and construction of healthcare facilities for the 21st century. Healthcare leaders, physicians, nurses, pharmacists, and architects recognize that the evolving discipline devoted to designing safety practices into the bricks and mortar of an institution may go a long way toward helping us reduce the epidemic of medical errors.

As a member of the National Advisory Committee for Boca Raton Community Hospital, I recently had an opportunity to "kick the tires," so to speak, by touring a full scale mockup of key components of the proposed Charles E. Schmidt Medical Center in Boca Raton, Florida. The experience left a deep impression on me and I wanted to share aspects of my real-life tour to give you a more tangible sense of *safety by design*.

In a nondescript strip mall, blocks from the current Boca Raton Community Hospital, interdisciplinary teams are hard at work designing the safest hospital in America. I think our readers recognize that standardization in design and construction enables activities to become subconscious so that caregivers can focus their attention on providing the best possible patient care. What exactly do we mean by a standardized design and what specific features in both patient rooms and procedure rooms can force functions to a safer level? Well, how about a red light that won't go off until a caregiver washes his hands in front of the patient! This red stop light appears not only in front of the sink but at the foot of the patient's bed, enabling the patient to comfortably ask the provider, "Gee, I don't see a green light, did you wash your hands?" Some may scoff at this so-called "forced function" for hand washing, but with a national hand washing rate still hovering at approximately 50%, I was mesmerized by the demonstration of this kind of technology.

I was also excited to see the rubber flooring products, the planned air filtration systems, the integral window blinds sandwiched between panes of glass that reduce the risk of infection by reducing dust, and the obvious excitement and passion displayed by the current hospital staff leading this effort. Other aspects of *safety by design* were equally impressive to me. I was quite taken by the individual room-based neonatal intensive care unit (NICU). As most readers probably recognize, current NICUs are usually designed with a large room and multiple bassinets lined up in rows. It is a noisy, scary, brightly lit area of controlled chaos and cacophony. Boca Raton is planning an individual room for each neonate that is large enough to house all of the critical equipment and includes a special chair designed for a tired parent to spend the night. All of these rooms are arrayed around a central nurses' station with direct lines of visibility for each neonate. The rooms are completely standardized and individually stocked with the necessary supplies. Staff members from Boca Raton Community Hospital have traveled across the country to benchmark best practices within the *safe by design* arena. Apparently, individual neonatal intensive care rooms are high on the list of key processes known to reduce medical error and improve clinical outcomes. Seeing this face-to-face was truly inspiring.

Members of the National Advisory Committee also toured the ambulatory surgery suite and a mockup of the planned operating rooms. Everything is designed with the patient in mind: private areas to speak with harried surgeons, forced-function hand washing, ceiling-mounted patient lift equipment in all of the rooms, and caregiver work stations that are especially designed to allow for increased face-to-face communication. I tried to visualize what it would be like for a patient wheeled into an operating room – nervous, cold, and consumed with anxiety – to be comforted by a special architecture designed to be soothing and safe.

In the mockup of the typical future inpatient room, there were several highlights that I also found exciting, including patient bathrooms at the head of the bed with hand rails leading into the bathroom to reduce the risk of inpatient falls, and family areas with a sleeper sofa and Internet access to facilitate family involvement and heighten the patient-centered aspect of care. There are plans to put a screen saver on every hospital staff computer with a bright background that asks, "How many days have passed since we last harmed a patient?" Apparently, this is underway in other institutions already.

The Charles E. Schmidt Medical Center at Boca Raton Community Hospital has made a major commitment to be transparent with regard to the safety agenda, which follows naturally from the commitment to the bricks and mortar. There is an evolving scholarly literature focused on safety by design. We have been privileged to hear John Reiling and Blair Sadler at departmental sponsored activities this past year. I would submit,

however, that those lectures could not capture the tangible, tactile aspects of safety that I saw throughout the numerous mocked-up rooms in a warehouse blocks from the current hospital. I am jaded, as I recognize that bricks and mortar will only go so far. Boca Raton Community Hospital has a huge cultural challenge, like every other institution, to commit every staff member to the safety agenda. We all have a lot of work to do in this arena and I am confident that the Boca Raton example may serve as a bellwether for all new hospital and healthcare related construction.

I would like to start a more detailed conversation about *safety by design* and I hope that you will contact me with your own experience in this area, at my email address, which is david.nash@jefferson.edu. I also hope that you will visit my new blog at <http://departmentofhealthpolicy.blogspot.com/>. What is your institution doing to create the safest possible environment for our patients in the future?

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References

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