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BUILDING SMARTER EDS

Flexibility is the cornerstone of redesign as hospitals struggle to incorporate shifting demands, improved processes and evolving technology

ARTICLE BY JAN GREENE

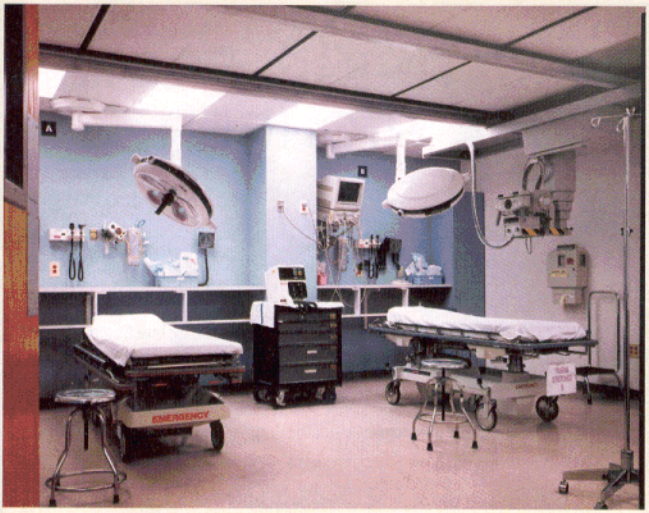
Pity the poor ED designer. Strong Memorial Hospital, Rochester, N.Y., spent two years planning a new emergency department to incorporate the latest equipment and design, including special areas for urgent care and treating children. Enough capacity was built in to handle 5 percent more patients each year, and when the ED opened in March 2001, Strong touted it as "the region's largest and most modern emergency facility."

Barely six weeks later, Strong's 55,000-square-foot ED was bursting at the seams. The sudden shutdown of Rochester's Genesee Hospital threw thousands of patients into the emergency departments of the area's remaining four hospitals. Strong's new private rooms were designed so they could convert to doubles as the need evolved, but planners expected that to happen over years, not weeks. "During planning, we had trouble convincing people that our patient volume would go from 55,000 to 70,000 a year," says Sandra Schneider, M.D., an emergency department physician and chairwoman of the department. "When Genesee closed, we went to 90,000."

Planning for the future is a tricky—some might say impossible—enterprise when it comes to EDs, as Strong's experience illustrates. But it's one that most American hospitals have already undertaken or plan to undertake within the next 10 years. Many hospitals make do with inadequate emergency facilities as a result of the widespread, faulty assumption that aggressive HMOs would discourage patients from using the ED and that hospitals' own urgent care centers would further reduce demand. Instead, managed care is in retreat and the number of uninsured Americans is climbing, pushing patient volumes beyond the limit of most EDs. Add to that the problem of finding enough nurses to staff departments, a shortage of inpatient beds, and an overall population that is aging and more prone to illness,

HIGH-TECH TRACKING:
Beth Israel Deaconess Medical Center, Boston, developed a five-foot plasma screen status board that is updated every 60 seconds with patient information, using initials and diagnosis codes for privacy. "With the white board you didn't know the department was getting crowded until it was crowded," says Larry Nathanson, M.D., an emergency physician who designed the system.

PHOTOGRAPH BY GRANT DELIN



MOBILE X-RAY:
Lawrence & Memorial Hospital, New London, Conn., added overhead radiology services within its revamped ED, because a large percentage of X-rays are performed on emergency department patients. The X-ray machine runs on an overhead track that services several beds.

Security has always been a critical issue in emergency departments; its significance intensified after Sept. 11, 2001. Security personnel and apparatus that previously might have gone unnoticed are now highly visible. "Our clients are taking a very high-profile approach—metal detectors, uniforms, visible video cameras, more guards and command centers at prominent locations," Farber says. Designers also are taking into account the possibility that bioterrorists might strike the community; most new EDs have at least a couple of rooms that can be used for decontamination.

WAITING MADE BETTER

Waiting rooms are a major area of redesign, in part because they are the target of so much patient ire. One trend is to break up the waiting room into conversation areas of several chairs or love seats so families can wait together with a bit of privacy, rather than sitting in long rows of chairs with all the glamour of a bus station. Cable TV and coffee bars are common enhancements in redesigned waiting areas. Ball Memorial Hospital, Muncie, Ind., is going a step further, eliminating its ED waiting area altogether and making patient rooms bigger so patients and their families can go directly to them for registration and treatment.

In fact, bedside registration using portable computers is allowing emergency departments to use more space on treatment areas and less on paperwork. Also gaining popularity are electronic patient tracking systems that offer a large-screen view of patients and their status to speed people through the system.

Beth Israel Deaconess developed a five-foot plasma screen status board that is updated every 60 seconds with patient information, using initials and diagnosis codes for privacy.

"With the white board you didn't know the department was getting crowded until it was crowded," says Larry Nathanson, M.D., an emergency physician who designed the system. "With this system, you can see it brewing and plan for it."

Rochester's Strong Memorial still uses a greaseboard to track patients, but is edging into IT by plugging into the hospital laboratory's patient tracking system.

Such process improvement is sometimes ignored in the rush to build, designers warn. More rooms don't necessarily make for shorter waiting times or more efficient service, says VHA consultant Jean McGrayne of Charlotte, N.C. "They take an old, broken process and replicate it in the new design. They just build another, bigger inefficient operation."

Most process improvement, though, involves how nurses and doctors interact with patients, from triage through discharge. As a first step in his ED redesigns, consultant Williams concentrates on such processes as reducing unnecessary tests and organizing staff to work in teams. He also urges clients to analyze patient flow throughout the hospital, not just in the emergency department—for instance, getting patients discharged in a timely fashion to open up inpatient beds. Among other strategies: establishing a discharge time and enforcing it, much like a hotel, and building a discharge lounge where patients can wait for a ride or a final prescription to be filled.

Still, no matter how state-of-the-art today's EDs are, one thing is certain: they will evolve as needs change and the way that health care is delivered advances. "We truly don't know what the future will hold," Farber says. "But it will be different." ●

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