DOOR TO DOC

S T E E P

Safe
Decrease in left without treatment rate.

Timely
ED wait time and LOS were reduced.

Efficient
ED beds were used only by patients who needed them.

THE PROBLEM

Emergency departments (ED) were at capacity or beyond it, extending wait times. This resulted in a dissatisfied patient population and a patient safety issue, as many patients left before receiving treatment. One literature review study showed that 46 percent of ED patients who left without seeing a physician were judged to need immediate medical attention, and 11 percent who left were hospitalized within the next week. At follow-up, patients who left without being seen were twice as likely as those who were seen to report that their pain or the seriousness of their problem was worse.

THE SOLUTION

With the help of industrial engineers at Arizona State University, Banner Health redesigned its ED flow by pioneering a process it called "Door-to-Doc," or D2D. The goal of D2D was to have patients see a physician sooner and free up bed space by keeping "less sick" patients ambulatory.

RESULTS

» Reduced average door-to-doc time (from when a patient entered a facility to first seeing a physician) from 117 to 49 minutes, a 58 percent improvement

» Reduced average left without treatment rate from 7.1 percent to 1.7 percent, a 76 percent improvement

» Reduced average length of stay (LOS) in the ED from 310 to 268 minutes, a 14 percent improvement

BACKGROUND

Phoenix is one of the nation's fastest growing cities, and Banner Health is one of Phoenix's leading providers. Unfortunately, the system's physical growth has not kept up with the city's population. Visits to the ED hit 110,000 per year by the mid-1990s, and Banner's facilities could not handle the demand. "We were trying all sorts of things to make patients feel good about the experience, like putting coffee in the waiting rooms, but that was totally inadequate," says Chris Price, MD, medical director at Banner Gateway Medical Center. "Wait times were easily a couple of hours, the triage nurses were going crazy, and the waiting rooms were like battlefields—and people within the ED itself had no idea any of this was going on. Here we were thinking everything was fine, and outside it was chaos."

The chaos spread all over. Press Ganey scores declined and the left without treatment rate spiked. This was regarded as a patient safety issue, as typically a high number of left without treatment patients would return later with their conditions having worsened.

Late in 2002, the system undertook an experiment with industrial engineers from Arizona State University led by Jeffrey K. Cochran. "These guys had never worked in health care, so they didn't have the preconceived notions about how things should be done," recalls Twila Burdick, the system's vice president for organizational performance. "We started telling them about how patients would bottleneck because there just weren't enough beds available, and they would ask, 'Why?'"

This essential question led to the analysis of the kinds of patients coming into the ED. Ultimately, the D2D design team classified patients into two types: "less sick," who needed only brief treatment (such as that for a broken arm) and "more sick," who required

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more treatment and were more likely to be admitted to the hospital. The bottleneck, it was observed, was bed space; less sick patients were taking up beds that they didn't really need.

The design team devised a "split flow" model, getting the more sick patients into beds while ensuring the less sick patients could be treated and released as quickly as possible. This meant keeping the less sick patients dressed and ambulatory whenever possible. "This made it possible to see a lot more patients with the same space and the same bed count," Burdick says.

The system implemented the change in 2005 at the ED at Banner Mesa Medical Center, where overcrowding in the ED was particularly acute. It wasn't an easy change to make because it countered the traditional notion of how an ED should be run. "There was a lot of resistance at first, both from doctors and nurses," Price recalls. "It took strong nursing leadership especially to achieve this." Once implemented, though, the split flow model proved immediately popular both with patients and providers. The left without treatment rate went down almost immediately and patient satisfaction scores rose.

PRINCIPLES OF PERFORMANCE EXCELLENCE

The Patient Experience

If patients have to wait, it's not a matter of poor customer service. It's a patient safety issue. Increased wait times lead to a higher left without treatment rate. In human terms, this translates to patients who may really need care leaving before they receive it—only to show up in the ED with their condition exacerbated later.

Removing Waste

Do all ED patients need a bed? No—but under the traditional conception of the ED, all patients are given one. This is a tremendous waste of health care resources, because a bed takes up a tremendous amount of room and needs to be cleaned following use, no matter the nature of that use; and, an occupied bed likely means that a patient who needs it is waiting for it. By keeping less sick patients ambulatory and dressed, Banner's D2D system ensures that beds are occupied only by those patients who really need them.

CONTINUAL IMPROVEMENT

Banner Mesa has been closed since D2D was implemented, being replaced by a new facility, Banner Gateway Medical Center. The ED at Banner Gateway was designed specifically to accommodate the split-flow model. The innovation has been brought to Banner facilities system wide and to other service line units, such as obstetrics.

Additionally, with assistance from a grant from the federal Agency for Healthcare Research and Quality, Banner worked with Arizona State to develop a toolkit on implementing D2D, which the system shares with other health care providers. (The toolkit is available on Banner Health's Web site at www.bannerhealthinnovations.org/DoortoDoc/About+D2D.htm.) In doing so, the system talks with other providers to assist them. "We learn from each other," says Rhonda Anderson, pediatric service line administrator for Banner Health.

Finally, Banner convenes a system-wide D2D group that meets monthly to review progress on throughput and make sure there is no backsliding. "We didn't land on this just to say, 'OK, we've made the change, that's it,'" Anderson says. "We're constantly tweaking it."