How Charleston Area Medical Center Reduces Wait Time in the Emergency Room.

The challenge

If you've ever visited an Emergency Room (ER), the word "express" may not come to mind. You may have felt the wait was too long. You may have been asked the same questions over and over again. And you may have noticed there were a lot of people there, some of whom didn't seem to actually have an emergency.

If you've been there, rest assured the emergency personnel were probably sharing your frustration. Although ER's are typically fast-paced, and the staff tries to treat patients as quickly as possible, inefficient processes can result in a chaotic situation for both patients and staff.

Charleston Area Medical Center (CAMC) is West Virginia's largest medical center and a Level 1 trauma facility. For the past five years, visits to CAMC's General Hospital ER have grown by 5-6 percent annually. This increasing volume, along with a desire to improve patient care and satisfaction, prompted CAMC to hold a rapid-improvement event designed to streamline the ER.

Planning and preparation

CAMC already had a long heritage of process improvement initiatives, including six sigma, when it decided to add Lean principles and practices to its arsenal—using our rapid-improvement methodology to jump start the process.

After developing a list of potential rapid improvement projects, one of the highest priorities was to reduce treatment initiation lead time for patients visiting the General Hospital ER.

CAMC Black Belt Steve Cunningham says the project goal was to start providing care to patients within 30 minutes after arriving in the ER (an industry standard target). As he explains, it's a psychological boost to be moved from the ER into a treatment room sooner rather than later. Even if patients have to wait a bit, or provide additional information after they're moved, they feel better when they're taken into the treatment area of the ER sooner rather than later.

Running the rapid-improvement event

One of the challenges facing the team was the physical limitations of the emergency department—essentially it was landlocked, wedged between the O.R. and radiology, and blocked from expanding outward by a busy street intersection. So, the team had to find other ways to accommodate the growing needs of the ER without expanding the area or even revamping the space.

The team started by observing the actual ER process, looking for inefficiencies. Among the problems that observation identified were significant travel time for registration staff, disconnects in communication between triage and treatment area personnel and underutilization of open treatment rooms and beds.

The sequential nature of the process also concerned the team. "Our ER staff was very task-oriented, but not very process-oriented," admits Cunningham. "Everybody had their roles clarified, but there wasn't much coordination in the way the process worked."

This resulted in a fragmented and lengthy patient experience, which the team confirmed with a current value stream map that brought to light several long delays. For instance, the wait time between when patients complete their registration and are moved to a bed averaged over 17 minutes. Also, the time between the RN's visit and the doctor's arrival averaged over 23 minutes.

Summary

Organization
Charleston Area Medical Center (CAMC)

Industry
Healthcare

Business Problem
Increase in emergency department visits resulting in long wait times

Methodology
Rapid improvement

Solution
Streamlined emergency registration, triage and care processes

Benefits/Results
Improved average lead time from patient sign-in to initiation of care by 70 percent

Key Tools Used
▶ Value Stream Map
▶ Value-add/Non-Value Add
▶ Analysis
▶ Waste Observation
▶ Brainstorming
▶ SIPOC / SIPOC-R
▶ Spaghetti Diagram
▶ Simulation
▶ Pilot

Problem Solved.

Instead of singling out these bottlenecks, however, the team concentrated on the flow of the entire process. From patient sign-in to physician orders, the average time was 99.6 minutes. But only 24.8 minutes was value-added time, leaving plenty of room for improvement.

On the second day of the rapid-improvement event, the team worked on the future state design. They developed two processes—one for treating patients during typical conditions when ER beds are available, and one for atypical, busy times when all the ER beds fill up and treatment must be initialized in the waiting room or triage area.

Both scenarios featured a shorter registration system to minimize initial paperwork and get the patient into the system quickly. The team proposed that the registration staff gather the rest of the information later, at the patient's bedside, and then use a hallway computer to complete the process.

The team also proposed creating an assessment team consisting of the primary nurse assigned to the patient, plus a physician and an assessment nurse. The team would visit each patient together, reducing the amount of information the patient had to repeat. In addition, the assessment nurse, a position created by the project team, would not have any assigned patients and so would be able to help facilitate care for all patients (e.g., check on lab results, compile x-rays, etc.).

The project team took advantage of a nearby clinical training area to test the proposed process. A few team members volunteered to pose as patients, and the others guided them through the steps. After a few tweaks, the team decided it was time for a real-world test.

On the third day of the event, the project team went to the emergency room and briefed the staff on the revised procedures. The team then singled out two patients and guided them through two scenarios: ER bed available (when not so busy) and ER bed not available (when very busy)

In both cases, the results were even better than they Had hoped. The observed average time from patient sign-in to initiation of care was 6.5 minutes – a 95 percent improvement over the baseline, and way below the project's 30 minute goal!

Evaluating success

After this, the CAMC project team ran a pilot of the new process in the ER. As it turned out, the concept of the assessment team had to be modified. "There are so many things going on in the ER," says Cunningham, "to get the physician, the assessment nurse, and the primary nurse to all stand still at the same time was just going to be next to impossible."

A more viable alternative was to have the assessment nurse visit the patient bedside with the physician whenever possible. However, if the doctor weren't available, in the majority of cases the assessment nurse could assess the patient, discuss findings with the doctor and obtain verbal orders to initiate care. This solution eliminated having to get three busy people in the same place at the same time, while still expediting patient care.

When the hospital was ready to implement the changes, the project team ran a second pilot to make sure everyone was on the same page, and that no other changes were needed. For this go around, the average time between patient sign-in and initiation of care hovered around 30 minutes—not as impressive as the 6.5 minutes observed during the event week, but still an improvement over 99.6 minutes.

After implementing the new procedures, patient satisfaction scores have been positive says Marianne Richardson, the nurse ER manager (who was also the rapid-improvement event team leader). In addition, she predicts that the hospital will see a reduction in LWBS (left without being seen) rates because patients are cared for so quickly. Plus, the changes move CAMC closer to one of its strategic goals—to reduce by 50 percent the number of patients with an ER length of stay longer than four hours.

Although Richardson reports that the new process met more resistance from staff than she thought it would, she did what any good manager would do. She talked to her people. In the end, they worked through the issues. "We've modified the new process to meet the needs of the staff and the goals of the hospital. We were able to compromise."

Problem Solved.