

## ONGOING TRANSFORMATION OF THE ED

### MARY WASHINGTON HOSPITAL

- ◆ Fredericksburg, VA
- ◆ 417 beds, 50 ED beds
- ◆ [www.medicorp.org/mwh/](http://www.medicorp.org/mwh/)

Mary Washington Hospital is the main hospital within Medi-Corp, a not-for-profit regional system of 28 healthcare facilities and wellness services in the Fredericksburg, Va., area. The ED at Mary Washington Hospital has 22 physicians, 50 beds and more than 100,000 patient visits annually.

## STEEEP

### Safe

Every patient, regardless of severity of condition, is seen without waiting.

### Timely

Significantly reduced overall wait times and length of stay.

### Patient-centered

All steps designed to minimize patient wait times.

### THE PROBLEM

According to a study published online by *Health Affairs* on January 15, 2008, the median wait time before seeing a physician for all emergency department (ED) patients rose to 30 minutes in 2004, a 36 percent increase from 22 minutes in 1997.

As recently as 2003, visitors to Mary Washington Hospital's ED often endured excessively long waits before seeing a physician. Roughly 14 percent found the wait intolerable and walked out before receiving treatment. As an example of just how bad the waits could be, on one particularly bad day, December 2, 2003, 44 of the 50 ED beds were taken up by patients waiting for an inpatient bed, leaving six ED beds for the 75 people in the waiting room.

### THE SOLUTION

Leaders in the ED envisioned a "No Wait ED," by incorporating tools and concepts of operations management. Specifically, Lean methodology allowed the team to begin to view health care from the patient's perspective. Looking at operations in the ED through this lens, a multidisciplinary team turned the focus on developing strategies to eliminate waste and create patient value.

To begin the transformation of the ED, the team came together to develop a super track system for level 4 and 5 patients as defined by the Emergency Severity Index (ESI). At that time, 30 percent of the ED's 50 beds were dedicated to these low acuity patients. Looking at operations from the patient's perspective, the team readily identified opportunities to reduce the number of steps and providers involved in managing and treating these patients. The team defined a new process—one that gets patients to physicians and on the way home much more efficiently, with fewer beds and fewer staff and ultimately reducing the length of stay.

With this system, patients are in a bed just long enough to assess their treatment needs. They are then treated and released or sent to the next area of need, such as X-ray. These low acuity patients are no longer treated as if they were emergency patients; they are now treated with the same speed as if they were in a physician's office.

Following the success of the super track system, a second, bigger, more complex, multidisciplinary team developed the RATED system—Rapid Assessment, Treatment, and Efficient Disposition—for ESI level 3 patients. By definition, the acuity and treatment needs of these patients are difficult to determine. At Mary Washington's ED, these patients, immediately identified by a pivot nurse at triage, are seen by a physician and nurse within roughly 15 minutes of arriving. Any waiting takes place after a physician and nurse have evaluated the patient, ordered testing, and initiated the specific treatment.

### RESULTS

- » Approximately 300 patients are now seen per day and without waiting.
- » Walk-out-rate among walk-ins has been reduced from a peak in 2003 of 14 percent down to 2 percent.
- » Time from treat to release has been reduced from more than 4 hours to fewer than 3 hours, even as the number of visits increased from 72,000 to more than 100,000 per year.
- » Press Ganey patient satisfaction scores improved from raw scores of 68 to consistently above 80.

## TEAM MEMBERS

- » **Rhondi Anderson, RN**  
Staff Nurse
- » **Louise Fletcher, RN**  
Staff Nurse
- » **Kelly McDonough, RN**  
ED Nursing Director
- » **Jody Crane, MD**  
ED Physician, Business Director
- » **Sarah McDonald, RN**  
Staff Nurse
- » **Cheryl Perdue, RN**
- » **Ramil Reluya, RN**

## BACKGROUND

In 2005, the ED at Mary Washington Hospital adopted Lean concepts to tackle the problems with wait times and the dissatisfaction among patients. The resulting approach uses teams of people who touch the process to redesign the process—not staff from management or administration. The people on these teams work together as a community of scientists, identifying the root causes of a problem, developing a solution, and then rapidly testing and revising the solution as many as four or five times before rolling it out.

## PRINCIPLES OF PERFORMANCE EXCELLENCE

## Removing Waste

The success of the new super track and RATED systems has instilled a culture that focuses on continually driving out waste. Every patient that walks in the door at Mary Washington Hospital's ED receives the same quality of care without waiting—regardless of severity of condition or ability to pay. Level 1 and 2 patients naturally are seen at once; level 3 patients flow through the RATED system; level 4 and 5 patients immediately move to super track rooms.

With the RATED system, the triage nurse identifies level 3 patients at arrival and they move immediately into one of five intake rooms. These patients are then seen simultaneously by a physician, nurse and scribe within minutes. The result is a single provider experience and immediate ordering of services needed. Patients who need further evaluation or extensive care move to a bed

within the main ED; patients determined to need minimal care are treated and released. Resources are all at hand to begin executing physician orders within the intake rooms at once: phlebotomist, X-ray, CT scan prep cart. This ability to consistently follow timely processes has significantly reduced length of stay for these patients.

## Reducing Process Variation

ED staff have been trained in Lean concepts and the application of queuing theory to establish consistency in patient flow as well as to eliminate steps that are wasteful or do not add value. The intent is to always have a bed available for the next patient that walks through the door. At Mary Washington Hospital, the ED accomplishes this even with fewer than the 80 beds typical of an ED of its size. With the consistent application of timely processes, the ED at Mary Washington now sees 100,000 patients a year with just 50 beds. This bed efficiency translates into staffing efficiency, placing it in the upper 25th percentile for this metric.

## Creation of High-Reliability Culture

The team of nurses, technicians and physicians that developed the award-winning RATED system began the roll-out with a mocked-up ED to demonstrate the new flow—under its own initiative. Every person who worked in or “touched” the ED moved through the simulated ED as a patient. This served to educate staff on the new process as it dispelled negative myths about the process and its outcomes, bringing most naysayers into the fold. The ED at Mary Washington Hospital has achieved the

creation of an organization that embraces change as it seeks to continually improve the patient experience through active participation in recommendations for modifications to the process. The team members recognize that they as well as patients benefit from the process, giving them ownership of the process and improving intent to stay.

Perhaps the feedback from patients is the best indicator of the success of the transformation to date. Negative letters from patients have not surfaced in years, but many positive letters have.

## CONTINUAL IMPROVEMENT

The transformation of the ED at Mary Washington Hospital is ongoing. At any one time, two to three teams of roughly 15 staff are working as a community of scientists to resolve problems and improve processes. The organization has clearly embraced ongoing change and improvement to a level that many other ED organizations have found difficult to achieve. Jody Crane, MD, who facilitates this ongoing transformation at the ED, explains, “For health care organizations, sustaining a change mindset has been very, very difficult, especially among emergency departments.” Yet at Mary Washington's ED, staff have taken full ownership of finding solutions and implementing change. In fact, on the day that RATED was fully implemented, Crane was out of town.