Improving ED Flow through the UMLN II

Hahnemann University Hospital
Philadelphia, PA
541 beds, 31 ED beds
www.hahnemannhospital.com

Hahnemann University Hospital is an academic medical center with a Level I trauma center for adults and is served by University MedEvac, an aeromedical transport program for critically ill patients. It includes a 198-bed cardiac center.

The Problem

Like many urban safety net hospitals, Hahnemann University Hospital struggled with overcrowding in its emergency department (ED). From December 2008 through February 2009, the ED had 8,821 visits. Of these, 12.7 percent of patients left without being seen.

The Solution

Upon joining the Urgent Matters collaborative [http://urgentmatters.org/overview], three improvements were adopted:

- the implementation of the ESI 5-level triage system,
- a policy of immediately bringing patients to an open bed for triage and registration; and
- dedicated space, staffing and resources for fast track.

STEEEP

Safe—The Emergency Severity Index 5-level triage system [http://www.ahrq.gov/research/esi/] evaluates patients on both acuity and resources available.
Efficient—With the adjustments, the ED can handle higher patient volumes
Timely—New processes have reduced length of stay and left without being seen rates

Results

From December 2009 through February 2010, there were 9,615 ED visits with a 9.6 percent LWBS rate, a statistically significant improvement from the prior year despite the rise in patient volume. According to a representative from the hospital, the rate continues to fall, and was at 6 percent in May 2010. Additionally, staff satisfaction improved and patient complaints declined.

Background

Similar to other urban safety net hospitals, Hahnemann University Hospital struggled with overcrowding in its ED, resulting in long lengths of stay, a high LWBS rate and low patient satisfaction scores. In June 2008, the ED director and assistant director and the hospital's director of staffing resources established the capacity action council, a multidisciplinary, multi-departmental partnership designed to improve patient flow throughout the entire hospital.

In the first year, the CAC implemented a set of process improvements that included streamling the process for direct admissions; standardizing the role of the floor charge nurses and grouping isolation patients to maximize use of beds.

While making these hospital-wide changes, the ED director and assistant director began focusing on bottlenecks specific to the ED. With the support of hospital leadership, they volunteered to participate in the UMLN II. The recognition of participating in a national collaborative was appealing, as was the emphasis on data collection and evaluation. Additionally, the program is designed to coordinate efforts and share best practices between participating hospitals.

Improvement Strategies

Hahnemann has a unique staffing model. The nurses and residents are employees of the hospital; and the hospital contracts for physicians from Drexel University. The Hahnemann UMLN II patient flow team is led by the director and assistant director of the ED and the team consists largely of staff nurses. After receiving input from the team, the director and assistant director selected three patient flow improvement initiatives, all of which could be led and managed by the nursing staff. Hospital leadership provided support by sitting in on meetings, showing staff the importance of the initiatives, and later by offering resources to support one of the strategies.

The first initiative was the implementation of the ESI 5-level triage system. Before joining UMLN II, staff used a 3-level triage system. This method was inconsistent and unreliable since level assignment varied depending upon the nurse, and the vast majority of patients were triaged as "urgent," making it difficult to determine which patients should be seen first.

It was realized that the 5-level ESI triage system would increase the patient volume in the fast track, the area where low-acuity patients could be treated quickly, because the new triage system would more frequently and appropriately identify low-acuity patients. The fast track received approximately 300 patients per month. The ESI triage system was expected to increase that number since all ESI Level 4 and 5 patients would be directed to the fast track.

However, the fast track had its own set of difficulties, namely staffing and space. A nurse practitioner and medic staffed the fast track, but delays occurred because the medic was not permitted to administer medications. Further, when the ED was busy, fast track staff were pulled to help with other ED patients. It was the viewpoint of the entire department that the fast track was a low priority. To make matter worse, the NP quit and recruiting for an experience NP was difficult.

Spacing was also an issue. When the ED experienced crowding, fast track beds would be used for ED patients, as the fast track did not have dedicated space. Further, the delineation between the ED and fast track was not clear to patients in the waiting room. This upset some individuals waiting for a bed in the ED when they saw others being admitted more quickly to the fast track. These issues led to the next initiative—dedicating both staff and space to the fast track.

The third initiative was to implement an open bed policy, where patients are immediately directed to an open bed, when available, for triage and registration. The traditional protocol at Hahnemann was to triage and register a patient when they arrived in the ED. They would then sit in the waiting room until a nurse was ready to see them. Patients waited hours, even if a bed was empty because nurses thought they had too many patients to care for and were overwhelmed taking on more patients. The open bed policy was designed to reduce the bottleneck of patients in the waiting room, getting them into a bed sooner. Additionally, it reduces the likelihood of patients leaving the ED if they are already in a bed.

These changes were selected to reduce the number of LWBS patients. Hospital leaders hoped that improved patient flow would also result in better utilization of the ED space. The ED was constructed to accommodate up to 50,000 visits a year. In 2009, the there were just over 31,000 visits.

Implementation

Implementation of the ESI 5-level triage was led by the ED staffing committee, consisting of eight frontline nurses and the nurse education coordinator. Between January and March 2009, the committee met every two weeks for four hours to learn about the ESI system using free books and videos from the Agency for Healthcare Research and Quality. They received guidance from an ED physician, who had implemented ESI at different hospital. Two of the nurses on the committee were also familiar with the ESI system, having used it at a different hospital. During April and May, the committee met more frequently – once per week for eight hours – to design the educational curriculum for the rest of the staff. They selected a number of cases to present at the training classes, using real-life patient charts representing the hospitals' frequent ED users. In June, they held two mandatory two-hour classes for the nursing staff. The first class provided an overview of the ESI system, and case studies were presented. The second class consisted entirely of practice exercises.

To prepare for the implementation of the triage system in mid-July, the committee purchased triage cards that nurses could refer to and new racks for patient charts--one for each of the 5 triage levels.

Although a few nurses were resistant to the ESI system, overall, staff reported that the transition was successful and relatively easy. More experienced nurses were more resistant to the change, but are becoming more comfortable with the system, recognizing that it is not as difficult or daunting as they initially anticipated.

A few months after the transition to ESI, the ED staffing committee began to evaluate the new processes. One initial challenge was that the patient information system did not have a check box for the 5-level ESI, so nurses had to manually enter the triage number. However, the system was

updated in October 2009, and the issue was addressed permanently. After a chart audit, they discovered that approximately 8 percent of patients were not triaged to the appropriate level (most were upcoded), higher than the national average of 4 to 5 percent. As a result, the committee organized another training session for all nurses in January 2010.

The revitalization of fast track and the open bed processes, both led by the ED director and assistant director, were more difficult to implement. While a dedicated nurse was assigned daily to fast track, recruitment of an NP continued to be a challenge. In the absence of a NP, physicians did the discharge orders, which was problematic since these orders are viewed a low priority, resulting in delays to discharge.

After consulting with another UMLN II hospital, the ED director identified additional sources for advertising the position, and created a partnership with a local university so that NP students could do their clinical rotations at Hahnemann. She also increased the salary. The result was that three NPs plus one contract NP were hired, permitting the fast track to be open 7 days per week (previously it was open 6 days) with double coverage of NPs on some days.

Additionally, the ED director convinced hospital leadership to fund a $150,000 construction project to physically separate the fast track from the ED, so that fast track resources would not be pulled when the ED became crowed. She presented data indicating that ESI level 4 and 5 patients – fast track patients – were most likely to leave without being seen. They were also more likely to call the hospitals to complain about wait times. Renovations to fast track were completed in spring of 2010.

The implementation of the open bed policy occurred gradually. The ED director stressed the importance of the open bed policy at all staff meetings, but there was resistance by staff. Nurses focused on the number of patients that they were responsible for, regardless of the intensity of time the patients require. They were overwhelmed when they had responsibility for more than four or five patients, even if some of the patients were simply waiting for labs. One factor that helped foster acceptance of the open bed policy among staff nurses is that the triage or charge nurses will often begin patient work-ups when they bring a new patient to an open bed, relieving the staff nurse from the responsibility. Further, in 2008, the department experienced considerable turnover, resulting in a need to hire 30 new nurses. Department leaders and nurses reported that it was easier for the new nurses to adapt to the process changes because they were not as familiar with previous processes. The open bed policy gradually gained acceptance during the day shift. It is the hope of ED leadership that the night shift will soon follow.

Another barrier to the rapid implementation of the open bed policy was failures by previous department leaders to sustain change. This resulted in staff being skeptical that the ED leaders were serious about making it a permanent part of operations. It was initially treated as a “flavor of the month,” where operations would be modified for a while, but slowly revert back to the old method. In addition to the constant reminders by the department leaders, the presence of outside technical advisors and evaluators under the Urgent Matters collaborative also conveyed a message to staff that this change was different and would be sustained.

Resources
The implementation of the 5-level ESI triage system and open bed policy did not require any purchases. However, the improvements to fast track required the addition of several NPs, whose salaries came out of the department's budget, and $150,000 in construction costs, funded by the hospital.

Staff time required to implement the improvements varied across the three strategies. The open bed strategy was least time consuming to implement, yet required a lot of time to communicate to staff. Constant reinforcement was necessary. The director, assistant director and nurse educator reminded staff daily for months about the policy and reiterated its importance. Planning the fast track improvements required considerable time from the director. She devoted many hours during the course of a year to recruiting NPs, conveying the importance of the project to hospital administrators and working with architects to finalize the construction plans.

Implementing the 5-level ESI triage system required more than 800 hours of nurse staff time to plan the transition and develop the first training seminar. An additional 160 hours were spent on the initial training of staff nurses. After ESI was fully implemented, nurse leaders devoted additional time auditing cases and conducting a second training seminar.

Results and Continual Improvement
The percent of ED visits that left without being seen declined from 12.7 percent to 9.6 percent with a 9 percent increase in patient volume. Interviews with staff revealed several additional benefits including a decline in patient complaints, an increase in staff satisfaction and an improved impression of fast track. Staff consistently reported that they believe that the improvements would be sustained.