

The Waiting Room *Is Closed*

Pocono Medical Center uses emergency department automation to improve patient throughput, charge capture, electronic documentation and patient satisfaction scores.

Pocono Medical Center (PMC) is a 192-bed hospital in a bedroom community of New York City in East Stroudsburg, Pa. Host to an extra 1 million vacationers, the hospital struggled with high bed occupancy and surges in patient volume, six-hour wait times in the emergency department (ED), as well as other problems such as “lost” charts, poor documentation and low patient satisfaction. This created a perception problem within the hospital and the community. Treating more than 50,000 patients a year in a totally paper-based 36-bed ED environment became so difficult that in 2001, PMC began looking for an ED information system (EDIS).

An interdisciplinary ED automation team was selected to explore technology that would improve both quality and satisfaction in the ED and improve throughput, while aligning with the hospital’s strategic initiatives to go paperless and wireless. The team was comprised of the director of the ED, the medical director, several nurses, the CIO and members of administration, medical records and registration. Other departments also participated when topics affecting their areas were discussed, such as lab, radiology and inpatient nursing.

The team looked at software systems and also examined current workflow and processes for ways to improve. Initially, this was difficult for team members because they

had limited ways of measuring and analyzing ED processes, but they considered the implementation of an EDIS the beginning of their plan of action, not an ending when they went live.

What was wrong? For starters, triage or patient screening took at least an hour, which was too long, especially with chest pain patients. Long wait times not only put patients at risk, but also posed a public relations problem for the hospital. The hospital needed information from patients to get them registered and to track them, but this required a lot of time and created the mistaken impression that the hospital was focused more on insurance information and medical record numbers than on patient care. Also, it was hard to miss Press Ganey scores on patient satisfaction, which averaged 20 percent, reflecting that 80 percent of other hospitals did a better job pleasing ED patients.

Emergency staff relied completely on paper and considered their white board the lifeblood of the department. Physicians used paper-based templates, staff relied on clipboards and documentation was done one person at a time. If someone accidentally took a chart to lunch or misplaced it, the patient was “lost,” along with any treatment or charges tied to the patient.

Just the Beginning

Pocono’s automation team evaluated four ED systems, participated in product demonstrations and used on-site visits to two vendors. A trip to Decatur Memorial Hospital in Illinois sealed their selection of Ibox PulseCheck from Picis in Wakefield, Mass., because they saw it readily accepted and used by nurses and physicians working in a similar ED setting. The Web-based application offered real-time information and the flexible design PMC needed, and it could support process improvements in patient tracking, physician and nursing documentation, risk management and charge management.

In September, the ED team began implementing the software. This involved changing the mindset of ED staff

Source

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to go electronic when they had relied completely on paper, to believe that faster care could provide better care and to shift the focus from waiting to treatment areas. Initially, they met some resistance; however, when faced with hard data on wait times, patient loads per staff and satisfaction scores, all staff eventually were convinced.

To change the process for the better, the automation team planned to use the software to help them collect and measure data to support workflow improvements. Nurses Carol Taylor and Sue Ruehle initially served as super-users for the program and, along with other team members, trained the entire ED staff on the new technology. Since many caregivers had never touched a computer before, they combined training that was focused on hardware set-up and keyboard skills with lessons on how to use Ibex PulseCheck proficiently.

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Over two and a half months, Taylor and Ruehle, along with Medical Director, Peter Favini, M.D., and Pocono's Vice President and CIO Marian Moran, worked in concert to train staff. In November 2001, the hospital prepared to go live with automated tracking and nursing documentation.

To make the process less frustrating to physicians, the plan was to wait two months before bringing physician documentation live. But the doctors had a different idea when they saw how much time was saved with the EDIS. When physicians saw nurses using wireless mobile carts for bedside documentation, they themselves quit using paper and started using the carts and software for physician documentation. In fact, Moran had to place an emergency order to purchase more carts to accommodate all clinicians wanting to use the system at once.

Eyes Wide Open

The floodgates were open. The ED automation team began using reports and metrics from Ibex PulseCheck to help them better evaluate where changes were necessary to move forward.

They discovered that a lot of time was spent progressing patients through three different processes at the front end of the ED: One process was for registration staff, one was for nurses and one was for doctors. The team decided there was no need for a linear approach to dealing with patients, and the treatment room type didn't matter, so they created a program called, "The Waiting Room Is Closed."

In this program, they eliminated triage unless it was unavoidable because of high volume. Instead, patients are taken directly to treatment rooms for quick bedside registration and care. Patient registration was moved from the front to the back-end treatment areas, and clinicians have adopted a single process for beginning care at the bedside using wireless laptop computers no matter who reaches the patient first—the nurse, physician or registration staff.

Pocono Medical Center had existing protocols that the ED used to notify other areas of patient volume and acuity, but the team realized that these weren't working because of poor communication. Instead, they decided to use the EDIS customer-defined tracking screens to change the background color instantly; this would alert staff to the changing patient volume and acuity in the ED. This functionality did not exist in the product as it was initially purchased, but PMC staff requested a change and within two weeks, a link was created whereby the charge nurse could change the background screen colors to reflect acuity. This was so successful at PMC that it is now a standard feature of Ibex PulseCheck.

PMC uses a range of colors to show staff in all areas of the hospital how busy the ED is and how to take action to prevent bottlenecks and optimize patient care. As volume increases, the screens change colors, and staff adjusts protocols to help avoid backlogs and widely communicate what needs to happen to increase throughput. For example, if the lab sees escalating activity in the ED, they will send someone to the ED to collect samples hourly. The color scheme includes:

White = low census. The patient is brought directly back to an ED bed.

Green = classic triage in waiting room, with a move into ED within approximately 20 minutes. All ED beds are full.

Blue = start a protocol where basic information is entered into the EDIS and specific orders are initiated.

Yellow = high volume with seven admissions being held without bed assignments. This initiates in-house support to the ED, i.e. hold nurse, lab, EKG.

Red = extremely high volume with 12 admissions being held without bed assignments. This also initiates in-house support. In addition, elective surgeries are cancelled.

Data from the system supplied baseline numbers of how to improve, including:

- Improve patient length of stay; more than 50 percent of patients were in the ED more than four hours.
- Eliminate lost charts; physicians estimated that 4 percent were "lost" and no bill was issued.
- Retain more nurses; they used an average of 23 percent agency nurses because of staffing shortages.
- Improve patient satisfaction; Press Ganey scores averaged 20 percent.

Ibex PulseCheck had a big impact on ED staffing decisions by monitoring activities and providing reports. Taylor and Ruehle used detailed patient volume data collected from the system to identify ways to improve patient turn-around times and adjust staffing according to patient arrival times and length of stay. For example, the software tracked occupancy and indicated that it became a big problem in the evenings until midnight, with a 74 percent occupancy rate. Armed with this data, they adjusted staffing to help keep up with patient flow. The ED now handles up to 70,000 visits a year without any agency nurses, because data helps the organization track and plan for this volume more efficiently.

When Ibex PulseCheck went live, the ED staff began using VoIP (voice over Internet protocol) phones, which helped nurses quickly reach physicians in time-sensitive situations. The hospital also installed Cisco Aironet Wireless G technology to enable wireless phones, laptops, tablets and even some portable cardiac monitors in the department.

Three Years of Benefits and Beyond

PMC has enjoyed demonstrated improvement since implementing the EDIS.

Patient satisfaction scores (Press Ganey) rose from 20 percent to 82 percent or higher. Bedside registration helped improve these patient satisfaction scores because patients felt their care was higher priority than billing forms.

Physician billing increased because the organization now has no lost charts and has improved documentation, coding and charge capture. This reduced the percentage of missed charges from an average of 4 percent to 0 percent.

Patient wait time decreased significantly. Under the old system, approximately 95 percent of patients were seen within four to eight hours. With the new system, fast-track patients average 90 minutes or less, and discharged patients are under 120 minutes. The hospital has a serious inpatient capacity issue, so many patients remain in the ED awaiting beds. Even then, more than 80 percent of patients are seen in less than four hours because of the new ED color protocols for throughput.

Nurse staffing and retention received a surprising boost. PMC used to rely on agency nurses for 23 percent of its staffing. Today that number is 0 percent.

The ED record is interfaced into the documentation record used on the nursing units, enabling all patient data (active or archived) to be retrieved, to maintain the continuum of care for the patient.

Better reporting helps everything and everyone. All ED activities can be tracked at any given time, and anything not within the department's benchmark can be reviewed.

Pocono Medical Center has used Ibex PulseCheck as a tool to make workflow changes that streamlined and improved the care of patients in the ED, with maximized throughput and better managed staffing levels.

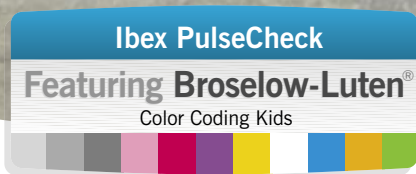
This program has been so successful that the new ED processes are now being applied to other departments at PMC for improvements in bed flow and patient care. For instance, Pocono has implemented a bed control team that is working to expedite patient flow through the rest of the institution and further improve throughput times for patients from the ED being admitted to the hospital. **HMT**

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