

# Patient Safety

## & QUALITY HEALTHCARE

NEWS • SCIENCE • RESEARCH • OPINION



# BEYOND BRICKS AND MORTAR: RETHINKING THE EMERGENCY DEPARTMENT

BY CAROLYN PEXTON

# Beyond Bricks and Mortar:

# Rethinking the Emergency Department

BY CAROLYN PEXTON

**B**erkshire Medical Center (BMC) is a 306-bed not-for-profit community hospital located in Pittsfield, Massachusetts, and the flagship facility for Berkshire Health System. BMC is a regional leader in neurosurgery, trauma, stroke care, diagnostic imaging, endoscopy, general surgery, and rehabilitation services. The hospital recently completed a 3-year effort to optimize surgical and emergency care facilities, creating a patient-centered environment with superior technologies and diagnostic tools.

Expansion and renovation projects have increased significantly in healthcare as providers race to keep up with demand. There are important concerns, however, that go well beyond actual facility design and construction. As part of an effort to renovate emergency care services, Berkshire Medical Center also considered factors such as workflow and patient throughput.

In response to a 2005 initiative from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), many hospitals have taken steps to address the congestion and bottlenecks in their emergency departments. JCAHO's Leadership Standard, "Managing Patient Flow," requires that institutions surveyed by JCAHO "develop and implement plans to identify and mitigate impediments to efficient patient flow throughout the hospital." The recommendations were developed to address issues hospitals routinely face with capacity, delays, and patient dissatisfaction.

At Berkshire Medical Center, emergency services had become stretched as a number of challenges converged on the organization. When two express services in town closed, the hospital saw a rather sudden increase in volume. The rising demand was complicated by a rebuilding project that covered six phases in 3 years and temporarily added to the noise and confusion. In addition, the hospital lost some of their key staff during this same time period.

Patients coming to the emergency department (ED) began to encounter longer delays, and clinicians sometimes had to treat people in hallways for lack of space. The community felt the impact of these challenges and expressed them through

As part of an **effort to renovate emergency care services**, **Berkshire Medical Center** also **considered factors** such as **workflow and patient throughput**.

mounting complaints and lower satisfaction scores. Some patients simply decided to seek care elsewhere. Since roughly 80% of the patients enter BMC through the emergency room, this created a problem for the organization as a whole.

The leadership team at Berkshire Medical Center decided to address the issues using Lean Six Sigma techniques and developing a series of innovative solutions. The ED initiative succeeded in redesigning the workflow, culture, and ability of the hospital staff to manage change in an inherently chaotic environment. Leveraging a combination of management tools and teamwork, they were able to exceed both internal and community expectations.

"Working with consultants and applying Lean Six Sigma techniques, we've seen significant improvement with length of stay in our emergency department," said Helen Downey, chief operating officer at Berkshire Medical Center. "Patient satisfaction scores are up, and instead of frequent complaints, we receive plenty of positive feedback."

## Tackling the Issues

With high ambulance traffic and an increase in the number of patients leaving without having been seen, the ED was under tremendous pressure to improve patient flow. In November 2004, the consultants met with the hospital's ED leaders to discuss the issues and begin collecting data.

Three internal performance improvement teams focused on CT turnaround time, lab results reporting process, and the ED admission cycle time. They had five specific goals:

- Reduce the admittance cycle, which exceeded the 75-minute benchmark 50% of the time.

- Improve patient and family satisfaction.
- Improve the layout and traffic flow at the main ED workstation.
- Decrease CT turnaround time and reduce housekeeping delays.
- Improve staff morale and reduce RN turnover.

The first step was to assess the current state. Working with the emergency department staff, the team gathered data, interviewed key stakeholders, and conducted time studies to identify the best opportunities for improvement. They also performed an assessment of staffing in the ED and found the hospital was significantly below the benchmark for the volume of patients they were trying to treat. When this information was presented to a larger steering committee, the team at first encountered some skepticism.

“I’ll admit I was one of the ‘doubters’ early on,” said Linda Carroll, RN, BSN, department director at BMC. “I thought we’d been through similar efforts before without really accomplishing much, and this would probably be more of the same. After we started getting into the process and seeing results, however, I changed my mind.”

### Moving from Complaints to Compliments

The improvements spanned the department and collectively made a significant impact on service quality and accessibility. On the basis of the team’s assessment and recommendations, Linda added nursing assistants and a greeter in the triage area, and increased the presence of educators from part time to full time. The team implemented a new pre-discharge process and also adjusted housekeeping schedules to better align with patient volume. Protocols were adjusted so nurses could initiate treatment sooner, and a new workup room was created out of unused office space.

The team is now able to utilize their resources more efficiently, and people feel empowered to think creatively when trying to resolve issues they may encounter.

“The processes helped staff properly transfer patient care and information from one shift to another, both on the unit and to different units within the hospital,” said Roberta Gale, RN. “We worked through issues and carried out a plan to expedite critical patients having lab work done. Communication has improved and people are more supportive of the hospital’s mission and goals.”

“We had been trying to get patients through the system faster, and everyone assumed the issues were confined to the ED,” said Linda. “Lean Six Sigma allowed us to look at this in a whole new way. We were able objectively to examine surrounding areas and factors, and that was the value of having credible data to guide the process.”

Change management tools were used throughout the process. Work-Out sessions were held for all three focus areas. “We realized we were having to *push* everyone else in the hospital to get our patients upstairs and into a bed,” said Lucy

## EMERGENCY SERVICES AT BMC

Berkshire Medical Center provides a Level Two Trauma Center, a 24-hour emergency department and an adjacent Express Care Center. The newly renovated emergency department includes a dedicated CT scanner and is staffed and equipped to handle all types of emergencies and urgent care issues on a 24/7 basis.

Britton, RN, BSN, clinical manager at BMC. “The consultant team helped us reset expectations toward *pulling* the patients out. It thus became everyone’s business to get patients into a comfortable inpatient unit and out of the ED. We believe this is a much more patient-focused approach, and this concept of ‘push-pull’ gave us a simple way to look at a complex issue.”

“I was surprised at how well the process fit into healthcare,” said Linda. “The assistance from the team was great, and having a consultant with a nursing background was also helpful—this provided instant credibility with the team. People seemed more willing to open up and talk about the issues.”

### A Well-Designed and ‘Lean’ Environment

Through the application of Lean techniques that focus on eliminating waste and perfecting processes, the team found several opportunities for improvement:

- Redesigned workstation in the main ED.
- Implemented faxed transfer report.
- Limited bed assignment to “ready” beds.
- Established working DRG to reduce length of stay.
- Improved discharge order processing.
- Improved timeliness of “dirty” bed signal.

Using the Lean process, the team quickly moved printers, faxes, monitors, and phones to make better use of the space. They even completely rebuilt the medical chart racks, creating a tailor-made solution to suit their needs and increase efficiency. They resolved workflow issues, shortened the lab cycle time for ED Super STATS, and led a multidisciplinary team to address environmental services and discharge procedures.

“Not only has the process improved the quality and safety of patient care in the ED,” says Ron Paquette, “but we also have a framework now to continue analyzing and improving our systems on an ongoing basis. The best measure in improvement is seeing the staff working in a more efficient, less stressful environment, caring for patients and families that see BMC as a safe and caring institution.”

“The solutions we put in place really helped to enhance services and shorten the wait time for patients,” said Ron Hayden, MD, chair for the department of emergency medicine.

“We look at things differently now and we know how to use the tools for our next efforts,” said Lucy.



### Seeing and Measuring the Changes

Change is never easy—especially when people have been following familiar patterns for an extended period of time. But the changes at Berkshire Medical Center are having a positive effect on patients, families, and staff.

“We’ve been able to create a much more efficient process for treating our patients during their stay in the emergency department,” said Joseph Amuso, RN, evening charge nurse at Berkshire Medical Center. “Employees from various departments in the hospital worked with the consulting team to decrease turnaround time for lab and radiology tests, and improve the admission process. The changes have greatly enabled us to provide more prompt and efficient care for all our patients.”

By all accounts, the emergency department is now a well-organized place. “When we first moved into the new space, there was stuff everywhere,” says Helen.

“We believe safety has significantly improved,” says Ron Paquette, “as the new processes minimize delays and allow patients to be seen, diagnosed, have a disposition determined, and therapeutics instituted, in a more efficient timetable. Delays often have adverse effects in patient outcomes.”

The ED initiative was completed in 2005, and the results have been impressive. The team was able to decrease the mean admit cycle time by 16% and provide a net financial benefit of \$771,000, excluding potential cost savings from the reduction in length of stay. They also reduced CT turnaround time variation by 46%, and reduced housekeeping cycle time variation by 70 minutes.

“Patient dispositions are determined sooner,” Ron Paquette noted. “With the institution of holding orders, patients are arriving in their inpatient beds sooner. Flagging labs as ‘super-stat’ is a tool to improve quality of care. Having radiology call directly to the ED charge nurse with results provides a higher degree of quality.”

Communication has improved, and since the project began, Press Ganey patient satisfaction scores have gone up consistently from 54% overall in their peer group to the 96th percentile. With the changes in place, BMC is now well prepared to meet the JCAHO requirement for managing patient flow in the emergency department.

Patients are now able to appreciate a much more pleasant environment, and with barriers removed, the genuine warmth and caring of the staff comes shining through. Instead of complaints about the ED, Berkshire Medical Center has been receiving a steady stream of compliments.

### BMC TEAM

Helen Downey, Chief Operating Officer  
Ron Hayden, MD, Chair, Department of Emergency Medicine  
Linda Carroll, RN, BSN, Department Director  
Lucy Britton, RN, BSN, Clinical Manager

### GE HEALTHCARE PERFORMANCE SOLUTIONS LEADERS

Beverly Moncy  
Eleanor Huff, RN

## BMC is now well prepared to meet the JCAHO requirement for managing patient flow in the emergency department.

“One measure of quality is the timeliness and efficiency with which patients are initially seen and are able to move through the system,” said Ron Paquette. “Honestly, I didn’t initially have high expectations regarding the Six Sigma methodology. After all, how could this help with the quality of the care we gave our patients? As it turned out, however, through data collection, Work-Outs, and process analysis, we now see our patients sooner; spend less time waiting for diagnostics (lab and radiology), and patients move through the system in a more timely manner.”

“Volume is up, but delays are down, and the number of patients leaving without being seen is also down,” says Dr. Hayden. “We’re improving patient care quality, increasing the case mix index, and more patients are choosing to come to Berkshire.”

Over the past year, ED patient satisfaction scores have continued to rise and they are now at the 99th percentile. The changes have started to create a positive ripple effect in the organization. Directors from other parts of the hospital have been looking to the emergency department for best practices that can be spread to other areas.

As for next steps, the team is reviewing additional processes for potential project work. Some solutions developed during Work-Out sessions were quick fixes and others were longer term solutions to be phased in. With the major issues resolved, they are pleased to be able to focus on some of the other details that can really make a difference. **IPSQH**

*Carolyn Pexton is director of communications for GE Healthcare Performance Solutions. She may be contacted at [carolyn.pexton@med.ge.com](mailto:carolyn.pexton@med.ge.com).*