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A PATIENT-CENTERED ED

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A Patient-Centered ED

Community Medical Center builds amenities into form and function

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The new Emergency Department (ED) at Community Medical Center (CMC) in Toms River, N.J., a major resort area, treats more than 95,000 patients each year. This makes it the busiest emergency department in the state.

At one time, this Saint Barnabas Health Care System hospital lacked the space and facilities needed to handle growing patient volume. Thus, nine years ago, CMC opted to expand its ED. Today, thanks to a 23,000 SF expansion and 28,000 SF renovation of the existing department, the new CMC ED—designed by Array Healthcare Facilities Solutions—offers more space and privacy and a wider range of services to its patients, along with decreased waiting times for lab and imaging results.

CMC now has one of the largest nonteaching EDs on the East Coast and is prepared to handle a wide range of emergencies. Its mission statement, “To provide a continuous commitment to excellence in customer-focused emergent/urgent care,” has become a reality, as the final phase of this lengthy project was completed with the final phase of the new department opening at the end of summer 2008.

A Self-Sustaining “Hospital Within a Hospital”

Before beginning the project, Array and CMC sized the department based on a capacity and population analysis from Health Strategies and Solutions, Inc. Following this analysis, over the course of a year, they looked into six possible campus locations for the new ED. They finally opted to expand in place, building over and around the existing department. Today, the current ED is double its previous size.

The new layout is that of a mini-hospital within a hospital. CMC’s ED is a comprehensive, self-sufficient unit with services in diagnostic imaging, cardiac support, emergent care, adult and pediatric quick care, psychiatric care (with isolation unit), point-of-care lab testing, and crisis services, all of which means patients never need to leave the department to be treated.

Patient Comfort, Staff Efficiency

The new ED consists of 79 treatment areas, including seven triage, seven rapid assessment, seven cardiac quick care, nine quick care, eight pediatric, six psychiatric, and 35 adult exam rooms. The areas are separated into four specialized clinical patient treatment “pods” to minimize staff travel time and maximize their efficiency.

A central multiposition triage suite supports all pods, each of which has one function: psychiatric screening and crisis intervention, major treatment, cardiac treatment, and emergent patient treatment. The pods constitute a unique departure from the traditional ED layout, a large open setting with many curtained patient positions and a single nurse station. In the pods, each room is private, with walls and doors rather than cubicle curtains to separate one patient from another.

Staff members enter from a central staff area, while patients and visitors enter from a public corridor feeding into the pods. Thanks



Photo by: Jeffrey Tcharo

The ED ambulance entrance leads directly to a rapid assessment and cardiac treatment area.



Photo by: Jeffrey Tcharo

Pediatric quick care private exam room separated from other specialized patient treatment areas.

to this dual hallway system—a product of evidence-based design—circulation is quieter and less congested and patients don't see one another or any indirect clinical space, which helps to reduce their anxiety level.

Consistency designed among the pods further enhances staff efficiency; for instance, supplies are located in the exact same place in each pod. Further, physicians and nurses are collocated in each pod, which allows them to share patient and treatment information quickly and easily.

“The new design has become better for treating 93,000 patients per year,” said Dr. Laurence DesRochers, chairman of emergency medicine at CMC. “The old ED was built for 45,000-50,000 patients per year, so it was cramped. The pod system works for the population and number of patients we are seeing.”

Frank Gelormini, CMC vice president of administration, noted that “the new Emergency Department allows CMC to handle growing volume and incorporates patient privacy in the pod rooms. Our treat and release times have been reduced, and overall department efficiency has been improved. Anytime we can have increased throughput, we know it's a great design.”

A “No-Wait” ED

Not surprisingly, one of the chief complaints about hospitals is the lengthy time patients spend in waiting rooms when they need to be treated. This is due to the national crisis of a lack of both ED and in-patient hospital beds. CMC was designed with patient comfort and satisfaction in mind; another unique aspect of its design is the spacious lobby and waiting areas. “Our philosophy was that the waiting area should be for families and visitors, not patients,” said Array HFS co-founder & CEO Doug Lindsay, AIA.

In addition to having easily accessible vend-



A centralized nurse station has been implemented for each of the four specialized treatment pods.

ing machines and restrooms, the waiting area is broken into smaller clusters. This allows more private spaces so that families and loved ones aren't uncomfortably close to one another during what could be a difficult time. According to Press Ganey's 2007 patient survey, improving ED waiting areas can in turn improve patient satisfaction during their waits.

While the concept of the “no-wait ED” has not yet become a reality, because it hinges on throughput and the number of beds physically available, the CMC ED was designed with wireless technology so that following triage, patients can be registered at the bedside. Although CMC's current bedside registration process is limited due to the speed of the wireless system, this can be improved upon in the future with infrastructure upgrades.

Nonetheless, bedside registration is a huge step. It has improved patient satisfaction and reduced time spent in the ED. According to Press Ganey, the average wait time in U.S. EDs was four hours and five minutes. Bringing it closer to home, New Jersey's average wait time was four hours and eight minutes in 2007, the third highest in all 50 states. At CMC, however, wait time is down to approximately two hours per patient from time of entry to discharge or inpatient admission.

Dedicated Parking

Another patient-friendly amenity, a new parking garage dedicated to ED patients and visitors, was designed during the preplanning process to address a lack of on-site surface parking. The adjacent garage allows patients to walk under a clear skylight canopy directly to the ED, protecting them in cold and inclement weather.

The CMC ED ambulance entrance, meanwhile, leads directly to a rapid assessment and cardiac treatment area. The multibay ambulance entrance is located near the cardiac treatment pod to allow clinical staff to quickly react to critical patients. In addition, CMC noticed a significant spike in elderly patients suffering from prescription medication issues that often warrant treatment in one of the geriatric secure holding rooms until stabilized and integrated with the remaining patient population.

Taking Time to Plan

The time taken to complete this project, as well as its great success, can be attributed to



The waiting area is broken into smaller clusters, allowing privacy for families and visitors.

the dedication of the staff team, lengthy planning, the quality of documentation and the multiphase process that lasted nearly four years. The project was finished both on time and below the guaranteed maximum price (GMP).

The smooth construction process was due to open and ongoing communication and coordination between the hospital, Array and the construction manager; the thorough planning process due to complex phasing; and the benefits of a significant mock-up for ED staff to stimulate ED activity in a nearby warehouse.

The full-scale mock-up consisted of five exam rooms, a nurse station and two dictation rooms. As the largest-scale mock-up Array had ever produced, it allowed staff and professionals involved to see and understand how the new ED would function and look.

Participants in the mock-up and planning process included 15-20 doctors, nurses and hospital representatives who were present at every meeting for over two-and-a-half years. Clinical staff worked alongside Array and the construction manager throughout the planning, design and construction phases.

These measures greatly reduced changes during construction. "The ED mock-up undoubtedly saved the hospital a significant amount of cost to address change orders. Having the physicians and staff see a full-size treatment room prior to construction went a long way in their support of the unit," said Vince DellaDonna, former director of planning & design for Saint Barnabas Health Care System.

Challenges and Complexities

Since the existing facility was expanded in

place, the ED had to remain fully operational throughout construction. This required a complex phasing plan that included detailed phase-by-phase information for the construction manager as well as hospital administration and staff.

Another challenge was moving the mechanical/electrical room. The electrical switch controls all major services for portions of the ED, operating rooms and other areas of the building, so conducting the move was an especially intricate maneuver. It took nine months to complete but went extremely well because of the advanced planning preparation.

Additional challenges included creating multiple temporary access routes for ambulances and maintaining adequate treatment capacity during construction. The significant patient volume and coding procedures demanded preconstruction patient treatment capacity during all phases; in other words, workers had to prepare new spaces prior to closing and vacating the existing ones.

Despite all the challenges to this project, the outcome was extremely positive, and both CMC staff and residents of the Toms River community are pleased with the finished product. "We achieved the project within the time frame and within budget, meeting the needs of the users and the design intent of the architects and maintaining hospital operations, and we did it all safely," said Keith Stanisce, executive vice president/director of operations of Barr & Barr Inc. Builders. "That is an accomplishment in itself, with the final outcome being successful, mainly due to the communication in phasing and solid working relationship of all involved."



The entrance canopy provides protection from cold and inclement weather for patients and visitors as they move between the new garage and newly expanded ED.

Growing With the Community

Today, 40% of admitted hospital patients come through emergency departments. The ED acts as a "front door" to the hospital, and patients deserve to have a positive experience there.

With private treatment bays that provide privacy while accommodating bedside registration, point-of-care lab testing and dedicated imaging, CMC's ED has accelerated its throughput to allow patients to receive quality care more quickly. All these services—in addition to the attention to every detail of patient and visitor comfort—make patients, family members and the community at large feel confident of patients' care and the environment in which it was received.

This indicates that CMC has met its initial goal of making throughput both better and faster for patients. In addition, the staff and physicians find the new ED to be running smoothly and efficiently, which was a key goal of the renovation and addition.

A display in the front lobby of CMC boasts "Our Community Is Growing and So Are We." The Community Medical Center Emergency Department has been nine years in the making and ended in a patient-centered success story for all involved. **FC**

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A multiple-patient private registration area, allowing for reduced time spent in the ED.