

A continuous improvement process developed to improve productivity and reduce waste in manufacturing has brought dramatic improvements to emergency room operations at a rural hospital in southeast Georgia.

Getting Lean

Rural Georgia hospital increases efficiency and serves more patients by adopting principles developed for manufacturing.

By Nancy Fullbright

The emergency department at Meadows Regional Medical Center in rural Vidalia, Ga., has achieved what would make most hospitals across the nation envious: a 44 percent reduction in average length of stay per patient, a 10 percent boost in patients served and a 92 percent patient satisfaction rate.

The secret? With assistance from the Georgia Institute of Technology, the hospital implemented lean manufacturing principles, a process management philosophy derived mostly from the Toyota Production System and known for reducing wasted time and effort in manufacturing.

At one point, the average length of stay for Meadows' emergency department patients exceeded 200 minutes, well below the national average of 3.3 hours, but still unacceptable to the hospital's management. "We had issues with bottlenecking, turnaround times, decreased satisfaction and overworked nurses," recalls Peggy Fountain, director of the emergency department at Meadows.

With funding from the Georgia Rural Economic Development Center (GREDC), lean specialists with Georgia Tech's Enterprise Innovation Institute began the hospital's transformation in June 2005. They conducted a three-day lean overview workshop and value-stream mapping event with Meadows' emergency department. In addition to Fountain and CEO Alan Kent, workshop participants included the emergency room nursing staff, an emergency room physician, the radiology director, laboratory manager and business office staff.

The lean team at Meadows developed 44 action items for reducing the time needed to admit, treat and discharge non-critical ER patients. Forty-one percent of the items were determined to be low-cost and high-impact. The ideas fell into one of seven categories: 5S and visual controls, cross-training, equipment, hospital procedures, patient information, general procedures and staffing.

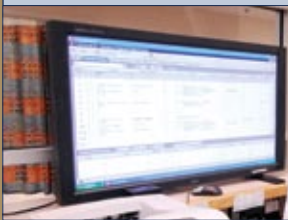
5S – which stands for sort, straighten, shine, systemize and

sustain – is a way of organizing and managing the workspace to improve morale and efficiency.

Changes made by the hospital included standardizing mobile supply stations; labeling racks, trays and drawers; installing a color-coded flag system outside patient rooms; issuing patients red allergy armbands to alert medical staff; and adding a holding area for patients who need to see a doctor but who don't need a room.

The hospital also implemented the T System®, a software program that shows staff who is in the waiting room, who needs an X-ray and who can be put into a room or a wheelchair. The T System also documents length of stay, lab tests ordered, physician and nurse assigned to the patient and discharge disposition, as well as patient name, room number and prior ER visits, if applicable.

Beyond the more visible improvements, Fountain says emergency room employees are now more empowered to take initiative and make changes that could positively impact their work process – a hallmark of the lean system.



Images show changes made at Meadows Regional Medical Center to reduce the time that non-critical patients stay in the emergency department.

Photos: Gary Meek



“Staff members realize that it’s not just the ER’s problem – it’s everyone’s problem. Whatever we can do to improve the process makes everyone’s job easier,” she says. Meadows’ management plans on utilizing lean health care principles when it builds a new, state-of-the-art hospital. The original facility, built in 1963, employs 600 people and operates 87 beds, as well as a 35-bed nursing home, an eight-bed outpatient facility, and one part-time and two full-time operating rooms.

“We want to design the new facility using lean processes before architects draw up the building,” says Kent, who also plans to incorporate online patient registration, self

check-in kiosks and bar-coding into the new hospital. “We want to optimize the process before we draw the first line. We want form to follow function.”

Kent says that Meadows’ approach could be successful in other hospitals, but notes that change is often difficult, especially in health care.

“If you don’t change and innovate, it will kill you,” Kent says. “One of the goals of lean health care is to awaken a new level of thinking and introduce manufacturing approaches that have been proven to produce excellent efficiency and profitability.” 

CONTACT

Karen Fite

706. 542. 8901

karen.fite@innovate.gatech.edu

Alan Kent, CEO and president of Meadows Regional Medical Center, and Peggy Fountain, director of the Center’s emergency department, played key roles in the lean implementation.



“Staff members realize that it’s not just the ER’s problem – it’s everyone’s problem. Whatever we can do to improve the process makes everyone’s job easier.”

– Peggy Fountain, director of the emergency department at Meadows Regional Medical Center in Vidalia, Ga.