Building a Lean healthcare machine
The average visit to Community Hospital’s Emergency department (ED) takes a little more than 3 hours, start to finish. But when you are in distress, it can seem never-ending, no matter how many minutes actually go by.

“People who come to the Emergency department really don’t want to be there,” says Karen McDonald, RN, ED director. “So, every minute we can shave off improves the experience.”

With that in mind, a year ago a team from throughout the hospital — lab technicians, cleaning staff, computer technology specialists, doctors, nurses, patient registrars, and more — began methodically looking at how patients move through the Emergency department and how to do it better and faster.

They were using the Lean approach, based on a system created by Toyota® decades ago and later adapted in other industries. Lean’s goal is to create the most value for customers with the least amount of waste, whether building a Prius® or diagnosing and treating stomach pain.

“A Lean organization understands what’s important to the customer and focuses on continually improving how we get there,” says Dr. Steven Cabrales, Community Hospital’s vice president for Medical Affairs. “We want to be that kind of organization.

We’re using Lean as a cultural transformation. We want to empower every member of our organization, particularly those at the frontlines and the bedside, to make the care we provide better.” For the hospital’s first major Lean project, he says, “we decided we would start with what for many people is our front door: the Emergency department.”

After training on Lean principles and tools, the multidisciplinary team “went to the gemba,” the Japanese word for “where the work is done.” Instead of spending time in a conference room, team members spent time in the ED, watching the work and looking for inefficiencies. They observed how patients move through the system, from arrival at the door to either discharge home or admission to the hospital. They took notes, drew “spaghetti diagrams” to track where and how often people walked around to do their jobs, watched, listened, and learned.

With the information, they developed a “value-stream map,” showing the current state of how the ED worked and the desired future state — a streamlined version that would improve the patient experience while still supporting the delivery of excellent care.

Eventually, they began putting pieces of their plan into practice, testing the changes, keeping those that worked and discarding those that didn’t.

“The goal is perfection, but it’s understood that it takes failure to get there,” Cabrales says.
Several similar exercises led to many changes, some very visible, others more behind-the-scenes, including:

- The front of the Emergency department was reorganized so the first point of contact is a nurse, who quickly assesses urgency and need. More minor issues are handled in rooms in the front of the department and more serious concerns are quickly moved to a room with a bed, if available.
- Registrars were assigned to specific rooms and are mobile, following the patient as they move through the ED.
- As much as possible, processes are now done concurrently rather than consecutively; if more than one thing can be done at once, it is.
- Furnishings and supplies in all the ED patient rooms were sifted and reorganized, eliminating stuff that isn’t really needed, ensuring that the most commonly used items are in every room, and standardizing the location of everything. The goals are to maximize space for everyone who has to be in the room and to create a cookie-cutter design, so that whether you are working in Room 1 or Room 10, everything is in the same place.
- Supply closets were reorganized and clearly labeled. If an IV stand belongs in a certain spot, there is now a picture of it on the wall, so it can be returned to that exact space. Supplies related to leg and foot injuries — like crutches and knee braces — were moved to the closet now called “Foot Locker.” Office supplies were centralized in the “Staples” closet. And the biggest supply closet, carefully reordered and relabeled, became “Safeway.”
Since urine tests are required in 60–70 percent of ED cases, they are now ordered earlier in the process, so that there is less waiting later for results.

Changes were made in the electronic patient charting system to standardize orders and eliminate unnecessary steps.

Having the multidisciplinary group was critical, says Dr. Sameer Bakhda, ED medical director.

“It’s like the stone soup story — everyone has something to bring, everyone knows their piece of the problem,” he says. “The more everybody does, the more it inspires everyone to do more.”

Lean transformation is a work in progress in the Emergency department. In the first few months, the changes shaved the average patient visit from 191 minutes to 180 minutes. For an individual, it might not seem like a lot, but collectively it is significant.

On an average day, 150 patients come through the ED doors. Saving 11 minutes on each case adds up to 27.5 hours in a single day.

“The bottom line,” Cabrales says, “is that patients are going to wait less and get better care.”
Lean throughout Community Hospital

Over time, Lean training is being provided to every staff member at Community Hospital under the direction of Rachel DeMaster, assistant director, Lean transformation. During 2016, every department will be involved in a “5S” improvement project. The 5S process forms the basic foundation of a Lean organization; helps maintain clean, safe conditions for patients and staff; and ensures that the workplace is organized and properly ordered to best support the people who do the work.

The **5S** steps

1. **Sort**
   - Identify what is needed and eliminate what is not.

2. **Set in order**
   - Organize and arrange, with a place for everything.

3. **Shine**
   - Clean the work area.

4. **Standardize**
   - Schedule regular cleaning and maintenance.

5. **Sustain**
   - Make 5S a way of life.

Eliminating waste is key to Lean.

**Seven Wastes**
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— Karen McDonald, RN, ED director