Lean Principles Strengthen a Mature CQI Program

Elkhart General Healthcare System, Elkhart, IN, gains speed, eliminates waste, and improves cross-departmental processes.

Patricia Panchak

While other organizations have been known to wait for a crisis before implementing a new management practice, Elkhart General Healthcare System (EGH), didn’t. EGH launched a Continuous Quality Improvement (CQI) program in 1991 and it continues to pay dividends at the Elkhart, IN-based hospital. EGH executives began exploring lean principles in 2004 and launched the first lean events there in 2006. They didn’t abandon or reduce their CQI efforts. They considered lean principles and tools a new approach to adding value and eliminating waste.

“Our CQI was working well, but we also wanted to take full advantage of Lean principles, particularly the Rapid Improvement Events (REI),” says CEO Gregory Lintjer. “We were looking for tools that were consistent with the CQI philosophy while offering, in some instances, a new dimension of speed.”

After exploring lean and Six-Sigma, the team chose to pursue lean principles to address this need for speed, but also to achieve other goals. They noted in a presentation to the EGH board of directors that lean’s emphasis on the elimination of waste would attack the inefficiencies that national statistics have found to add 30 to 40 percent to the cost of health care. Lean’s focus on improving processes would combat situations — deficient systems — that research shows lead to 85 percent of malpractice cases.

EGH also recently decided to change the departmental name “Lean” to “Total Value Management” (TVM). “We wanted a name that was self-explanatory like Continuous Quality Improvement” and which provided a very broad umbrella for principles and tools, of which lean is an important, but not an exclusive, part,” explains Jen Nolt, director of TVM.

In Brief

During the past year and a half, Elkhart General Healthcare System has been working to interweave lean process improvement into an existing — and very successful — Continuous Quality Improvement (CQI) program. They’ve found Lean benefits the organization by speeding quality improvements and bringing associates from disparate departments together to understand and improve processes.

Coordinated Efforts

Now, a little over a year since EGH launched TVM utilizing lean principles, the two function harmoniously. At the hospital’s 13th annual Quality Expo in September, poster exhibits demonstrating CQI and TVM improvements cover table-tops set up in the hospital cafeteria. Nothing indicates whether the projects employed CQI or lean tools. Nolt and Jean Putnam, director of quality, know which is which, but don’t dwell on how the projects were done; they’re focused on results.

When asked how EGH teams decide which method to use to solve a particular problem, neither Nolt nor Putnam cites a set of rules.
"We talk at least an hour a day about linking CQI and TVM, so that our efforts are coordinated," Putnam says. They also formally meet each week to discuss ongoing improvement efforts.

**CQI Strengthens Clinical Practices**

Putnam adds that generally CQI initiatives tend to be more clinical in nature and confined to a relatively small group, involving only one or two departments. A clinical improvement, she explains, is where medical research has identified best practices, and so "We have to ask ourselves: 'Are we doing that? If not, why not? What do we have to do to comply?'"

Examples of CQI initiatives at this year’s expo included efforts to improve door-to-balloon time to treat heart-attack patients, specifically ST-elevation myocardial infarction (STEMI), and to reduce bed sores. "These are processes that may not warrant a lean RIE (rapid-improvement event), they're more of a 'just do it,'" Putnam adds.

The Centers for Medicare and Medicaid Services’ (CMS) STEMI-treatment standard calls for patients to undergo heart catheterization (often called balloon angioplasty) within 90 minutes after arriving at the hospital, explains Becky Jellison, nurse manager for Cardiac Diagnostics and Catheterization. EGH routinely meets the standard and has the "best practice" in the region, but works to sustain and improve its treatment process. New efforts involve creating standard treatments based on the patient’s electrocardiogram results. Also, the group is looking for other places to replicate the door-to-treatment standard, such as the door-to-CAT-scan time for incoming stroke patients.

For the effort to reduce bed sores, nurses gathered initial-state statistics and then redoubled their efforts to follow protocols shown to be effective in clinical research. With the new practices, the number of patients getting bed sores dropped from 20 percent in December 2006 to 9.4 percent in September 2007. Fifteen percent is the national average.

**Lean Streamlines Processes**

Lean projects tend to be process oriented and involve several distinct departments, says Nolt. An example demonstrated at the Expo involved an RIE to streamline the stocking of surgical carts, which involved surgeons, nurses, and the central processing department (CPD, which is similar to manufacturing’s material handling). Before the RIE, the CPD stocked the carts two days prior to the surgery using "pick lists" (a checklist of the materials and supplies needed for the particular surgery) and sent them to the Surgery Center Core (an inventory area near the operating rooms). While there, the carts were 'raided' by surgical staff members who needed an item in a hurry, leaving the cart without the necessary supplies. As a result, the surgical staff had to re-inventory and re-supply the cart several times within the two days, causing them to make an average of 1.14 calls to CPD per cart. Since the RIE, surgery carts are sent to the surgery center one-half to one day ahead of surgery and calls to restock are down to .16 calls per case. With an average of 30 cases each day, that’s a reduction from more than 30 calls to less than three.

Another example is the management of the infusion pumps, which, because they travel with the patient through various departments, are difficult to track. Before the lean RIE, nurses in every department who needed a pump for a patient and technicians who needed to conduct maintenance had to search throughout the hospital to find them. Nurses averaged two or three searches of up to an hour each per day, and an emergency department (ED) technician averaged an hour each morning gathering and returning pumps to the ED (where many pumps begin their journey through the hospital). After the RIE, with an appropriate number of cleaned pumps stored near where nurses need them, nurses spend no time looking for pumps. The maintenance staff maintains and moves pumps to the appropriate location, where with a visual system they can tell at a glance if the appropriate number of pumps is available. Also, technicians complete maintenance on the pumps on a more regular schedule.
The Big Quality Picture

EGH executives say a key to their success can be credited to rolling out TVM and Lean principles as a complement to, not a replacement for, CQI. "TVM is one part of the big quality picture that involves CQI, data collection, and pay for performance based on CMS indicators, and risk management," says Nolt. Lean principles have added an important new approach to continuous improvement efforts. "It’s very satisfying to see quick results, and the possibility of more results in the relatively near future," says Terri Hilyard, VP Nursing. Some processes and projects necessarily require more time, which makes them harder to sustain. "With CQI, 100 percent attendance is a challenge," Nolt says. Due to the nature of medical care, it’s harder for associates to schedule an hour for a meeting than it is to schedule the entire day.

Both TVM and CQI bring different departments together, which promotes greater understanding of each other’s work. "It makes people so much more aware of what other departments have to do," Hilyard says. "Particularly with the RIEs, the associates go to other departments to see — and do — work. You hear people saying, ‘I had no idea that department had to do that; I had no idea that all this had to be done to get this to my department,’” she explains.

Now EGH’s challenge is to continue the integration of TVM and lean principles into its culture as firmly as CQI. "Truly CQI is part of the culture," says Putnam. "I don’t have to tell people to do it. I might say, look, our data is showing this, and they just go right out and do it." For Nolt, the goal is to familiarize the organization with new tools represented by lean principles and reach a point where individual employees can make them second nature in doing their daily work.

According to CEO Lintjer, "Between CQI and TVM with its emphasis on lean principles, we think we have a great tandem to improve our daily work and always make the services we offer tomorrow better than those offered today."

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