

Business Tactics Are Medicine for What Ails Hospitals

The Boston Globe

January 31, 2008

About four years ago, patients were backed up in the X-ray lab at Newton-Wellesley Hospital. People with broken ankles and other painful injuries could sit around for as long as 45 minutes before they saw a radiologist. The hospital prepared for the obvious solution: add another X-ray machine, at a cost of about \$500,000.

But before the purchase, the hospital sent consultants to study the X-ray suite. Following radiology technicians throughout their workday, they found the technicians spent a lot of time walking around outside of their exam rooms—collecting paperwork, ferrying patients to changing rooms and calling doctors to double-check orders.

In addition, some technicians would wait for Room 1, even when the other four radiology rooms were empty. Room 1 was considered superior because it was closest to the changing rooms—minimizing the patient's embarrassing walk in a hospital gown—and it had better equipment, with an exam table that moved up and down.

Efficiency experts, once the province of industrial giants with big factories, are sweeping through Boston-area hospitals, bringing cutting-edge business school methodologies into the doctor's office. The buzzword is "process improvement," a technique in which close examination of repetitive tasks can expose hidden faults.

"More and more hospitals are doing this," said Dr. Donald M. Berwick, chief executive of the Institute for Healthcare Improvement, a Cambridge nonprofit organization. "Healthcare systems were never designed for efficiency and effectiveness the way modern manufacturing and service industries have been. As a result, there's a tremendous amount of defects and waste in healthcare."

In the Newton-Wellesley radiology lab, a new system was soon in place. The radiology coordinator now checks orders electronically, eliminating the need to call doctors. Receptionists lead patients to changing rooms. A follow-up footstep study shows that technicians now spend almost all of their time in the exam rooms.

The median time elapsed from the end of check-in to the completion of the X-ray exam, which used to be nearly 40 minutes, is now less than 25 minutes. Some weeks it's down to 21 minutes. The plans for a new machine were scrapped.

"We're treating more patients every year, but it doesn't seem as busy as it used to be," said Brian McIntosh, radiology operations manager.

Using process improvement is a radical shift in medicine, which has often been resistant to change from outside the healthcare establishment. Berwick said he first saw hospitals using the methodology about eight years ago. Hospitals like Newton-Wellesley are part of a second wave of early adopters.

"This is a major movement in American healthcare, just accepting the fact we can learn from other industries," said Dr. Marc Bard, a partner at Bard Group, a consulting firm in Needham, MA. "It's getting rid of the arrogance that previously existed that said healthcare was so different than

everything else.”

Process improvement grew out of previous approaches to quality engineering, including total quality management, which became popular in the 1980s. One leading methodology is Six Sigma, a statistically based system of improving processes that originated at Motorola Inc., the electronics manufacturer. It runs a training program called Motorola University. Another is the Toyota Production System, a model gleaned from Toyota Motor Corp.’s pioneering approach to producing quality cars efficiently.

Many hospitals in the Boston area have adopted process improvement to varying degrees. But Partners HealthCare System Inc., the parent of Newton-Wellesley, Massachusetts General Hospital, Brigham and Women’s Hospital, and others, has approached the discipline in a systematic way. It encourages individual hospitals to develop programs using whichever quality methodology they like.

It also recently sent hundreds of its back-office middle managers to Harvard Business School. Over several sessions, they worked on an actual Harvard case study on a problem that struck Toyota’s Kentucky assembly plant in 1992: A hook used to install the rear seat on the new Camry kept breaking, and the problem threatened the entire Camry production line.

Stacia Talberth, one of Partners’ information technology managers, said the program reenergized her. “My challenge is I get 300 requests each year to install new software applications,” said Talberth. “Getting a program in place involves four different work teams and can take six to eight weeks. Working on the case study focused me on a way of breaking down a process into its component parts and looking to see if there are wasted steps.”

Based on what she learned from the Toyota study, Talberth said she is working to break down her department’s work flow into individual steps. “We need to build ownership of each of the steps and overall ownership of the final outcome of each project,” she said. “A project can get delayed as it gets passed from one team to another. We want to create an owner who will be responsible for start to finish.”

While many hospitals in Boston have taken up process improvement, Partners has implemented it systematically. Heading the effort is Dan Ginsburg, who left Boston Consulting Group to become the president and chief operating officer of the physicians’ group at Massachusetts General. He also is chairman of the Partners Process Improvement Executive Committee.

“Process improvement is the study of the way you do things,” he said. “You map it out, and then you look to take waste out of the process.”

A common theme in the various approaches is finding out what’s happening on the front lines, whether it’s the assembly line worker at the auto plant or the nurse in the intensive care unit. There’s also an effort to empower those workers so they can have a direct impact on a problematic area. The classic example is the andon cord, an alarm that any worker can pull in a Toyota assembly plant to stop production until a problem is rectified.

Learning about process improvement has its own rewards. In organizations that adopt Six Sigma, employees who complete training are awarded achievement status similar to karate belts. “I’m a Green Belt now,” said McIntosh, the Newton-Wellesley radiology chief. “When we did this project, Six Sigma was new to me.”

“I don’t believe this is just business school mumbo-jumbo,” said Dr. Michael S. Jellinek, president of the hospital. “I’m convinced that if you do this really thoroughly, you can increase capacity and

cut out costs. It also has a great impact on employee morale.”

Mass. General has a proton beam facility, one of only three such devices in the country. They offer a new type of radiation that treats tumors with fewer side effects than traditional treatments. But the \$100,000 million facility was fully booked, and managers were soon looking to add a night shift to treat more patients—an expensive proposition for the hospital and an inconvenience for patients.

The process improvement project found that patients arrived for their appointments only to wait while the anesthesiologist needed to prepare them for treatment was summoned. Under a new scheduling system, all patients who required anesthesia are booked together, and an anesthesiologist was assigned to those hours. Patient volume went from 29 a day to 39 a day without adding hours of operation.

“It often sounds totally obvious,” said Ginsburg, “but until you do it, things won’t change.”

Nancy Kane, professor of management at the Harvard School of Public Health, isn’t surprised hospitals are playing catch-up to industry when it comes to process improvement. “The whole idea of management being applied to healthcare is long overdue,” Kane said. “I train physicians to be managers, and it’s like teaching them a whole new world.”

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