INNOVATION PROFILE

Redesigning Acute Care Processes In Wisconsin

SYSTEM Appleton Medical Center and Theda Clark Medical Center, both part of ThedaCare, a 5-hospital health care system with 40 sites and 5,500 employees serving approximately half a million people in northeastern Wisconsin.

KEY INNOVATION Collaborative Care, a model of general acute care. Lean methodology was used to redesign and reconfigure clinicians’ roles, all acute care processes, and the physical setting to make them more efficient, effective, and patient-friendly.

COST SAVINGS In the two acute care units where Collaborative Care has been implemented, cost per case has decreased 15–28 percent, and average length-of-stay has dropped 10–15 percent (with an 8.89 percent thirty-day readmission rate).

QUALITY IMPROVEMENT RESULTS The two acute care units in which Collaborative Care has been fully implemented have achieved perfect “medication reconciliation,” which is a formal process for creating the most complete and accurate list possible of a patient’s current medications and comparing the list to those in the patient record or medication orders. Ninety-five percent of patients in Collaborative Care units rated their satisfaction level as “excellent” in 2010, compared with 68 percent in 2006, before the rollout of Collaborative Care.

CHALLENGES Under Medicare, hospitals receive less than the full diagnosis-related group payment per case when patients are discharged to certain postacute settings, rather than to their homes. Because patients receiving Collaborative Care were moved more quickly to rehabilitation units or nursing homes, ThedaCare was effectively penalized, even though the thirty-day readmission rate is less than half the national average.

A combination of vigorous leadership, enhanced organizational development, and use of the lean improvement methodology led to substantial cost savings and quality improvement at ThedaCare, according to Kathryn Correia, a ThedaCare senior vice president. Dubbed Collaborative Care, the initiative was planned in 2005–06 and then formally launched in early 2007 in a medical-surgical unit at Appleton Medical Center, the second-largest hospital in the ThedaCare system. The planning stage started with an intensive examination of the principles and processes guiding inpatient care using the lean manufacturing methodology first made famous at Toyota. Collaborative Care has since been put in place in another inpatient unit within the ThedaCare health care system
and is being implemented in a third. Plans are to have it in place in all inpatient units in ThedaCare hospitals by 2012.

Lean is based on the concept of *kaizen*, or continuous improvement. Lean initiatives typically start with so-called value stream mapping, in which every input and step in a manufacturing or service-delivery process is identified and then analyzed in terms of the value it delivers to the customer. The objective of value-stream mapping is to uncover waste, such as bottlenecks, duplication, ambiguity, excessive complexity, and underuse of resources. In the lean approach, all who contribute in some way to creating a product or delivering a service are empowered—indeed, encouraged—to point out flaws or opportunities for improvement.

ThedaCare employs four full-time organizational development professionals, three of whom have doctoral degrees—and, as a result, different parts of ThedaCare had undergone improvement initiatives before. Collaborative Care, however, was the first to use lean. In addition to its appealing focus on increasing efficiency and reducing errors, lean “is also about reducing risk of errors and making full use of available resources,” notes Correia. These were critical goals for ThedaCare as well, particularly since internal surveys had revealed that the nursing staff felt underutilized.

**Redefinition Of Desired End, Shift In Perspective**

Senior leadership at Appleton Medical Center decided to focus on inpatient care for two reasons. First, inpatients sustained greater exposure to risk of errors compared with outpatients. Second, the system forecast that the majority of future hospital revenues would come from inpatient care as ambulatory care moved to other settings, and therefore costs needed to be lowered and quality improved as much as possible.

Value-stream mapping of the hospital’s existing inpatient care revealed that it was oriented to the wrong goal. “In the process we had,” says Correia, “everything was built around justifying why the patient needed to stay in the hospital. We realized we needed to define discharge as the desired end point and look at our processes from the patients’ perspective—what did we do that clarified their health status for them, what did we do that confused them?”

Redefining the end point allowed a complete rethinking of every step in the inpatient experience, every decision point in it, and the contributions of every person interacting with the patient.

Value stream mapping also uncovered numerous instances of duplication, unnecessary complexity, and ambiguity. Instead of a single care plan per patient that all caregivers—doctors, nurses, pharmacists—agreed on and followed, “we saw that different people caring for a single patient essentially followed their own care plan,” Correia says. Input solicited from patients revealed that patients too often felt confused about their condition and how it would be treated, and they resented giving the same information to different caregivers; having to do so led them to suspect—with justification—that their caregivers were not fully communicating with one another. Surveys of nurses revealed widespread confusion about physicians’ care plans for patients, frustration with accommodating different physicians’ personal preferences regarding care, and substantial wasted effort—on average, nurses were spending three hours per shift securing and transporting supplies.

**Defining The New Care Model**

The unit chosen for the launch underwent twenty-four rapid-improvement events in which the care process and clinicians’ roles were completely redefined. For instance, in the new model a trio composed of physician, nurse, and pharmacist visits the patient within ninety minutes of admission to review the patient’s history, current health status, and health goals, and devise a care plan with the patient’s input.
Nurses are the “keepers of the tollgates,” says Correia. Two series of tollgates run in parallel and correspond at key points: a diagnostic and therapeutic progression and a nursing progression. For a patient admitted with gastric bleeding, says Appleton Medical Center’s Mark Hermans, the diagnostic and therapeutic progression will include blood counts every four hours. Getting each test done on time constitutes one tollgate; getting the results back constitutes another. For the nursing progression, the tollgates correspond to general nursing care (for example, food and fluid intake, elimination).

If a tollgate is missed because of an error—lab results that should have come in but have not yet done so—the nurse is to stop the progression, solve the problem on the spot if possible, and then communicate what happened so that the error can be eliminated in the future. If on-the-spot problem solving is not possible, then the nurse is responsible for initiating an examination of the problem later.

“Having tollgates helps us track where process errors prevent care from progressing as it should,” says Correia. “At first, nurses would do backflips to get past the tollgates. The training team had to say, ‘Look, I see how dedicated you are, but you’re missing the point—we want to learn what the process issues are, so backflips aren’t necessary.’

When the new roles and processes were defined, the unit was moved off site for six weeks so that the new systems could be practiced and fine-tuned, with volunteers serving as “patients.” The unit’s nonphysician staff members were able to take part in this intense immersion for the entire six weeks, with physicians participating on and off during the first four weeks and then for all of the last two. The elaborate testing phase was expensive but worthwhile, says Correia. “We recognized that you can’t bring all these people together and just expect them to know their new roles and how to interact in this new way with one another, and how to come up with a patient’s plan of care. Off site they got used to the new model and had to be vulnerable in front of each other.”

Adopting new ways of working challenged most clinicians, as did adapting to new roles. Correia describes how one physician, speaking for other physicians as well as himself, said, “Where we struggle is the loss of control, some loss of autonomy. ...Now I’ve got a team attached to me.” The medical center’s organizational development team played a key role here, Correia says. “We were asking people to change their sense of what their profession is, their sense of who they are.” The organizational development team’s work plus senior leadership’s strong support of the new model eventually won everyone over.

Correia emphasizes that senior leadership’s commitment to the project, from beginning to end, was crucial to its success. “Leaders activate belief—they say, ‘We can do this, it matters, and we’re going to do it.’ They create connections between people and make things happen.”

Supporting And Spreading Collaborative Care
Eventually, the acute care unit where Collaborative Care was first implemented was completely remodeled to better support the care model, and all rooms were made private. Before the renovation, though, the Collaborative Care model was tested on selected patients throughout the unit, which then had semiprivate rooms, allowing other patients to observe the model as it was used on their roommates. When the patients who witnessed Collaborative Care in action but didn’t receive it started requesting it, Correia comments, anyone on the team who still had doubts about the new care model was won over.

Making all rooms private was an important design decision. Communication between patients and providers that was central to the new care model had proved difficult in semiprivate rooms because of privacy issues. But even larger changes were made outside of patients’ rooms so that the entire facility was “built around the process, not vice versa,” says Correia.

Nursing stations were eliminated: “We want nurses in the room with patients or communicating with the rest of the care team,” says Correia. Ten consultation alcoves for use by care “trios” (the aforementioned physician, nurse, and pharmacist team) were scattered throughout the twenty-four-bed unit. Electronic medical records can be accessed in the alcoves, as well as in kiosks in every patient room.

To reduce the constant back-and-forth searching for supplies that had taken up so much of nurses’ time, some 80 percent of supplies were stored within easy reach in patients’ rooms. Whiteboards were placed in the rooms, so that nurses could write test results and other information and make them easily visible to patients and caregivers alike. Numerous visual reminders, such as different colored lights signaling that a test has been ordered or that test results are awaited, were put in place over the rooms’ doors.

Collaborative Care has been introduced into a second inpatient unit in the ThedaCare health system and is being implemented in a third. Subsequent rollouts have proved easier than the first, Correia notes, as enthusiasm for the model
and news of its successes have spread. “This is a human model. People working in it are passionate about it,” she says. She quotes one registered nurse as saying: “It took me seventeen years to become the nurse I’ve always wanted to be. So strongly do I feel Collaborative Care is the right thing for patients and for me professionally.”

**Results**

In the two acute care units where Collaborative Care has been fully implemented, the cost per case has decreased 15–28 percent, and average length-of-stay has dropped 10–15 percent (with an 8.89 percent thirty-day readmission rate). There are fewer registered nurses per patient in Collaborative Care units, resulting in a decrease in the cost of clinical care per patient day; as a result, nurses’ productivity has risen 11 percent.

These two Collaborative Care units have achieved defect-free medication reconciliation upon admission and 100 percent compliance with a specified bundle of procedures for caring for pneumonia patients. Patient satisfaction scores have risen sharply in Collaborative Care units: 95 percent of patients rated their satisfaction level as “excellent” in 2010, compared with 68 percent in 2006, before the rollout of Collaborative Care. Anecdotal information suggests that employee satisfaction has also increased significantly and that nursing staff turnover, which was already below the national average, has dropped.

**Challenges**

Under Medicare, hospitals may receive less than the full diagnosis-related group payment per case when patients are discharged to certain postacute settings, rather than to their homes. Because patients receiving Collaborative Care were moved more quickly to rehabilitation units or nursing homes, ThedaCare was effectively penalized, even though its thirty-day readmission rate is less than half the national average. As a result, ThedaCare estimates that in 2010 it lost $1,900–$2,200 in reimbursement, on average, per Collaborative Care case. Hospitals implementing similar initiatives that shorten hospital stays are likely to lose out on revenue under these current Medicare rules. ■

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