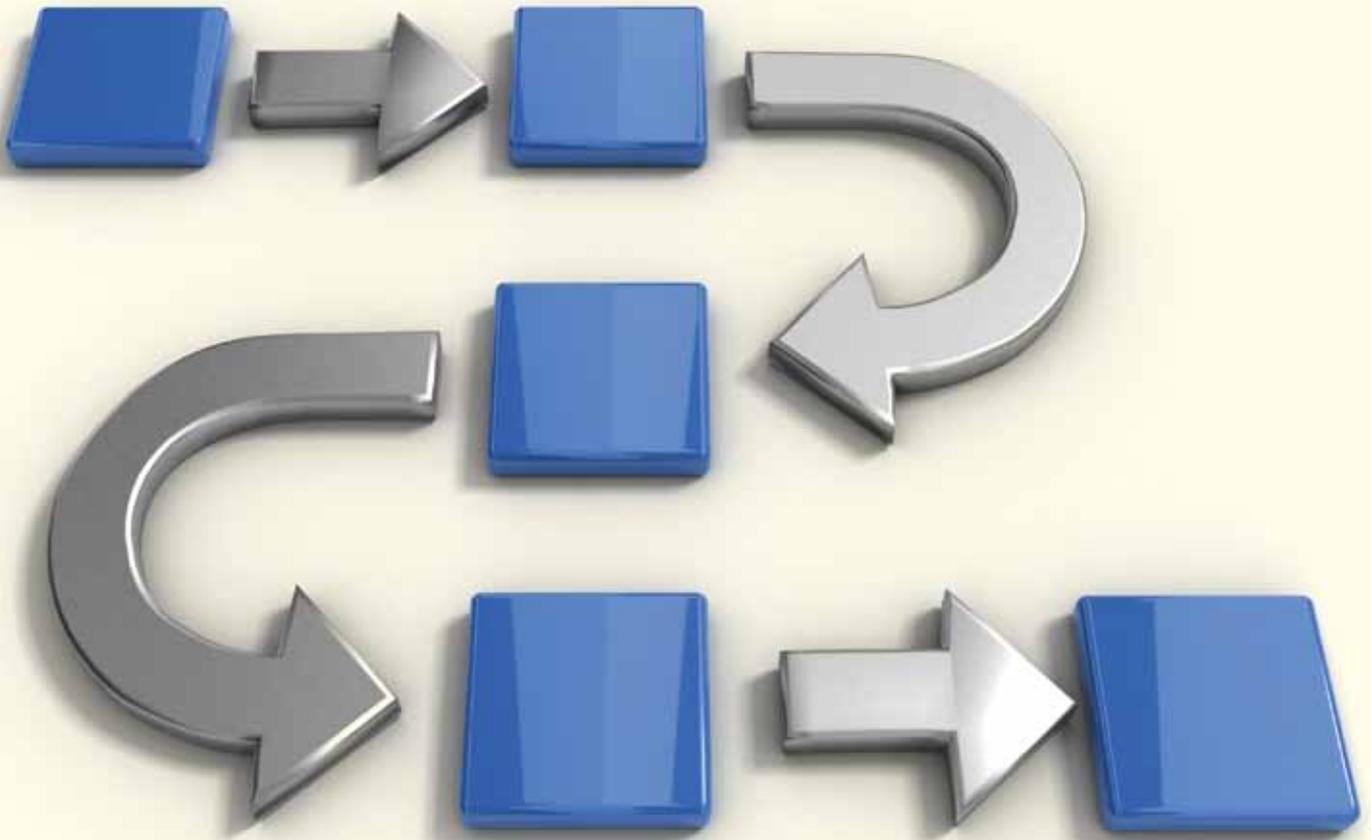


# Using Formal Process Improvement for Revenue Cycle Success



At a time when downward payment pressure makes preserving margin critical, many hospitals are applying formal process improvement methods, such as Lean, Six Sigma, Total Quality Management, and ISO 9000:2000, to improve financial performance. Using these methods, hospitals have improved net patient revenue, managed denials, and improved productivity, among many other successes. Consider just a few results achieved from formal process improvement:

- Bethesda Healthcare System, South Palm Beach County, Florida, increased point-of-service cash receipts by more than 120 percent since October 2011.
- CHRISTUS Health decreased denials by almost 50 percent and saw an increase in cash of more than \$4 million in one month in just one of its hospitals.
- Sentara Healthcare, which operates 10 hospitals in Virginia, slashed patient throughput time in registration from 18 to 10 minutes and raised the outpatient preregistration rate from 84 to 95 percent.
- Norwalk Hospital (328 beds) in Fairfield County, Conn., increased the number of follow-up accounts handled per day from 40 to more than 80.

Formal structures for examining improvement opportunities are providing hospitals with a clearer path to finding process inefficiencies. By applying a disciplined approach to process review, leadership can often discover poor hand-offs, process inefficiencies, underutilized automation, or variations in service delivery that impede cost-effectiveness, quality, or user satisfaction. Structured process improvement systems also help organizations better understand work flow and predict which changes will have the greatest effect on performance.

## Using Lean/Six Sigma for Performance Improvement

There are many types of formal process improvement approaches, but one growing in popularity is the use of Lean/Six Sigma, which combines two basic philosophies. The Lean methodology focuses on eliminating waste or any aspect of an existing process that does not add value. Six Sigma concentrates on reducing variation in existing processes and/or redesigning those processes so there are no defective elements.

Lean and Six Sigma are similar in their overall orientation. Lean has five steps. It 1) assesses the current state by creating a value stream map; 2) projects a future state on the basis of changes in the value stream after eliminating waste; 3) identifies, quantifies, and prioritizes process improvement opportunities; 4) implements changes and measures the effects of the changes; and 5) monitors performance gains.<sup>1</sup>

Six Sigma 1) defines opportunities for process improvement; 2) measures performance; 3) analyzes changes that can lead to improvement; 4) improves performance by implementing changes and measuring their impact; and 5) controls performance by developing systems for sustaining the changes.<sup>2</sup>

The two performance improvement methodologies work well together. Lean fosters improvement as the result of an overall organizational approach to trimming waste, while Six Sigma provides a statistical grounding for uncovering the cause of problems.<sup>3</sup>

Although developed for the manufacturing sector, the techniques increasingly are being used in all forms of business, including health care.

“We have millions of processes that go on every day in hospitals, and those processes have never been engineered as you would in manufacturing or some other industry using Lean/Six Sigma,” observes Bob Broadway, vice president for corporate strategy, Bethesda Healthcare System. “If processes in the healthcare industry could be as efficient and low-cost as transactions in the banking system or as flawless and without error as the airlines, our industry would be more efficient and cost effective.”

## Norwalk Hospital: Increasing Back-End Revenue Cycle Productivity

When Norwalk Hospital focused Lean/Six Sigma on its back-end revenue cycle activity earlier this year, it found a large number of accounts for follow-up staff to process. “There was always a backlog because people would have to choose among the accounts,” says Joe Pajor, administrative director of the revenue cycle. “People would tend to work the high-dollar accounts so the low, \$50 or \$100, accounts got delayed, or the complex cases got bumped down the line.”

The problem was getting so severe that the hospital didn’t have enough staff to handle the work flow. “Sometimes certain staff would have more than a thousand accounts in their work queue, and we were building up a huge amount of dollars in un-worked accounts with relatively small balances,” Pajor says.

**What they did.** Norwalk Hospital first conducted a value stream map of the steps involved in getting a clean bill. It then prepared a future value stream map that highlighted how much less effort and time would be needed if the steps were reduced or if they were taken in a more succinct, productive manner. “You define the area that will produce the biggest bang for the buck and the quickest results, and that becomes the project you work on,” Pajor explains.

After deciding to address follow-up accounts, Pajor assembled a group of 10 people to examine that process in depth and determine where there was waste. A major part of Lean/Six Sigma is watching work in action. “You don’t just sit in an office and talk about how the work is being done. You go to the floor, go to the business office, and see what the people do,” he says.

The exercise led to a number of small but important discoveries. As Pajor points out, “It’s not the big waste that’s killing you; often, it’s the little waste.” Staff, for example, spent a lot of time switching from one software system to another. “It’s very common in health care to have two disparate IT systems, so you have to flip back and forth on the computer screen. Everyone in patient accounts now has two computer screens so they don’t have to waste time toggling in and out anymore,” he says.

The Lean/Six Sigma process improvement project also defined standard work. “Many of the people processing accounts didn’t know what they were supposed to do in certain situations, so they would call someone else for advice,” he says. But that led to delays and variation because accounts were not being handled in a consistent manner.

Staff now have standard protocols that specify how each situation should be addressed. “The staff based the numerous protocols on their own experiences, and they agreed that they would produce the best results to move accounts along,” Pajor explains. “Since the staff created their standard work, tested it, and then obtained management approval, we experienced tremendous buy-in from staff.”

**How they have improved.** In the first 45 days after implementing the process improvement, Norwalk Hospital achieved significant gains in follow-up account processing. Staff who had been handling 40 accounts a day now completed 80 to 90 accounts daily because each follow-up person takes and resolves every new account on a first-in, first-out basis. “Our staff has to touch every account that comes into the system by the end of the day,” Pajor says. “If we get an account that has been denied for payment or if there is a question about payment, then the staff person has to resolve the account immediately and not let it go into a pool of accounts to be worked or sorted later.”

That doesn’t mean payment will be made on every account at the end of the day. “But if there is a small dollar amount involved, we need to review it and determine whether it is the patient’s responsibility,” he says. “If there is a denial, maybe because a provider number is wrong, then we have

to resolve the problem that day. Some large or complex accounts, like those involving Medicaid, will take longer, but they still need to be processed within the week.”

The change is reducing the number of languishing small-dollar accounts. “We now have people who are quickly screening accounts and deciding that the account should be moved on to the patient because the self-pay payment balance is correct,” says Pajor.

It is also expediting denials management. “If an account needs to be punted to the denial team, it is getting there much quicker. Instead of taking two or three months, or even two weeks, to get the account to the denial team, it is done the next day,” he says.

Norwalk Hospital is now tracking the number of accounts that are coming in each day. “In some cases, we’ve already sent out a bill but for some reason the payer is not paying what we thought it was going to pay or is denying the claim or creating some other roadblock. We are monitoring such trends so we can determine how we are managing according to the number of new accounts we are getting,” he says.

Pajor believes this is a new concept for hospitals. “Usually most revenue cycle activity is focused on days in receivables, cash to net revenue collections, etc. We’re drilling down to learn not only what our productivity is, but what our work flow is. We are redeploying staff during the day as they finish their queues, and are now starting the Lean process to review ways we manage technical denials and payment variances,” he says.

## Sentara Healthcare: Decreasing Patient Throughput Time

Movement of patients from the time of arrival at Norfolk General Hospital to check-in at a clinical department was averaging 18 minutes, a figure that is significantly higher than what is considered to be the standard 10-minute throughput time, says Brenda Loper, CHFP, regional director of access services for Sentara Healthcare Hospitals.

Norfolk General, flagship for Sentara Healthcare, is a very large building with many additions. Outpatient services are scattered throughout the hospital, making passage to those services complex for patients. “Patient registration staff had to escort patients to the clinical departments, which was killing our throughput time because staff weren’t registering patients, they were walking through the halls with someone,” Loper says.

## IMPROVING PERFORMANCE BY EXAMINING WORK FLOW AND PROCESS AT BETHESDA

Lean/Six Sigma is helping Bethesda Healthcare System in South Palm Beach County, Fla., pull apart layers of waste and inefficiency that stall the revenue stream and impede productivity wherever it may occur along the revenue cycle. “We’ve made a significant change in unwrapping the onion by looking at work flow and processes,” says Bob Broadway, vice president for corporate strategy, Bethesda Healthcare System.

Bethesda Healthcare System operates its flagship 401-bed Bethesda Memorial Hospital as well as the Bethesda Comprehensive Care Center and the Bethesda Heart Hospital. The healthcare system also is in the process of building an 80-bed community hospital.

Since it adopted the Lean/Six Sigma approach, Bethesda Healthcare System has improved performance in a variety of ways. Achievements include:

- Reducing appointment scheduling time by 20 percent
- Decreasing DNFB by 63 percent in only four months
- Increasing cash receipts by 28 percent in four months
- Raising point-of-service collections by 120 percent over a period of six months

### Improving Process Efficiency

By examining sources of variation and waste, the organization made several key changes that contributed to these gains. Some of these changes include:

- New automated processes that eliminated the need to enter scheduling data into two separate systems and reduced the number of errors caused by manual data entry
- Redesigned reporting and follow-up processes that allowed DNFB to be examined on a daily, rather than monthly, basis and improved resolution of physician queries and dropped accounts
- Workflow processes that better organized coding so coders could focus on coding instead of other tasks

### Lean/Six Sigma in Patient Access

One key project success has been improvement in estimation of patient payment responsibility and resulting cash collection. In particular, Lean/Six Sigma led the Bethesda Healthcare System to take better advantage of technologic tools and better execute supporting processes.

The organization recognized the value of implementing a price estimator that would allow it to get a better handle on determining patient financial responsibility for its patient mix. “The tool we use can decipher eligibility rules from the nearly 2,000 health plans in the patient mix to help us determine what the patient reasonably owes and will be expected to pay,” says Broadway. But, he adds, support technology is only as good as the ways in which it is used.

“Bringing in the price estimator was important, but if you don’t enter the proper insurance information, load the correct plan, or interpret the data in the right way, then you’ll get the wrong answer,” he observes.

The healthcare system consequently focused on identifying and peeling back the routines that interfered with accurately estimating and collecting amounts due. “We had the right people looking at all the inputs and outputs of the process,” says Broadway. “We brought people together to provide and feed information to our access personnel. We listened to the access staff and outpatient registrars at the front end. We changed our work flow.”

The result? Point-of-service payment collection is now more accurate and streamlined. Many hospitals fall into it’s-always-been-done-this-way habits, Broadway notes. “You don’t update policies or procedures or don’t do it appropriately. That lack of focus causes duplications, omissions, or errors,” he says. “Six Sigma/Lean provided us with totally new work flow and new processes. Six Sigma/Lean eliminated errors and waste, and in the process we made great strides, and improvement was immediate.”

**What they did.** To reduce throughput time and increase preregistration, Norfolk General turned to Lean/Six Sigma methodologies for data analysis. “There have been lots of management du jour types of process improvement activities that find changes that intuitively make sense. But the Lean/Six Sigma method forces you to look at processes logically and make sure you are not basing a decision on anecdotes or on data that haven’t been validated,” Loper explains.

Lean/Six Sigma also focuses on the factors that will produce the most benefit. “You need to look at your historical data, but you don’t need to dive 30 feet down and never come up again,” she says. “You need to look at enough data to understand your current situation. And you need to move forward with the data.”

As Loper notes, “A lot of hospitals spend so much time on what’s wrong, they don’t get around to figuring out how to fix it. Lean/Six Sigma is designed to get to where you need to be. You will get results, because you will be monitoring and measuring the right things to correct the root causes of the problem.”

Data gathering at Norfolk General revealed the need to alter staffing patterns. “FTE is a four-letter word in hospitals; nobody wants to add an employee, especially in an administrative job,” she says. “But because of the facility’s unique physical layout, we either had to have transporters to take patients to the clinical department, or the department had to come and get them. We hired three people—one full-time and two part-time—so we would have at least one transporter during peak hours and we could cut down the amount of time our registration staff had to be away from accepting and registering patients coming in for services.”

Data analysis also indicated the need to remodel the registration work area. There just were not enough registration work stations in the lobby of the hospital. “Even if we hired more people to handle an increased volume of outpatients, we would have no place to put them. So we built three more registration stations to give us more geography to process patients in a timely manner,” Loper adds.

At the same time, as part of a separate initiative led in IT, the hospital increased automation in the registration, patient scheduling, and insurance verification department to incorporate a patient tracking system. The next phase is focused on building an interface between check-in, patient tracking, registration, and visit notification so the abstract can be created in the medical record system, coders can begin coding, and the bill can be generated.

**How they have improved.** Norfolk General Hospital has exceeded its throughput goal, reducing the time from arrival at the hospital to arrival at the outpatient department to 10 minutes. Also, the hospital is capturing patient satisfaction rates in the range of 97 to 98 percent. At the same time, preregistration rate also is improving. “The interview in the registration area is much briefer than if you have to do a full-blown registration, and patients are positive about the experience because we are getting and validating their information over the phone, and they don’t have to go through it all again when they arrive,” says Loper.

## CHRISTUS Health: Increasing Cash by Decreasing Denials

CHRISTUS Health also has benefited from formal process review. The organization was seeing an increase in denials not because of flaws in revenue cycle operation but because of difficulties in clinical departments. “The revenue cycle is the first place that gets targeted when your denials go up or adjustments or write-offs occur and cash goes down,” says Kaycee Orman, executive director of the revenue cycle. “But the majority of our denials were occurring because of medical necessity issues. Payments were being denied because there was no authorization from a case management standpoint or the treatment wasn’t covered.”

Orman believed the revenue cycle had many opportunities for improving revenue through increased billables and decreased errors. The problem was figuring out how to develop a collaboration with the clinical side. “In health care, we have segregated ourselves as being operational or clinical,” she says. “For years, the clinicians would say, ‘I’m here to treat the patient, not to collect the money. That’s your job.’”

When CHRISTUS Health applied Lean/Six Sigma principles in three of its consolidated business offices, one of its objectives was to raise awareness among clinical departments about the effects of lapses in the revenue cycle. “They really didn’t understand that they were creating issues from a reimbursement standpoint. In many instances, people thought they were doing the right thing,” she adds.

**What they did.** The health system developed a revenue integrity program whose primary focus is to review claim denials and write-offs at monthly meetings with clinical departments. Revenue cycle staff provide detailed denial data and trending information and work with clinical staff to identify specific concerns, make recommendations to improve cash flow, develop action plans, assign responsibility, and set due dates.

## 3 STRATEGIES FOR MAKING THE MOST FROM EXTERNAL ASSISTANCE

Many hospitals turn to experts outside of the organization when developing programs of formal process improvement. An external perspective often provides new insights into ways to optimize processes and technologies, educates the organization about ways peers are overcoming similar challenges, and can provide a level of expertise in performance and change management not available within. Whether partnering with someone on a per-project basis or enlisting on-site presence for long-term value, hospital executives should keep the following in mind.

**Seek the right expertise.** Although many formal process improvement methods have roots in other industries, such as manufacturing, hospitals should seek partners who are familiar with the specific challenges of healthcare processes and technologies. Does a potential vendor have experience with similar clients? What sort of reputation does the vendor have within the healthcare industry? Talking with others who have used external partners for similar projects can help leadership best identify questions to ask and avoid potential missteps.

**Ensure sufficient training and monitoring.** Developing new processes to create efficiencies, cut costs, or provide better services is only half of the challenge: The organization must be able to sustain improvements. Will the vendor provide on-site training, and what will this training entail? How will the relationship be structured to ensure existing staff understand the process changes needed and are able to continue to implement solutions identified? What role will the vendor play in monitoring progress and intervening should backslide start to occur?

**Establish clear goals and expectations.** What is the organization hoping to achieve? Partnering can provide once-in-time solutions to a specific process or function or more comprehensive, longer-term benefit. As an example, some organizations not only engage performance experts to review processes and provide staff training in Lean/Six Sigma, but also receive input on technology use and obtain on-site guidance to ensure the technology is optimized to its potential.

To address problems related to medical necessity denials, for example, one clinical department targeted three root causes: incomplete and illegible information, lack of authorization for delivering high-cost medications, and admission denials.

In response, the department reviewed its charting methodology with the objective of migrating documentation from paper to the electronic patient care system, improving the legibility of clinical notes, and increasing the comprehensiveness of the patient history and assessment. The department began an analysis of ways it could improve its process for obtaining high-dollar drug authorizations before services were delivered. And it provided ongoing education about the appropriateness and documentation of admission decisions.

Although the revenue integrity program deals primarily with the clinical departments that have the highest numbers of denials in each region, Orman encourages all departments to participate in the meetings “so they can listen and understand the concept of learning how to drill down and examine processes and start conducting their own review and analysis.”

**How they have improved.** “We are truly managing by data,” says Orman. Through analytical tools, workflow management tools, historical trending, and benchmarking, Orman can tell each of CHRISTUS Health’s five regions how its cash compares with cash collected by the highest-performing region. “We have a pipeline that indicates how fast cash is coming in the door, so we know what kind of a cash month we’re going to have, and we can predict how cash is going to perform from one month to the next.”

As a result, in one month in one hospital, data-driven management cut denials in half and raised \$4 million in cash. Orman estimates that if Lean/Six Sigma were fully operational in all CHRISTUS business offices across its more than 40 hospitals, the health system could be collecting somewhere in the neighborhood of \$7 million more each month.

### Fundamentals for Success

Those who have implemented formal process improvement programs in health care point to a number of critical success factors.

**Focusing on training.** Probably the most important factor when instituting Lean/Six Sigma is proper training. As Bethesda Healthcare’s Broadway points out, “At a management level, you assume that your supervisors and mid-level managers are properly training the entry and frontline staff. Too often, however, they are not educators and don’t know

## OUR SPONSOR SPEAKS

# IMPROVING MARGIN PERFORMANCE

M. Scott Armstrong, vice president, Margin Performance Program, OptumInsight, discusses fundamentals for applying formal process improvement to revenue cycle operations.

**Applying traditional manufacturing process optimization techniques (TQM, Six Sigma, and Lean) to a service industry requires a unique set of processes and metrics, primarily because service organizations have very different root causes of problems. Given this premise, what are three of the basics for applying process improvement methodology to provider revenue cycle services?**

First, you need change management and culture shift. The basis for improvement involves shifting the culture and behavior of the organization from task-focused to process-focused. This involves teaching and bringing awareness that every activity within the revenue cycle has an impact on the entirety of the process, negative or positive. Educating and empowering staff to own the revenue improvement process, monitor performance metrics, and communicate with their employees are the keys to staff adoption of the cultural and operational changes that are vital to successful financial management.

Second, you need data-driven information for decision making. Managing with metrics allows leaders to drive targeted projects, achieve desired results, and sustain improvements. Proper training in the use of simplified Lean

Six Sigma tools and methodology provides a single source of truth. Standardizing the measurement system's definitions and calculations is essential for continuous improvement.

Third, you need the right focus on performance improvement. Inefficiency in healthcare administration can lead to lost revenue, increased costs and, in some cases, regulatory compliance issues. Lean Six Sigma projects can place quality measures upstream in the process, resulting in reduced costs, improved delivery times, expanded staff capacity and, in some cases, improved compliance. Improvement is predicated upon teaching every associate to identify and eliminate waste, change poor decision-making processes, standardize practices for productivity improvements, reduce cycle times, and mitigate the risk of poor judgment driven by inadequate metrics.

Transforming a revenue cycle management process requires long-term vision, commitment, leadership, management, and training. When these elements are in place and combined with disciplined problem solving techniques, the results can lead to significant, long-term improvements in provider performance and an elevated quality of patient service.

Source: OptumInsight.

how to train on process and technique and interpretation of policies and procedures. So they end up spending four hours with someone who has been doing a job for the last three years, tell the person they have to change the way they are doing things, and then say, 'Here's the procedure manual.'"

Some organizations will look external to the organization for training expertise. Those with experience specific to formal process improvement can not only identify the types of strategies that will best identify inefficiencies or waste but also the structures that will support ongoing improvement and maintenance of achievements. Success isn't a one-time event. The right guidance can help ensure staff have the skills and resources to sustain improvements.

"Ideally, when you put together a Lean/Six Sigma team, you will have someone who understands the measurement

part of the model," says Sentara Healthcare's Loper. There are many types of tools for collecting and measuring data on processes. Depending on the nature of the process, some are more valuable than others. "You need someone who has been thoroughly trained and can say, 'The best measurement tools for the project you are working on are one, seven, and eight; two, three, and six will not give you the answers you need.'"

**Seeking staff buy-in.** Lean/Six Sigma projects rely on input from the people who actually do the work—asking staff how they spend their time, what is important, where are wasted hours of the day, and what processes are not contributing

Broadway says that hospitals can further promote staff buy-in by offering incentives and rewards. "It can be as simple as pats on the back or movie tickets or competitions among teams."

Continual support is essential, says Loper. “We talked to staff continuously during the project. We told them what we did last week, how we set goals, how and what we were measuring. For improvements like this, which are such a major change in culture, I don’t think you can over-talk or over-sell to the staff. Because if they think you value them in the process and care about what they have to say and how they can contribute, it will be a huge factor in gaining their buy-in.”

**Planning for ongoing monitoring.** Formal scorecards, regular meetings, data collection and analysis, discussion, and staff input about process changes need to be embedded in a Lean/Six Sigma facility. Many organizations, such as Bethesda Health System, develop ongoing committees that include representation from Lean/Six Sigma experts to ensure changes in process continue to be implemented and successes are sustained.

Also, routine monitoring of metrics that allows for early interventions at signs of backslide also is important. “If you don’t do the monitoring to make sure changes are being followed, then people may fall back to what they’re used to, and you won’t get the bang for the buck,” says Loper.

**Not underestimating the value of technology and staff support.** Work flow and analytical tools that can drill down performance reporting keep Lean/Six Sigma projects focused and on track, CHRISTUS Health’s Orman observes. Lean/Six Sigma projects also can reveal the need for other types of technological support, such as price estimators for front-line staff engaged in point-of-service collection and claims processing software for the back office.

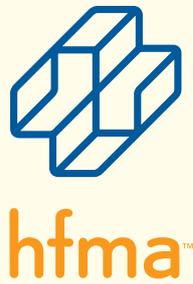
But Orman emphasizes, “You need to cultivate a truly people-oriented culture when you implement Lean/Six Sigma. If you don’t invest in the continual development of your people and allow them to be decision makers, then you won’t be very successful. Continuing to develop your people will improve their skills and allow them to contribute more than they would in a traditional business office. They will understand a lot of the critical data that prevents overall success: financials, income statements, the reasons for denials. And that’s pretty special.”

### Endnotes

- 1 Stegall, S. “Lean and Six Sigma—Comparing and Contrasting the Process Steps,” Sprick, Stegall & Associates, Oct. 30, 2009.
- 2 IBM Global Business Services, “IBM Institute for Business Value: Driving Operational Innovation Using Lean Six Sigma,” 2007.
- 3 “A Quality Improvement Primer,” CFO Forum, online resource, Healthcare Financial Management Association, Sept. 15, 2010.



Optum™ is an information and technology-enabled health services business platform serving the broad health marketplace, including care providers, plan sponsors, life sciences companies and consumers. Its business units—OptumInsight™, OptumHealth™ and OptumRx™—employ more than 30,000 people worldwide who are committed to enabling Sustainable Health Communities.



### About HFMA Educational Reports

**HFMA is the nation’s leading membership organization for more than 39,000 healthcare financial management professionals employed by hospitals, integrated delivery systems, and other organizations. HFMA’s purpose is to define, realize, and advance the financial management of health care. HFMA educational reports are funded through sponsorships with leading solution providers. For more information, call 1.800.252.HFMA, ext. 330.**

This published piece is provided solely for informational purposes. HFMA does not endorse the published material or warrant or guarantee its accuracy. The statements and opinions by participants are those of the participants and not those of HFMA. References to commercial manufacturers, vendors, products, or services that may appear do not constitute endorsements by HFMA.