

# Saving Money, Saving Lives

by Jon Meliones



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A noble mission doesn't guarantee financial solvency. That's why the chief medical director at one hospital needed to find a way to keep the mission lofty and the bottom line healthy. His tools: reams of data, a fresh approach to teamwork, a sense of humor—and the balanced scorecard.

# Saving Money, Saving Lives

**M**Y EPIPHANY CAME AT SEVEN O'CLOCK on a hectic November evening in 1996. I was the attending physician in the intensive care unit at Duke Children's Hospital (DCH) in Durham, North Carolina. A six-month-old named Alex lay in a crib in the ICU with a stiff plastic tube in her throat. Awake and moving after heart surgery, the tiny girl was ready to come off the ventilator. As Alex squirmed and tried to breathe, the ventilator forced more air into her lungs. Her exhausted parents grew distraught. "Why can't she come off the ventilator?" her mother asked. "Because we've had to cut back on night staff," replied the busy nurse. "There's no respiratory therapist available." Alex was uncomfortable. She received medication to help her sleep and to keep her from fighting the ventilator until the therapist arrived in the morning. But her parents didn't sleep; they were too confused and upset.

As I watched Alex and her parents, I thought back to similar scenes I had witnessed over the years at DCH, a 134-bed pediatric hospital located on the fifth floor of Duke University Hospital. Here, 800 employees care for patients in our neonatal intensive care unit, pediatric intensive care unit and pediatric emergency room, bone-marrow transplant and intermediate care units, as well as in our subspecialty and outreach clinics. When I came to DCH in 1992, we had a \$4 million annual operating loss; it had grown to \$11 million by 1996, which forced administrators to cut back on resources. As a result, some caregivers felt that the quality of clinical care had deteriorated. Parents' complaints increased. Some dissatisfied doctors threatened to send their patients elsewhere. Frustrated staff quit.

by Jon Meliones

And then it struck me. I saw with perfect clarity the reason that DCH was struggling to meet the needs of its customers—our patients and their parents. And I knew what had to be done to make things right. The problem was that our hospital was a collection of fiefdoms: each group, from accountants to administrators to clinicians, was focusing on its individual goal rather than on the organization as a whole. We would be a far more effective organization if we could stop that from happening. Most companies in the United States had this insight 20 years ago, but the nonprofit world remains, for the most part, unaware of it. I realized that DCH needed to start thinking less like a money-losing nonprofit and more like a profitable corporation.

A sense of mission, of course, is critical to any organization's identity. The institutional mission of a hospital is to promote the health of the community. But during difficult periods, it's easy to lose sight of the big picture and focus solely on your fiefdom's specific goals. Clinicians—that is, doctors and nurses—want to restore their patients to health; they don't want to think about costs. Hospital administrators have their own mission—to control wildly escalating health care costs.

Cost cutting in a vacuum traumatizes patients, frustrates clinicians, and ultimately cripples the hospital's mission. The decision to cut a respiratory therapist from the night shift, for example, affected Alex and her parents as well as their insurance company, which had to pay an additional \$2,000 to cover the cost of the ventilator and ICU care. The decision also left the clinicians feeling powerless, since decisions regarding clinical practice were being made without their input. Such trade-offs between quality of patient care and cost control cause intense conflict for health care professionals. In worst-case situations, efforts to improve profit margins actually have the opposite effect—they chase away customers, cost executives their jobs, and put the entire hospital at risk of financial ruin.

### Regaining Our Balance

Considering the magnitude of the issues we faced—a \$7 million increase in annual losses in four years—it's hard to believe that we ever turned things around. But we did, by changing peo-

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ple's minds and hearts, inch by inch, day by day. In 1997, the chief nurse executive, nurse managers, and I began working together to start turning the organization around. First, we discussed our current realities with the entire clinical team. We opened the meetings by talking about our goals for our patients. "We want patients to be happy," the doctors and nurses agreed, "and for them to have the best care."

*Chief Medical Director Jon Meliones realized DCH needed to start thinking less like a money-losing nonprofit and more like a profitable corporation.*

We also described our pressing financial challenges.

We showed the clinicians our raw data.

The average length of stay at DCH was eight days—20% longer than the six-day national average. The average per-patient cost was \$15,000—more money than we were bringing in. If we continued to spend at the same rates, we would be forced to cut clinical programs, staff, and beds. The quality of patient care and our reputation would then suffer, and we would fail to meet the needs of our community.

Confronted with this grim picture, the clinicians began to understand that if we wanted to save our programs and our patients, create an environment in which staff are fulfilled, and keep our jobs, we would all have to readjust our individual missions and start paying attention to costs. If the hospital didn't show a margin, clinicians wouldn't be able to fulfill their mission. Thus, we adopted the now-familiar mantra in health care: no margin, no mission.

It was also clear that the administrators needed to be highly involved. To bring the administrators' and the clinicians' missions into alignment, we turned to a practical management approach that had worked well in numerous *Fortune* 500 corporations: the balanced scorecard method. Developed by Robert Kaplan and David Norton,

it had improved customer service, driven organizational change, and boosted bottom-line performance in leading companies like AT&T, Intel, and 3M. Our goal was to become the health care leader in the balanced scorecard.

Our balanced scorecard aligned the hospital's goals along four equally important quadrants: financial health; customer satisfaction; internal business procedures; and employee satisfaction. We explained the theory to clinicians and administrators

like this: if you sacrifice too much in one quadrant to satisfy another, your organization as a whole is thrown out of balance. We

could, for example, cut costs to improve the financial quadrant by firing half the staff, but that would hurt quality of service, and the customer quadrant would fall out of balance. Or we could increase productivity in the internal business quadrant by assigning more patients to a nurse, but doing so would raise the likelihood of errors—an unacceptable trade-off. Our vision, which became the new mission statement, was to provide patients and families with high quality, compassionate care within an efficient organization.

### Taking Our Medicine

Developing and implementing a balanced scorecard is labor intensive because it is a consensus-driven methodology. To make ours work required nothing short of a pilot project, a top-down reorganization, development of a customized information system, and systematic work redesign. The most difficult challenge was convincing employees that they must work in different ways.

At first, doctors and managers saw attempts to move them into teams as a shift in their power base. Nearly everyone complained that applying a systematic approach to cost management was "cookbook medicine." It took a good deal of persuasion, persistence, and reassurance to get some individuals to buy into our process. One cardiologist routinely stormed out of meetings when we talked about cost per case.



We knew that changing people's minds would be hard work. But once people saw how successful the balanced scorecard approach was in one area of the hospital, we reasoned, it would be easier to sell the methodology throughout the rest of the organization. So we decided to launch a pilot project. Some physicians were much more willing to change than others. Those who under-

**To keep the hospital afloat, clinicians and administrators learned to work together. Using the balanced scorecard, they dramatically cut costs without sacrificing the quality of patient care.**

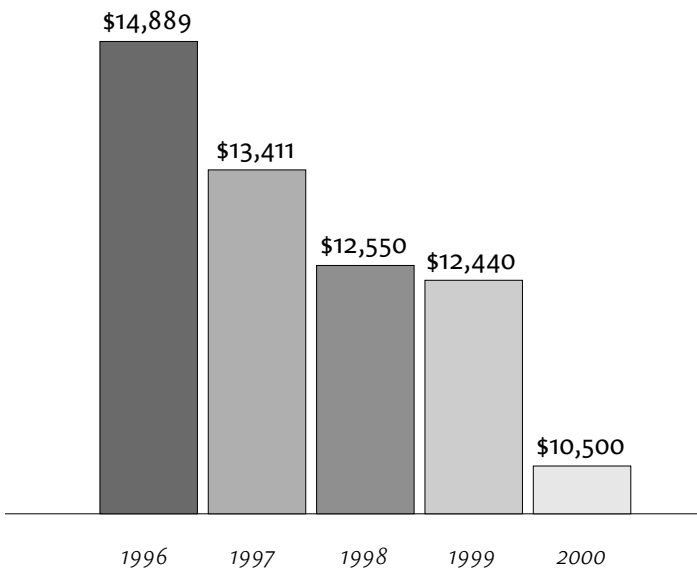
stood the importance of applying systems to medicine—such as surgeons—became our first champions. So we started the balanced scorecard in one very important microcosm of the hospital—the pediatric intensive care unit, which I lead.

First, we reorganized the roles that individuals play in the ICU. We moved from mission-bound departments in which people identified only with their particular jobs (“I am a manager,” “I am a nurse,” and so on) to goal-oriented, multidisciplinary teams focused on

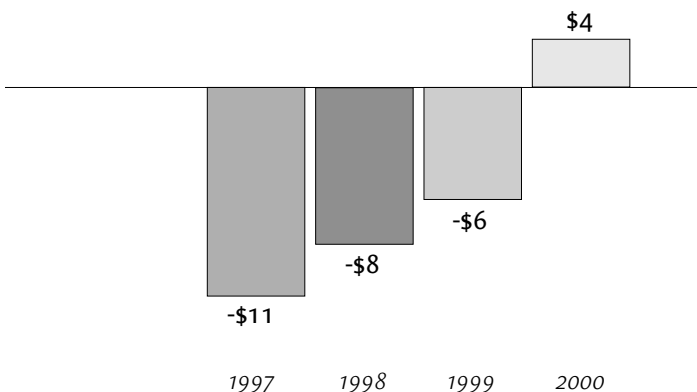
## A Look at the Numbers

*Using the balanced scorecard method, Duke Children’s Hospital’s cost-per-case average fell from nearly \$15,000 to \$10,500 and its margin soared from an \$11 million annual loss to a \$4 million gain.*

### Cost per case



### Net margin



a particular illness or disease (“We, the ICU team, consisting of the manager, the nurse, the physician, the pharmacist, and the radiologist, help children with heart problems”). We called these teams clinical business units—what other industries call business or operating units. The lead physician and the lead administrator shared responsibility in these teams. Together, they reviewed financial information, patient and staff satisfaction data, and information on health care trends and initiatives.

The various clinical business units worked together to organize “care coordination rounds” and brainstorm solutions to difficult patient cases. They created a patient’s care plan—a document, shared with the parents, that records everything from treatment recommendations to post-hospital care.

The teams also developed protocols we call clinical pathways—a set of best practices for various treatments. For example, a respiratory therapist, a nurse, and a physician developed a series of steps a nurse could follow to remove a patient from a respirator without having a therapist present. As the clinicians developed new pathways, they shared their successes with the entire organization so we could all learn from their experience.

By developing and promoting protocols like these, we improved care dramatically. For example, we knew that babies recovering from heart surgery had trouble feeding and that parents needed to learn how to help them. Before we had formed the pathways, we would wait until the day of discharge to teach parents how to do so. Once people started sharing their expertise to develop the pathways, we learned that there was no reason to wait so long and moved the training to the day after surgery. Patients were able to go home much sooner, and their hospital costs were cut by 28%.

We developed more protocols by comparing patient data. A study of 20 heart patients, for example, revealed that treatment costs varied dramatically. One child received two days’

worth of antibiotics; another received seven days' worth for the same condition. One child underwent ten laboratory tests; another had only three, and so on. As a group, the clinicians went over each case, comparing notes and reviewing the medical literature. They decided which tests were unnecessary and eliminated them.

Within six months, our balanced scorecard approach in the ICU was garnering impressive results. We re-

head of the intensive care unit, I'd cared for and transferred 1,500 patients. What was going on here? A closer look at the data revealed that they reported on only the 70 patients who had died, not my total caseload.

Clearly, we needed to approach the data in a new way and turn it into useful information. Unless we did, we wouldn't know where our potential cost savings were. We didn't know, for example, that babies were needlessly kept on

tomers surveys that parents felt frustrated by not knowing who their child's attending physician or nurse was at any given time. So we simply put identification cards on the doors, naming the attending doctor and primary nurse. Our customer satisfaction scores rose sharply.

We made other changes, too. For the financial quadrant, for example, we reviewed the most significant data points, such as the number of patients admitted, treated, and released, and the cost per patient. The clinical business units reviewed cases of patients whose diagnostic, surgical, pharmacy, and postoperation costs had been the highest, and tried to determine why.

In many cases, our research showed us new ways to do business. For example, we learned that children often stayed longer than necessary in our \$1,700-per-day ICU, in which the nurse to patient ratio is 1 to 1 or 1 to 2. That was because the patients weren't quite ready to move to the regular pediatric floor, where the ratio of nurses to patients is 1 to 5 and the cost is \$700 per day. So we created a six-bed, \$1,200-per-day transitional care unit, where the nurse to patient ratio is 1 to 3. Patients could stay there until they could be moved to the general floor. Not only did our cost-per-patient numbers drop but also our patients' families got to spend more time with their recovering children.

Overall, the results we've achieved at DCH by using the balanced scorecard have been stunning. By increasing the number of clinical pathways and communicating more with parents, our customer satisfaction ratings jumped by 18%. Improvements to our internal business processes reduced the average length of stay from 7.9 days in 1996 to 6.1 days in fiscal year 2000, while the readmission rate fell from 7% to 3%. And employees noted a 45% increase in satisfaction with children's services and with the way the entire administrative team performed its job.

Impressive results occurred on the financial front, too. The cost per patient dropped by nearly \$5,000—a fact not

## *Within six months, our balanced scorecard approach reduced the cost per case in the ICU by nearly 12% and improved our patient satisfaction by 8%.*

duced the cost per case by nearly 12% and improved our measured patient satisfaction by 8%. In fact, our pilot project was working so well that we implemented it in pediatrics, then in all of the other areas of DCH, within a year. We didn't use a cookie-cutter approach; rather, leaders in each unit customized the scorecard template for their specific areas.

Over time, even the physician who had angrily left our initial meetings began to find ways to lower his cost per case without compromising patient care. For example, instead of keeping some patients awaiting surgery in the hospital, he discharged them overnight to a nearby hotel, lowering the total cost by \$1,000 per day while making the patients and their parents much more comfortable.

### **A Measure of Progress**

Like most hospitals, DCH collects a tremendous amount of data. We rigorously detail things like length of stay, number of staff, cost per case, and so on. But we were culling very little useful information from the data—and some of it was false. For example, the first report card on my own performance showed that I had discharged 70 patients with an average length of stay of 29 days and an average cost per case of \$70,000. Taken together, these numbers deserved a grade of F. I knew that since I'd been

\$2,000 ventilators at night, nor did we know how much that decision was costing the hospital. So for every clinical business unit, we created a measurement system for each of the four balanced scorecard quadrants.

To measure our progress, we asked our IT department to help us develop our own database and cost-accounting system. Using information pulled from national databases, we determined national averages for indicators such as length of stay and complication rates. (In 1997, custom development was our only option. We've since installed StrategicVision software from SAS to support our extensive data management, trend analysis, and performance reporting needs.) The system logged each patient's treatment history and costs for everything from a \$15 hypodermic needle to a \$5,000 heart-lung bypass operation. The system also tracked the average waiting times for admission and discharge, blood culture contamination rates, and so on.

The new system helped us find ways to improve our performance in each of the four quadrants. Many of the steps we took were small, but cumulatively, they made a big difference. For example, our clinical pathways included a "patient care guide" for parents that explained in lay terms what they could expect to happen on a daily basis during their child's hospital stay. We also learned from our cus-

lost on parents, insurers, and our own senior leaders. By FY 2000, we had gone from \$11 million in losses to profits of \$4 million, even though we were admitting more patients. We achieved a reduction in costs of \$29 million over these four years, without staff cutbacks. Our methodology has proved so successful that the entire Duke University Hospital now uses it as a framework. With the balanced scorecard we have drastically improved our margin and achieved our hospital's mission.

### Lessons Learned

Yes, DCH has navigated a tremendous turnaround, but I don't want to suggest that it's been easy. Adopting the bal-

anced scorecard approach presented us with huge management challenges on a daily basis. In the early stages, we often found it difficult to keep discussions on target. We spent nearly a month debating whether a certain goal or target belonged in the internal business process quadrant or the customer satisfaction quadrant. We learned to limit those discussions – it was too easy to get embroiled in semantics and lose our focus on patients and staff.

We also found that people became demoralized if we compared their performance to an abstract or too-lofty tar-

get. For that reason, we encouraged employees to use their own performance as the primary benchmark. Still, if they wanted to see how their performance compared with the hospital as a whole, or with a national average, they

*The cost per patient dropped by nearly \$5,000 – a fact not lost on parents, insurers, and our own senior leaders.*

could review those data points as well.

We learned to set our targets conservatively at first: an annual 10% reduction in the length of stay was something most of us felt comfortable reaching for, but a goal of 20% would have been

## Survival Strategies

*The challenges faced by Duke Children's Hospital are by no means unique to the health care industry. Indeed, many organizations find themselves in similar situations. They fear that focusing on costs will compromise their higher mission of serving the community – but in fact, a strong bottom line will make fulfilling their missions that much easier. If you're trying to turn your organization around, you may want to adopt the operating principles we followed to make DCH a thriving business.*

### Communicate, Communicate, Communicate

- If your organization is in trouble, be honest. Make it absolutely clear to everyone in the company that survival depends on cost management.
- Listen to what employees are saying; they know their jobs better than you do. Instead of issuing orders, ask them, "What can we (as an organization) do?"
- Share the pulpit. People with other expertise can help build consensus.
- Change people's roles; instead of identifying with an individual job ("I am a nurse"), employees should identify with goal-oriented teams ("We, the ICU team, work together to help children with heart problems").
- Offer constant feedback. Frequent evaluations help keep the organization on track.
- Publicly celebrate every employee and team success.
- Cultivate your sense of humor – people will respond if you can laugh at yourself.

### Chart Your Path

- Start with a pilot project; succeeding in one department will pave the way for organizationwide change.
- Set conservative goals at first; you'll gain the confidence needed to set more aggressive targets.
- Focus on a few key goals; changing everything at once leads to failure.
- Turn data into information. Work with your information technology people to ensure that employees can correctly interpret measurements and statistics.
- Let employees compete with their own performance, not with some abstract competitive or statistical target.

### Never Stop

- When mapping your business to the balanced scorecard, don't get sidetracked by semantics.
- Be willing to experiment; learn from failures.
- Constantly revise and improve practices.
- Encourage strategic thinking at all levels.



too intimidating. As we became more successful, we set more aggressive targets.

And I learned that there's a fine art to communicating with professionals who know more than you do about their particular subject and who are passionate about their work. You can't just order them around. You have to get inside their heads and figure out what they're going through.


Before 1996, I thought I was a decent communicator. But over time, I've had to learn to listen carefully not only to what people are telling me but also to what I'm saying to them. Today I know that I can't make a point in a con-

I started a newsletter, "Practicing Smarter," so staff members could share best practices and keep one another apprised of their progress. We honored "team members of the month," started on-line discussion groups, and sponsored a series of staff brown-bag lunches and open forums. These approaches may sound simple, but they really did help to change our culture. For the first time, employees felt that their opinions mattered.

I discovered how important it is to share the pulpit during dramatic organizational changes. Not only did I respect the chief nurse executive, the managers, and the administrators as

sive power of meaningful information. I spent hours with members of our IT department, telling them what the staff was telling me—trying to slice and dice our enormous mountains of data into useful information. When we finally presented people with accurate tracking measures about their personal performance, they were fascinated—and anxious to improve.

It's been four years since we set out to improve performance at Duke Children's Hospital, and changes are still happening. We talk about our scorecard constantly; we're fine-tuning what works and discarding what doesn't. Whenever a clinician comes up with a better pathway, we spread the word through our newsletter and on our bulletin boards.

Of all the changes that have occurred, the most telling are the ones we see in our patients. Consider the case of Ryan, a four-month-old who recently recovered from heart surgery. At 8 PM, Ryan was breathing with a ventilator—just as Alex had—and his parents kept vigil by his crib. But unlike Alex's parents, Ryan's parents knew exactly who was responsible for their child's care, what his care entailed, and that he'd soon be transferred to an intermediate care unit. At 9 PM, Ryan began breathing on his own. The nurse skillfully removed the plastic tube and gently placed him on his mother's lap. For me, seeing Ryan sleeping peacefully in his mother's arms was a rewarding end to a long, hard, but ultimately satisfying journey. 

## *There's a fine art to communicating with professionals who know more than you do about their particular subject and who are passionate about their work.*

versation by talking in the abstract. I have to say something that personally matters to the other individual. I learned not to say things like, "Duke Children's Hospital is losing \$11 million per year." Rather, I opened conversations with a question, such as "How important do you think it is to have a therapist on this unit to work with your patients?" When they said it was important, I'd follow up with "How can we work together to manage our costs so we can preserve the therapist's job?"

I learned that little things make a big difference when it comes to morale building. We created all kinds of communication and feedback mechanisms.

partners, but I knew that they could communicate more effectively with their own constituencies than I ever could.

Even in the most earnest conversations, I've found that having a sense of humor is essential. For example, I developed a Letterman-style list of the "Top Ten Reasons for Using the Balanced Scorecard," poking fun at myself in meetings. Once, I even walked through the hospital dressed up as the eminently poke-able Pillsbury Doughboy. Keeping things light made it easier for us all to endure the tremendously challenging course we'd set for ourselves.

I learned, too, to respect the persua-

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