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eyes on the supplies results of a massive performance improvement initiative

How much money can you save with a performance improvement initiative that focuses largely on supplies? More than you might think, if you follow the example of the University of Utah Hospitals & Clinics.

AT A GLANCE

The University of Utah Hospitals & Clinics learned three lessons from its performance improvement initiative:

- > Develop and track key performance indicators and compare them with performance targets on a monthly basis.
- > Identify and define core processes and sub-processes, and build an appropriate organizational structure to support those processes.
- > Identify supply cost-savings opportunities by focusing first on procurement.

It's always a good idea to look for ways to reduce operating expenses and improve performance. But how many hospital CFOs expect to find a substantial share of their potential cost reductions in the area of supplies? That's what UUHC found when it embarked on a systemwide, five-year performance improvement initiative in which a centerpiece was controlling costs in the supply chain.

With an expense budget of \$15 million to spend just on improving the supply chain, UUHC's overarching vision for the project was to establish a fully integrated cost-control/supply chain process that would support excellent patient care while managing and controlling financial resources. Three years were spent on tasks such as reorganizing supply chain departments and implementing 50 projects that required 11 computer systems. During this time, UUHC netted \$14 million in cost savings, with another \$7 million net cost savings expected in the following year.

The success of the initiative's first three years afforded UUHC an invaluable educational experience on which to base its future efforts, as it required the organization to scrutinize a wide array of cost-savings projects. Of 106 individual projects initially proposed, only 50 projects were implemented, because the other 56 either failed or provided no economic value. The first three years of UUHC's performance improvement initiative consisted, in part, of the four phases described below. After establishing the context of the larger initiative, the discussion narrows to focus on the supply chain improvement efforts.

Phase One: Strategic Plans and Financial Projections

The initiative was prompted by a financial analysis conducted in September 2001. At the time, the institution was undergoing a period of high growth by expanding its main hospital and building a cancer hospital, an orthopedic hospital, a new eye center, and other clinics. To ensure proper funding for these strategic plans, as well as routine operations and long-term financial integrity, UUHC's leaders called for a five-year forecast of the organization's cash, debt, capital, and profitability requirements.

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The forecast report projected that UUHC's capital uses would be \$290 million over the FY03-07 horizon, including cash for capital needs, working capital, school of medicine transfers, and principal payments on debt, as well as cash on hand to reach a healthy targeted cash position. Among possible sources of the \$290 million, the report identified estimated amounts of unrestricted cash, debt capacity, remaining bond funds, and contributions.

The report also projected a capital shortfall of \$14.3 million over the five-year period, and recommended ways in which UUHC could make up this deficit. In particular, the report recommended that UUHC make up for the shortfall by improving its profitability from operations through operating expense reductions.

Phase Two: Performance Improvement and Opportunity Analysis

The second phase of the performance improvement initiative consisted of UUHC's first round of efforts to identify cost-savings opportunities to plug the \$14.3 million gap. To this end, UUHC contracted to have a comprehensive assessment of its entire health system performed using a proprietary hospital "turnaround" or performance improvement methodology that focuses on 10 business components of a healthcare organization and their objectives. (See the sidebar on page 76.)

The methodology began with a systematic review of three years of UUHC's financial statements to ensure that reported numbers were accurate. The analysis looked at statistical and operating summaries for each department, payroll information, general ledger detail, and patient level data. Data also were gathered from benchmarking with other like hospitals, interviews with hospital employees, and reviews of core processes.

As a result of the systemwide analysis, UUHC was presented with a list of 20 top performance improvement opportunities, with a total

bottom-line potential of \$48.8 million, one-third of which (\$16.3 million) could be realized quickly through immediate action. Among the 20 recommended performance improvement projects, 12 focused on cost reduction, five focused on revenue enhancement, and three had the potential to produce both of these results.

Phase Three: Performance Improvement Implementation

Phase three of the initiative began with implementation of 12 of the 20 performance improvement projects identified during the systemwide opportunity analysis. Improving UUHC's supply chain was foremost among these efforts, topping the list of 12 cost-reduction projects with a projected annual cost savings of \$5.6 million. The projected cost savings came from an assessment showing the following common supply chain management problems:

- > Excess inventory
- > Pricing errors due to incomplete or incorrect item, vendor, and/or contract information in the materials management information system
- > Use of noncontracted vendors to purchase supplies at higher prices than were offered by contracted vendors
- > Use of too many different vendors and lack of order consolidation with individual vendors resulting in inefficient purchasing and loss of volume discounts
- > Payment of excessive distribution prices
- > Insufficient control of supply chain management processes and a decentralized organizational structure

UUHC engaged a consulting firm to help generate the projected \$5.6 million in annual supply chain cost savings. During the engagement (from November 2002 to January 2004), UUHC implemented 24 of 54 proposed supply chain cost-savings measures. The remaining 30 proposed measures ultimately proved to offer little or no financial return.

10 STEPS ON THE ROAD TO PERFORMANCE IMPROVEMENT

The University of Utah Hospitals & Clinics used the following 10-step performance improvement methodology during the second phase of its performance improvement initiative.^a The chart on page 77 shows how each of the 10 components of a successful hospital or healthcare delivery system targets each line item on the organization's income statement.

1. Ensure accurate revenue recognition. Reconcile accounts receivables to actual cash collections for each business unit to ensure accounts receivable reserves are not understated and net income overstated. Income is then restated, if necessary, to reflect the institution's actual financial performance and cash collections, so that accrued revenue equals cash collections.

2. Review managed care contracting. Renegotiate or terminate contracts where payment is below hospital costs. Identify payers where actual payment is less than contracted terms.

3. Review the revenue cycle. Implement key performance indicators and targets throughout each area of the revenue cycle to identify problems and bottlenecks. Identify accounts with no payment or payment below 10 percent of charges by payer, location of service, and reason for nonpayment. Use payment data to conduct a root-cause analysis from scheduling and registration through payment posting and bad debt write-off to identify process breakdowns. Restructure departments and redesign processes as necessary.

4. Close noncore businesses. Identify noncore business units and determine whether they are profitable and whether they contribute to the core mission of the institution. Close unprofitable, noncontributing businesses immediately.

5. Assess product line profitability. Determine the fully loaded financial performance of every product line. Review the cost accounting system and data for accuracy. Understand the value or liability of each product line and their strategic and competitive roles in the market. Develop business plans for key product lines to gain greater market share and increase profitability.

6. Install productivity-based flex staffing and budgeting processes and cut operating costs. Implement variable cost reporting systems that deliver volume-driven information in a frequent and timely manner to line managers who monitor performance and take corrective action expeditiously. Such a system calculates productive versus nonproductive time, actual to targeted hours worked, and labor and supply costs per workload unit.

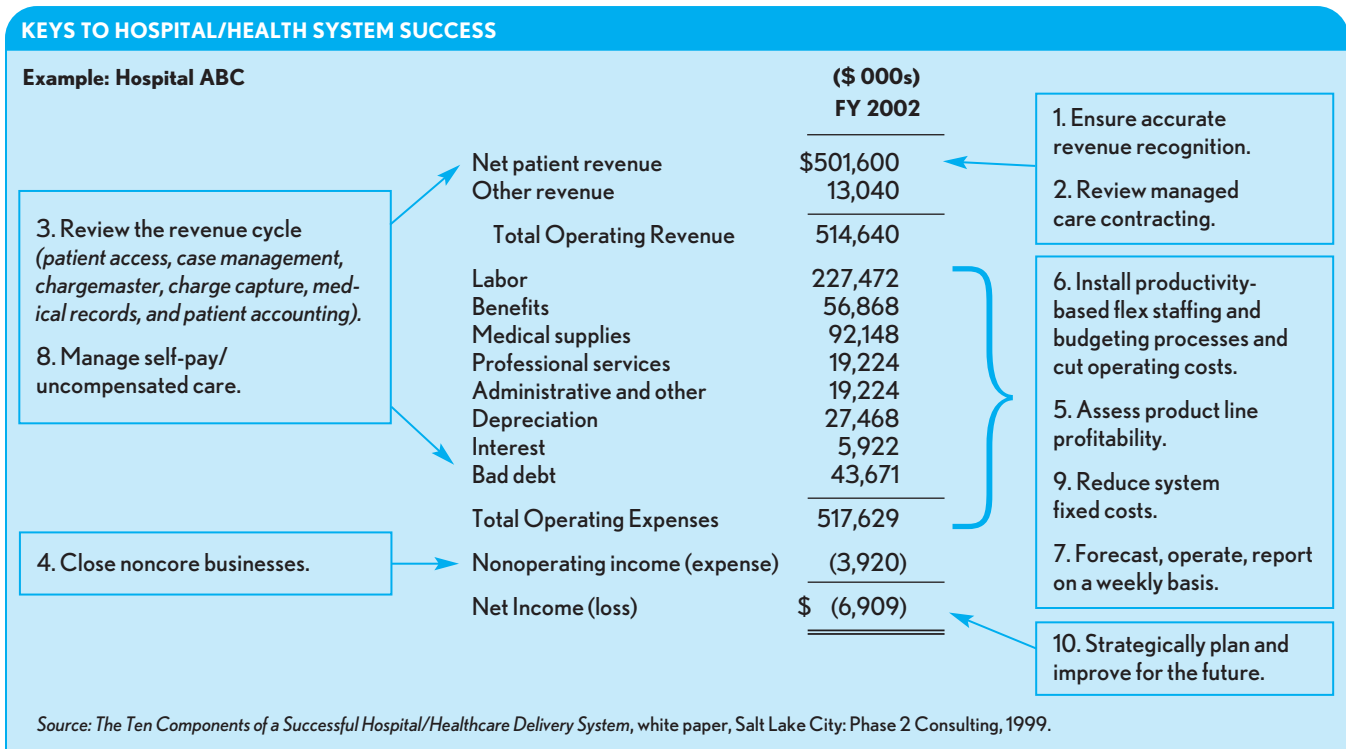
7. Forecast, operate, and report on a weekly cash basis. Develop weekly cash flow reporting for every business unit to immediately improve economic efficiency. Forecast weekly cash collections and cash payments should be tracked against actual performance, so that if cash collection falls below targets, cash payouts can be adjusted until problems are determined and remedied.

8. Manage self-pay and uncompensated care. Increase access to lower cost care sites and improve the efficiency of treatment. Pursue all sources of funding and compensation through financial counselors to include Medicaid enrollment and qualification for charity care funding. Deposits should be collected and payment plans arranged at the point of service.

9. Reduce system fixed costs. Focusing in particular on labor costs, increase the spans of control, eliminate or consolidate functions, and reduce the levels of supervision from the CEO to the patient.

10. Strategically plan and improve for the future. Develop a strategic action plan that focuses on the core business of providing acute care services to patients with the most severe clinical conditions. Although inpatient services have been greatly complemented by the advancements in outpatient services, demand for acute care will continue to increase. The fixed supply of hospital operating rooms, emergency departments, intensive care units, and ancillary services will not be able to keep pace with the increased demand, which will force the price of health care to increase.

a. The performance improvement methodology is encapsulated in the white paper *The Ten Components of a Successful Hospital/Healthcare Delivery System*, published by Phase 2 Consulting, Salt Lake City, in 1999.



In addition to the measures shown in the exhibit above, the supply chain improvement measures included:

- > Standardizing and reducing the costs of certain supply items such as coronary stents and interventional supplies
- > Resetting par levels to reduce inventory
- > Switching from disposable to reusable items such as trocars (devices used to create puncture holes prior to the insertion of a scope)
- > Reprocessing disposable items such as certain pulse oximeters
- > Capturing charges on supply items and related procedures such as fluoroscopy and the insertion of pacemakers

Combined, the 24 supply chain cost savings measures produced \$5 million in annual savings.

Phase Four: Partnering with Supply Distributors

To generate further savings from supply chain improvements, UUHC entered into three-year partnerships with a medical/surgical distributor and a pharmaceutical supplier in March 2004—and

thus began phase four of the performance improvement initiative, which in this case was exclusively focused on the supply chain. UUHC viewed such partnerships as an effective means to negotiate greater pricing reductions, realize further material management process improvements, and implement new supply chain technology.

With this phase, UUHC implemented 52 additional cost-savings and process improvement measures with a projected three-year net savings goal of \$12 million. Implementing these measures required a staff of 18 people (three pharmacists, eight IT specialists and programmers, five business experts, a supply chain expert, and an analyst), several consulting and IT firms, and a remaining supply chain improvement expense budget of \$11 million.

Ultimately, however, only 26 of the proposed 52 measures were successfully completed. The other 26 measures either failed or were eliminated because they showed no economic value, calling into question whether the \$12 million supply chain cost savings target could be achieved.

UUHC PERFORMANCE INITIATIVE, PART THREE: TOP 12 SUPPLY CHAIN COST-SAVINGS MEASURES			
No.	Measure	Description	Annual Savings
1	Increased markup on outpatient drugs	Based on benchmarks, UUHC was not charging enough on outpatient medications. In fact, some pricing was lower than allowed by many UUHC payers.	\$1,828,992
2	Proton pump inhibitors—therapeutic interchange initiative	Cheaper but clinically similar generic drugs in this medication class were used in place of name brands, resulting in a 10% to 20% price reduction. Medications accomplished the same results but were different chemically.	\$669,427
3	Revenue capture—Botox	UUHC was not billing for this product.	\$482,248
4	Reduction in costs for ICDs and pacemakers	A new contract with better pricing was developed with a single manufacturer, and cardiologists were persuaded to move more volume away from a competing brand.	\$419,866
5	340b pricing—infusion center	340b-eligible patients were tracked to make sure their medications were purchased at the lower rate for the disproportionate share of indigent patients.	\$253,663
6	340b pricing—home infusion	UUHC's home infusion service was part of the health system's pharmacy, but it was purchasing medications directly, rather than through the pharmacy at the lower 340b rate.	\$233,547
7	Orthopedic hip and knee implant pricing and standardization	A new contract with better pricing was developed with a single manufacturer, and orthopedic physicians were persuaded to move more volume away from a competing brand.	\$150,789
8	340b pricing—Botox	UUHC began to purchase outpatient drugs for 340b-eligible patients through the pharmacy at a lower price than it had been paying.	\$120,891
9	Reduction in office supply spend	Office supplies were standardized, and purchases were consolidated through a single, online office supply vendor. Office supply spend was reduced by 10%.	\$119,462
10	340b pricing—plasma products	340b-eligible patients were tracked to make sure medications were purchased at the lower price.	\$111,152
11	Reduction in linen usage and bed standardization	The types and number of linens used on inpatient beds were standardized. A universal policy about frequency of bed changes was implemented. Overall, the total pounds of linen processed each day was reduced.	\$93,390
12	Substitution of full compression sleeve for knee-high sleeve	A shorter, knee-high sleeve was in many cases as clinically effective as the more expensive full-length sleeves. Clinical staff was trained about the savings available by using the shorter sleeve when clinically appropriate.	\$78,135

Fortunately, UUHC was able keep on track toward the target by adding other measures. In addition to the savings from measures shown in the exhibit on page 80, further savings came from:

- > Renegotiating contracts with manufacturers based on benchmarking analyses
- > Installing an open cabinetry bar code scanning inventory control system in the catheterization laboratory and the interventional radiology department
- > Tracking and collecting indigent drug recovery

from pharmacy manufacturers (i.e., receiving money back from drug companies based on the cost of drugs and nonpayment by the indigent, self-pay patient population)

- > Replacing high-cost items with lower cost or generic items of the same quality
- > Achieving improved, cost-minus pricing through electronic fund transfer payments and by purchasing products such as intravenous solutions and contrast media through the pharmaceutical distributor rather than through

- a medical/surgical distributor
- > Reducing par levels (i.e., the amount of inventory maintained on hand at a given location)
- > Tracking payment and contract compliance in outpatient pharmacies
- > Expanding business by installing “telepharmacy” equipment in remote clinics, thereby allowing pharmacists not residing in the clinics to dispense drugs remotely

In addition to these supply chain cost-savings measures, UUHC reorganized the nonpharmacy part of the supply chain under a single director, developed key performance indicators and targets based on benchmark information to drive and maintain savings, and implemented materials management and other supply chain information systems.

Lessons Learned

During the first three years of the systemwide performance improvement initiative, UUHC realized a total of \$40 million in net savings by implementing 12 of the top 20 improvement recommendations, giving UUHC more than a 3 percent operating margin in FY03-05, significantly better than in any of the previous five fiscal years. The supply chain improvement project, one of the 12 systemwide improvement projects, realized \$14 million of the \$40 million in net savings, with an additional \$7 million in net cost savings projected for the following year. The supply chain project successfully completed 50 cost-savings measures; benchmarked its performance with other hospitals; and engaged eight consulting, advisory, and computer technology firms to support the efforts of its internal staff.

Three primary lessons were learned from this process.

Develop and track key performance indicators and compare them with performance targets on a monthly basis. This process should be in place before cost-savings projects are proposed and implemented. KPIs help identify and prioritize existing problems and hold people accountable to productivity standards, thereby providing a rational basis for

selecting supply chain and other improvement projects. Without such information, projects tend to be selected at random and, as a result, are poorly organized and incapable of attacking root problems.

Supply chain KPIs, in particular, include:

- > Supply spend as a percentage of net revenue
- > Supply spend as a percentage of total costs
- > Supply spend per adjusted admission or discharge
- > Supply spend per adjusted patient day

KPIs such as supply costs per case or workload unit should also be tracked in high-cost clinics, surgical services departments, inpatient pharmacies, catheterization laboratories, and interventional radiology departments. The percentage of supply spend by supply category (e.g., pharmacy, medical/surgical, implants, food and nutrition, facilities and engineering, office supplies, and durable medical equipment) can also be measured and benchmarked to identify category outliers and cost-savings opportunities.

Identify and define core processes and subprocesses, and build an appropriate organizational structure to support those processes. This organizational structure should promote individual ownership and accountability. Breakdowns commonly occur because duties and functions are not well defined and individuals are not held accountable to responsibilities through productivity standards.

Core supply chain processes, for example, typically include procurement, receiving, stocking, distribution, accounts payable, and charge capture. Subprocesses should be identified for each of these processes. For example, in procurement, subprocesses include contracting/sourcing, vendor management, requisitioning, system/data management, formulary management, recalls, purchase-order tracking, blanket orders, order drop times, and spend and value analysis (i.e., product standardization and utilization).

Staff should be positioned to oversee each process and subprocess and report to a single

**UUHC PERFORMANCE IMPROVEMENT INITIATIVE, PHASE FOUR:
TOP EIGHT SUPPLY CHAIN COST-SAVINGS MEASURES**

No.	Measure	Description	Annual Savings
1	Pharmacy charge capture	UUHC's billing system was underbilling certain high-cost outpatient medications due to a problematic unit conversion calculation (i.e., the number of doses of medications billed was less than the number administered). Other charge capture savings were realized in outpatient procedure areas, such as chemotherapy.	\$2,034,312
2	304b pricing—dialysis	340b-eligible blood products and medications were now purchased through the pharmacy at the lower price.	\$1,193,637
3	Pharmacy inventory management automation	Automated perpetual inventory management systems were installed in the inpatient and outpatient pharmacies. As a result, waste and labor costs were reduced and pricing updates automated. Also, medication errors were reduced through the use of bar codes to match physician orders of medications to patient wristbands, and with the verification of medication images.	\$741,876
4	Medical/surgical charge capture	UUHC implemented audit processes in the highest revenue-generating departments to ensure accurate charging, coding, and billing.	\$650,316
5	Pharmacy distribution fee reduction	UUHC negotiated better rates with a pharmacy distributor.	\$446,650
6	Medical/surgical distribution fee reduction	UUHC negotiated better rates with a medical/surgical distributor.	\$425,537
7	Reversal of catheterization laboratory supply shrinkage	UUHC installed an open cabinetry bar code scanning inventory control system in the catheterization laboratory and interventional radiology department to measure and control shrinkage.	\$286,536
8	Pharmacy benefits management	UUHC offered outpatient pharmacy discounts to employees and families insured by the University of Utah and took over the dispensing of medications and pharmacy services for this population rather than continuing to give this business to other companies.	\$208,908

director. In highly efficient supply chains, for instance, operating room, catheterization laboratory, and radiology supply chain staff can also report to the supply chain director, rather than clinical directors.

In instances where a department combines patient care, teaching, and research missions, however, staff typically should report to senior leadership. The pharmacy, for example, should be integrated into the supply chain through a senior supply chain committee, which reviews KPIs, supply budgets and variances, new products, and policies and procedures. This committee typically is composed of the CFO, vice

president of operations, chief nursing officer, pharmacy director, medical director, and supply chain director.

Identify supply chain cost-savings opportunities by focusing first on procurement. Because the supply chain starts with procurement, activities in this area can affect the rest of the supply chain, as well as patient care. For instance, procurement activities such as vendor selection and pricing negotiations can determine factors such as product costs, quality, and speed of delivery, which in turn can affect other supply chain departments and patient care. It is therefore important that such procurement activities be performed with opti-

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mum effectiveness. Also, benchmarking analyses can be used to identify opportunities for quick, significant, and sustainable savings in the procurement area that are achievable through product selection changes and pricing and contract renegotiations.

One More Lesson

A comprehensive performance improvement assessment of UUHC's entire health system disclosed that improving the supply chain would yield the greatest cost-savings opportunity.

Although relatively few healthcare provider organizations possess the scale to achieve results comparable to those achieved by UUHC, the results of UUHC's performance improvement initiative do impart one more important lesson to other hospitals and health systems: Don't give up too soon on looking for ways to reduce operating costs—and don't hesitate to focus your attention on the supply chain. ●

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