

INSIDE EDGE

IT-enabled Workforce Management and Productivity

EXECUTIVE SUMMARY

Using IT to drive efficiency has taken on new urgency for healthcare delivery systems in this era of disappearing capital, vanishing investment portfolios and increasing uncompensated care. Given that labor is the biggest single cost for hospitals and integrated delivery systems, using IT to increase workforce productivity has become an imperative for organizations that expect to survive and ultimately thrive in what is likely to be intensifying industry consolidation during the next 24 months.

The good news is that more efficient workforces are more effective ones—more efficient processes generally mean more timely and attentive care for patients and therefore better outcomes. The healthcare C-suite understands this and continues to cite IT as a necessary price of doing business going forward. But given the inevitable slowdown of capital investment, a premium will be placed on IT initiatives that enhance revenue or efficiency with documented returns.

We highlight some of those initiatives in this report. Our objective is less to provide a comprehensive list of strategies for IT-enabled workforce productivity than to outline a general direction. Within that outline we can count three key guiding points:

1. It's not always the new and glamorous that work, as reflected in such enterprise applications as time and attendance;
2. Departments are the best proving grounds for workforce and workflow solutions;
3. It's often the little things that count in rationalizing processes to make workers more efficient.

Back to the future

"Time and attendance" may conjure up old-fashioned images of punching in and out of work with time cards, but all three of the C-suite executives we talked to cited the value of time-and-attendance systems as the first example of how they're using IT to more efficiently deploy their workforce.

"IT is a huge facilitator in helping us enhance our care model from an efficiency standpoint," says Ernie Sadau, COO at CHRISTUS Health, an Irving, Texas-based integrated delivery system with 40 hospitals in six states and Mexico. "We use IT to manage our daily staffing model and flex staff much quicker." CHRISTUS has implemented VisionWare software at all of its hospitals to dynamically monitor and respond to staff needs based on shift volume instead of a using a traditional fixed model.

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WELCOME
NEW
MEMBER

The Scottsdale Institute is proud to announce Adventist Health System, based in Winter Park, Fla., as a new member.

Adventist Health System, founded in 1973, supports and strengthens Seventh-day Adventist healthcare organizations in the southern and southwestern, and midwest regions of the United States. It is the largest Protestant not-for-profit healthcare system in the nation and remains committed to providing quality whole-person care.

Adventist Health System is comprised of 37 hospitals totaling more than 6,000 licensed beds, care for nearly 4 million patients in inpatient, outpatient and emergency room visits, and employs nearly 43,000 in full and part-time positions.

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**Ernie Sadau, COO,
CHRISTUS Health,
Irving, Texas**

“We can manage overtime as well as agency and contract labor better,” says Sadau, who notes the system has helped cut overtime at some hospitals by up to 10 percent and agency utilization by as much as half.

Another not-so-obvious advantage: the system helps in recruiting nurses and maintaining each hospital’s Magnet Nursing status. “Those highly sought after nurses don’t want to work in a place unless we can ensure nurses are at the bedside,” he says. Nursing agencies not only cost more but can potentially weaken compliance with the CHRISTUS care model, Sadau says, adding, “Our goal is to minimize variability and achieve a more consistent workforce day in and day out. That way you get more buy-in to the culture.”

The Daughters of Charity, a six-hospital system based in Los Altos Hills, Calif., is implementing its third-generation of software for time-and-attendance, scheduling and labor productivity. “I think it’s key, especially given the pressures of the economy,” says Richard Hutsell, VP and CIO at the DCHS. “We are pushing it as much as anybody, taking near-real-time productivity data and feeding our staff scheduling. It tells us what the staff should be with this mix. We are driving productivity based on standards established by the DCHS, which consider

factors like percent of operating expense toward labor and benefits.”

Hutsell, a veteran healthcare IT executive, says the popularity of time-and-attendance and productivity systems has waxed and waned depending on the economic environment. “This is a resurgence. I first saw it in the late 1970s, then again in the late 1980s. It’s back now as the economy drives organizations toward even more efficiency,” he says.

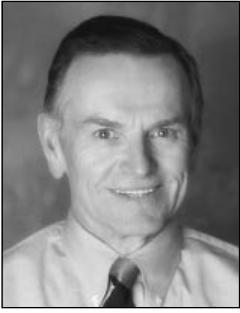


**Richard Hutsell, VP/CIO,
Daughters of Charity,
Los Altos Hills, Calif.**

Even San Diego-based Sharp HealthCare, a 2007 recipient of the Malcolm Baldrige National Quality Award, is now implementing a time-and-attendance system. “It’s

not a leading-edge application,” acknowledges Bill Spooner, Senior VP and CIO. “Most organizations have already done this. But for us it’s an important piece of the puzzle—and it’s a great benefit to be able to tell how many hours the staff worked yesterday, and that leads to better productivity. We can track much better what our labor consumption is.”

With Sharp’s old time-card system it would take as long as two weeks to acquire workforce data for analysis. With the new system, which involves badge readers for staff check-in-and-out, as well as software that automatically calcu-



Bill Spooner, Sr. VP/CIO,
Sharp HealthCare,
San Diego

SHARP

lates hours worked from whatever perspective an administrator wants, executives can log in to a portal to review near-real-

time data. “I know every day and every shift. As the economy ebbs and flows we can react better to census change,” says Spooner, who says implementation is still underway at Sharp, so it’s too early to report hard figures on improved efficiency.

Florida Hospital achieves efficiencies in lab services

Departmental systems tend to have demonstrated more benefits, workforce-related or otherwise, than enterprise-wide systems because they’ve been around longer and follow more clear-cut processes.

A case in point is the digitized laboratory services at Orlando-based Florida Hospital, the 900-bed flagship for Adventist Health System’s seven-hospital southeast region. Each year Florida Hospital’s lab processes a whopping five million ordered billables (a billable can be a chemistry profile, for example, that includes multiple tests) and produces 10-times that many individual lab results. It’s no surprise then that automating lab processes end-to-end has become a top priority at the sprawling medical center.

“For IT-enabled workforce productivity in our lab, two areas immediately come to mind,” says Patrick O’Sullivan,

laboratory operations director for Florida Hospital.

“The first is the general workflow of the lab and the second is in the electronic exchange of information.”

It starts when a phlebotomist collects a blood sample at the patient’s bedside using a wireless, handheld device for data entry similar to those used by rental car agencies to process customers returning cars. Coupled with bar-code technology and Collection Manager software from Tucson, Ariz.-based Sunquest Information Systems, Inc., the system automatically verifies an order and prints a bar coded label to be affixed to the sample taken. What transpires is essentially a diagnostic version of the Five Rights of medication management: ensuring that the *right test* is performed on the *right patient* at the *right time* for the *right indicators*, ultimately leading to the *right diagnosis*.

“Automation creates a safe process but also creates a one-to-one match with the test that was ordered to the patient it was collected from,” says O’Sullivan. The system piggybacks onto the hospital’s wireless network to automatically update the laboratory information system (LIS), and—in a stunning example of IT/biomed convergence—even transmits the order information to the chemistry analyzer or other lab instrument as to what its next task is. That eliminates the need for a person to manually program the device. “The instrument already knows what it’s supposed to do. These instruments can run dozens of tests but you may only want one. This way you don’t have to tell it which one,” he says. “It reads the bar code.”

Welcome New Member continued

Many Adventist Health System hospitals also offer home health services.

Seventeen extended-care centers provide more than 2,000 beds for patients who need long-term medical or rehabilitation services.

Florida Hospital, Adventist Health System’s flagship facility, is one of the largest healthcare providers in the country and is a leader in cardiac care. It provides more than 1,800 beds on seven campuses and is recognized for the quality of its cancer care, neurosciences, orthopedics, kidney disease, limb replantation, sports medicine, rehabilitation and women’s medicine programs.

Welcome Donald L. Jernigan, PhD, President and CEO, Brent G. Snyder, Esq., CIO, and the entire Adventist Health System team.

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MEMORIAL
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Modern Healthcare named Houston-based Memorial Hermann Healthcare System recipient of its National Quality Forum's 2009 National Quality Healthcare Award. The 16th annual award recognizes a healthcare organization that successfully uses performance measures to drive quality improvement in patient care.

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The Commonwealth Fund has launched "Why Not The Best?" Conduct side-by-side comparisons of 4,500 hospitals nationwide, track performance over time against numerous benchmarks, and download tools to improve health care quality. Watch a demo to learn more.

Speeding workflow

Auto-verification rules for test resulting built into the software that are configured to a hospital's particular needs have proved to be a significant time-saver for Florida Hospital's laboratory services. A pre-defined rule set automatically screens results so that normal ones are automatically filed in the EHR. All abnormal results, however, are automatically retained in the LIS for viewing by laboratory technologists. "The system really helps speed the workflow up. It flags the critical values that can be life-threatening. You really want to see only the abnormal ones immediately," says O'Sullivan.

Under the old process, at the patient end, the phlebotomist would have to manually label the tube of blood and, at the lab end, a staffer would have to update the LIS with data like collection time, who collected the sample and receipt time. A technologist would then have to program the instrument, telling it what tests to run, have it print out the result and key that information into the LIS. "Now all of that starts electronically at the bedside. Once we implemented auto-verification we were able to cut urinalysis, for example, by half—to 15 minutes from 30," as a result of the automated work processes, he says.

O'Sullivan says using IT to improve workforce productivity is a continuing effort for his lab, which employs 275 FTEs. "We're leveraging the function of LIS to maximize throughput and production. Each new feature that LIS brings, whether it's auto-verification or electronic data exchange, enhances the amount of work we can do with existing staff.

The workload goes up far more than staffing. Over the past five years the lab's work has grown at a faster rate than our staffing."



Patrick O'Sullivan,
Director, Lab
Operations, Florida
Hospital, Orlando

Another area IT has helped Florida Hospital's lab staff become more efficient is in the blood bank and transfusion medicine. In the past four years, the lab has added new software and interfaces between

the LIS and new more advanced transfusion instruments, eliminating the need for manual processing and data entry for antibody screens.

When Florida Hospital acquires new testing platforms it works with Sunquest to develop interfaces with those devices to bring them onto the network and LIS. After implementation, the lab was able to run four fewer FTEs in the blood bank. "On top of that," says O'Sullivan, "we actually had an increase in workload. It was a huge labor savings," based on costs of between \$100,000 and \$150,000 a year.

Adding functionality to the LIS also resulted in staff efficiencies in the area of electronic "crossmatch," which checks patient blood type against donor blood type to be transfused. Instead of having a technologist conduct a serological check to ensure blood type is correct, the system performs the crossmatch electronically.

“So, you’re creating efficiencies in your process. The interfaces and electronic crossmatch all come into play in time and labor savings,” he says.

Workforce & workflow

A technology that has demonstrated great workforce efficiency is delivery robots. According to Fran Turisco, research principal for CSC’s Emerging Practices business unit in Waltham, Mass., several leading hospitals have “hired” delivery robots as effective assistants to nurses and other skilled personnel, such as lab technicians. Robots can already deliver medications, meals and lab specimens, as well as fetch linens and supplies from inventory rooms. Using laser sensors, a digitized hospital floor plan and guided by an onboard computer, a robot can navigate its way around the hospital, avoiding obstacles and even calling elevators. Newer versions can automatically attach to and detach from carts and hampers. At Providence Hospital in Washington, D.C., one delivery robot does the work of 4.2 full-time-equivalent staff for about \$2.85 per hour. Turisco says the robots do not replace the nurses, however. Instead, they raise nurse productivity by completing manual tasks that nurses used to do, which even leads to increased job satisfaction.

A report published last December by the California HealthCare Foundation (CHCF), “Equipped for Efficiency: Improving Nursing Care Through Technology,” highlighted robots at Washington Hospital Center (WHC), also located in Washington, D.C. Two robots deliver routine medication carts to the nursing units, allowing the hospital to reassign pharmacy technicians to

the inpatient units, making them part of the care team. Pharmacy technicians now provide a higher level of service to nurses.

WHC also employs a third robot to make regular deliveries of medical materials and ad hoc deliveries of additional linens and supplies. In a pilot held across four units, robot-delivered medications and supplies eliminated six to 10 trips of 45-minutes each to the pharmacy or materials management per day, resulting in a net savings in nursing time of 1.5 hours per unit per day.



EXPERIENCE. RESULTS.



Fran Turisco, Research Principal, CSC, Waltham, Mass.

There are many such cool technology options that can automate work tasks, Turisco says, but not every institution is in a position to afford them today. “In these tough economic times you need to think long and hard about investing precious capital in technology.”

However, if hospitals were to pick one IT solution to improve workflow productivity, “consider a workflow management system,” she says. It requires only a conventional wired infrastructure, which nearly all hospitals have. “They install quickly and require only standard interfaces between ADT, lab and pharmacy. They improve patient throughput and can get patients discharged quicker,” she says.

MAXIMIZE THE VALUE OF USING SI TELECONFERENCES



Pete Springsteen, MD, Medical Director for IT, Munson Healthcare offers this suggestion.

“We’ve found an easy way to let everyone know about the teleconferences: the assistant to our CIO forwards the announcements to a distribution list of IT management and others who have a stake in IT decision making. So in one click we are all reminded. I often forward them as well to targeted individuals who have a need to know in certain topic areas. By now many people have their own passwords and get the announcements, but we like to reinforce.”

SI TELECONFERENCES

March 12

Clinical Data Sharing Across the Enterprise at Cedars Sinai: Triumphs and Pitfalls

- Jerome K. Wang, MD, FAAP, FACP, associate medical director, Enterprise Information Services, Cedars-Sinai Health System, Los Angeles

March 16

Cerner Collaboration #10

- Judy Van Norman, senior director, Care Transformation, Banner Health, Phoenix
- Joel Shoolin, DO, vice president, Clinical Information, Advocate Healthcare, Oak Brook, Ill.

March 17

Natural Language Processing: Survey Results and Discussion

- John Chuo, MD, neonatal quality informatics officer, assistant professor, Neonatology, Children's Hospital of Philadelphia,
- Ed Septimus, MD, FIDSA, medical director, Infection Prevention, HCA Healthcare System, Nashville, Tenn.

March 17

Quality Dashboard Collaborative Workgroup, Call #4

- Judi Binderman, MD, MBA, MHSA, consulting physician principal, CSC, Phoenix

March 19

Structured Vocabularies for Reporting and Decision Support at Weill Cornell

- Curtis Cole, MD, CMIO, New York Weill Cornell Medical Center, New York Presbyterian Hospital

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A recent CSC-sponsored whitepaper Turisco coauthored, "Next Generation Inpatient Care: Crossing the Capacity Chasm," says, "The growing boomer population, the increasing longevity of the population and continued medical advances are all contributing to a huge increase in demand. Building new facilities is very costly, and finding additional staff is a growing challenge. The key to success will be increasing throughput in existing facilities." The paper cites workflow management as a key tool to achieve that efficiency:

Care activities often involve a number of resources that come together to deliver care. Orchestrating the mobile care team, the patient's needs and the non-staff resources to deliver care efficiently and effectively can be helped with new operational intelligence applications and technologies that incorporate process workflow knowledge, task timeframes, resources, time sequencing of tasks and location. These systems collect, measure and track patient flow with an overall goal to improve operational performance in real-time. Key metrics built into the system are used to alert the care team when bottlenecks or delays are likely. For example, if a patient has been assigned to an ED room and has been waiting for the physician more than 20 minutes, an alert could trigger a call to the ED manager for escalation. In the OR, the application could locate the mobile resources (surgeon, nurse, tech, equipment and patient) and using RFID tracking, check the availability of the room. If there is an issue, the system can automatically page the

OR manager and send a message to the surgeon."

The CHCF report also cites the ability of workflow management systems to "collect information from multiple sources and integrate it into a single display that highlights key patient and bed-management information." By providing a single view of real-time patient information using graphical cues on large display screens, nurses and other staff can at-a-glance prioritize tasks and resolve bottlenecks in patient flow. "Quick access to this information can save considerable time for nurses. In one vendor study, nurses recouped up to one hour per shift by eliminating seven to 10 telephone calls and three to four workstation log-ins. Also, the combination of placing patients in the right bed more quickly and reducing discharge delays can release five to 10 'hidden' beds per day."

Turisco says that next-generation workflow-management systems monitor and measure tasks and resources for a specific procedure and compare them to benchmarks. These solutions have had the most success in departments such as radiology and lab where there are defined processes. For example, a patient comes into the department for a CAT scan that requires the equipment, room, technician and the radiologist, and should take a certain amount of time. The system can track each task in the CAT-scan process and identify bottlenecks and resource underutilization, and then identify trends and recommend adjustments.

Conclusion

Using IT to improve workforce productivity often involves very targeted strategies that aren't always new and glamorous, as in the case of time and attendance systems that have gained renewed emphasis in the economic downturn. Also, many solutions arise from workflow-management systems that rationalize the step-by-step processes of a department like lab or radiology.

And it's often the little things that make a difference when it comes to workforce productivity. Turisco recalls the case of the hospital that opted to use robots for medication delivery, freeing up pharmacy techs and nurses for more care-related tasks, and improving job satisfaction for both. "I had never heard of a place doing that. I thought what they did was incredibly creative."



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continued

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- Paul Pitcher, director, Financial/Services Research, KLAS Enterprises, Orem, Utah

March 31

Making the Most Out of Technology for Medication Safety

- Carole Cotter, CIO, Lifespan, Providence, R.I.
- Chuck Mahoney, VP, Pharmacy Services, Lifespan
- Christine Collins, director, Pharmacy, Lifespan

April 2

RTLS/RFID a Hotbed of Activity: What's Working?

- Steve Van Wagenen, director, Clinical Research, KLAS, Orem, Utah

April 14

Managing the Multigenerational Healthcare IT Workforce

- Walter Zywiak, principal researcher, CSC, Falls Church, Va.

April 15

Building a Community Physician Platform

- Joel Vengco, director, Ambulatory Practice System, Boston Medical Center Strategies

April 16

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- Michael Habeck, Deloitte Consulting, Chicago

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