Our annual CEO Outlook has never opened upon a more tumultuous economic year. From credit to housing to jobs and everything in between, we are in the midst of the most serious global economic crisis since the Great Depression. Despite the weakness in our economy, however, SI member organizations continue to implement IT-enabled strategies. In fact, the economic downturn has in many ways accentuated the value of IT in creating the efficient care-delivery organizations imperative to what is emerging as an era of healthcare reform.

To explore what IT-enabled initiatives health systems are implementing this year, we talked to CEOs at five leading care-delivery organizations: Dan Wolterman at Memorial Hermann; Alan Goldbloom, MD, at Children’s Minneapolis; Joe Swedish at Trinity Health; Steve Mason at BayCare; and Steve Williams at Norton. These organizations became leaders in quality and efficiency partly as a result of their investment in IT. As the industry faces the most significant financial challenges of our time, the value of those investments will be tested like never before.

Dan Wolterman,
Memorial Hermann
“e-Ordering for community physicians is our number one priority,” says Dan Wolterman, president and CEO of Memorial Hermann Healthcare System, a Houston-based integrated delivery system. Memorial Hermann, whose 14 hospitals include 10 acute care facilities and three heart-and-vascular institutes, is continuing final implementation of Advance Care 4, its Cerner-based clinical information system at its acute-care hospitals.

“We've been at this for five or six years now,” says Wolterman. “System-wide we already have e-Ordering, or CPOE, with alerts and reminders for physicians and other clinicians. That’s been our primary focus for a long time. We have a single patient identifier and a single integrated-EMR with lab, radiology and pharmacy.”

This year's task, which involves rolling out e-Ordering to more than 3,000 independent physicians as well as 700 house staff and residents at the University of Texas Medical School Houston, is more difficult to control than other phases because the medical staff are not employees of Memorial Hermann. “We're starting slowly, beginning in smaller hospitals, then moving to larger...
hospitals and finally teaching hospitals. Our initial intent was to complete the roll-out in 2009, but a necessary slowdown pushed it to 2010. We want to do it right,” he says.

Memorial Hermann's second IT priority for 2009 is to automate and track core measures—the process indicators for quality care and patient safety. Such tracking will become even more critical given that the original 10 measures promulgated by the federal government have already grown to 27 and will climb to 72 in the next year. “We decided to automate reminders to within the first 24 hours of admission. Did you give discharge instructions to the patient? Our information system has been a real plus in its ability to track just about anything.”

The IT strategy seems to be working. Last month the National Business Group on Health and VHA awarded Memorial Hermann its first annual award for Patient Safety Leadership at the National Press Club. “Our numbers are really impressive. We couldn’t have achieved these without an integrated CIS,” says Wolterman. “We ask how we can integrate our information systems so we can achieve our goal of perfect care. We’re getting closer and closer. Now we’re turning our attention to physician offices.”

Memorial Hermann will integrate physician offices with its EHR using eClinical Works, a software suite with easy-to-use scheduling and registration modules for physician office staff. Physician groups will be charged a fee to build the integrated system, dubbed “Physician Link,” which utilizes a web-based portal to provide physicians with secure access to Advanced Care 4 features like PACS images and electronic-signature capability.

“We’ve done some of that but will finish in 2010,” says Wolterman. “It’s also an opportunity for us to communicate with doctors. Our ultimate goal is to have a single medical record integrated through Physician Link. For the last five years we’ve spent approximately $20 million per year on strategic capital expenditures. It’s been quite a chunk of our capital, but we believe we’re seeing tremendous improvements. Lower cost of care, for example—we’re not duplicating tests because of the patient identifier. We’re also seeing reduction in LOS—a drop from FY 2007 to FY 2008 of .5 days across our system while patient acuity rose 18 percent. By having IT-enabled capability like real-time reporting we’re definitely improving,” says Wolterman.

Those stats translate well into Memorial Hermann’s patient mix, which includes fixed Medicare, managed care and discounted fee for service coverage. The Houston metro market has experienced an increase in population of one million in the past decade and expects a similar rise in the next eight years. “Reducing LOS takes the pressure off bed availability. It’s like turning tables in a restaurant. Most of our hospitals are full on any given day,” he says.
Alan Goldbloom, MD, Children’s Hospitals and Clinics of Minnesota

Children’s of Minnesota, which comprises 332 beds across its two sites in Minneapolis and St. Paul, commits a hefty 5 percent of its operating budget to IT, about $28 million a year plus $5 million to $7 million in capital investments. “It’s part of our long-term strategic commitment to be at the forefront of care,” says Alan Goldbloom, MD, Children’s president and CEO.

The most important initiative for 2009 is final-stage implementation of CPOE and all clinical documentation. “This will be the icing on the cake,” he says. “Just getting all the docs trained—1,400 have privileges of whom 300 to 400 do the bulk of the ordering – will be a major undertaking. We’ll be concentrating on the latter group, which includes 125 employed physicians, plus several large physician groups, including neonatologists, intensive care specialists and anesthesiologists, the three biggest specialty groups contracted to Children’s.”

The second big project is rollout of an EMR to physician offices. The system, targeted at pediatric and other subspecialty groups, will allow those referring physicians to interface seamlessly with Children’s EMR. “We’re very cognizant of the Stark restrictions in terms of linking the private systems of, say, a large pediatric surgical group, and are committed to working within those regulatory boundaries. It’s part of our longer-term physician alignment strategy, says Goldbloom.

A third initiative is to set up a health information exchange (HIE) with other hospitals in the region. “When you’re a children’s hospital you’re getting referrals of extremely ill babies and children, you need a standardized way to exchange patient information”, he says. “We’re on a Cerner system, while most of the adult hospitals in the metropolitan area are on Epic. A lot of newborns are referred here and we want to develop a really robust interface.” An effective HIE allows information to flow to directly to the point of care, even if the patient is in a different hospital.

A fourth initiative for Children’s of Minnesota, somewhat related to the HIE, is development of a teleradiology system that allows digital sharing of radiology images with community physicians and outside hospitals. “We’re looking to develop an extended network so that physicians can ask, ‘Here’s this patient’s x-ray. Is this a patient who needs to be transferred?’” says Goldbloom.

These last three initiatives are focused outside the hospital’s walls. “They’re really designed to improve our connectivity with physicians and other hospitals,” he says, adding that such focused HIEs are easier to implement and more practical than RHIOs, many of which have failed because they were too broadly cast and tried to “boil the ocean.”

In 2009 Children’s is also undertaking an initiative to integrate all its disparate
communication devices like pagers, wireless phones and nurse-call systems, traditionally unconnected and unintegrated. “The goal is to merge data from all those media. For example, if an alarm goes off on a baby’s monitor in a neonatal ICU, it will ring on a device on a nurse’s belt. If she’s on break, she can have those messages forwarded. You remove the need for people to be immediately adjacent to the patient,” says Goldbloom. Children’s is also evaluating ways to prioritize such messages so that “I need a pillow” would have less priority than “I’m in trouble.”

“We’re in the early stages of consolidating these systems so they interact with each other. We’ll merge the data so they can be more intelligent,” he says.

Finally, Children’s is expanding its data warehouse and outcomes reporting. “We’re very focused on outcomes improvement,” says Goldbloom. “Today a lot of data is aggregated through a series of manual steps. We can do that automatically and in real-time for quality measures, outcomes and administration.”

PEWS, which stands for pediatric early warning system, is the hospital’s tool to identify high-risk patients who might have to be moved to, say, an ICU. “PEWS reduces reliance on human factors which are always subject to failure,” he says. On the business side of IT, Children’s CFO is working on a system called “Beyond Budgeting,” which converts the traditional annual budgeting process—a one-time crack at forecasting—into a continuous re-forecasting on a quarterly basis. “It allows us to be more nimble,” says Goldbloom, adding that the hospital is evaluating several tools to achieve this vision.

The medical center is also upgrading its Kronos Timekeeper scheduling. “The long-term goal is to integrate that routine data with the electronic patient record or electronic bed board and patient acuity system, so that staff scheduling becomes more automatically linked to patient needs,” he says. Another tool, called “Nursing Compass,” provides an electronic dashboard to help nurse managers coordinate patient activity and staffing more efficiently.

Says Goldbloom: “Everybody in the IT group is running full-speed.”

Joe Swedish, Trinity Health
To understand the 2009 IT plans of Trinity Health, a Catholic health system with 44 hospitals in seven states coast to coast, you must go back to the turn of the century. That’s when the Novi, Mich.-based system launched Genesis, its large-scale initiative to integrate information management for improved patient care. “We began development of the three-legged stool—clinical services, financial services and supply chain—in 2001,” says Joseph R. Swedish, Trinity Health’s president and CEO.

Genesis’ ambitious goal was and still is to establish a single IT platform with centralized information management. Today that goal is 60 percent complete, according to Swedish, and the organization expects to complete the
remaining go-lives in the next three years. “We’re going live in some incredibly large and complex organizations this year,” he says, adding that the decision was made to hold off on its largest hospitals until later because Trinity Health didn’t want to compromise the system by taking on too much complexity too soon.

“What we do know,” says Swedish, “is that having built a significant data repository we’re now advancing evidence-based practice with standard order sets. We’re also accelerating performance as a result of this large-scale data repository as we gain experience—and we’ve added an HR management infrastructure that standardizes all HR.”

Trinity is well regarded for its highly-standardized IT-implementation model, fine-tuned since its 2001 Genesis launch. “When we go live we bundle technical skill with culture change. We spend as much time with managing culture as managing technology,” says Swedish, who cites Winston Churchill’s comment about architecture—“We design buildings and then buildings design us.”—as applicable to IT. “What you put in place literally becomes your new culture,” says the Trinity Health CEO.

It’s not difficult to see why Trinity Health has made centralized IT management an imperative. The nation’s fourth-largest Catholic health system and 10th-largest healthcare system will spend about $305 million over the life of the Genesis initiative.

“Our experience demonstrates that variation is anathema to managing good process and creates incredible barriers to change that have to get extracted from systems. What we’ve learned in every go-live is that standardization is extremely important to realign benefits. Show us the architectural design of an IT system and you’ll then see how decisions are made in your organization. So, standardization is critical,” says Swedish.

Another lesson is that workflow must be adapted in order to effectively leverage the IT. “We spend a lot of time on workflow. If you don’t change workflow you complicate the caregiver’s task,” says Swedish.

St. Joseph’s Mercy in Ann Arbor, Mich., Trinity Health’s largest tertiary care center, is one target for roll-out this year. “We try to approach a number of angles,” says Swedish. “Realization that standardization is critical, of course, and then use of those systems to optimize efficiency. We’ve built a mantra: ‘Unified Enterprise Ministry’ or UEM, which recognizes the value of integrating skill and scale. If we implement a hospital in Fresno, Calif., we can replicate the success of that in Silver Spring, Md. We’re focused on unity in multiple ways. At the core we have a culture that accepts the benefits of scale in eliminating variation,” he says.

“Our IT team contributes to the tactical plans that organizations create. We’ve learned our lessons the hard way and forged a template that works for us. At its core organizations have to have the right culture in place to adapt to change. Just because you have the New England Patriots’ playbook doesn’t mean you can win the Super Bowl. It’s culture,” Swedish says.
Steve Mason, BayCare Health System

Formed in 1997 by the leading not-for-profit hospitals in the Tampa Bay area, BayCare is a nine-hospital system with 95 access points to serve 3.5 million people. Based in Clearwater, Fla., BayCare also has 11 ambulatory/outpatient centers, a reference laboratory and a home-health agency that makes 600,000 visits a year. In 2009, BayCare is scheduled to open a brand new hospital and a new freestanding psychiatric facility.

BayCare also has an array of system-wide, IT initiatives underway. At the top of the list is Phase II of the BEACON project, BayCare’s EMR initiative.

“Last year, BayCare completed Phase I, which involved the installation of many of the core applications we need, including a data repository, which we started feeding with pharmacy, ED, surgical scheduling and laboratory information,” says Steve Mason, BayCare’s president and CEO. “All the applications are laminated together.”

In addition, BayCare’s lab and imaging data are fully digital, and the health system is now scanning all inpatient records upon discharge. Going forward, all patient information will be held in optical images or digital form.

BEACON’s Phase II will take the next step in connecting nursing notes to the system and implementing the remaining components of the emergency department’s systems, including CPOE and clinical documentation. Phase III, which will occur in 2010 and 2011, will involve design and implementation of CPOE for the inpatient space.

“Phase III will involve lots of physician dialoguing and choosing order sets,” Mason said. “It’s the hardest and most laborious phase. The BEACON EMR project is the biggest project we’ve ever done as an organization—and the most expensive. It has maintained our focus for the last year and a half.”

This year’s second IT-related piece for BayCare is digital connectivity of 2,200 physicians and their offices back to the health system. These are the core users of the health system from the 3,500 total physicians in BayCare’s market, including the 900 doctors exclusively affiliated with the health system.

BayCare’s third initiative is a multi-pronged, patient portal strategy. It will allow patients to use information from the EMR, to communicate with their physicians, and to download and store information for their own health records.

“It will give them the ability to understand value and quality, as well as procedure costs, and to ultimately design their own systems of care,” Mason said, “It also will include bundling prices for a whole series of procedures.”

Although it’s still a work in progress, BayCare’s online Quality Report Card provides the community with a user-friendly tool to learn how well the health
system’s hospitals cared for patients with certain common medical conditions and surgical procedures, and how their performance compared to hospitals around the country and the state. Patients also can use the website to access a list of physicians with their specialties, and search for the nearest outpatient treatment centers by zip codes.

Until two years ago, the Tampa Bay health care market was exploding with 65,000 new residents each year, but that surge slowed considerably with the economic crisis, especially the bursting of the housing-mortgage bubble.

“We still have growth, but it’s measured growth,” Mason said.

Despite the economic meltdown, BayCare will reap the benefit of some gee-whiz IT in 2009, including a vein-technology, patient identification system that it rolled out last year. The system uses a four-pronged plastic device resembling a football tee to shine a light upward and read the veins in the palm of a hand. BayCare has already used the system to register thousands of patients—and drawn lots of outside attention, including from the Dept. of Homeland Security.

“We now scan every patient admitted, even those for a blood draw,” Mason said. “It stores and tracks all the information as long as they have a hand. People are just fascinated with it. We’ve had a very low rejection rate.”

BayCare researched all kinds of biometric-identification tools and found that, while retinal scans were the best, they were prohibitively expensive and relatively cumbersome to administer. Finger-print readers also tended to physically erode over time. Vein readers turned out to have the best value in combining accuracy, ease of use and cost-effectiveness.

Finally for BayCare in 2009, a telephony-based initiative involves placing 300 devices in selected homes to enable patients to enter measurements, like weight, blood pressure and heartbeat, for automatic transmission to nurses who then can be alerted to negative trends like a CHF patient’s jump in weight. As a result, BayCare has avoided a significant number of nurse home-health visits, which is especially valuable under Medicare-capitated care.

“Everything we do ties back to our core business of improving the health of our patients, one patient at a time,” Mason said. “As an organization, we are committed and enthusiastic about advancing superior health care for the communities we serve.”

Steve Williams, Norton Healthcare

Louisville, Ky.-based Norton Healthcare serves a region known for bourbon, baseball bats and blue grass—Makers Mark, Louisville Sluggers and the Kentucky Derby, respectively—but its major concern is the 1.1-million population in 18 counties around Louisville and southern Indiana that comprise its primary market; a secondary market adds another half-million people in double that geographic area and its Kosair Children’s Hospital takes referrals from all over Kentucky and the region.

Norton extends its reach through four large hospitals, 11 immediate care centers and about 2,000 physicians, 300 of whom
are Norton employees working at some 60 practice sites. That’s why Norton’s IT agenda for 2009 includes implementing an online ambulatory EMR, which will enable physicians to retrieve a patient’s problem list, for example, while prioritizing tasks.

Norton will initially target its 300 employed physicians with the ambulatory EMR. “We’re starting with employed practices before rolling it out to independent community physicians,” says Steve Williams, Norton president and CEO. “We assume that will occur, but there still some unanswered questions. The goal is build a Norton-centric, very user-friendly ambulatory record that will interface with Norton’s existing integrated inpatient EMR.”

The promise is seamless integration: outpatient EMR vendor LSS shares code and demographic identifiers with inpatient vendor Meditech (Meditech actually owns part of LSS).

While this effort transpires, Norton is also opening a new hospital—Norton Brownsboro—in August 2009. “We approach this entire initiative as a clean slate for green design and construction, and fresh thinking in terms of care processes, patient throughput and IT,” says Williams. That’s not all. Norton is also building a new pediatric ambulatory facility. “When we talk about this innovation the challenge is to keep it compatible with our existing facilities,” he says.

The new hospital’s innovations include RFID-enabled systems to track equipment location and monitor the temperature of refrigerators. Norton will also deploy CPOE and medication bar coding at the new facility prior to implementing those technologies throughout the rest of the enterprise. Other innovations include patient kiosks for self-registration and patient-room entertainment systems that allow customized patient education and menu ordering. “They’re new, more consumer-friendly technologies,” says Williams.

On an enterprise level, Norton will launch the Norton Healthcare Access Center, which will use a call-center approach to create a single point of service for physicians and patients who need to schedule an outpatient procedure, register for patient education events or get clinical advice. For example, a doctor will be able to call in to schedule a patient for an MRI at the earliest time and nearest location without having to call each of Norton’s five hospitals in a hit-or-miss fashion. Ultimately the system will incorporate an online portal for the same access.

“We have so many access points within Norton that we need a well-coordinated system to handle everything from hospital admissions and referrals to clinical screenings. It’s IT-based—we’re not eliminating any traditional phone numbers or access points, we’re just applying technology to centralize the calls,” says
Williams, noting the goal is to combine the web portal with customer relationship management software to track patient preferences.

A final priority for Norton in 2009 is business intelligence (BI), which includes collection, integration and analysis of data gathered in a data warehouse containing several data marts. “We call it decision support. It’s become critically important not only for performance review but for strategic planning purposes,” says Williams. Norton has invested a lot over the years in quality measurement, management and reporting and received positive national attention for the color-coded hospital-quality rating system it publishes on its website. A new product stemming from its recent fall board meeting is a dashboard on patient quality for board members. “Our goal is not only education but also engagement and ownership on the part of board members as to quality and patient safety,” says Williams.

**Conclusion**

When Scottsdale Institute was launched more than 15 years ago, a key part of its mission was to engage healthcare CEOs in the importance of IT in improving quality and efficiency. This year’s CEO Outlook reminds us that not only was that message received years ago but that IT continues to drive healthcare improvement and will provide a critical pathway for success in the uncertain days ahead.

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