



Navigating the Perfect Storm

Healthcare in 2010 and Beyond

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The healthcare world changed forever on March 23, 2010, when President Obama signed into law the most sweeping changes ever seen in the industry: nearly 500 requirements and deadlines, trillions of federal dollars spent, dramatic changes to the way employers offer health benefits to employees, and new requirements on the sale and purchase of health insurance. The downstream consequences will likely be as profound: patient access to providers; market consolidation among health plans, hospitals, and other providers; employer decisions whether to offer benefits; the budget implications of a new federal long-term care program; and many other unknowns.

What is known is that the new law will affect every single stakeholder in healthcare, from physicians, insurers, and technology vendors to drug makers, businesses, and patients. Hospitals and health systems are no exception. They will see profound changes firsthand, both good and bad. There will be new opportunities for hospitals to participate in pilots and demonstrations to better align payment with quality outcomes and care coordination, particularly the creation of Accountable Care Organizations, bundled payment pilots, and value-based purchasing programs.

While these opportunities should be embraced, hospitals will be faced with monumental challenges. According to the American Hospital Association, Medicare and Medicaid cuts to hospitals will total \$155 billion. Reductions to Disproportionate Share payments, lower productivity adjustments, and cuts to annual market basket updates will impact the bottom line of every hospital. The law also includes payment cuts for preventable hospital readmissions and hospital-acquired conditions. Given the dramatic expansion of Medicaid and the low reimbursement rates that will come with it, coupled with Medicare cuts and perhaps a smaller private insurance market, hospitals must focus on increasing efficiency, improving quality, and lowering costs.

Health information technology is a critical solution to surviving—and thriving—in the future. Tens of billions of dollars were included in the economic stimulus law (American Recovery and Reinvestment Act of 2009) to move both physicians and hospitals away from paper records to electronic systems. Hospitals can earn millions of dollars for using a certified electronic health record (EHR) that meets the criteria of “meaningful use.” Hospitals should adopt EHRs regardless of the federal incentives because they are essential to long-term success.

This paper explores some of the most successful models that leading hospitals and health systems embrace today by utilizing health IT to improve care and lower costs: from worksite clinics and home health to end-of-life care and provider workflow. By successfully adopting these models, hospitals and health systems will be much better positioned to weather the perfect storm that lays on the horizon.

What Keeps Healthcare Executives Awake at Night

Ask a healthcare executive what keeps him or her awake at night and you're likely to hear a long list of similar things. They include Health Information Technology for Economic and Clinical Health (HITECH) Act incentives that were included in the economic stimulus law, ICD-10 and HIPAA 5010 compliance, the Patient Protection and Affordable Care Act, projected physician and nursing shortages through 2025, and massive federal reimbursement cuts. Throw in a sluggish economy and state budgets in crisis mode and you've got the perfect storm brewing across the entire healthcare industry.

A long list of policy deadlines and requirements related to health information technology and health reform will soon flood the healthcare industry, from now through 2014 and beyond. And there's more to the challenge than finding the resources to get it all done. "It's also about changing the culture of physicians and nurses who are going to have to adapt their behaviors to the use of information technology," says J.P. Kichak, chief information officer of the University of North Carolina (UNC) Health Care. The ultimate test will be whether the changes produce happy, satisfied patients.

As if lack of resources and cultural changes weren't enough to worry about, there is the potential impact this quantum shift will have on quality initiatives. Jeffrey Thompson, MD, chief executive officer of Gundersen Lutheran Health System in La Crosse, Wisconsin, is quite frank about it. "What keeps me awake at night is the concern that there are many requirements for which the cost pressures will be so great on businesses, individuals, and government that the great work we've done already in improving quality and access to care will get truncated," he explains. "The money will just run out."



Louis Filhour, senior vice president for clinical quality at the Albany Medical Center in New York, agrees. While he's excited about the government push for broader adoption of health information technology, like Thompson, he is concerned that the push is so aggressive and requires so much upfront capital from providers that it will be difficult to satisfy all the requirements.

George T. Hickman, executive vice president and chief information officer at Albany Medical Center (AMC), is watching the confluence of industry changes along with the pressures of sizeable, projected state budget deficits, which drive spending cuts on Medicaid and affect providers like AMC that disproportionately serve Medicaid patients. Hickman understands that environmental factors are playing a heavier role in his organization's strategies than ever before.

The transition time between now and the next generation of healthcare delivery practices is what keeps Sandra Elliott of Meridian Health in central New Jersey awake. Elliott, Meridian's director for Consumer Technology and Service Development, says, "How do you get there without cutting off your nose to spite your face?"

"What has to become clear," Elliott continues, "is an understanding that we have to look at things from a continuum perspective and always keep that in mind. Right now, for the most part, health systems have been so focused on budgetary issues and today's bottom line that they sometimes can't think about the future."



But talk of standards and user-friendly technology begets the issues of system certification and meaningful use. Donald Spencer, MD, associate chief medical information officer at UNCH, puts EHR certification and well-defined meaningful use criteria—two key requirements that providers must meet to receive the HITECH incentives for health IT adoption—at the top of his must-have list.

Albany Medical Center's Hickman believes that as the stars align many things will go right. Albany Medical Center is facing major building expansion and many local agendas in addition to the changes on the horizon. So Hickman foresees his organization aligning resources and objectives based on understanding all the associated interdependencies. "As that occurs, I believe we will fare well through the next several years," he says.

So What Has to Go Right?

The ultimate objective of all these converging initiatives is to get to a system that improves the quality of care while keeping costs down. But how do you achieve that balance? Executives speak to some things that are within their control and others that are not. Bob Whitler, vice president for Government and Community Affairs at Charleston Area Medical Center (CAMC) Health System in West Virginia, argues that one thing that needs to go right is an equitable payment model for providers. New business models such as Accountable Care Organizations (ACOs) will only work if they fairly compensate providers. Glenn Crotty, MD, and chief operating officer at CAMC, argues for greater interoperability among all the information systems used within the health system. Most health information systems continue to operate in silos, making it difficult to share information as patients move through the care delivery process.

For Filhour and Kichak, greater interoperability requires better data standards for health information systems, so the need for these standards is at the top of their lists. "RxNorm and LOINC, for example, only get us about 70 percent of the way," Kichak says.¹ Filhour also argues that the systems have to be user-friendly, efficient, and effective for clinicians to use them. "If clinicians can't or won't use it," says Filhour, "I'm dead in the water."

¹ RxNorm, produced by the National Library of Medicine, is the standardized nomenclature for clinical drugs and drug delivery devices. Logical Observation Identifiers Names and Codes (LOINC®) is the universal standard identifying medical laboratory observations.

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J.P. Kichak
Chief Information Officer
UNC Health Care

Staying the Course on Quality Improvement

Clearly one key to increasing patient satisfaction is to continue the adoption of technology that can help providers improve the quality of care. So what are organizations doing to stay the course on quality initiatives while working hard to expedite adoption of information technology and reduce costs? CAMC has invested in a multi-year deployment strategy using Lean Six Sigma and process improvement techniques developed by the automobile industry. While waiting for the government and industry to deliver the payment reform and standards, “We are going to have to become extremely efficient and effective in continuing to deliver high quality and safe care, continue to improve it, and do it in a less costly way,” explains Dale Wood, CAMC’s chief quality officer.

Thompson believes that some of the most significant language in the recently signed health reform law deals with ACOs and the patient-centered medical home. “We think this is a good move toward changing the system from fee-for-service to paying for outcomes,” he explains.

Though not participating in a federal ACO demonstration, Gundersen Lutheran has a patient-centered medical home program for patients with comorbidities and chronic conditions that require services from the hospital, from specialty clinics, or at home. A nurse is assigned to as many as 60 patients whose care is coordinated among all the providers and includes follow-up and coordination of services to help ensure that the patient complies with treatment plans. Lack of compliance among patients is a big issue in healthcare and a contributing factor to lower-than-expected outcomes for many conditions. The electronic medical record and mobile technology make it easy for the information to follow the patient. A two-year study of the program revealed that patients enrolled in the program have fewer hospital visits that are less critical, with an average length of stay that is 48 percent shorter. In fact, for every dollar Gundersen Lutheran invests in the program, it saves three dollars in healthcare charges.

UNCH is also piloting a patient-centered medical home, which is a new model of care that Dr. Spencer believes holds much promise for helping his organization improve quality and increase patient engagement in care. “I’m a primary care physician,” he says. “What excites me about the medical home is its potential to bring together information and primary care in a way that is very helpful to the physician and beneficial to the patient.” UNCH is already seeing improvements in managing diabetes care and congestive heart failure, two of the most costly and challenging medical conditions. Health insurers are responding to UNCH’s medical-home model by providing financial incentives for its certified medical home programs. One clinic earned level-1 certification from NCQA and another is certified at Level-3, the highest attainable level.²

In the hospital, UNCH has been capturing clinical data by incorporating electronic clinical documentation into its nurses’ patient care workflow for the past two years. The data, which are either derived or entered manually right at the time of the assessment or intake, are used for analyzing quality and reporting performance measures.

² The National Committee For Quality Assurance (NCQA) developed the Physician Practice Connections® – Patient-Centered Medical Home™ standards as a mechanism for recognizing physician practices as medical homes.



“At least four core measures are tied in with workflow,” explains Tracy Parham, director of Clinical Systems at UNCH. “We’re also using the documentation to work on the Joint Commission’s National Patient Safety Goals, pulling data directly from the clinical documentation,” she says. One result: UNCH has seen almost a 100 percent turnaround in its compliance with requirements for surgical site infection education and central line patient education.

Similarly to UNCH, CAMC’s process incorporates a workflow engine that helps expedite interventions that improve a patient’s recovery time. For example, Crotty explains, “the workflow engine listens for certain symptoms of stroke and, based on the information entered during the admission assessment, triggers the appropriate consult requests.” This proactive approach eliminates the delay in having to wait, for instance, for a physician order for physical or occupational therapy, improving turnaround time. As a result, CAMC finds that clinicians are able to respond to a patient’s needs more quickly, preventing complications such as aspiration pneumonia caused by an inability to swallow, and ultimately speeding recovery. CAMC also uses the workflow engine to help screen for alcohol or drug levels that can trigger a consult request for substance abuse treatment.

Healthcare organizations are also taking a service-line approach that looks at the big picture of how an information technology investment can help providers significantly improve healthcare quality, increase volume, and lower costs. Sacred Heart Hospital in western Wisconsin has a Brain and Spine Institute that provides comprehensive neurosurgical care to the 450,000 people in the medical center’s service area.

Features of the Institute include two smart ORs equipped with the latest technology, such as interoperative MRI and CT technology, a surgical mapping system, and a global positioning system for the brain and spine. This approach gives doctors near-real-time images of the procedure when the patient is still in surgery, rather than the next day, enabling reworking on the spot, which reduces hospital expenses and improves patient outcomes. For example, the Institute reduced the need for follow-up surgery in 32 percent of its cases involving residual tumor or suspicious tissue removal.



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Glenn Crotty, MD
Chief Operating Officer
Charleston Area Medical Center Health System

Bending Down the Cost Curve

But how do you balance the need to improve quality while controlling costs? And when you talk about costs, you have to ask the question, “Whose costs?” One stakeholder’s savings is likely another’s revenue.

Thompson likes the part of health reform that will expand coverage to more Americans, but likens reimbursement cuts to the horse trading that goes on at car dealers. “Imagine a car dealership being offered the chance to sell many more cars, but they’d have to sell them at 40 percent of cost. They wouldn’t get too excited about that,” he says. Fortunately, healthcare systems across the country are balancing issues of quality, cost, and access by combining creativity and technology.

Perhaps nowhere is the healthcare cost model more skewed than in end-of-life care, which costs three times as much in Miami as it does in La Crosse. But who gets the savings? Not Gundersen Lutheran, Thompson says, which runs its Next Step program for patients entering end-of-life care. Operating a quality end-of-life program has a negative financial impact on Gundersen because it eliminates thousands of procedures for which Gundersen could bill Medicare, but it does it anyway, says Thompson, because it is the best thing for the patient. A 2007 Dartmouth Atlas study found that Medicare patients at Gundersen Lutheran had 43 percent fewer hospital days the last two years of life compared to the national average.

“I would argue there is nothing better than having patients say how they want to be treated at the end of life and having the health system follow through on it. That is truly patient-centered care,” he says.

At the heart of the Next Step program is putting the patient’s advance directives in Gundersen’s electronic medical record so that it is easily accessible by all care providers throughout the care continuum. Thompson knows of institutions where 85 percent of the elderly population has advance directives, but only 15 percent are followed. The electronic medical record is the best way Gundersen Lutheran has found to help change that percentage, resulting in more than 90 percent of its patients receiving care consistent with the directives.



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Jeffrey Thompson, MD
Chief Executive Officer
Gundersen Lutheran Health System

What will really help push down the cost curve, says Thompson, is putting population health on the top of the agenda, along with cost, quality, and access. According to Thompson, 70 to 80 percent of costs are related to population health issues, such as obesity and smoking, not necessarily technological interventions by the healthcare system. "If I get 10 percent more efficient here at Gundersen overnight, but we don't slow down the rate of obesity in our population, for example, it is just going to overwhelm any efficiency I can make in our organization," he says. "Getting people to make healthy choices will do more to lower costs than anything I can do after they are ill."

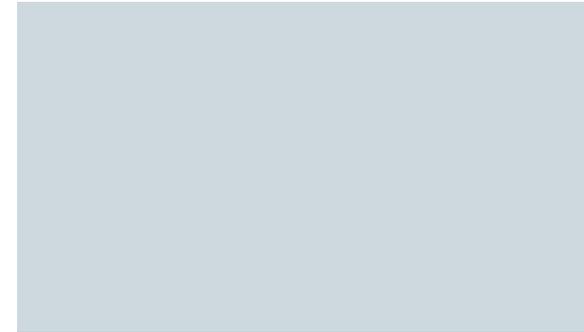
Many of Gundersen Lutheran's programs are focused on population health, including a consumer portal with a personal health record where patients can access their health information, get reminders, and add information. Gundersen is working with its own employees and local employers to implement health risk assessments that become part of the electronic medical record. In addition to population health programs aimed at consumers, Gundersen Lutheran has a very successful bariatric surgery program with great long-term outcomes. It includes post-surgery follow-up, counseling, and nutrition follow-up. The result? Dramatic improvements in eight obesity-related medical conditions 12 months after surgery. These include 70 percent of patients with hypertension resolved, 100 percent with reflux resolved, 67 percent with diabetes resolved, and 70 percent with joint pain resolved.

But at some point, after you've wrung all of the cost out of the system, you have to find creative ways to manage ongoing cost. UNCH has already picked most of the low-hanging fruit in terms of cost containment, says Kichak, so finding ways to cut costs is getting harder. UNCH has been able to centralize dictation and also transcription, resulting in a \$4 million savings over three years. It is in the early stages of implementing an electronic medication administration record.

Creating More Access Points

The healthcare industry faces the prospect of supporting as many as 34 million newly insured consumers over the next four years, as a result of the new health reform law. At the same time, it faces the twin specters of slashed reimbursements and a clinical workforce shortage. With these challenges, you'd think that the industry's sole focus would be cost containment. But you'd be wrong. Providers like Sanford Health, CAMC, Gundersen Lutheran, UNCH, and Meridian Health are focusing on several strategies to increase access to affordable healthcare.

Sanford Health in Sioux Falls, South Dakota covers a service area that is 200,000 square miles across five states, making it the largest rural healthcare provider in the United States. A key factor in its success is its ability to provide continuity of care throughout its vast network. Investments in information technology make it easy for primary care physicians to follow patients who may have to travel two or three hundred miles for specialty care. "It is very common that the family doctor is receiving test results and viewing images that come in through the system...and while they may not be communicating specifically with the patient from their hometown, certainly in terms of follow-up and feedback, they are as tuned in as one can possibly be regardless of the physical distance," says Andy Wentzy, director of the Sanford Initiatives. Wentzy believes the culture of trust in the family doctor that has been built over generations helps families accept Sanford's deployment and use of information technology.



Similarly, CAMC, which operates multiple urgent care centers across West Virginia and partners with public health agencies and other hospitals across 17 counties, uses telemedicine for fetal monitoring of patients in outlying areas. One of its major initiatives is to increase access by maximizing current resources. “We operate at capacity,” explains Wood, “so we are working to become more efficient, which in turn reduces length of stay, which helps create beds.”

To provide more access to care and to help keep the cost of healthcare down for other stakeholders, Gundersen Lutheran is out in the community, working with area employers on healthcare cost-saving initiatives. One self-insured employer built an in-house clinic staffed by Gundersen Lutheran providers. The purpose was to provide preventive health services at the worksite and help manage employee health for those with chronic conditions. After two years, the clinic is saving the employer nearly \$1 million in annual healthcare costs.

Offloading those patients who do not require emergency care from the emergency department can also create better access. UNCH is collaborating with community health centers to shift care to less expensive environments, thus increasing access and leading to lower costs. UNCH is also moving traditional hospital-based services like urgent care and radiology off the hospital campus and into separate clinics. This move not only makes the services more accessible to consumers, it also helps to minimize the overuse of expensive technologies.

Increasing access by combining creativity and technology also led Meridian to its At Home concept. Access may be increased by using sophisticated information technology to help clinicians unobtrusively monitor a patient’s activity in the home and notify the health system when interventions may be needed. Meridian’s At Home concept seeks to cost-effectively manage the care of the elderly and those with chronic conditions in their homes so they can continue living independently. This type of care is not generally covered by Medicare or most health plans, but more importantly to Meridian, it’s what patients strongly prefer.

At Meridian, Elliott looks for low-cost, innovative solutions that make sense from a cost and patient perspective. By using basic communication technology, such as phone calls and discreet wireless motion detectors (as opposed to cameras), Meridian creates a cost- and care-effective program. In this way, Elliott often justifies the cost of information technology in home settings by looking at the productivity savings. So even though much of what Meridian At Home provides is not covered by health plans, if she can demonstrate more efficient management of the patient base, the return on investment is much easier to calculate. In fact, after several years of operation, Meridian At Home has helped reduce readmissions for the same condition, provided a higher net revenue for certain cases because most of the monitoring can be done remotely, and reduced the cost-per-case because the number of routine visits per week is reduced. “Routine visits are truly routine because there is no longer a need for a just-in-case type of visit,” explains Elliott.

Looking ahead, the challenge for Elliott and the industry as a whole will be achieving a paradigm that is low cost and high return. She is constantly looking for new revenue sources from either payers or consumers. But consumers are seeing higher deductibles and payers are looking to cut costs themselves. The payment threshold for consumers is about \$200 upfront and between \$30-\$40 per month until they are in super crisis mode, according to extensive research by Elliott and her team. “The challenge then is to determine what technology or services I can deploy that enable profit at those levels. That is a very different challenge than most health systems have ever faced,” explains Elliott.



Evolution, Not Revolution

The concept of continuous progress is part of the fabric of healthcare. Establishing protocols or bringing a drug to market takes time. So it is with the changes facing the healthcare IT industry. While the industry faces a myriad of challenges today, progress in meeting them will be consistent and evolutionary. “Everyone is looking at this as a revolution and it just isn’t going to occur that way,” argues UNCH’s Kichak. “We’ve been at this for 15 years and we’ve brought a lot of people along, but there is still a challenge.”

This evolutionary approach is one strategy that will help the industry use technology to meet today’s challenges. But there are others.

Filhour advises organizations to really understand the function of the systems being put in place and how those systems will help them achieve both provider and patient satisfaction. This requires a willingness to redesign workflow processes to maximize outcomes. “It’s easy to say and hard to do, especially in an older, established system,” he says.

Elliott believes her organization’s greatest strength is defining the problem to be solved from a patient perspective at a very detailed level, building the program around meeting patient needs, and then looking at technology solutions that can support it. “We start with patients first. We truly understand what their key struggles are and what they need so we can better support them. We then go look for the technology that can help,” she explains.

The low-cost, high-return solutions you need may come from unexpected places. “You have to go outside the traditional industry,” says Elliott. “I spend most of my time with companies that are not familiar with the healthcare industry.” The interactive voice response platform used by Meridian, for example, is a known player in the legal profession and used as a customer interface for appointments and routing calls. With it, Meridian can follow a patient for 30 days for approximately two dollars using automated emails and phone calls to remind people about appointments as well as monitor some common symptoms of chronic disease without making the calls manually.

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Sandra Elliot
Director, Consumer Technology and Service Development
Meridian Health



Navigating the Perfect Storm

There is no road map to compliance with the many initiatives facing the healthcare industry. Many more sleepless nights lie ahead for healthcare providers as the gathering clouds of the perfect storm assemble above them, from HITECH funding and requirements as well as the myriad changes on the horizon from the health reform law. But this is an industry marked historically by organic progress.

The key to this progress—to navigating that perfect storm—will be the use of information technology for meeting many of the challenges posed by recent legislative, regulatory, and standards mandates. And the signs that the industry is already responding in this manner are all around us and span the health continuum. Cost, quality, and access will continue to be the historic balancing act they've always been. Progress on these issues will be slow but steady, and yes, at times stormy. But as all navigators know, smooth seas don't make good sailors.

This paper was produced in collaboration with The Center for Health Transformation, www.healthtransformation.net.

Siemens thanks the following healthcare providers for their contributions:

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Charleston Area Medical Center Health System, www.camc.org

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