HIMSS STAGE 7 ACHIEVERS

ACOs: READY OR NOT

STRIKING THE RIGHT HARDWARE BALANCE

Healthcare Informatics

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Healthcare IT Leadership, Vision & Strategy

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INSIDE

Data Reporting Mandates, Hardware Selection, HIMSS Stage 7

The new era in healthcare is both driven by data and shaped by it—a fact that brings its own set of challenges around data reporting that is unprecedented in the history of healthcare in this country. In this month's cover story (page 8), Editor-in-Chief Mark Hagland presents the overall picture of data reporting requirements, as well as case studies of pioneering provider organizations that are moving forward into healthcare future organized around the industry's new accountability agenda.

At a time when the rapid expansion of computing hardware options is opening up new possibilities of patient engagement and productivity, CIOs must make sure that their selections are the right fit for their organization's needs. In the article beginning on page 18, Managing Editor John DeGaspari examines how they are weighing their options against workflow issues, infrastructure requirements, and budgetary constraints.

Meanwhile, Associate Editor Jennifer Prestigiacomo presents a timely story of interest to any hospital system that has embarked on the challenging path to becoming a paperless enterprise. Beginning on page 25, she profiles the latest provider organizations that have reached HIMSS Analytics Stage 7—an objective measure of progress toward EMR implementation.

Also in this issue, the first steps along the road to meaningful use means getting the fundamentals right. On page 31, contributors Judy Murphy, R.N., vice-president information services at Aurora Health Care, and Bob Schwyn, associate principal and meaningful use practical lead for Aspen Advisors, offer pragmatic advice for meeting MU requirements and qualifying for incentives.

In addition, two articles explore the evolution of health information exchanges. In this month's HIE Perspective on page 36, Senior Contributing Editor David Raths looks at a novel approach taken by the state of Nebraska that will enable behavioral healthcare providers—which have been left on the sidelines in nascent HIEs—to share patient information with each other. In the Financial Perspective on page 38, Jennifer Prestigiacomo reports on a study, conducted by Humana Inc. and the Wisconsin Health Information Exchange, that puts a hard dollar amount—$29 per ED visit—of the savings that can be gained by integrating HIE within the clinician workflow.

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Healthcare IT Leadership, Vision & Strategy

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What Does It Mean To Be Accountable?

AS HEALTHCARE MOVES FORWARD, PROVIDER LEADERS NEED TO REASSESS THEIR STRATEGIES


Mark Hagland

Just as this issue was going into production, the Centers for Medicare and Medicaid Services (CMS) released the final rule on accountable care organizations (ACOs) for the shared-savings program under Medicare. That program, one of two under healthcare reform for which participation will be optional, is actually one of five major healthcare reform-driven programs (the other three being mandatory) now being launched under Medicare. To say that the world is changing quickly for healthcare providers would be to express an extreme understatement.

Indeed, taken together, the three mandatory programs (healthcare-acquired conditions reduction, readmissions reduction, and value-based purchasing), and the two voluntary programs (ACOs and bundled payments) could reshape how care is delivered in the next decade. Fundamentally, purchasers and payers are saying, that through healthcare reform, the old ways of delivering patient care, and charging for it, are simply not going to work anymore—that providers must begin to provide concrete, documentable value.

And what is value? Ask 10 people and you'll get 10 different answers. But fundamentally, value involves some combination of quality, price, and service. Let's face it: the reimbursement incentives that have prevailed until recently have not promoted real value in the provision of healthcare delivery. Nor have any but the most pioneering patient care organizations pushed ahead in that area in spite of the lack of incentives for change.

Yet change is now in the offing; with the passage of comprehensive federal healthcare reform earlier last year, the landscape of healthcare delivery is set to undergo unprecedented change.

And what will the new healthcare look like? To find out, you might want to ask Michael Schrift, M.D., Debbie Pehler, Don Stumpp, Tomas Gregorio, or Steven Riney (see this month's cover story, beginning on p. 8); all of those healthcare leaders are pushing forward in the trenches, reengineering their care delivery in order to succeed under various aspects of healthcare reform, as well as under the meaningful use process under HITECH. And what are these leaders learning? Four things, fundamentally, I believe.

First, the organizations now making serious progress in reworking patient care delivery are moving forward under a banner of patient safety, care quality, patient satisfaction, performance improvement, or some combination of all of those elements, and are resolving all issues with patient-centric focus.

Second, the senior leaders of these organizations have been, and continue to be, willing to invest professional risk at a personal level in order to push their organizations forward. As everyone knows, healthcare organizations are mostly big, complex, often intensely political, entities; and without intense personal-professional commitment, it is generally impossible to move forward in any meaningful way.

Third, every one of these organizations is investing considerable time, effort, and money in performance improvement methodologies of all kinds, using lean, Six Sigma, Toyota Production System, and other techniques, to drill down multiple levels in order to reengineer care delivery processes. None of this work is easy, or else it would have been done long ago. But organizations like Allina, American Health Network, and Methodist Medical Center of Peoria, are proving that such change is indeed possible.

And fourth, not surprisingly, these healthcare leaders are leveraging clinical information technology, business intelligence, analytics, and other tools, in highly effective ways. The hard work being put into creating change could never bear fruit, let alone be sustained, without the intelligent use of the best IT tools available. In short, look towards where the pioneers are headed to know where things are going; and don't doubt for a moment that the new accountability in healthcare is here now on all of our doorsteps.

Mark Hagland
Editor-in-Chief

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READY TO CATCH

THE NEW ACCOUNTABILITY AGENDA IN HEALTHCARE

DATA MANDATES FROM HEALTHCARE REFORM AND MEANINGFUL USE ARE SET TO UPEND THE INDUSTRY BY MARK HAGLAND

EXECUTIVE SUMMARY:

With several healthcare reform-related programs already beginning to demand an extremely broad range of data reporting from providers, and the meaningful use process under HITECH continuing to move forward, healthcare IT leaders are faced as never before with a menu of data reporting mandates that are set to redraw the landscape of healthcare. In this cover story package, we look first at the overall picture, and then offer case studies from the pioneering organizations that are already moving forward into the future of healthcare, one organized around the industry's new accountability agenda.

THE NEXT WAVE?

PART I: THE NEW LANDSCAPE OF ACCOUNTABILITY

With several mandates around data reporting coming out of various federal government initiatives these days, healthcare IT leaders are on the cusp of a new era, one that will not only be driven by data, but shaped by it as well. Given three mandatory programs and two voluntary programs coming out of the Patient Protection and Affordable Care Act (ACA)—the comprehensive federal healthcare reform legislation passed by the U.S. Congress and signed into law by President Barack Obama in March 2010; as well as the ongoing meaningful use process under the American Recovery and Reinvestment Act/Health Information Technology for Economic and Clinical Health (ARRA-HITECH) Act, established through the federal stimulus program of February 2009—there has never been a time in the healthcare industry's history when data reporting requirements have been so intense and demanding.

Jane Metzger

Indeed, the complexity of the situation is such that industry experts are warning CIOs and other healthcare IT experts they need to be actively engaged right now in intensive work to satisfy all the requirements involved. Among the industry leaders in this area, Jane Metzger, principal researcher in the Waltham, Mass-based Global Institute for Emerging Healthcare Practices, a division of the Falls Church, Va.-based CSC, co-authored a white paper in August along with colleagues Caitlin Lorincz and Marta Arthur, entitled "The Hospital Agenda for Accountability," which laid out the various data reporting requirements under healthcare reform and articulated the concept of the "new accountability agenda in healthcare" that the various programs represent.

When put together, the data reporting requirements are daunting in their breadth and scope, Metzger and her co-authors point out in their white paper (available at http://assets1.csc.com/health_services/downloads/CSC_Hospital_Agenda_for_Accountability.pdf). First, there are the requirements coming out of the three mandatory programs under healthcare, to be administered under the Medicare program: the value-based purchasing program, the readmissions reduction program, and the healthcare-acquired conditions reduction program. Then there are the requirements emerging out of the two broad voluntary programs under healthcare reform, also administered through Medicare: the accountable care organization (ACO) shared-savings program and the bundled payments shared-savings program. And of course, there are the many requirements under Stages 1 through 3 of the meaningful use process under the HITECH Act.

Not surprisingly, many hospital leaders will find the overlaps in the data demands involved in these various programs, as well as their overall breadth of scope, confusing and challenging. Such diverse areas as mortality statistics, infections, patient falls, the administration of certain types of drugs, the provision of patient discharge summaries, and patient experience measures, are all implicated. Not surprisingly also, each of these programs involves its own particular complexities, including around the fact that some of the data regimes are based on calendar years and others on fiscal years.

"One thing we noted in putting together the white paper," Metzger says, "is that, when people were writing about healthcare reform, they kept using the future tense. And we noticed that some of the dates didn't seem all that far in the future. For example," she notes, "probably the most significant element is data collection for chart-abstracted measures for the first year of value-based purchasing, which started on July 1, 2011. So we decided that some of these elements weren't well-understood. And the ACA is over 1,000 pages and is very complex. These programs under the ACA are on separate timetables, and have different elements to them." Unless healthcare leaders begin to educate themselves rapidly and thoroughly in the data reporting requirements under the three

ONE THING WE NOTED IN PUTTING TOGETHER THE WHITE PAPER IS THAT, WHEN PEOPLE WERE WRITING ABOUT HEALTHCARE REFORM, THEY KEPT USING THE FUTURE TENSE. AND WE NOTICED THAT SOME OF THE DATES DIDN'T SEEM ALL THAT FAR IN THE FUTURE. —*JANE METZGER*

mandatory programs (and certainly the two voluntary ones, too, if they are interested in participating in those), Metzger argues, they will quite quickly fall perilously behind.

In preparing the white paper, Metzger continues, "We decided also to sort them by timeframe, by looking at the first year in which measurement for a measure will actually influence reimbursement. That cuts through all these many different applicable dates. And when we did that," she says, "it turned out, as we suspected, that the future is now; and regardless of what happens with the ACO rule and whether hospitals participate in the shared-savings program or not, there is this pretty significant accountability agenda hitting the industry. And none of these other programs are voluntary."

The bottom line? The data reporting requirements under the three mandatory healthcare reform-triggered programs under Medicare are a here-and-now concern, not some futuristic menu of optional issues to consider.

REGARDLESS OF WHAT HAPPENS WITH THE ACO RULE AND WHETHER HOSPITALS PARTICIPATE IN THE SHARED-SAVINGS PROGRAM OR NOT, THERE IS THIS PRETTY SIGNIFICANT ACCOUNTABILITY AGENDA HITTING THE INDUSTRY. —*JANE METZGER*

What's more, with reimbursement-cut provisions in all three of the mandatory programs beginning in the last few years, the stakes are high. "By 2015, when the healthcare-acquired conditions program kicks in," Metzger notes, "low-performing hospitals could potentially lose 3 percent of their Medicare reimbursement because of HACs [healthcare-aquired conditions], on top of 1.5 percent under the value-based purchasing program. In fiscal year 2015, the bottom-performing hospitals will lose 1.5 percent from the value-based purchasing program, 3 percent from the readmissions reduction program, and a further percentage from the HAC program; so it starts adding up; it's a big deal."

For CIOs, CMIOs, and other healthcare IT leaders, the implications are clear, Metzger says. In her view, what will be key is that, "Going forward, data capture will be the foundation not just for informed care—that you have a medical record that's complete—but what will be essential will be the data that you need for measurement, and bringing that measurement into real time, so you can track patients, and if there are gaps in care, take care of those in real time."

PART II: THE PIONEERS

Case Study: At Allina, Drilling Down to Actionable Change

One thing that is becoming clear over time is that the patient care organizations—hospitals, medical groups, and integrated health systems—that are moving forward comprehensively to improve patient safety, care quality, clinician effectiveness, efficiency, and cost-effectiveness all at once, are also the ones whose potential to be winners under the new accountability agenda in healthcare is greatest. The leaders of those organizations have committed themselves and their teams to doing what's right for patients—and yes, for purchasers—by pushing hard to improve the core care delivery processes that make a difference. And they are looking systematically at the potential for change, and very often using formal performance improvement methodologies, such as lean management, Six Sigma, the Toyota Production System, and PDCA (plan-do-check-act) in order to map and improve processes. Not surprisingly, such efforts are drilling down into areas that all the mandatory and voluntary programs under the ACA are working to improve, as well.

Michael Schrift, M.D.

And it is in such organizations that clinician, IT, and clinical informaticist leaders are most often able to drill down the numerous layers needed in order to analyze underlying problems and really correct them. Such processes are taking place on a broad scale at the Minneapolis-based Allina Hospitals & Clinics, where leaders like Michael Schrift, M.D., the system's CMIO and vice president for clinical knowledge management, are guiding their colleagues through optimization work that is improving performance across the health system's 11 hospitals and 100-plus clinics.

Schrift is leading his team of three full-time clinical informaticists, in concert with IT leaders and clinician leaders across the Allina organization, in a wide variety of improvement initiatives. "We're lucky we're a clinically led organization at Allina; so the organization's clinical priorities are fairly easy to define," Schrift says. "So as we make a priority for something like our cardiovascular service line, and specifically for heart failure or acute MI, or for readmission prevention, our teams are specifically assigned to each of these pieces of work, to break down the workflow into pieces that can be either made into evidence-based practice or best-practice, and then hardwired by handing it off to the technical teams whose members design solutions; and we work very closely with the clinicians and their support staff, to find out which decision support tools most effectively support the care."

There are numerous examples of progress and process change that Schrift could cite, but one initiative that exemplifies the disciplined sort of work that he and his colleagues are engaged in is in the area of medication reconciliation at the point of discharge.

"Medication reconciliation at the point of discharge has been a weak link," Schrift explains. "So we broke down the work, and have created several alerts to let doctors and nurses know if changes have occurred at the time of discharge. We're pretty good during the time when the patient is in the bed, but it's during that physical transition time between bed and front door when last-minute changes affect medication lists." During that time, he notes, "Patients and families are stressed, and it's a confusing time, so there isn't 100-percent accuracy at the point of discharge." Indeed, Schrift and his colleagues in clinical informatics have estimated the historical level of inaccuracy as averaging as high as 20 percent, with some of the inaccuracies being omissions, with other problems including last-minute changes in medications that aren't communicated to a patient's family.

MEDICATION RECONCILIATION AT THE POINT OF DISCHARGE HAS BEEN A WEAK LINK, SO WE BROKE DOWN THE WORK, AND HAVE CREATED SEVERAL ALERTS TO LET DOCTORS AND NURSES KNOW IF CHANGES HAVE OCCURRED AT THE TIME OF DISCHARGE. —*MICHAEL SCHRIFT, M.D.*

So what Schrift and his colleagues in clinical informatics have done is to alert the appropriate physician and nurse if changes have been made to a patient's medications list just prior to discharge. The other has been to embed

a helpful "smart list" of medications into the EMR, in order to essentially make it more difficult for doctors to make mistakes in this area.

"Our clinical leaders strongly support this approach to making it easy to do the right thing at the right time," Schrift says. "If you're doing the right thing, we don't bug you; but if you're doing the wrong thing, we use guardrails and cattle prods to improve patient safety."

IF YOU'RE DOING THE RIGHT THING, WE DON'T WANT TO BUG YOU; BUT IF YOU'RE DOING THE WRONG THING, WE USE GUARDRAILS AND CATTLE PRODS TO IMPROVE PATIENT SAFETY. *—MICHAEL SCHRIFT, M.D.*

While it is precisely these types of laser-like, drilled-down interventions in process that will create the patient safety and care quality improvements desperately needed in the healthcare system, Schrift is under no illusion that any of this will be easy. So when asked for his advice, he readily responds, "Stay humble, because you won't get it right every time. And if you're not making a few informatics mistakes in the pursuit of service of great patient care, you're not trying hard enough. So it just takes a humble attitude to keep at it.

Continuing in that vein, Schrift says, "The other thing I would say is to not do it alone. We are incredibly lucky at Allina to have world-class clinicians, robust performance and analytics resources, an IS and Excellian team who won the HIMSS Davies award a few years ago, and a very driven leadership. Collaborating with them each day makes a big difference." What's more, he says, "There are many other organizations doing this; and as I say, many heads think better than one. So learn from others. That's why we're involved in the CMIO Collaborative," which includes some of the most well-known pioneering organizations in the country (the University of Pittsburgh Medical Center system, the Geisinger Health System, the Sentara Health system, the Cleveland Clinic health system, Texas Health Resources, Intermountain Healthcare, and Group Health Cooperative of Puget Sound), with leaders from all the participant organizations in that collaborative actively working with all the others to learn from one another.

In the end, Schrift underscores, making serious progress on the quality and patient safety requirements coming out of healthcare reform and other sources will require such sustained, deep, and broad work. But he and his colleagues continue to thrive in the environment of continuous performance improvement they've created, as they move forward on many fronts at once.

Case Study: Doctors Measuring Up in Indiana

While physicians nationwide are beginning to move forward in reporting on their patient care outcomes, the vast majority are still in the earliest stages in this important area. But a small number of multispecialty medical groups are showing the way when it comes to laying the IT and data foundations for routine, comprehensive outcomes reporting, and one of those is the American Health Network (AHN), an Indianapolis-based multispecialty medical group with 230 providers (about 170 of whom are physicians), providing patient care out of about 85 locations in Indiana and Ohio.

Debbie Pehler

At AHN, CIO Debbie Pehler and manager of payer contracting Don Stumpp have been helping to firmly lay those foundations for their organization. They have been facilitating the participation of AHN in an Indiana program sponsored by Anthem Healthcare called Quality Health First, whose outcomes reporting initiative currently encompasses 26 commonly used quality measures, such as diabetic patients who have had a hemoglobin A1C screening test in the past 12 months, and common women's and children's health measures, such as provision of mammograms.

The AHN physicians are making gradual but steady progress in a number of areas. For example, Stumpp notes, "We had a compliance rate of 53 percent at the beginning of last year with regard to the percentage of patients ages 3 to 6 who had had a well-baby visit; by the end of last year, it was 69 percent." Similarly, results on measures including hemoglobin A1C screenings and Chlamydia screenings have both improved. Importantly, of course, Stumpp notes, the AHN physicians are competing for patients and market share with non-AHN physicians whose outcomes are also increasingly being measured by these large health plans.

What's more, says, Pehler, "The measures are very similar to the clinical quality measures in meaningful use." As a result, building and enhancing the infrastructure for one purpose is supporting the infrastructure for the other. Furthermore, the process has had not only the support, but indeed the participation, of the highest levels of AHN management, which has made all the difference, she says. "Our CEO, Dr. Ben Park, has probably been the person driving most of these efforts," she notes. "In fact, he's actually developed a lot of the reports that we call 'patient-on-a-page.'" The patient-on-a-page report, she explains, is literally a one-page printout given to each physician just before she or he sees a patient for a patient visit. The ability to provide the doctors with this particular tool has strongly enhanced their preparedness when seeing patients, not to mention their satisfaction with the organization's EMR capabilities, she reports.

In terms of the mechanics, "We extract information out of the NextGen database"—the organization's EMR is from the Horsham, Pa.-based NextGen Healthcare—"and we pull that information nightly, so that every morning, the physicians who choose to get this report have it emailed to them," Pehler explains.

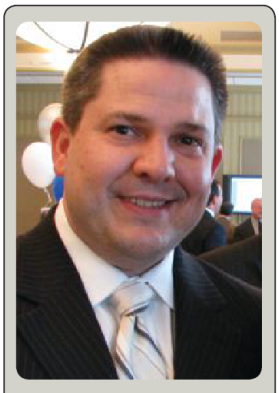
The patient-on-a-page tool also in turn triggers reminders to physicians to ensure that patients are receiving the kinds of screenings and tests being measured by the Quality Health First program, so all of these different elements of AHN's efforts reinforce each other.

Moving forward on all these fronts has taken considerable effort over time, and of course, has required considerable collaboration between the quality and IT departments at AHN. "It took a long time to work through back-office functional issues—correcting the data, getting things right, even working on the attribution of patients," Stumpp reports. "Now we're working at the front-end elements—are we making sure that Mrs. Smith gets the right tests and meds when she comes in for a visit, that kind of thing." But the results speak for themselves, he says. "What we're trying to do is to emphasize for the physicians that they should be giving health care, not just sick care; and we're trying to encourage patients to engage with us in all these elements of care."

In the end, Stumpp says, "I think that transparency, not just in cost but also in quality, is being sought after by payers and purchasers, and ultimately, patients." While he adds that "I don't know that consumers are yet looking at that data to a large extent, it would certainly help to be able to demonstrate good processes and outcomes." And, he says, "I certainly would hate to be the physician who doesn't do the proper screenings and doesn't have the best outcomes." Fortunately for them, the doctors at AHN have proven their value-based purchasing mettle, earning more than $1 million each year over the past two full years in which they've participated in the Quality Health First program.

Case Study: Preparing for ACO Participation in New Jersey

At the 230-bed Meadowlands Hospital and Medical Center in Secaucus, N.J., preliminary preparations are underway for laying the groundwork, both strategic and IT, for participation in the ACO shared-savings program under Medicare. Interestingly, the background of Tomas Gregorio, the hospital's president and CEO, reflects the importance of strategic IT involvement in such preparations, as Gregorio was until last year the CIO at nearby Newark Beth Israel Medical Center. But, says Gregorio, "We're a for-profit hospital, and the investors decided to put a CIO in the CEO seat, because of technology becoming so important to achieving results now in healthcare." In fact, Gregorio joined Meadowlands in May of last year, with the expectation of being made CEO in 2012, but circumstances changed, and he was put into the CEO position earlier this year. (The hospital itself is still relatively very new, having opened its doors only in December of last year.)



Tomas Gregorio

Under his leadership, "We've created the Hudson County Health Care Alliance," Gregorio reports. "The mission of the organization is to integrate physicians in the community, the hospital, and the house calls we do for the patients in the community. This is our ACO concept," he says, adding that not only do he and his colleagues plan to apply to become participants in the Medicare shared-savings program, they are at the same time working to build a collaborative with physicians to support that concept. As of press time, a small number of physicians had already joined, with the expectation of more than 100 doctors participating over time.

Importantly, Gregorio and his col-

leagues have not been approaching the local doctors empty-handed. "As a technology-based hospital, a 100-percent-paperless hospital, we're tracking patients in their homes in collaboration with GE Intel; and we are developing home monitoring that will actually help keep readmission rates down," he reports. "We're interested in creating that entire ecosystem," he stresses; he and his colleagues are in the startup phase of building the technology infrastructure for live-monitoring of patients in their homes, and are hoping to begin a phased rollout of patient home-monitoring using that technology, starting in the first quarter of 2012. They are also continuing to enhance their core cloud-computing capabilities, as they plan to add both back-end nurse case management support capabilities and front-end consumer tools (including alerts around medications, etc.) to their menu of technologies. All of these are complementary to one another, Gregorio emphasizes, and all will support Meadowlands' strategizing forward towards ACO participation.

In the end, Gregorio says, he and his colleagues at Meadowlands are convinced that success in the ACO arena will mean thinking like a health plan, to the extent that intensive care coordination and management and across-the-continuum thinking will be required for accountable care success. In that context, laying the IT foundations will be absolutely essential to the success of all hospital organizations seeking to capture reimbursement across the continuum of care.

Discussion: A Long, Sometimes-Winding, Journey

Those healthcare IT leaders who've been involved in metrics-driven improvement for a long time have a number of pieces of wisdom to share with their colleagues. "We've gained experience in meeting multiple data requirements, including adhering to stringent data definitions and submission requirements, and have learned how to capture, harvest, and report data consistently," says Steven Rinpulled in a half-million dollars over the last few years" as a high-performing participant in the CMS/Premier HQID (Hospital Quality Incentive Demonstration) program, whose success provided the basis for the design of the value-based purchasing program under Medicare. And that experience, Riney says, is the kind that hospitals and medical groups of all types will need to have in order to succeed under healthcare reform.

WE'VE GAINED EXPERIENCE IN COLLABORATING AS A TEAM—WITH CLINICIANS, IT, DECISION SUPPORT, AND PERFORMANCE IMPROVEMENT PEOPLE ALL WORKING TOGETHER—TO MAKE THESE GAINS. THAT'S THE CULTURAL PIECE THAT WILL SERVE US AS WE GO FORWARD INTO THE NEXT PHASE. —*STEVEN RINEY*

ey, vice president and CIO of Methodist Medical Center, which until Oct. 1 had been a standalone community hospital in Peoria, Ill. (on Oct. 1, Methodist joined the Des Moines-based Iowa Health System). "And as a result," Riney says, "we've gained experience in collaborating as a team—with clinicians, IT, decision support, and performance improvement people all working together—to make these gains. That's the cultural piece that will serve us as we go forward into the next phase."

In fact, Riney notes, "We've probably

Still, Riney cautions, even with such experience, going forward into any of the three mandatory or two voluntary programs will not be a slam-dunk for any patient care organization. In fact, Riney and his colleagues determined this summer, based on the preliminary ACO rule, that the potential for making payment gains from the ACO shared-savings program was simply not strong enough for them. "We could save millions of dollars and get $50,000 in reimbursement, so it didn't make sense for us to participate," he said in the early autumn, before the final rule was released.

Randy Thomas, a vice president at the Charlotte-based Premier Inc. alliance who has been involved in the HQID demonstration project, says that the work involved in HQID "was a great learning for the country. It involved a lot of hard work for the hospitals that have participated," she says, "and the country learned that if you focus on quality, you can improve outcomes and bend the cost curve at the same time." What's more, she says, "As we start to look at the quality measures related to meaningful use, we'll see that the organizations that have made strides through the HQID program are much better-positioned to take the information that comes out of their EHRs and even further excel in quality improvement."

In the end, Riney concludes, the biggest and most core challenges going forward will be around "the non-technical, cultural stuff." So what should CIOs, CMIOs, and other healthcare IT leaders be doing right now? "Find a place to plug in," he says. "I was able to do that with Premier through HQID, and then with Premier's ACO collaborative. So, plug in somewhere and get your hands dirty."

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Making the Right Hardware Choices

WITH MORE HARDWARE OPTIONS TO CHOOSE FROM, CIOs STRIVE TO BALANCE WORKFLOW, BUDGETARY, AND INFRASTRUCTURE ISSUES

BY JOHN DEGASPARI

EXECUTIVE SUMMARY:

A rapid expansion of computing hardware options is paving the way to better patient engagement and increased productivity. For that to happen, CIOs must balance their choices against workflow issues, infrastructure requirements, and budgetary constraints.

Without a doubt, this is an exciting time when it comes to computer hardware selection, with a rapid growth in options available to doctors and nurses making their daily routines. The choices being made by CIOs are, in a very real sense, transforming the vision of healthcare reform and policy decisions into care delivery reality.

New choices of mobile devices such as tablets and smartphones are providing clinicians with far more flexibility as they make their daily rounds, while wall-mounted flat-screen monitors in patient rooms are proving to be powerful education tools for patients who are being given the information they need to take a more active role in their own care. When added to the more traditional com-

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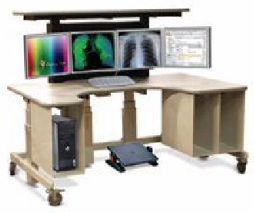

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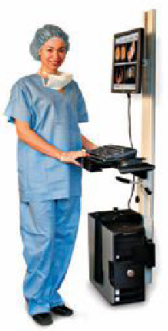

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puting inventory of workstations on wheels (WOWs), PCs, and laptops, there seems to be something for everyone when it comes to meeting clinician preferences. Meanwhile, some vendors are beginning to develop software products that support these new hardware tools.

These potential benefits come with their own set of challenges. Most of all, developing a robust IT infrastructure, and introducing these tools in a way that meshes with clinician workflows and enhances productivity, at a time of significant budgetary constraints for hospitals, is a combination of factors that is proving daunting for many healthcare IT leaders. Added to all this is the need to meet meaningful use deadlines at the same time. And in trying to meet those challenges, CIOs are finding that there is no such thing as one-size-fits all.

As noted by Curt Kwak, CIO of the western region of Providence Health and Services, Renton, Wash., "Everybody has the same requirement: make data available, and make data easy to access and use; and the devices need to be very functional. It's the differences in preferences that we are trying to corral and standardize across the enterprise. And that is going to take a little bit to do."

Chuck Podesta

Jim Venturella

EVERYBODY HAS THE SAME REQUIREMENT: MAKE DATA AVAILABLE, AND MAKE DATA EASY TO ACCESS AND USE; AND THE DEVICES NEED TO BE VERY FUNCTIONAL. IT'S THE DIFFERENCES IN PREFERENCES THAT WE ARE TRYING TO CORRAL AND STANDARDIZE ACROSS THE ENTERPRISE. —*CURT KWAK*

'WORKHORSE' STAYING POWER

Preferences are often tied to workflow and the task at hand. Larry Funk is the former CEO of Laguna Honda Hospital and Rehabilitation Center, a post-acute care facility in San Francisco, who now runs a healthcare consultancy in the San Francisco Bay area. He maintains that nurses do see the value of having a charting device near the bedside, which many hospitals have sought to provide with wall-mounted computers in the patient room or WOWs, but he adds that clinicians still need some degree of privacy and separation during charting. Some hospitals have sought to satisfy both demands by positioning fixed computers outside patient rooms, which allows patients to be observed but also provides a level of privacy for charting activities.

Jim Venturella, CIO of the University of Pittsburgh Medical Center (UPMC) health system's Hospital and Community Services Division, agrees. After testing the model of having computers in patient rooms, "We moved away from that model," he says. "Clinicians want to be away [from patient rooms] when they are doing documentation or orders," he says.

In Venturella's view, part of the continuing demand for WOWs involves their versatility. He describes the carts as a sort of go-between model that can be moved in and out of rooms as needed, to accommodate various workflow needs. WOWs are still the workhorse at UPMC, he says. They can be wheeled where needed, and also serve as a workspace. UPMC has just gone through a process of streamlining its carts for medication delivery and specimen collection, he says.

Chuck Podesta, senior vice president and CIO of Fletcher Allen Health Care, Burlington, Vt., who has embraced many of the new hardware choices, maintains a healthy respect for carts. "The issue with nurses is that they always have something in their hands," he says. "With the cart, they can take all of that stuff with them." He advises caution when deciding to implement new computing tools. "People need to study workflow before they say we'll just have a bunch of iPads at nursing stations that they can just grab and run. Eventually we will get there, but we are not there yet," he says.

Roland Garcia, senior vice president and CIO of Baptist Health, Jacksonville, Fla., says choices are influenced by real-estate constraints and the environment of care. At his hospital, the ICU and ED have computing devices by the bedside; while med-surg units have a complement of workstations, WOWs, and mobile devices.

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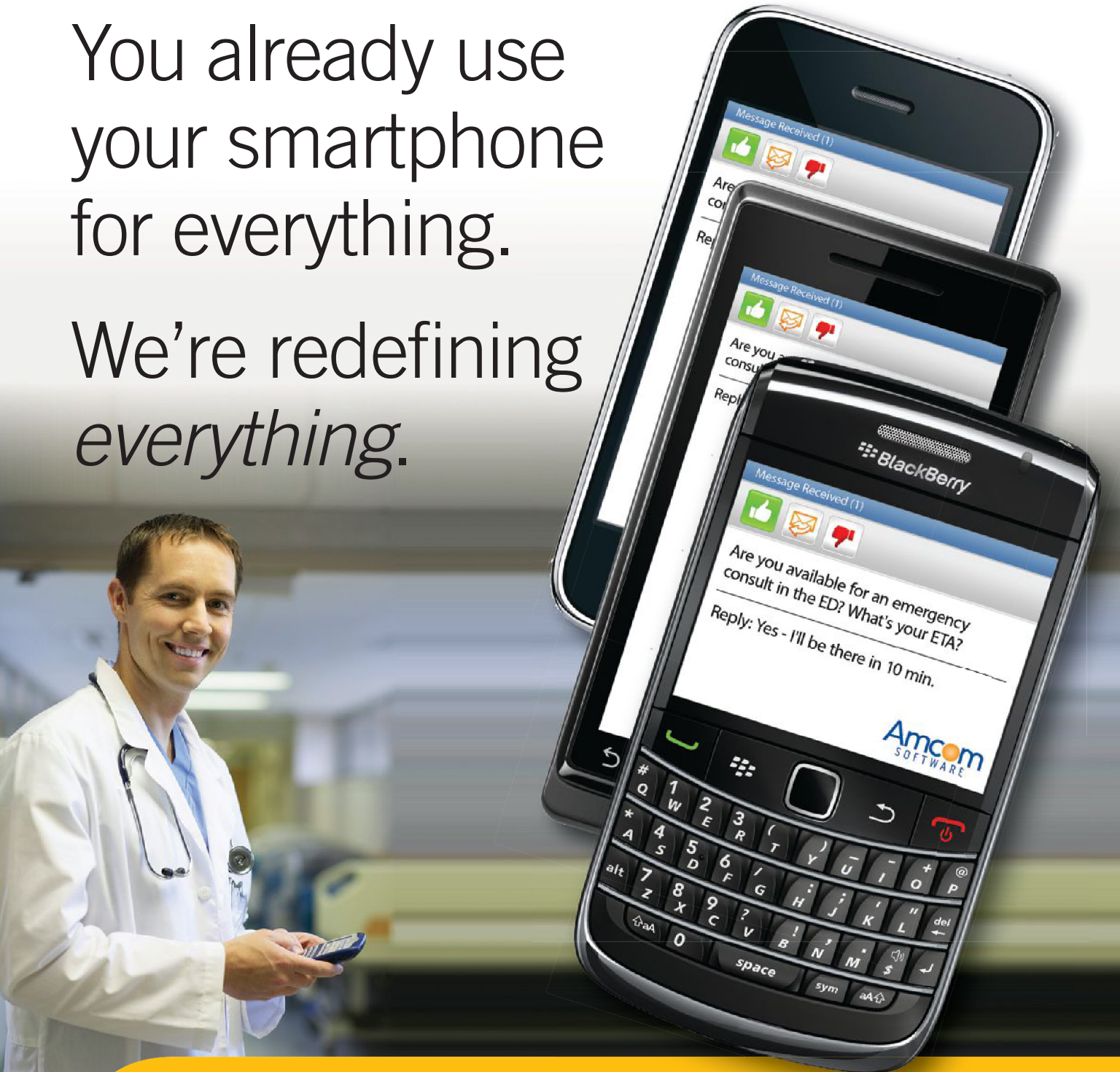

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MOBILE COMPUTING GAME CHANGERS

Nonetheless, the winds of change are clearly blowing in the direction of smaller, lighter, and more mobile. One of the proponents of this view is Podesta, who says that mobile computing in its various forms is on the rise. He sees the iPad, and to a lesser extent, the iPhone, as game changers. He says that vendors have begun to take notice, by launching applications for mobile devices. Fletcher Allen, for example, is getting ready to implement Canto, a read-only EMR developed by Verona, Wis.-based Epic Corp. for the iPad. (Haiku, a counterpart program for the iPhone, has also been developed by Epic.)

Roland Garcia

UPMC's Venturella notes that the rapid expansion of mobile computing devices in the consumer market has begun to be felt in hospitals. How well the devices have taken hold largely depends on how well the devices meet the needs of the particular user, he says. The iPad, for example, has been embraced by some physicians, although less so by nurses. "Physicians are there for a shorter period of time, in the general med-surg area. They are in and out, just doing their rounds."

He adds that UPMC has tested many tablets with physicians, and many times they have handed them back, because they didn't meet their needs. "They need to be able to go in, sit down with the patient and walk back out and around," he says. "But they still want a full keyboard and a desktop, and to be able to sit in front of a larger screen while they are viewing PACS images." He believes that iPads and like devices will have a place in physician workflow, but will probably not replace more conventional devices.

Venturella says there is a mix of hospital-owned and personal mobile devices in use at the hospital. UPMC supplies small numbers of iPads and smartphones. As the hospital moves into the next phase, it has had discussions focused on controlling or managing the devices. During the last nine months, UPMC has been reviewing the infrastructure for mobile device management, and security and privacy teams have been evaluating whether the right tools are in place to manage that. In addition, the IT support team has to expand its skills as devices from a variety of manufacturers are introduced, he says.

The key, he says, is to have applications that are built for particular devices. Venturella says UPMC is beginning to build an infrastructure to pilot a set of mobile applications from Kansas City-based Cerner Corp., the provider's EMR vendor. The initial stage will be to review laboratory, medications, orders, and documents.

In addition, UPMC is in the process of upgrading its wireless infrastructure. "People have become far more reliant on these devices, and what you built five or six years ago doesn't necessarily have the right coverage or strength to support the number of devices you have tying in now," Venturella says. UPMC has its wireless network segmented into one for patients and the other for clinicians. It is considering creating a separate wireless network for personal wireless devices brought in by physicians.

While acknowledging the impact of mobile devices in the healthcare setting, Kwak of Providence expresses some skepticism. "I don't see them as enterprise-wide ready, because they are a consumer product versus an enterprise product," he says. "From an IT perspective of someone who has worked in enterprise, they are just not there." The caveats, in his view, are that they cannot be encrypted like traditional laptops and tablets, and they are fragile. Traditional PCs and laptops have the necessary infrastructure for support in an enterprise environment, can be encrypted, and are physically rugged, he adds.

Podesta also says that maintenance and security of an increasingly diverse set of products is significant, adding that the Department of Health and Human Services Office of the Inspector General and the Office of Civil Rights "are focused on starting security audits this year, and the first thing I heard they are going to start auditing are mobile devices, including laptops." He notes that some vendors are offering solutions that can manage a mixed mobile environment from a security standpoint, which he sees as a growing need in the future.

PEOPLE HAVE BECOME FAR MORE RELIANT ON THESE DEVICES, AND WHAT YOU BUILT FIVE OR SIX YEARS AGO DOESN'T NECESSARILY HAVE THE RIGHT COVERAGE OR STRENGTH TO SUPPORT THE NUMBER OF DEVICES YOU HAVE TYING IN NOW. —*JIM VENTURELLA*

Despite the significant challenges, Kwak says he understands the appeal of small mobile devices: they are sleek, relatively inexpensive, and easy to use. In a nod to the preferences of some of the hospital's clinicians, Providence is testing small mobile devices such as iPhones and Blackberrys for Microsoft Office type applications; it has not yet tested them in clinical applications.

RISE OF THE THIN CLIENT

The virtual desktop is becoming a more important factor in the healthcare environment as CIOs seek to offset hardware costs. Potential cost savings are significant, Podesta says: "Virtual desktops are going to be a game changer, because it allows you to go with a thin client into your nursing areas and your clinical areas. It gives you the ability to buy a $300 device with no C drive, lock it down and manage an image from the profile in the server, versus the PC."

Garcia notes that thin clients reduce the costs of ownership, not only the initial cost of the device, but the cost of maintaining the device. Although Baptist Health has not widely deployed thin clients, Garcia says the hospital is working toward expanding thin client deployment. One limiting factor, he notes, is that some legacy applications prevent the deployment of thin client technology across the board. Hopefully, applications will evolve to be supported in a thin client environment, he says.

Both Providence and Fletcher Allen are currently testing the virtual desktop on the iPad. "You are really using these devices as a portal to an application, versus an application actually residing on the device, which mitigates that encryption risk factor," Kwak says. In his view, using mobile devices as thin devices with no data residing on them is a prudent way to go. "This would allow manufacturers to lower the cost of computing devices. They won't have to concentrate on things like encryption, because the virtual desktop will take care of that piece," he says, adding that the cloud can be leveraged to accommodate thin devices, which would reduce the hospital's infrastructure costs.

"From a PHI perspective, once you do that, everything is on the server level," Podesta says. "They are interacting with, in our case, with the Epic system through the virtual desktop, so you don't have to worry about if they misplace their iPad, or it gets stolen, because there is no PHI stored on it."

Podesta says Fletcher Allen currently has a mixed environment of PCs and thin clients, but he says that at some point the hospital will convert to thin clients completely. He adds that the virtual desktop offers benefits over Citrix, both from an IS perspective and a user perspective, because it requires less maintenance and is easier to log on. The virtual desktop allows roaming profiles, a benefit in a busy environment when clinicians may be using different types of devices during their rounds, he adds.

DUAL USE: EDUCATION AND ENTERTAINMENT

Not all of the hardware innovations are in the mobile arena. Some hospitals are using flat-screen mon-

itors in patient rooms for patient care, as well as entertainment. Dual use of the television in the patient room can expand the concept of patient engagement in their own care, while freeing up the nursing staff for other tasks, according to Podesta.

THE DEPARTMENT OF HEALTH AND HUMAN SERVICES OFFICE OF THE INSPECTOR GENERAL AND THE OFFICE OF CIVIL RIGHTS ARE FOCUSED ON STARTING SECURITY AUDITS THIS YEAR, AND THE FIRST THING I HEARD THEY ARE GOING TO START AUDITING ARE MOBILE DEVICES, INCLUDING LAPTOPS. —*CHUCK PODESTA*

Fletcher Allen, for example, is currently running a test program with Boston-based Aceso, in which wall-mounted flat-screen televisions in patient rooms push out care information to patients. "If you have had a hip replacement, but also have diabetes, that is going to be on your problem list in Epic," Podesta explains. "The system knows that, and can push out the appropriate information without having the nurse do that." The system can also be used in the discharge process, and update the discharge summary to verify that the patient has gone through the education process, Podesta says.

WE MEET WITH HOSPITAL EXECUTIVES ONCE A QUAQRTER, AND I HAVE ANALYSTS AND MANAGERS OUT AND ABOUT EVERY DAY LOOKING AT USABILITY ISSUES. —*CURT KWAK*

The advantage of this approach is that it is an efficient way to engage the patient and family in the care management process, he says. The patient education information can be made available in the patient's home after discharge as well, Podesta says. One of the next steps is to connect it with the hospital's patient portal, MyHealth Online, so patients can view their laboratory results and other information.

Inside the patient rooms, Providence employs flat-screen monitors in some rooms; in others, it has installed laptops or tablets on an arm at the bedside. Docking stations in the patient rooms give the clinician the ability to roam within the room or work with the patient with wall-mounted monitors. For charting purposes, Providence has wall-mounted computer monitors in the hallways behind locked cabinets, allowing physicians and nurses to check data or get patient information.

A CLINICAL FOCUS

Albert Oriol, CIO of Rady Children's Hospital San Diego, has embarked on a program to convert the operating system on computing devices used in clinical applications from Windows to Linux. "We've begun treating our clinical workstations as biomedical devices," he says. The hospital has a total of about 4,600 desktops and laptops distributed throughout the organization, including those in patient rooms, WOWs, and in physician workrooms. It has completed the inpatient go-live, and now has gone back to convert clinical devices to Linux in its ambulatory clinics.

Explaining the move, Oriol says that going with Linux is both more secure and less expensive. "In these clinical workstations, we don't need Word or Excel and other Microsoft Office tools. Because these are clinical devices, the applications can be accessed with Citrix and a web browser," he says. The conversion to Linux has saved significant costs in license fees, and also discourages users from downloading harmful software, he says. Regarding Citrix, he calls hardware costs a wash because of added server costs; but he adds that the value for the IS department is better control, because devices are managed centrally.

KEEPING UP WITH TECHNOLOGY

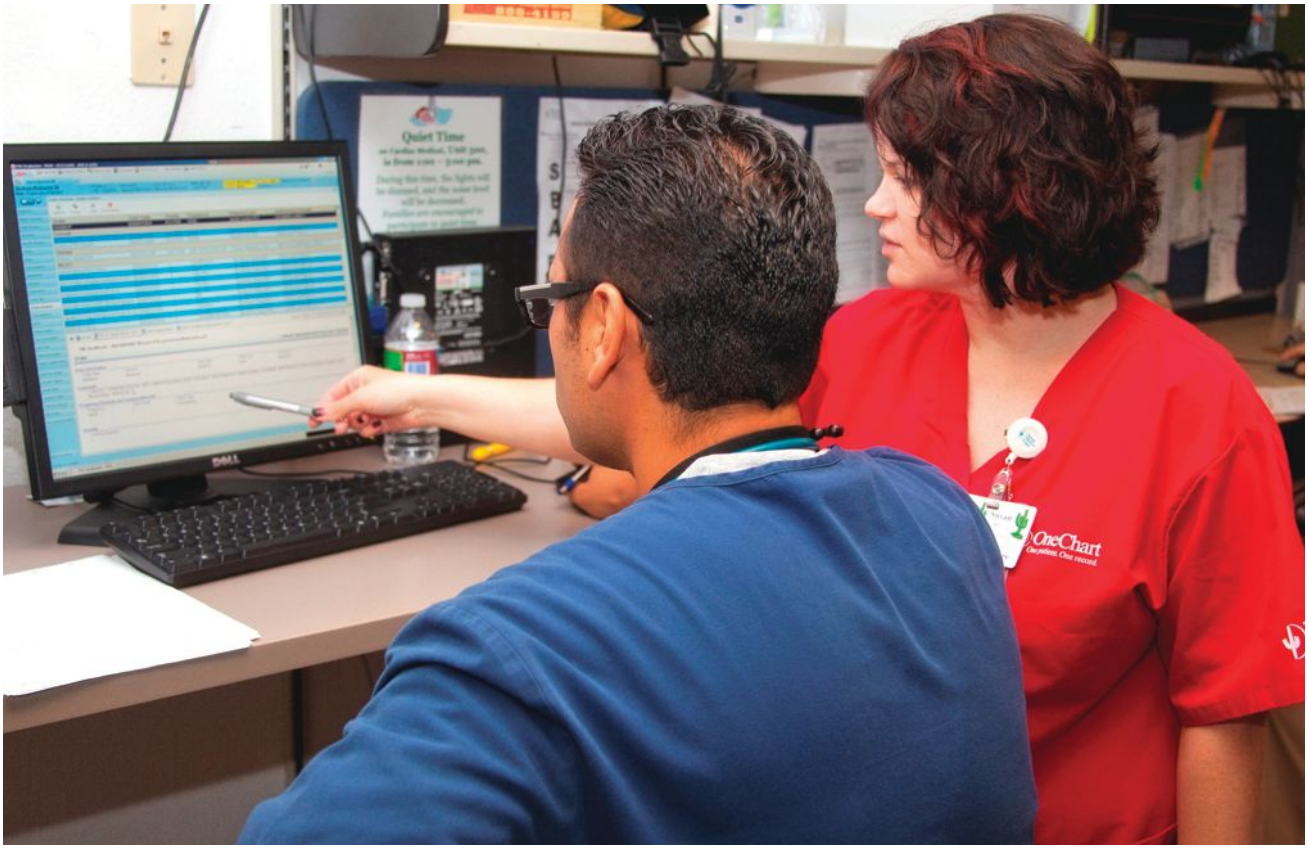
By all accounts, staying up-to-date with all hardware releases is a demanding job. Several months ago Fletcher Allen created a position for a full-time "enterprise architect," whose sole responsibility is to look at technology trends and put promising products through their paces to see if they fit in the hospital's architecture.

At Providence, Kwak, who supervises three hospitals and more than 100 clinics and long-term care facilities in the Washington-Montana region, characterizes technology reviews as a constant process. "We meet with hospital executives once a quarter, and I have analysts and managers out and about every day looking at usability issues and struggles," he says. In addition, a Technology Leadership Council meets once a month to discuss technological feasibility.

Each approach is an attempt to make informed decisions about the onslaught of new technology, and to make sure that whatever choice is made is a good fit for the clinician's needs. ◆

Enterprising Organizations

THE LATEST HOSPITAL ORGANIZATIONS TO REACH HIMSS ANALYTICS STAGE 7 ALL HAVE SOMETHING IN COMMON: AN ENTERPRISING SPIRIT AND SET OF SYSTEMS BY JENNIFER PRESTIGIACOMO



When TMC rolled out its OneChart EHR system on June 1, 2010, dozens of superusers in red shirts were on hand for several days to help physicians. Photo: Tucson Medical Center

EXECUTIVE SUMMARY:
Here's an inside—and detailed—look at how three hospital systems achieved HIMSS Analytics Stage 7, an objective measure of progress toward EMR implementation.

Becoming a paperless enterprise is a long and winding road, as the latest Healthcare Information and Management Systems Society (HIMSS) Analytics Stage 7 healthcare organizations—Tucson Medical Center; University of California, San Diego Health System; and Nemours Children's Health System—can attest. It is one fraught with hard work and challenges, but ultimately rich in patient care benefits and financial payoffs.

Nemours uses technology to improve the safety of care as well as the experience for patients and families. Photo: Nemours

To measure electronic medical record development in hospitals and health systems, HIMSS Analytics, a division of the HIMSS organization, created its HIMSS Analytics EMR Adoption Model, an eight-stage schematic (encompassing Stages 0 through 7) that helps healthcare IT leaders assess their progress in EMR implementation. Since HIMSS Analytics created the model in 2005, it has formally recognized 61 hospitals as reaching Stage 7—61 in the U.S. and one in Seoul, South Korea (as of press time).

The commonalities among the latest winners, says John Hoyt, executive vice president, organizational services, HIMSS, are medical staff adoption and the energy to accept the organizational change to make the "best of a new world." He also notes that having an enterprise system for clinical and financial information doesn't hurt, either. "It's not the only way to do it," he says. "But it seems to be the most effective for enterprise adoption and the fastest route to goal achievement, which is process redesign and quality improvement."

The Stage 7 criteria are rigorous, with contenders being analyzed against a 12-page checklist that includes such elements as disaster recovery, quality improvement, deployment methodology, training methodology, governance, HIE, and data warehousing. Hoyt conducts a phone interview before the site visit to ensure the organization is ready for Stage 7. During the day-long site visit, the organization gives a 60- to 90-minute presentation on its IT strategy, and then Hoyt walks the floors (medical imaging, pharmacy, ED, the med/surg floors, and the HIM department, among others), accompanied by two CIOs and a CMIO to evaluate the organization's paperless-ness. The team then makes its decision onsite.

As of yet, there is no Stage 8, but additional stages involving HIE and accountable care readiness are likely to be created. There will however be an ambulatory adoption model rolled out in next few months that will assess patient engagement strategies, as well as other meaningful use criteria. What follows are stories from the latest organizations to reach Stage 7.

TUCSON MEDICAL CENTER

On its way to becoming an accountable care organization, Tucson Medical Center (TMC), a 612-bed community hospital, reached HIMSS' highest level of EMR adoption. In late 2008, the organization took a concerted approach to move to an enterprise electronic health record (EHR) its leaders have dubbed OneChart. Starting in 2001, TMC replaced its order entry system and pharmacy module (with software from the Verona, Wis.-based Epic Systems Corp.), and in January 2009, implemented the rest of the Epic modules, including revenue cycle management.

John Hoyt

Frank Marini, vice president and CIO, says TMC began to see improvement in cash collections and denials, as well as improvement in turnaround times, from the ED to inpatient admission. Brian Cammarata, M.D., CMIO, an anesthesiologist by trade, says that medication turnaround time dramatically reduced from an average of 166 minutes to under 10 minutes. Further improvements came when TMC went live with its bar code medication administration (BCMA) in a big-bang approach in June 2010; the hospital averted 6,000 medication errors within the first six months.

Hoyt is impressed by the lack of clini-

cally oriented paper at TMC and with the fact that its electronic medication administration record (eMAR) is the one place to look for all patient medications. Clinical information at TMC is reviewed by the medical executive community via dashboards that are customized for cardiac, neurosurgery, nursing, and other areas, in addition to specific reports for the quality care committee of the board of directors.

Frank Marini

Even though the hospital is waiting till 2012 to apply for Stage 1 meaningful use, at this point, it is compliant with most, if not all, of the Stage 1 measures. The hospital is currently looking at Stage 2 requirements across the board and performing a readiness assessment to focus on problem list usage.

Beyond meaningful use, TMC is engaged in many ACO preparation activities like information exchange, which happens rather seamlessly, says Marini, in the OneChart program which operates on a common patient database. TMC's employed physician group, Saguaro Physicians, also uses it and is able to see all inpatient information. TMC intends to connect the hospital to a number of practices, specialty and primary care physicians (PCPs), and ancillary services like laboratory and radiology using the Axolotl exchange technology. TMC has also agreed to participate in the recently announced statewide exchange Health Information Network of Arizona (HINAZ) linking all payers and providers.

The second core element to TMC's ACO foundation is a robust analytics engine (provided by the Eden Prairie, Minn.-based OptumInsight) that will allow clinicians to analyze clinical data, with future advanced capabilities to support clinical activities over the continuum of care and transitional care services. "The real objective is to utilize this data and get it into the hands of physicians in the community caring for these patients, so as an organization we can provide the most cost-effective, high quality care to everyone in the community," says Cammarata.

Beyond moving forward on its ACO initiative and meaningful use, TMC is focused on its transition to ICD-10. Like its OneChart implementation, it will encompass the whole hospital, but fortunately for this single-platform organization, IT challenges will be mitigated moving forward.

Reaching Stage 7 is not easy, and involves much change management, says Marini. "For something as big, expensive, and risky as an electronic medical

THE REAL OBJECTIVE IS TO UTILIZE THIS DATA AND GET IT INTO THE HANDS OF PHYSICIANS IN THE COMMUNITY CARING FOR THESE PATIENTS, SO AS AN ORGANIZATION WE CAN PROVIDE THE MOST COST-EFFECTIVE, HIGH QUALITY CARE TO EVERYONE IN THE COMMUNITY.
—BRIAN CAMMARATA, M.D.

record implementation you absolutely need to have your executive team and your CEO on board, fully engaged and committed for the long haul," he says. "Getting the organization to understand that an initiative like this is not an IT project [is key]. The minute it is looked at as an IT project, you know you're headed in the wrong direction. This is really an organizational initiative; it needs to have leadership from the medical staff, as well as the nursing and operational staff." Hoyt was impressed by the scope of TMC's IT team, which includes about 100 IT personnel and 20 informatics professionals. "It's clearly a multi-disciplinary effort," says Hoyt.

Joshua Lee, M.D.

Marini acknowledges the importance of Stage 7 achievement, but says it's really a byproduct of what TMC is trying to pursue. "We didn't think about Stage 6 or Stage 7 when we set out to do this. It was really about the realization that patient care requires better tools; our clinicians require better tools, and that's really what we pursued," he says. "It was gratifying and validating to use HIMSS Analytics as a benchmark to see that we are on the right track."

UCSD HEALTH SYSTEM

The story of the University of California, San Diego Health System (UCSD) is one of iterative change, says its CMIO, Josh Lee, M.D. The health system has made many early important decisions that helped it reach Stage 7. The organization, which is comprised of a few specialty centers and two hospitals, UC San Diego Medical Center and Thornton Hospital, operates under one license, with a combined licensed capacity of 552 beds. UCSD has been focused on increasing patient care quality and patient safety through health IT for the last 12 years.

Recently, the system has been transitioning its hybrid systems into a more streamlined, enterprise approach. "We believe that all information that is needed for provision of patient care is best to be in one environment, so that care providers don't have to go to multiple, different areas to get that information," says Ed Babakanian, who has a team of more than 200 people and has been the system's CIO for 16 years. "That system is supported by these specialized systems like labs, pharmacy, cardiology, imaging, but you have to deploy those in a way like a human body, in that they are integrated and transparent in what they need to do—so a pharmacy system can't be an island of automation all by itself."

WE BELIEVE THAT ALL INFORMATION THAT IS NEEDED FOR PROVISION OF PATIENT CARE IS BEST TO BE IN ONE ENVIRONMENT, SO THAT CARE PROVIDERS DON'T HAVE TO GO TO MULTIPLE DIFFERENT AREAS TO GET THAT INFORMATION. —*ED BABAKANIAN*

It was UCSD's transition to a unified inpatient EHR that struck Hoyt when he was reviewing the system for Stage 7. In February 2011 the system transitioned its Siemens inpatient system to match its ambulatory system (Epic Systems), so patients could benefit from a centralized registration system and have a record that followed them throughout their care. "I don't think we've ever had a hospital achieve Stage 7 in 12 months of go-live, but that's because they had previous experience, and they were probably at a Stage 5 with their previous system. So they knew what they needed to do, and they put their heads down and did it," says Hoyt.

Lee says a novel decision that made its inpatient transition smoother was asking clinicians what they felt was the most important element to preserve; their overwhelming response: transitions of care. About 10 months before the big bang go-live, the IT team brought up the medication reconciliation module, which was a new discharge summary system that forwarded certain communication internally and externally.

On the ambulatory side during medication reconciliation, Lee says his team facilitated workflows for vaccinations at time of discharge, so it could happen at a logical time for clinicians. "We recognize that people need to be introduced to things that clearly meet a demonstrated business need, and we delivered on that early, and they were happy," says Lee. "Nurses and doctors started to see the inpatient presence of our new EMR, so by the time the change happened, it was already a familiar part of [their work environment]."

UCSD provides its staff with complex dashboarding to give clinicians quality report cards, short-term retrospectives, and over time trending to develop practice-based and evidence-based care approaches. For instance, to improve frail patients' risk of fall, a real-time audit is generated for each patient to see if all the appropriate interventions have been taken.

The health system is currently migrating its entire ambulatory and inpatient revenue cycle/billing and appointment schedule system to its enterprise vendor, as well as other modules like its health information management system, ED, perioperative and anesthesia system, and imaging. UCSD is also refreshing its clinical decision support system, as well as implementing a clinical trials system, research informatics for genome sequencing, and a medical education system to train clinicians. "We have a unique combination of talented IT professionals who move beyond simple IT configuration," says Lee. "But really do workflow analysis almost to the point of becoming an internal consulting agency for the enterprise."

David Milov, M.D.

UCSD has a robust patient portal, which is used by 30,000 patients to send clinical messages, request refills and appointments, complete health maintenance activities like setting reminders for care activities, and update problem lists. In October, patients will be able to download a free MyChart app to manage their health via mobile device. Soon, Lee says that the portal will be able to capture non-urgent medical images, like a photo of a rash, so patients can provide more information to their providers.

Another way UCSD connects with its patients is through telemedicine. Approximately 10 specialties are doing doing telemedicine amounting to approximately 40 distinct contracts, and 10 to 20 more specialties are in the pipeline to begin telemedicine use soon. UCSD is now preparing to see stroke and psychiatry patients remotely, as well as constructing a new telemedicine building to train future physicians. In September UCSD expanded its outreach to rural communities and launched its eVisits program.

UCSD has been recognized nationally for its outreach efforts by becoming one of the 17 Beacon Communities. A year and half ago UCSD obtained the Beacon grant in large part, Babakanian says, because several clinicians on his team started integrating UCSD with several hospitals across San Diego and linking and interfacing community physician practices through an internal HIE to provide for patient-centered medical homes.

The Beacon project, called the San Diego Safety Net Health Information Exchange (HIE), will allow physicians to electronically make follow-up appointments at participating community clinics for patients being treated in the hospital or emergency department who don't have a PCP. Other Beacon activities include expanding pre-hospital emergency field care and electronic information transmission to improve outcomes for cardiovascular and cerebrovascular disease, patient engagement through web portal and mobile technology, and improving continuity of care for veterans and military personnel through the Veterans Affairs/Department of Defense Virtual Lifetime Electronic Record (VLER) initiative.

"I view Stage 7 as our start," says Lee. "It's really not a finish; I think you have to achieve this stage to now move into the real exciting part of patient engagement and interoperability, but you have to reach this stage first."

As part of a family-centered model of care, Nemours offers self-service kiosks to make the registration process easier. Photo: Nemours

NEMOURS CHILDREN'S HEALTH SYSTEM

The Jacksonville, Fla.-based Nemours system stretches across four states, and because of its institutional breadth of one hospital, 24 clinics (including primary and specialty care) and on-site care partnership with an additional five health systems in Southeastern Pennsylvania and Southern New Jersey, the use of an integrated platform has made all the difference to link the inpatient and outpatient experience. Gina Altieri, vice president of corporate services, says that in Nemours, information technology is just the enabler; it's really the users, who have embraced IT in their everyday jobs and work alongside the IS/IT team to avoid workarounds.

"[We have] achieved a seamless, integrated platform where the inpatient and outpatient experience, as well as the patient and physician portals are all together, and the interfaces essentially being transferred to the vendor through the upgrade process, where they're actually responsible for actually speaking together," says David Milov, M.D., CMIO, who is an attending in the division of pediatric gastroenterology. He mentions that another early milestone that was crucial to the system's success was its insightful board in 1984 who advocated implementing computerized physician order entry (CPOE).

"We had a lot of information over a wide geography, and an enterprise system is the best way to deliver that same level of care to every doctor in the hospital or in the clinic," says Bernie Rice, chief of information technology. "Leveraging that enterprise system anywhere, anytime, on any device, has brought the true power of that system to every clinician throughout our enterprise."

WE CHOOSE TO LOOK AT METRICS WHETHER FROM A CUSTOMER PERSPECTIVE, OR FINANCIAL PERSPECTIVE, OR OUR OWN ASSOCIATES' PERSPECTIVE. WE LOOK AT METRICS FROM AN ENTERPRISE LEVEL, AND WE CASCADE THAT DOWN TO OPERATING DIVISIONS. —*GINA ALTIERI*

Altieri says the main transition from Stage 6 to 7 involved transforming data from its data warehouse, which it has had for more than 14 years, into information. "We use information in a very organized way through our strategy management system," she says. "We choose to look at metrics whether from a customer perspective, or financial perspective, or our own associates' perspective. We look at metrics from an enterprise level, and we cascade that down to operating divisions."

HIMSS' Hoyt adds Nemours strengths are in their quality performance improvement programs that are owed to its effective deployment of its enterprise system, along with clear goals achieved. "Nemours is clearly a data-driven organization," says Hoyt. "They showed us lots and lots of graphs of data they track and several of those graphs showed a notable improvement starting in May of 2009—that is when they went live."

Currently, clinicians can use a reporting workbench tool to do simple queries on their patients. For instance, a clinician can see how many of their diabetic patients have been seen in the last six months and have their hemoglobin A1C measures documented or have an action plan that is current. Physicians are highly motivated toward quality improvement, as they have a portion of their salary at risk to achieve agreed upon performance metrics. Milov adds that there are several internal improvement collaboratives, like an obesity initiative that charts doctors by division, shows adherence to the use of available clinical decision support (CDS) tools, and tracks outcomes. The organization knows what percentage of all PCPs who have provided optimal patient information to the families of obese children. Rice says that Nemours is working on a new enterprise intelligence initiative to channel all data into digital dashboards containing real-time information for organizational leadership and clinicians to check their progress, their department's progress, and compare it with their peers.

Nemours is in the midst of working out the thorny issue of information exchange, as it is somewhat dependant on state activities. Within the Nemours enterprise, continuity of care documents (CCDs) have been exchanged since August. In Delaware, Nemours hospitals have agreed to participate in the Delaware Health Information Network (DHIN). But in Florida, on the other hand, there are hospitals in three different districts, all using three different HIEs. An HIE committee has been meeting regularly to figure out which HIE will be worth investing in.

Patient engagement is another strong suit of Nemours. For two years the institution has been deploying kiosks in clinics to ease registration burden, and now has 10 in five sites. Nemours is now working on training patients to trust the kiosks, which is no simple task, Milov says. He notes one kiosk had 16,000 encounters in September, which attests to the growing utility of this initiative. Also, there has been an intense marketing and resource push from the whole organization to achieve informed and activated patients through the organization's MyNemours patient portal. The portal has gone from a few thousand users to now more than 40,000 participating. An ambitious enterprise goal has been set at 100,000 users.

Nemours is now working out the IT components of its cutting edge logistics center at its new Nemours Children's Hospital to open next fall in Orlando. Nemours leadership has borrowed and built upon concepts from airports command centers to local 911 call centers. This children's hospital command central will be staffed by clinicians, who will be able to monitor patients in any room via video and medical monitoring equipment. Also building management systems like elevator operation for trauma cases or helipad operation will be tied in. Nemours has been working with Epic on coding specifics to make sure clinicians are kept in one single application that is integrated with all systems in the hospital. ◆

How to Fast-Track Your Meaningful Use Effort

A PRAGMATIC APPROACH TO FILLING IN THE GAPS AND EARNING YOUR INCENTIVES BY JUDY MURPHY AND BOB SCHWYN

EXECUTIVE SUMMARY:

While there is no shortcut to meaningful use, getting the fundamentals right is essential to smoothing the way to qualifying for incentives.

Though the Stage 1 attestation process for meaningful use (MU) incentives opened in April 2011, the number of hospitals that will attest in the early stages is likely to be underwhelming, according to at least two recent surveys. One, from the Ann Arbor, Mich.-based College of Health Information Management Executives (CHIME), found that fewer than one-third of responding healthcare CIOs expect to qualify by Sept. 30, 2011. A second, from the Chicago-based Healthcare Information and Management Systems Society (HIMSS), found that only 44 percent of hospitals thought they would be ready to qualify by May 2012.

That's disappointing, but not surprising. Understanding and meeting the MU requirements demands a significant effort. To qualify for incentives in Stage 1, "eligible hospitals" must meet 14 core measures, and then demonstrate they've also met five of the remaining 10 menu set measures. "Eligible professionals" (clinicians) must meet 15 core measures and five of 10 menu set measures. Ongoing clarifications from the Centers for Medicare and Medicaid Services (CMS) and the Office of the National Coordinator for Health Information Technology (ONC) have added to the challenge. One clarification, for example, requires that organizations "possess" the software for all of the menu items, even though they are only ex-

MU 'To Do' List

Depending on where you are in your EHR implementation journey, this can be a several-month multidisciplinary effort that includes:

- understanding the regulations and tracking the constant clarifications on an ongoing basis;
- completing a "current state" analysis;
- comparing "current state" to the desired "future state" as defined by the regulations and your own strategic goals;
- completing a detailed data element mapping analysis to thoroughly identify the data requirements needed in the clinical workflow process (readers should make note of the intensity of data requirements within the clinical quality measures);
- creating a plan to address the gap, including a detailed timeline, detailed technology requirements and specific clinical workflow changes;
- executing the plan;
- testing and validating that you've met the measure objectives (healthcare organizations can receive some guidance on this from a MU attestation calculator that CMS has published);
- determining your 90-day measurement period for year one;
- documenting your numerators and denominators for each measure requiring them;
- identifying who from the organization will attest and when; and
- completing the attestation online.

pected to "demonstrate" five of the 10 menu set measures.

Despite such demands, we believe the number of organizations attesting is far lower than it should be. Having an electronic health record (EHR) in place that meets MU standards is quickly becoming a must-have for any clinical operation, so why not attain incentives to offset the costs? It can be done in a reasonable time period if hospitals and physician groups take some thoughtful initial steps.

ONE OF THE BIGGEST MISTAKES ORGANIZATIONS MAKE IS NOT FULLY UNDERSTANDING THE MU REQUIREMENTS, INCLUDING NOT TRACKING ALL THE UPDATES, CLARIFICATIONS, AND IMPLEMENTATION GUIDANCE THAT THE CMS AND ONC HAVE PUBLISHED ON THEIR WEBSITES.

CREATE A STRONG FOUNDATION

If you haven't done so already, an important first step is to model your financial opportunity in the MU EHR Incentive Program, based on your volume of Medicare and Medicaid patients. A simple approach is to use the instructions on the CMS Tip Sheets for Medicare and Medicaid to calculate your potential return. A clear, realistic picture can help you: first, understand the value proposition for your organization's MU project; second, engage in a more precise budgeting process; and third, confidently balance MU with other competing priorities.

That balance is critical. Like most hospitals and health systems, you're probably already contending with multiple strategic considerations that range from deciding whether to apply for the CMS Medicare Shared Savings Program to incorporating ICD-10 coding and weighing merger and acquisition opportunities. Those competing priorities could cause you to allocate inadequate resources for your MU project; the resulting hasty implementation might make short-term financial sense, but may not address key patient safety issues and could put your future EHR incentives (Stages 2 and 3) at risk.

In contrast, designating MU as a strategic project and placing it in the context of overall strategic planning can help ensure there are enough resources to plan, design, implement, and foster clinical adoption of a system that meets both the MU measures and your organization's needs.

An important next step is to create a dedicated program management structure with clearly defined roles and responsibilities—some exclusively for MU, others integrated into existing clinical structure—and to begin creating the project plan. One effective component of the plan is to engage your government affairs and compliance departments to take leadership roles in understanding the regulations, delivering the needed MU documentation, and tracking the updated guidance from ONC and CMS using the published FAQs.

In addition, the program management team should collaborate as much as possible with: your EHR vendor; other hospitals and health systems, especially those who use the same EHR vendor; consultants; and health information technology (HIT) organizations like the American Medical Informatics Association (AMIA), CHIME, and HIMSS. This enables your team to benchmark what's possible and avoid reinventing the wheel.

Finally, complement the program management structure with a strong communication plan that engages the entire organization and helps people

understand what the MU program is and how it's tied to your existing strategic mission, vision, and goals. If your employees have a clear sense of MU's strategic, financial—and, especially, clinical and patient safety value—they are more likely to engage in the activities needed to achieve the incentives. Seeing the link will help eliminate concerns that the MU program is only about the incentive money and is out of context of the organization's strategic plan.

AN IMPORTANT FIRST STEP IS TO MODEL YOUR FINANCIAL OPPORTUNITY IN THE MU EHR INCENTIVE PROGRAM, BASED ON YOUR VOLUME OF MEDICARE AND MEDICAID PATIENTS.

Once these basic building blocks are in place, you can turn your attention to two near-term challenges for Stage 1 attestation: first, gauging and closing the gap needed to attain the incentives and, second, simultaneously assessing how you will work with existing or prospective EHR vendors.

GAUGE AND CLOSE THE GAP

Perhaps one of the biggest mistakes organizations make is in not fully understanding the MU requirements, including not tracking all the updates, clarifications, and implementation guidance that the CMS and ONC have published on their websites. The result is that many organizations lack clarity on the measures and underestimate what they need to do moving ahead.

One way to fully understand the MU requirements is to look at each objective measure across four dimensions, and then look at the multiple data points within each dimension. The four dimensions are:

• Understand how to calculate "the numerator and denominator" for each objective. On its website, CMS explains this by dividing the calculation into two groups: "one where the denominator is based on unique patients seen or admitted during the EHR reporting period, regardless of whether their records are maintained using certified EHR technology; and one where the objective is not relevant to all patients either due to limitations (e.g., recording tobacco use for all patients 13 and older) or because the action related to the objective is not relevant (e.g., transmitting prescriptions electronically and for whom the denominator is based on actions related to patients whose records are maintained using certified EHR technology.)" Some objectives do not require a numerator and denominator, but are "Yes/No" or "perform one test" measures.

• Meet the objective using certified EHR software with a process acceptable to CMS. According to CMS, "In most cases, an eligible professional or eligible hospital is not limited to demonstrating meaningful use to the exact way in which the Complete EHR or EHR Module was tested and certified. As long as an eligible professional or eligible hospital uses the certified Complete EHR or certified EHR Module's capabilities and, where applicable, the associated standard(s) and implementation specifications that correlate with the respective meaningful use objective and measure, they can successfully demonstrate meaningful use even if their exact method differs from the way in which the Complete EHR or EHR Module was tested and certified."

• Adhere to the data and technical standards defined for the objective. The ONC has issued reference grids that show each measure and objective and their corresponding data and technical standards. While you are not required to demonstrate adherence

Important Dates for Meaningful Use

- ✔ **November 30, 2011:** Last day for eligible hospitals and critical access hospitals to register and attest to receive an Incentive Payment for federal fiscal year 2011.
- ✔ **December 31, 2011:** Reporting year ends for eligible professionals. Expected timeframe for CMS to publish the Stage 2 NPRM for public comment.
- ✔ **February 29, 2012:** Last day for eligible professionals to register and attest to receive an Incentive Payment for calendar year (CY) 2011.
- ✔ **Spring 2012:** Expected date for CMS to publish the Stage 2 final rule.

to the data and technical standards during Stage 1, they offer important guidance—and demonstration may be required for Stages 2 and 3. Therefore, it makes sense to do everything you can to adhere to these standards as soon as possible. CMS has issued one- to two-page specification sheets for each measure that are designed to assist you in demonstrating meaningful use successfully and to help you understand the specific requirements of each objective.

YOU'LL NEED TO KEEP YOUR EYE ON THE EMERGING REQUIREMENTS FOR STAGE 2 AND STAGE 3, WHERE THE VARIOUS DATA STANDARDS WITHIN EACH DIMENSION BEGIN TO COME INTO PLAY AGAIN.

• Capture the data elements required to achieve the objective and report those elements from the EHR with your vendor-certified reporting logic. The goal is for data capture to occur in the EHR, in real-time, during the healthcare process.

Once you understand the four dimensions, it's important to appreciate that although the MU measures generally track closely with any existing EHR implementation project, there are details that will demand adaptation of the current effort.

Some of these details affect and must be integrated into clinical workflow. For example, one of the required demographic details includes collection of "cause of death." If you do not have an existing workflow in place to collect that, you will need to define one that identifies such things as who will collect the information, when they'll collect it, and where they'll document it. Similarly, one of the required "vital signs" includes the collection of height and weight in order to calculate body mass index for all patients. If you don't typically collect this data in all areas, including ones such as the emergency department, you will need to define a new workflow to meet this requirement.

A second detail that multi-entity systems should keep in mind is that having the same software at each hospital will not be enough. Each hospital has to attest separately and be able to demonstrate that their workflow and clinical use of the certified software meets the objectives for each of the measures.

Yet another important detail is that you must continuously monitor a significant number of data points to make sure you demonstrate compliance with MU over the specified time frame: 90 days for Stage 1 and the full year for Stage 2. This may require dashboards or scorecards for ongoing tracking and trending. If you need help with this, some vendors have tools and consulting services of varying sophistication to measure and monitor the core and menu set measures. Evaluate such tools carefully before buying, to ensure they meet your organization's specific needs.

Taken together, these many and complex requirements will demand changes in nearly any organization. Making that change efficiently and effectively demands an in-depth gap assessment and analysis for Stage 1 attestation and for the proposed Stage 2 requirements, which then leads to creation of a more precise plan, and more targeted execution. You can conduct this process internally or hire an external group, but don't underestimate the effort involved in doing it right.

ASSESS VENDOR READINESS

As you begin the above process, another key issue to consider is vendor readiness. More than 400 vendors already have received certification, which may cause you to believe that your vendor can guide your efforts towards MU incentives, but some vendors are still scrambling to understand the program themselves, which can cause some unforeseen snags.

For example, one large vendor certified a "complete EHR solution," which included its core product along with five optional modular products. When a client realized its implementation included only two of the five modular components, the vendor had to go back and certify each of its products

independently. This enabled the client to use the core product and two of the modular products to qualify for some of the EHR incentive measures. It also set the stage for other clients to put together a variety of modular combinations, based on their unique implementations, in order to use the certified software to qualify.

With these potential complications in mind, one of the first things your project management team should do is to carefully verify that the way your vendor (or a prospective vendor) has certified its products matches how you use or will use the products in your facility in the context of each MU measure. One useful starting point is the ONC's Certified Health IT Product List website, which shows how each vendor certified its core product and any modules.

WORTH THE EFFORT

These are only the initial challenges, and so make clear that attestation is a serious undertaking. It requires a vigilant, ongoing effort that involves the entire organization and never loses sight of both short and long-term goals. You must create a structure for your MU program within the context of your organization's overall strategic plan, engage in a serious project planning and execution effort, and carefully assess your EHR vendor. Looking ahead, you'll need to keep your eye on the emerging requirements for Stage 2 and Stage 3, where the various data standards within each dimension begin to come into play again.

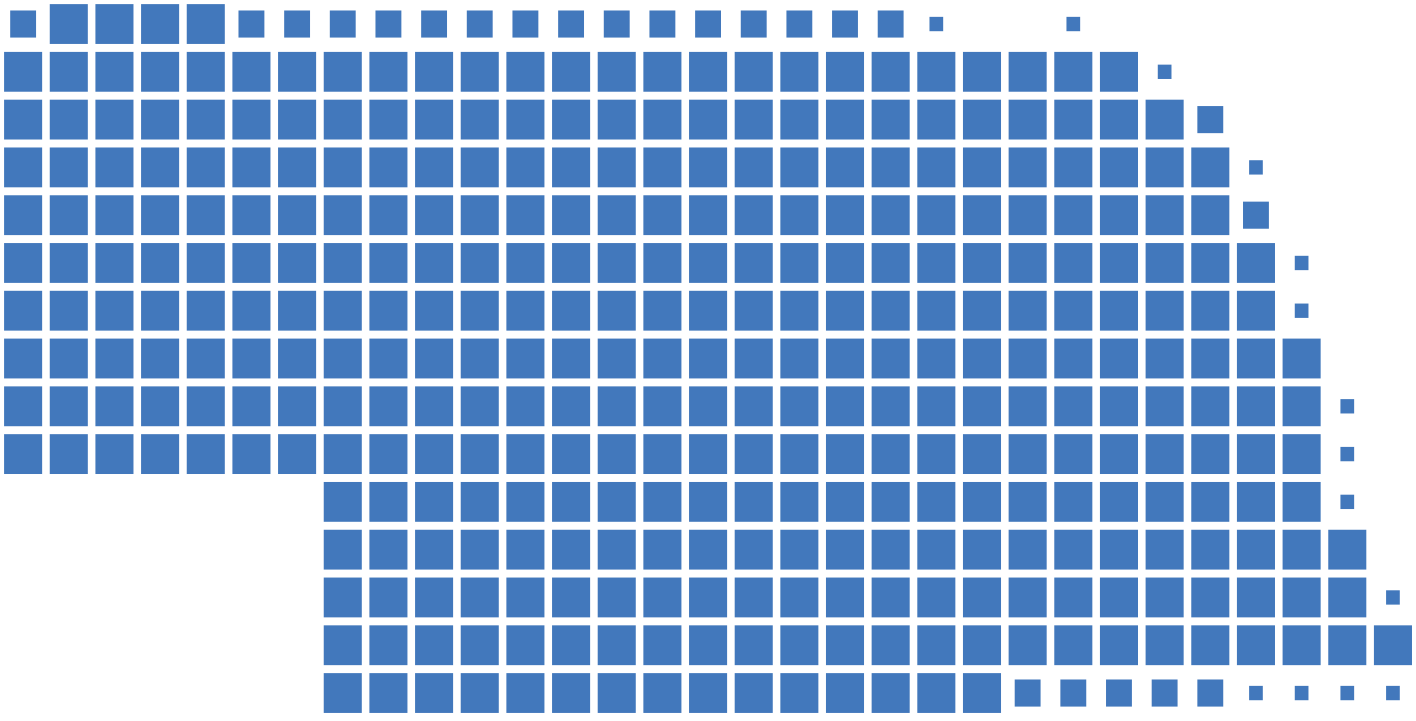
Yet despite the intensity of these demands, it's also important to remember that there are significant returns available that are not limited to the EHR incentives. Electronic connectivity for health data exchange is the direction in which healthcare is moving. Everyone understands the potential for secure and accessible EHRs to facilitate a better, safer, more efficient healthcare delivery system when a patient-centric record exists that spans time, crosses care venues, and extends across different healthcare organizations. So, with a strong plan in place, now is the time to move ahead. ◆

Judy Murphy, R.N., FACMI, FHIMSS, is vice president-information services at Aurora Health Care in Milwaukee, Wis.; a HIMSS board member; co-chair of the Alliance for Nursing Informatics; and a member of the federal HIT Standards Committee.

Bob Schwyn is a former CIO of a pediatric medical center, and currently associate principal and meaningful use practice lead, for Aspen Advisors LLC, Pittsburgh, Pa.

Nebraska Creates HIE for Behavioral Providers

SHARED HEALTH RECORDS ARE ACCESSIBLE BY MULTIPLE BEHAVIORAL HEALTH ORGANIZATIONS BY DAVID RATHS



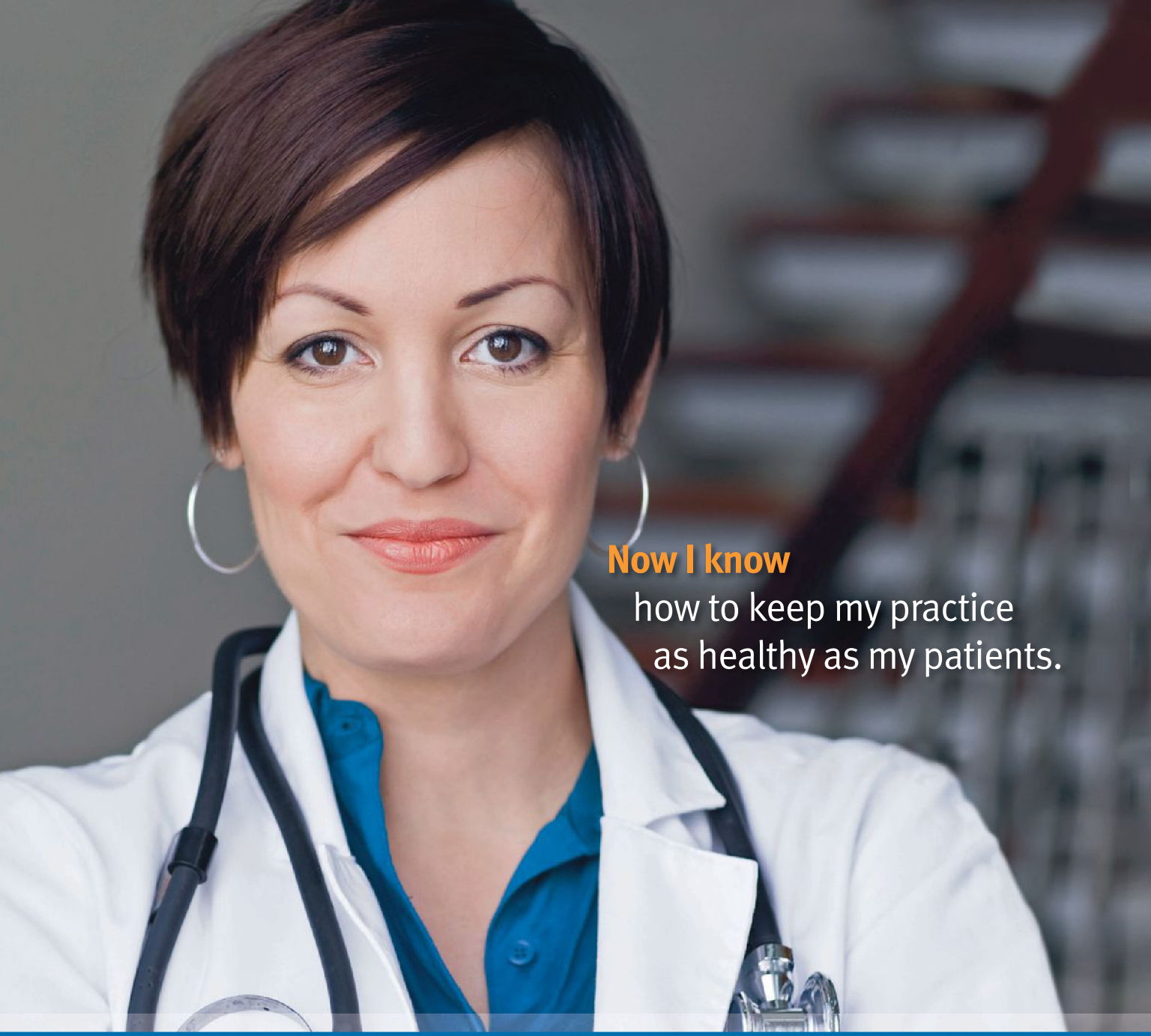
Largely due to concerns about federal privacy laws, behavioral health providers—even those using electronic health records—have so far been left on the sidelines by nascent health information exchanges (HIEs). But despite the obstacles, the state of Nebraska has taken a novel approach by creating a network that will enable behavioral healthcare providers to share patient information electronically with each other.

In the planning stages for several years, the Electronic Behavioral Health Information Network (eBHIN) (www.ebhin.org) deals only with behavioral health information. Developed in partnership with the Horsham, Pa.-based NextGen Healthcare, the system connects 11 health centers and clinics throughout Region V, the umbrella for Southeast Nebraska behavioral providers.

With a patient's permission, certain information is pushed from EHRs to create a shared behavioral health record, which is accessible to other behavioral health organizations that are also using the HIE. The shared record contains a limited set of data, including demographic information, emergency contacts, diagnosis, substance abuse history, current medications, and insurance information.

A major focus of the project has been making sure the HIE complies with federal confidentiality regulations commonly referred to as 42 CFR Part 2. (Those rules state that without written authorization from the patient, physicians cannot

(Continued on p. 39)



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HIEs Reduce ED Costs

A STUDY FINDS DECREASED ED UTILIZATION FROM CLINICIANS QUERYING THE WISCONSIN HIE BY JENNIFER PRESTIGIACOMO

A recent study conducted by Humana Inc. (Louisville, Ky.) and the Wisconsin Health Information Exchange (WHIE), based in Mequon, Wis., has finally put a dollar amount—$29 per emergency department visit to be exact—on the savings that can be reaped from integrating health information exchange (HIE) within the clinical workflow.

The study, entitled "The Business Case for Payer Support of a Community-Based Health Information Exchange: A Humana Pilot Evaluating Its' Effectiveness in Cost Control for Plan Members Seeking Emergency Department Care," found definitive decreases in four of the top five emergency department-based procedures, including CT scans (41 percent), EKGs (4 percent), laboratory testing (9 percent), and diagnostic radiology (19 percent), when the WHIE database was queried by clinicians. This resulted in an average savings of $29 per emergency department (ED) visit.

Kim Pemble

"HIE in a broader context needs to become an all-community element where that coordination of care and potentially avoiding the ED visit in the first place, or avoiding inpatient admission from the ED, are additional value points, not only to the payer organizations like Humana, but to the providers, and to the patient," says Kim Pemble, executive director of WHIE.

THE SUCCESS OF THESE KINDS OF TOOLS WILL BE BEST REALIZED WHEN THE WORKFLOW IS TIGHTLY INTEGRATED. —*KIM PEMBLE*

The study ran from December 2008 through March 2010, and examined 1,482 fully-insured Humana members in Southeast Wisconsin who sought care at EDs at 10 Milwaukee hospitals. For the purposes of the study, Humana provided incentives to WHIE to promote clinician queries for eligible Humana members, and have chosen not to state the exact incentive amount because it may compromise current or future stakeholders' ability to adjust administrative costs for future obligations.

HOSPITAL ADOPTION AND CLINICAL WORKFLOW

Currently, 23 hospitals are providing admitting data to WHIE, and one Federally Qualified Health Center (FQHC) is providing ambulatory clinic encounters. One Medicaid managed care organization is providing member data (e.g. care manager assigned, contact detail, member-specific messages) to WHIE, while Wisconsin Medicaid is providing encounter and pharmacy claim data to WHIE. In addition, a total of 51 hospitals and several ambulatory clinics are providing data for public health syndromic surveillance.

Part of WHIE's success was that it makes querying the exchange easy and part of clinicians' workflow. When a clinician logs on to the WHIE portal, they see a grid that shows how many times the queried patient has been seen by the clinician's hospital, how many times the patient has been to all participating facilities, and how many of the visits were in the ED. "The success of these kinds of tools will be best realized when the workflow is tightly integrated," says Pemble. Despite the presence of electronic health records (EHRs), many of the participating EDs still operate in a paper workflow. For these organizations, the exchange auto-generates a patient history report and sends it to the appropriate ED printer, so it can be seamlessly folded into the workflow. In the future, Pemble would like to provide a link to the exchange within the EHR system and is working with vendors to provide that integration.

PAYER SUPPORT, SUSTAINABILITY

WHIE is in the minority of HIEs nationwide that receive payer support. As the Washington, D.C.-based National eHealth Collaborative pointed out in an August HIE sustainability report, only three of its 12 profiled HIEs (WHIE not among them) had payers as stakeholders. Funded by Wisconsin Department of Health Services, through a Medicaid Transformation Grant,

WHIE received payer support from Humana and the Business Health Care Group (Franklin, Wis.) from the beginning of its formation in 2004.

Albert Tzeel, M.D., study author and national medical director, HumanaOne, says that getting involved with an exchange was a great opportunity to help keep his members healthy and became an early physician champion at Humana. "A lot of it is understanding what potential is there, and you have to believe that this is really going to make a difference," says Tzeel. "And even if it doesn't necessarily make as big of a difference, it's certainly the right thing to do." He has tried to get other health plans involved in WHIE, but many of them are still hesitant. With this study, he hopes that the cost savings will be enough to sway them to participate.

Albert Tzeel, M.D.

Even with payer support, WHIE hasn't found a path to sustainability yet and is currently reviewing several models. "Here's a pushback to the question that everyone keeps asking, if exchanges are sustainable," Pemble says. "My question is, can we accomplish things we're trying to do to have healthcare be sustainable without exchanges?"

Pemble says that the WHIE is a community asset that has streamlined fractured workflows. "Different payers and managed care organizations have historically sought to establish portals or connectivity with health systems to provide information back to those hospitals and help them be aware of what's happening to their patients," h e says. "There are so many of those, and suddenly the workflow for providers is very fragmented."

The Humana/WHIE study provided no further analysis of how WHIE affected inpatient admissions or length-of-stays, but Pemble says there will be future studies to assess the benefit of HIE. One study that will be published soon by the Medical College of Wisconsin in Milwaukee surveyed physicians after using the exchange to get their feedback. WHIE also plans to do a follow-up to that study across all payers to shadow physicians during patient visits to gather quantitative data points like what tests were or weren't ordered as a result of the exchange. ◆

(Continued from p. 36)

access patients' substance use history and current treatment regimen, except in cases of emergency.)

"We had to work on the technical and operational approach to be compliant with CFR 42 Part 2," explains Wende Baker, eBHIN's network director. "We challenged our attorneys to come up with a way to do this."

The sticking point was that the HIE couldn't just keep a list of providers that patients consent to have their data shared with, because those approvals would all have to be updated every time a new provider joined the network. "It would become administratively overwhelming," Baker says.

Under eBHIN's operating rules, patients must give consent not only to the first provider who puts data in a shared database, but also to any other providers in the network who seeks to access those records. "Our local chapter of the National Alliance on Mental Illness really saw this as a breakthrough," Baker adds.

The long-range plan is to include other regions of the state, and then for eBHIN, with patient consent, to offer the shared behavioral health record to other medical settings. "We are working on using the NHIN Direct capability through our health information service provider, the Nebraska Health Information Initiative, to use secure messaging to be able to do point-to-point communications with other providers and hope to broaden out from that incrementally over time," Baker explains. In addition, eBHIN expects to aggregate de-identified data from behavioral health organizations to work on continuous performance improvement. The launch of the HIE, she says, "is just the tip of the iceberg." ◆

WE ARE WORKING ON USING THE NHIN DIRECT CAPABILITY THROUGH OUR HEALTH INFORMATION SERVICE PROVIDER, THE NEBRASKA HEALTH INFORMATION INITIATIVE, TO USE SECURE MESSAGING TO BE ABLE TO DO POINT-TO-POINT COMMUNICATIONS WITH OTHER PROVIDERS AND HOPE TO BROADEN OUT FROM THAT INCREMENTALLY OVER TIME.
—WENDE BAKER

ACOs: Challenges and Opportunities

A RECENT REPORT LOOKS AT SHARED-SAVINGS PROGRAMS AND SEES MULTIPLE STRATEGIC AND IT CHALLENGES AHEAD BY MARK HAGLAND

In July of this year, Suzanne F. Delbanco, Ph.D., a noted expert on payer-provider relations and reimbursement issues (among other posts, she has been CEO of The Leapfrog Group), and the executive director of the San Francisco-based, non-partisan Catalyst for Payment Reform, an independent purchaser alliance working to improve healthcare quality and reduce costs, published a report on accountable care organization (ACO) development, along with researchers from Booz Allen Hamilton.

The report, funded by the Washington, D.C.-based Commonwealth Fund, and entitled, "Promising Payment Reform: Risk Sharing with Accountable Care Organizations," looks frankly at many of the challenges facing provider organizations whose leaders might choose to participate in the Medicare Shared-Savings Program created under the Accountable Care Act (ACA), the federal healthcare reform legislation passed in March 2010 by the U.S. Congress and signed into law by President Barack Obama.

Examining 16 diverse private-sector shared-savings models, half of them involving actual shared risk, in a variety of markets nationwide, Delbanco and her co-authors note that their "research uncovered several key findings:

• Payer-provider shared-risk models are in an early developmental phase; there are few operational shared-risk models aside from the traditional capitated HMO model.

• There are varying definitions of shared risk, and shared-risk initiatives versus a variety of program designs.

• Providers do not currently have the infrastructure required to take on and manage risk successfully, though some payers are providing infrastructure and other support to providers.

• Shared-risk models have typically evolved from shared-savings programs."

In the end, the report's authors conclude, those shared-savings and shared-risk payment models that have been launched in the private health insurance market are too much in their infancy to be able to be declared successes yet; what's more, the complexities of establishing such models continue to dog their progress.

Not surprisingly, the implications of such findings for the potential of the Shared Savings Program under the Medicare program, as mandated by the ACA, are many. Even as leaders of patient care organizations nationwide consider the potential financial and care management quality gains to be made, the complexities involved in potentially participating in either Medicare's Shared Savings Program or in a private health insurer-sponsored one, are not to be underestimated.

Suzanne F. Delbanco, Ph.D.

Delbanco spoke recently with *HCI* Editor-in-Chief Mark Hagland regarding the strategic, operational, and IT considerations involved. Below are excerpts from that interview.

Healthcare Informatics: What have been the biggest challenges you and your co-authors have uncovered in the case studies you've examined?

Suzanne F. Delbanco: Well, the two elements that are critical for providers to have in place to be able to manage any financial risk are, first, they need near-real-time access to cost information; and they have to have near-real-time access to quality information as well. So it's one thing if a provider is getting paid fee-for-service, and these things are nice to know. But in the new model, where providers are taking on more and more financial risk, to the point where they almost resemble insurance companies, they have to have the monitoring devices in place to alert them to any needs for changing course. And ideally, providers would have dashboards that they could turn to at any moment in time, and check their status.

HCI: I've spoken to Craig Lanway, the CIO of Hill Physicians Medical Group in Northern California, about some basic issues they faced in pulling together their program, with Catholic Healthcare West and Blue Shield of California. As he noted, even achieving success around developing a universal patient ID is a challenge. Have you noted some of those basic, even mechanical, challenges?

Delbanco: Yes, the providers right now are not there yet, per [operational] dashboards, so they're reliant to some extent on the health plans. But that's complicated. And to the degree that plans can monitor quality based on claims data is good, but has its limitations. So where things have the potential to be durable is where the health plan is set up, is planning to, and is actively providing, the kinds of data the providers need. In fact, that was one of our findings, that health plans need to be able to and prepared to do that, until providers are able to monitor these things themselves.

HCI: Do you think the issue of patient assignment under the Medicare Shared Savings Program—wherein accountable care organizations might end up being responsible for the outcomes of patients whom they themselves did not bring into their ACOs—could be a stumbling block also?

Delbanco: Yes, though we have to separate out what might happen under the Medicare Shared Savings Program and what might happen in the private sector, where everyone's trying to feel their way forward. Personally—and this wasn't in the study—I believe that there's a lot of work that has to be done here [to the proposed ACO regulation under the Medicare program], because it's a little awkward to hold a provider responsible for the care of a patient who doesn't want to be a part of the arrangement; that's difficult. At a minimum, if the provider were given information about where that patient did seek care, or whatever, perhaps there's something to be said for that; but as long as there's competition in local markets among providers, I don't see that happening. And we'll all find out what happens in the Medicare Shared Savings Program, but there are lessons being learned in the private sector.

HCI: What do you see as the major lessons overall that are being learned in the private sector to date?

Delbanco: While the feds heard that there was lots of risk-sharing being created in the private sector, what we found out is that that's not true at all; there are very few cases where mature arrangements have created full menus of financial risk and quality outcomes triggers. For instance, in the Medicare program, there are two paths, one where they take on risk in year one and the other where they take on risk in year three, and few are ready for either of those. And my bias, as someone who works with purchasers and employers, is that I do think that providers should assume shared risk in the future; but I don't want us to go into this so fast that we fail; so we do have to be thoughtful about how we help providers assume shared risk.

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Path to Professional Growth

ONE PHYSICIAN LEADER DISCUSSES HIS MULTIPLE TRANSITIONS INTO THE CMIO ROLE BY MARK HAGLAND

A cardiologist by training and medical practice, Michael Bakerman, M.D., has enjoyed a varied career. After 18 years in clinical practice, Dr. Bakerman received his master's degree in medical management in 1998, and beginning in 1999, he spent several years working for different consulting firms, working in areas of medical management and leadership consulting, and then shifting more fully into clinical informatics consulting work.

From 2008 until the beginning of 2011, Bakerman was associate medical director for the Needham, Mass.-based Community Healthcare Partners Inc., where he led the management of that organization's 18 regional services organizations (RSOs), encompassing 1,000 primary care physicians and 5,000 specialists. In January of this year, Bakerman became CMIO of the five-hospital UMass Memorial Healthcare, based in Worcester, Mass.

This summer in Denver, Dr. Bakerman spoke on a panel discussing "The Role of the CIO and CMIO in EMR Adoption," at the 2011 Health Care Forum, which was sponsored by The Breakaway Group, a Denver-based healthcare IT consulting firm. He spoke recently with *HCI* Editor-in-Chief Mark Hagland regarding his

experiences around the transitions from medical practice to consulting to the CMIO role. Below are excerpts from that interview.

Healthcare Informatics: You've gone through a lot of transitions already in your career. Do you still have all your limbs?

Michael Bakerman, M.D.: I do. I'm a tough, old, gnarly veteran at this point.

HCI: Have there been any surprises coming into the CMIO role, after spending years as a clinical IT consultant, on the outside of patient care organizations?

Michael Bakerman, M.D.

Bakerman: I'm fortunate in some ways in that it's exactly what I thought it would be. There are so many fragmented elements in healthcare that it's very difficult to align incentives or goals. For each set of physicians, depending on what department they're in, whether primary care or specialist, and for non-physicians, whether they're nurses or administrators, etc., each group has different goals. And we all say we want to be patient-centric, but everyone's measured based on their individual departments' metrics. So it's very difficult to galvanize [multidisciplinary teams].

HCI: Is it correct to say that they were already live with an EMR at UMass Memorial when you arrived?

Bakerman: It's complicated. We have three academic campuses and four community hospitals. The majority of the member hospitals are on a very old Meditech system that will clearly not suffice for meaningful use or for the 5010 [transition]. They use Allscripts Enterprise on the outpatient side [from the Chicago-based Allscripts]. On Nov. 1, we're doing a big bang in terms of implementing Soarian Clinicals [from the Malvern, Pa.-based Siemens Healthcare]; one hospital, Health Alliance, in Leominster, Mass., is already live on Soarian, and is out in front. And we're planning, as our HIE [health information exchange] intervention, to use [the Pittsburgh-based] dbMotion in that middle space, to combine that data. dbMotion is up and running, but we have to go live on Soarian.

THE NEED FOR CLINICAL REPRESENTATION

HCI: Have there been any surprises in the challenges of preparation for go-live?

Bakerman: They had never had anyone in my role here, and IS recognized that they needed clinical leadership. Prior to my arrival, they had had no central advocate or someone who could lead meetings; they had relied on part-time volunteer involvement. So prior to my coming, the discussions had been more around implementation than adoption, about hitting dates and such. One of the problems was that IS was vulnerable, because the IS people could do the technical build, but didn't have the clinical expertise.

HCI: So it's a combination of diplomacy and linguistic interpreting, right?

Bakerman: Exactly. And every day, I practice in the mirror, and say, 'OK, we're going to do this today.' But to the credit of the healthcare system, they get it, they understand this is going to be hard; but they've all been putting up with a lot the last year—physicians, nurses, administrators, all of them. To put in a new clinical and financial system shakes a healthcare organization to its roots. And before I came here, the message was that any functionality in Meditech would translate directly into Soarian. And I got here and said, 'wait a minute, just because we could do something in an outdated system doesn't mean we should replicate it precisely in the new system.'

And by background, I'm a cardiologist; and I took care of everyone in the ED, the ICU, etc. I still do a hospital shift six times a year. Admitting, doing floor rounds, write orders, etc. It's a 12-hour shift, six times a year. So I get to admit a whole different group of patients, and see general medicine admissions.

HCI: Have any cranky doctors challenged your credibility at all?

Bakerman: They don't pick on my credibility, because I bring enough value to the conversation. But through the [Tampa, Fla.-based] American College of Physician Executives, I got my master's in medical management [MMM], which focuses on all those leadership and governance skill sets; I got a CPE [certified physician executive] certification through them, and I currently sit on the board at ACPE. And through my experience with that group, you gain significant experience about how to lead meetings, set agendas, talk to providers—in general, I almost never get questioned regarding my credentials or credibility.

And one of the things I've been working on at ACPE is helping them to develop a health information technology certification. What they've been good at is developing CMOs and VPMAs [vice president of medical affairs]. And systems are looking almost for the CMO to transition into a CMIO position, and they're really totally different skill sets, around implementation, etc. So we've created an HIT-focused program so they can work cooperatively with IS, etc. That program was launched early this summer.

AN EVOLVING ROLE

HCI: How do you see your role evolving over the next five years?

Bakerman: Right now, my role is all about adoption of technology; and the day you go live, it's about, well, I need this report, or how do I put the data in, or what's the standardized way to manage order sets? So it's all about management, governance,

CMIO PERSPECTIVE

and support. And we're not going live with the CPOE [computerized physician order entry] until May—and then once that goes in, you step through those order sets—you walk your medical staff through how you adopt those order sets. So I see my role as managing that adoption, helping the staff; and beyond that, we'll need to integrate care under some sort of accountable care framework.

HCI: And leveraging IS and data for quality, right?

Bakerman: Yes, there's a whole data stewardship aspect of the role, too. And I have different teams looking at panels of doctors differently, and looking at different resources. So I have a family medicine initiative around managing population health or registries; I have a primary care integration workgroup looking at how we integrate care; and then I have IS, which is leading the meaningful use initiative. Different people are working those.

I SEE MY ROLE AS MANAGING THAT ADOPTION, HELPING THE STAFF; AND BEYOND THAT, WE'LL NEED TO INTEGRATE CARE UNDER SOME SORT OF ACCOUNTABLE CARE FRAMEWORK.

HCI: And who are you reporting to?

Bakerman: I report to my CIO. We had talked a lot about that when I got hired; because as the CMIO role evolves, you could perceive some inherent conflicts between the CMIO and CIO. George Brenckle is my boss, and he's been wonderful. He's got all the right personal characteristics in terms of being a consensus-builder. But in some situations, you have a CIO who's just thinking about their implementation, costs, etc., and the CMIO can really struggle in that case.

HCI: Do you have any dotted-line to the CMO of your organization?

Bakerman: In my case, my dotted-line relationship is to our COO, who is a physician. But suffice it to say, I work very closely with the CMO at the university level and at the CMOs at the facility levels.

HCI: So you're glad you took the job?

Bakerman: Oh, yes. One of the things that ACPE taught me years ago was that, unless you write it down, it doesn't happen. And so I wrote down my own vision and mission goals for myself in the late 1990s, and realized that the CMIO role was what I wanted. And I live in Massachusetts, so this is a great opportunity. And UMass is really the only healthcare system out here, and it's got really great people out here, so I'm very happy.

And from my standpoint, what we really need to be doing more and more is educating the physicians on how we provide better care to the patients; not giving the doctors everything they want, but showing them that if they persevere, their care delivery and efficiency will get better, and ultimately, we'll be doing a better job for patients. And that resonates with them. ◆

ACO PERSPECTIVE

(Continued from p. 41)

HCI: Earlier this year, I spoke with an executive at the American Medical Group Association, who said that his member organizations, which had participated in the earlier Medicare demonstration project on accountable care, were unready for the shared savings program, as articulated in the preliminary ACO rule.

Delbanco: Yes, that is cautionary; and if that's true, then this is an idea that may not be ready yet.

HCI: Do you think CMS [the federal Centers for Medicare and Medicaid Services] will listen to providers' concerns on the Shared Savings Program?

I BELIEVE THAT THERE'S A LOT OF WORK THAT HAS TO BE DONE HERE [TO THE PROPOSED ACO REGULATION UNDER THE MEDICARE PROGRAM], BECAUSE IT'S A LITTLE AWKWARD TO HOLD A PROVIDER RESPONSIBLE FOR THE CARE OF A PATIENT WHO DOESN'T WANT TO BE A PART OF THE ARRANGEMENT.

Delbanco: CMS has a history of not wanting to get too far ahead of providers on things. And I have no secret knowledge, but I would guess, just based on past experience, that they would make significant modifications to the final rule.

HCI: Given what you and your colleagues have found from your examination of private-sector initiatives, what would your advice to CIOs, regarding the strategic and operational IT challenges involved?

Delbanco: It's only a question of how quickly, and not whether, shared risk ultimately becomes a part of federal reimbursement. And I would urge them to move forward as fast as they can to monitor cost and quality and implement the systems they need to, because the value-based purchasing program is moving forward quickly now in any case.

HCI: All these programs mandated by healthcare reform are pushing providers forward in a rather clear way, wouldn't you agree?

Delbanco: Yes, absolutely; towards more accountability for quality and for cost. ◆

Information 'Liberación'

A FEDERAL HEALTHCARE IT LEADER SHARES HIS PERSPECTIVES ON ACOs, INNOVATION, AND INFORMATION DIFFUSION BY MARK HAGLAND

On Wednesday, Oct. 5, Todd Park, chief technology officer of the federal Department of Health and Human Services (HHS) helped open the Merge Live 2011 Client Conference, a user-group conference sponsored by the Chicago-based Merge Healthcare in downtown Chicago.

Park's rousing speech laying out a vision for how HHS can help to create a climate of, and opportunities for, healthcare IT innovation industry-wide, was energetic, yet specific, and led his audience of about 500 healthcare IT leaders to give

him a standing ovation. Stating more than once that, "This is not your father's HHS!" Park articulated for his audience a three-pronged overall strategy coming out of HHS for leveraging information technology and the web to improve patient care quality and efficiency and make the healthcare system more accountable, transparent, and responsive to healthcare consumers' needs.

"There are three big things" HHS is moving forward on, Park said, and all three are elements in what he referred to as "information liberación." Among the three, he said, is "patient-centric information exchange, as with the Blue Button program," a web-based program through which healthcare consumers will increasingly be able to download their health information and share it with providers and other trusted parties. The second element of three, he said, is provider-to-provider health data exchange, as embodied in the federal Direct Project. And the third element of "information liberación" is increasing market transparency, with the aim of helping healthcare consumers to make better decisions.

Park spent more than a half-hour outlining and explaining to his audience a variety of initiatives being developed and launched at HHS that he believes will help to transform healthcare, through an ongoing collaboration between government and the private sector. In particular, Park said that he and his colleagues at HHS want the agency, via the newish www.healthdata.gov, to become "the NOAA of health data," referring to the fact that the federal National Oceanic and Atmospheric Administration has become not only a comprehensive data repository of weather-related data and information, but also a foundation for private-sector use of weather data, such as by The Weather Channel and weather.com.

IT'S A TREMENDOUS TIME FOR CLINICAL INFORMATICISTS BECAUSE THEY'RE NOW KEY PEOPLE TO MAKE THINGS HAPPEN. —*TODD PARK*

Underscoring his and his colleagues' vision of a federal government role not to control data diffusion but instead as a facilitator of innovation and collaboration, Park referred to a maxim articulated years ago by Bill Joy, a co-founder of Sun Microsystems, which has become known as "Joy's Law." "Bill Joy," he said, "used to say that, you have to remember that no matter where in the world you are, most of the smart people in the world work for someone else. I think of that; and that's what we're trying to achieve at HHS."

Park commended the announcement by Merge Healthcare that the company was launching a new cloud-based imaging service, called "Merge Honeycomb," which will enable users to upload, download, view, and share medical images, free of cost. That announcement, Merge Healthcare's CEO Jeff Surges said in a statement, was aimed at demonstrating that "We're harnessing the cloud in a way that encourages and enables faster collaboration among all healthcare stakeholders, resulting in a true improvement in the delivery of care and reduction of costs."

Just prior to giving his keynote speech at the Merge user group event, Todd Park sat down exclusively with *HCI*'s Editor-in-Chief Mark Hagland, to discuss his perspectives on current healthcare reform- and meaningful use-related developments. Below are excerpts from that discussion.

Healthcare Informatics: Do you feel the data reporting requirements coming out of the three mandatory healthcare reform-triggered programs [value-based purchasing, hospital readmissions reduction, and healthcare-acquired conditions], as well as the two voluntary ones [accountable care organizations, bundled payments], and the meaningful use program, are being harmonized well?

Todd Park: There's a bunch of work going on with that; and that harmonization among them is absolutely a goal. And as [National Coordinator for Health Information Technology] Farzad Mostashari has said, the point of meaningful use Stages 2 and 3 is to support care delivery innovation and payment reform. So a lot of work is being done; there's still a ways to go, of course.

HCI: One element in all this that has become increasingly clear is the degree to which clinical informaticists will need to be key figures in creating change in their organizations, in order to create the kinds of clinical and data transformation that are being called for by the healthcare reform and meaningful use mandates. What are your thoughts on the challenges and opportunities facing clinical informaticists at this point in time?

Park: I think it's a tremendous time for clinical informaticists because they're now key people to make things happen. And I know that virtually all clinical informaticists know this already, but I think that it's not so important to know everything, but rather to be the catalyst to get clinicians, IT people, administrators, patients, everyone, talking to each other, to maximize health in a very proactive, information-driven way. So if we view the role of the clinical informaticist as the person who has to personally do all the work, of course, it becomes impossible; but instead, we should view them as leaders and coordinators, performing [strategic] jujitsu to help achieve all the right things; then it becomes a very exciting role. ◆

An Evidence-Based Approach to Activating Your EMR

PROS AND CONS OF VARIOUS EMR ACTIVATION OPTIONS, AND LESSONS LEARNED BY ONE HOSPITAL

BY LISA M. GRISIM, R.N., AND CHRISTOPHER A. LONGHURST, M.D.

Selecting the appropriate activation approach is a critical decision that any organization implementing an electronic medical record (EMR) will have to grapple with. And although there is no one right way to activate computerized physician order entry (CPOE) and clinical documentation, there are many factors that can and should be analyzed in order to develop the best strategy for your organization. At Lucile Packard Children's Hospital (LPCH) at Stanford University, Stanford, Calif., the leadership of our EMR implementation took a rigorous, evidence-based approach to determining our activation approach.

LPCH, in 2003, signed a contract with a commercial EMR vendor (Cerner Corp., Kansas City, Mo.) and in the fall of 2005 replaced its legacy system functionality as part of a phase 1 implementation. Following this like-for-like functionality replacement, we began planning for our phase 2 implementation, which was to include the advanced clinical EMR functionality of CPOE and clinical documentation across all in-patient nursing units and ancillary departments within the hospital. One of the first and most critical decisions we encountered in our planning efforts was the best approach to activating the scope of our phase 2 implementation.

THE TWO PRIMARY DIMENSIONS TO CONSIDER WHEN DETERMINING THE APPROPRIATE ACTIVATION APPROACH IS THE FUNCTIONALITY WHICH YOU ARE PLANNING TO BRING LIVE, ALONG WITH THE GEOGRAPHIC LOCATIONS YOU WILL ACTIVATE AND THE SEQUENCE IN WHICH YOU WILL ACTIVATE THEM.

ACTIVATION APPROACH

The two primary dimensions to consider when determining the appropriate activation approach is the functionality which you are planning to bring live, along with the geographic locations you will activate and the sequence in which you will activate them. In addition to these two dimensions there are organization specific factors such as risk tolerance, leadership engagement, physician and patient populations, and project management considerations around design, build, testing, training, activation support, resource type, and amount available along with technology deployment that should be factored into the decision.

Geographic: Within the geographic dimension there are three primary types of approaches. The first is a big-bang approach that is all units at once. A big-bang approach can achieve early benefits and cost saving along with allowing the organization to focus on one major effort. Yet this approach can also increase risk to the organization and be difficult to support in addition to requiring a huge training and change management effort.

The second approach is a pilot, with one area activated first followed by the rest of the house. A pilot method allows you to work out the kinks in the system prior to going house-wide and provides a controlled environment that is easier to support. And if the pilot goes well, adoption may be more easily obtained on subsequent units. However if the pilot does not go well, this could impact the success of the continued roll-out. The pilot unit also might not be representative of issues that may be encountered in other areas of the hospital and floating staff to this unit could be difficult.

A phased approach, which would be a unit-by-unit roll-out, is the last type to consider. When assessing a phased approach, it is likely that this will be easier to support than a big-bang. The change can be introduced slowly over time, which allows more time to gain adoption, and issue management can be handled more easily. Conversely you may get hung up on issue resolution, which could delay the rollout to the remaining units. Dual processes created by some units being automated and some units being on paper can also cause complexities for transferring of patients and increase patient safety risks. Benefits achievement will also be delayed.

Functionality: There are two main approaches when considering the functionality dimension. A big-bang approach brings all functionality live—CPOE and clinical documentation—all at one time. Some of the pluses with this approach are the ability to maximize the benefits of system integration, limit fragmentation of workflows, and enable closed loop processes. The major drawbacks are there may be more system issues to work through; it can be difficult to support requiring a large pool of resources and will be a huge training and change management effort.

A phased or subset functionality approach is where one piece of functionality is activated first followed by the next piece. For example, CPOE first followed by clinical documentation or vice versa. This approach will allow clinicians to become comfortable and proficient with one piece of functionality prior to implementing another. The magnitude of change is also lessened and the training effort is smaller and more

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focused. However issues encountered during the first phase can hinder the ability to implement the second phase of functionality. Fragmentation of clinician workflow can also lead to omissions or increased errors due to some information being online while some is on paper. And a multi-phase implementation with a prolonged rollout can also lead to staff burn-out.

Other Key Considerations: The level of risk tolerance of your organization as well as leadership engagement are key organizational factors to consider around whether you chose a big-bang, pilot, or phased geographic approach as well as the amount of functionality you chose to bring live at once. There are some important considerations related to your physician and patient population related to the readiness of the M.D. constituents as well as the acuity level of the patients in various locations of the hospital that also should be explored.

THE LEVEL OF RISK TOLERANCE OF YOUR ORGANIZATION AS WELL AS LEADERSHIP ENGAGEMENT ARE KEY ORGANIZATIONAL FACTORS TO CONSIDER AROUND WHETHER YOU CHOSE A BIG-BANG, PILOT, OR PHASED GEOGRAPHIC APPROACH AS WELL AS THE AMOUNT OF FUNCTIONALITY YOU CHOSE TO BRING LIVE AT ONCE.

The design, build, testing, training, and activation support needs of your implementation will all be impacted by the choices you make related to your activation approach. The more units and the more functionality you bring live together, the greater the implementation effort will be. There are also technology needs to investigate based on the needs of the areas you activate in addition to the functionality you bring live. Specialty areas may require larger monitors and stationary devices versus computers on wheels versus the need for hand-held devices should be weighed.

MULTI-HOSPITAL SURVEY

In the summer of 2008 we conducted a survey related to activation strategies. Twenty hospitals responded to the survey all of whom had activated CPOE and documentation representing four major vendors. Questions were asked about the approach taken to EMR activation within their organization. The results of the survey showed that each organization activated CPOE and clinical documentation using different approaches. However 73 percent said they would use the same activation approach if they were to do it again.

Based on all the information gathered during our intensive due diligence process related to determining our activation strategy, we developed an "acuity-based" strategy which consisted of a phased geographic and a big-bang functionality activation. In our phased geographic approach we activated more than 90 percent of our inpatient beds and then activated our highest acuity pediatric intensive care unit and cardiovascular intensive care unit at a later time. In terms of the functionality that we activated, we decided that due to the integrated nature of our CPOE and clinical documentation build, we would activate them together using a big-bang approach.

From the data collected and evaluated plus our own EMR activation experiences we have determined that there is no one right way to implement CPOE and clinical documentation, however there is a right way to activate it for your organization. Through the application of a thorough and thoughtful decision making process which studies the factors outlined in this article, you can position your organization for a successful EMR implementation. Good luck! ◆

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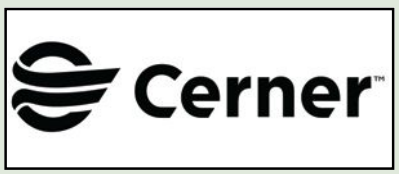

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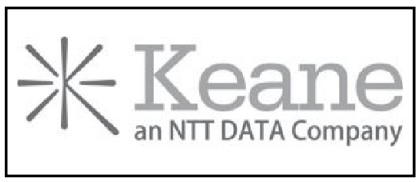

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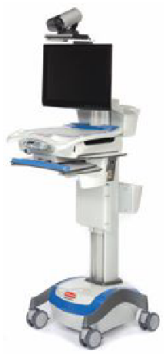

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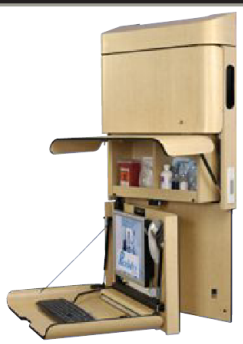

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AD INDEX

Hiring Top-Shelf Talent

WANT TO ATTRACT TOP TALENT? HERE ARE TIPS FOR GETTING A SUPERSTAR ON YOUR TEAM BY TIM TOLAN

Tim Tolan

Everyone wants to believe that they have the best talent in the land working on their team. In many cases they are probably correct, but not all that glitters is gold. I'm a big believer that by recruiting a superstar and adding top shelf-talent to your team, by osmosis your B players can upgrade to the B+ or A level. We all aspire to a perfect world where we add only A players to a high-performing organization—but landing these superstars is not as easy as it looks.

Here are a few ideas you might consider implementing to convince Mr. or Ms. Wonderful to join your team.

Candidate's arrival: I suggest that as CIO, you meet with the candidate when he or she arrives at the facility. It's ok if you plan to officially interview them later in the visit. Give him a little background on each person he will be meeting with, to augment whatever information he has learned already on his own. If he is top-grade talent (and has left his ego at the door), he has already visited LinkedIn or other websites to learn everything there is to know about each person he will be meeting, and has four or five questions already prepared. Make sure, as the IT leader, that you are the first and last person your candidate sees that day. Impressions matter here…a lot!

MAKE SURE, AS THE IT LEADER, THAT YOU ARE THE FIRST AND LAST PERSON YOUR CANDIDATE SEES THAT DAY. IMPRESSIONS MATTER HERE…A LOT!

Interview process: The process you have in place for interviewing candidates face-to-face should not change dramatically. I'm a big believer in process, and you do need to be consistent in your hiring and vetting practice. However, what you can't afford to happen when an A player is scheduled to interview are misfires that can occur in the day-to-day scheduling, which could blow up if you are not totally prepared. I suggest that you meet with the interview team in advance and then follow up the day before the candidate is supposed to be onsite, just to make sure there are no last-minute changes in the schedule. If there is a change, by all means find a suitable replacement to fill the gap. Make sure the replacement knows how important this interview is, and provide him with the candidate's resume and with the same information the rest of the interview team has. Avoid gaps between interviews and make sure there is a smooth hand off from one interviewer to another.

Follow-up: Providing immediate feedback to the candidate or the search firm you are using is so important. I have seen firsthand scenarios in which it took weeks to get feedback from the hiring manager; as a result, we had nothing to share with the candidate. No worries: candidates form their own opinion after a few days of silence, and it's usually not favorable to your organization. It's really hard to recover when you drop the ball on follow-up. A few business days are acceptable—a few weeks are inexcusable. Get feedback from the interview team and (good or bad) make the call. It's not that hard.

Executive involvement: If you have a superstar in your candidate pool and you want to make a real impression, schedule time for them to meet with other executives in your organization. Explain to the executives why the candidate's background is so important, and make sure they are familiar with the background before they meet. Get the executives to help you sell the organization's culture, and why they joined and stayed. It helps candidates to know why people join your organization and why they stay.

Meet outside the office: Take your star candidate to lunch or dinner when you know you are ready to make an offer. Get a chance to know more about him, and meet in a neutral and casual place outside the walls of your facility. Make sure he knows why you are interested in having him join your team and leave time to answer any and all questions he has. Wrap up with a warm handshake and a final confirmation that you are looking forward to having him on your team.

Tim Tolan is a senior partner at Sanford Rose Associates Healthcare IT Practice. He can be reached at tjtolan@sanfordrose.com or at (843) 579-3077 ext. 301. His blog can be found at www.healthcare-informatics.com/tim_tolan.

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