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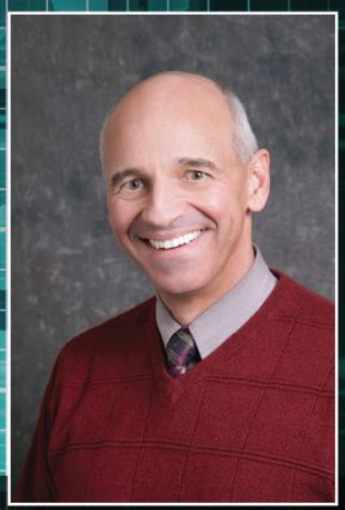

Yakima Valley Farm Workers Clinic

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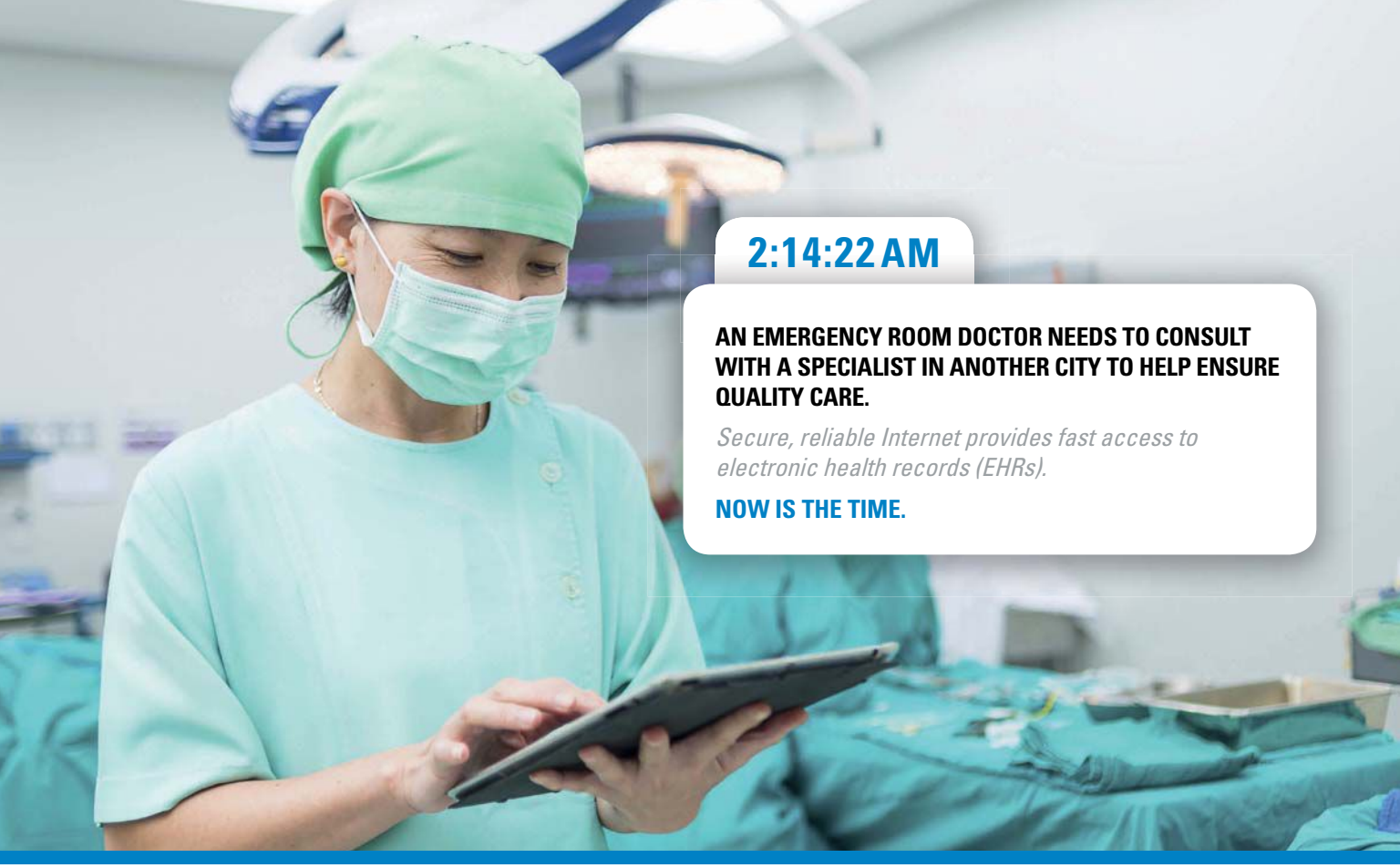

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COVER STORY

2015 INNOVATOR AWARDS

On the cover, members of the first-place winning team in the annual *HCI* Innovator Awards program, from the Yakima Valley Farm Workers Clinic. Left to right: Glen Davis, chief operations officer; Carlos Oliveras, CEO; and Ross Ronish, M.D. chief medical officer. YVFWC and the other three winning organizations are leading the way with innovative models of care delivery that are replicable across the U.S. healthcare system.

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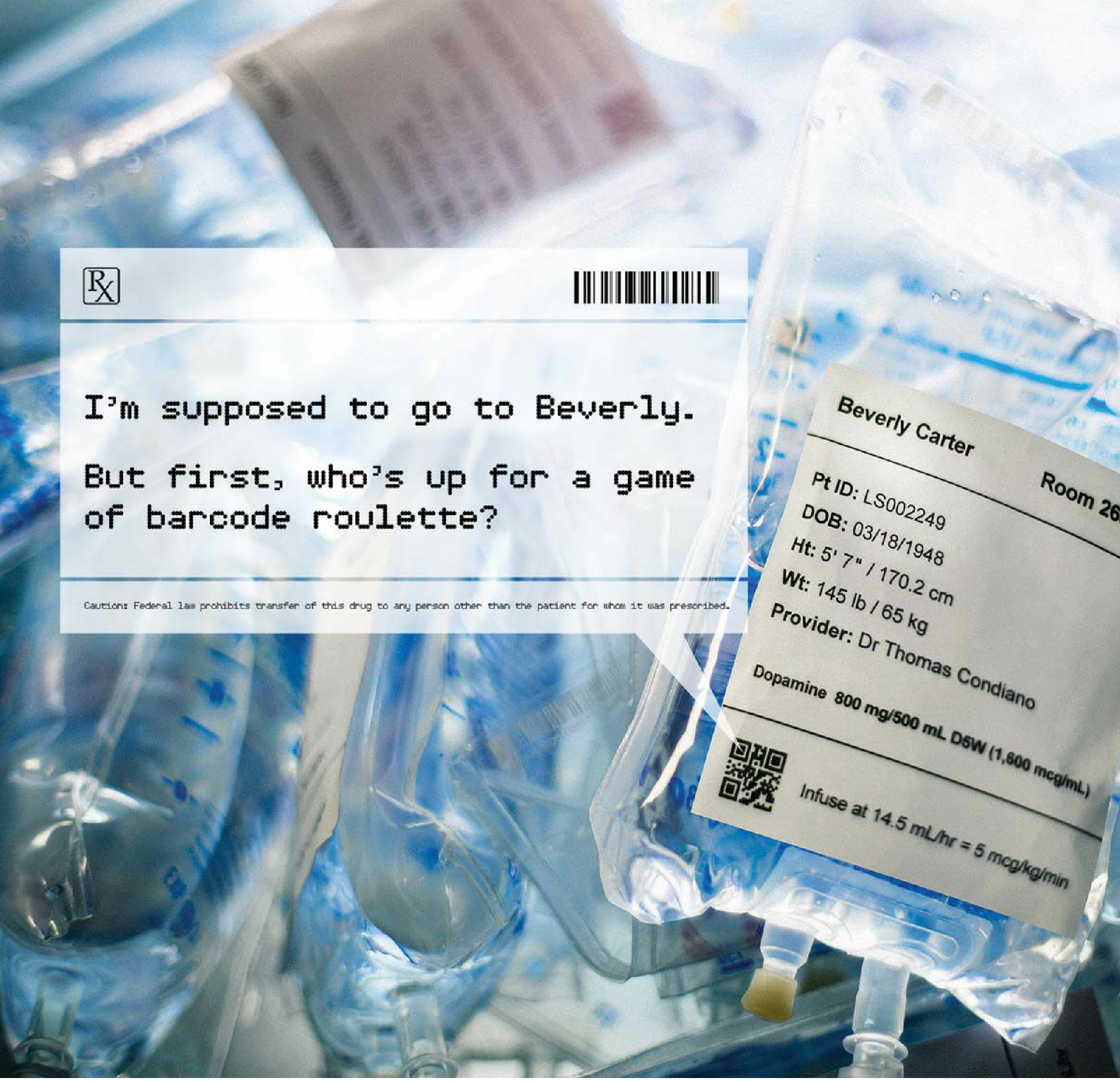

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Will Old-Style Healthcare Leaders Get "Googled" by the New Healthcare Pioneers?

Mark Hagland

One of the more fascinating books about the business and technology worlds to be written in the past several years has been Ken Auletta's *Googled: The End of the World as We Know It,* an inside look at the creation and evolution of the Google enterprise. And who better to write the 2009 book than Ken Auletta, an award-winning journalist who has written the "Annals of Communications" column for *The New Yorker* since 1992? Indeed, Auletta, who has won numerous journalism awards, brings the perfect blend of curiosity and knowingness to his exploration of the success of Google as a company and as a phenomenon.

But I have to say that some of the most fascinating parts of *Googled* actually come early in the book, as Auletta describes the media and communications landscape into which Google emerged, one that was filled with old media companies uncertain how to advance into the future. Auletta compared the deer-in-the-headlights position of "old media" companies in the face of the intensely disruptive emergence of Google into the media and advertising sphere, with Xerox's early failure to grab market share in the desktop photocopy machine market, and IBM's tardiness in shifting from a mainframe computer focus to enter the minicomputer market several decades ago.

Faced with Google's new business model around Internet advertising, Auletta noted that old media executives found themselves confounded by change. "Defensiveness mixed with fear fueled resistance to change. In a 1994 speech to the National Press Club in Washington," he writes, "Viacom chairman Sumner Redstone proclaimed, 'I will believe in the 500-channel world only when I see it…' The Web, he said, was just another 'distribution technology,' more 'a road to fantasyland' than a game changer. He envisioned that traditional media—movies, television, books, all content—would remain 'King,' concluding: 'To me it seems apparent that the Information Superhighway, at least to the extent that it is defined in extravagant and esoteric applications, is a long way coming if it comes at all.'"

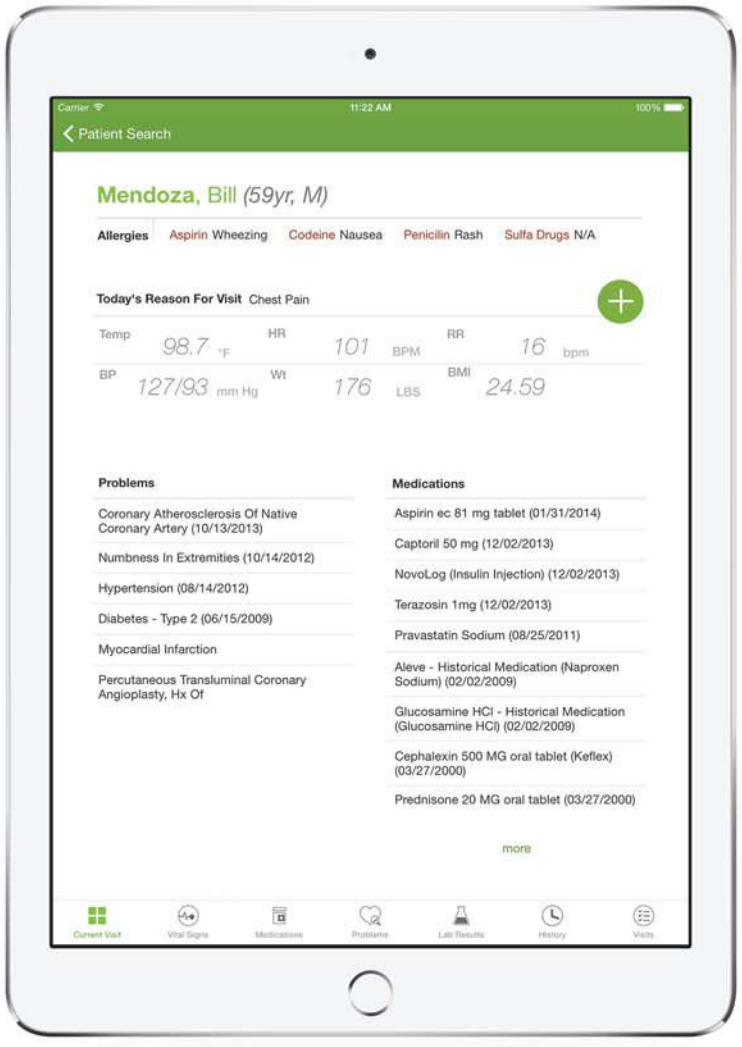
Is it a stretch to see the parallels between old media versus new media, and old healthcare versus new healthcare? I really don't think so. It's fascinating to see how broad the space is these days between the most advanced patient care organizations in U.S. healthcare,and those lagging most seriously behind. It is becoming clear that some leaders see the new healthcare—a U.S. healthcare system of greater transparency and accountability, of continuously improved patient care outcomes, cost-effectiveness, and patient and community satisfaction—and others haven't yet grasped the shifts taking place.

Those that do see the shifts taking place are moving as quickly towards the new healthcare as they can, and are pioneering new models of population health management, care management, evidence-based care delivery, analytics for continuous performance improvement, and much more. And it is our privilege once again to present our annual *Healthcare Informatics* Innovator Awards winning teams (pp. 8-25). This year, we are honoring four finalist teams—from the Yakima Valley Farm Workers Clinic (Toppenish, Wash.); Texas Children's Hospital (Houston); the Children's Health Alliance (Portland, Ore.); and the Bon Secours Medical Group (Richmond, Va.). What's clear is that there are amazing pioneers out there in U.S. healthcare, people who see the future and are moving towards it, and in the process, are creating models of care delivery and other processes that are highly replicable. Do they have all the answers? Of course not; no one does. But at least these Innovators won't end up being "Googled" the way old-media types in the communications world have been.

Mark Hagland
Editor-in-Chief

The future of
population health

Simplified.



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Forging Ahead Into the New Healthcare:
Innovator Award Winners Make the Leap

If any one thing is clear in today's healthcare, it is this: that the purchasers and payers of healthcare in the United States, whether public or private, have put a giant collective foot down and are demanding change. Their demands for transparency, accountability, improved clinical outcomes, greater cost-effectiveness, and enhanced patient and community satisfaction, are rocking the healthcare provider world.

Not all providers are moving forward with alacrity; yet some true pioneers are forging paths that will be offering models for strategic action that could be replicable U.S. healthcare system-wide. It is organizations like these whose accomplishments we at *Healthcare Informatics* strive to recognize, through our *Healthcare Informatics* Innovator Awards Program.

This year, we are honoring four teams of pioneers, at Yakima Valley Farm Workers Clinic (Toppenish, Washington); Texas Children's Hospital (Houston); the Children's Health Alliance (Portland, Oregon); and the Bon Secours Medical Group (Richmond, Virginia). Each of these teams has done something extraordinary in innovating in healthcare, whether it is designing highly effective population health management programs for Medicaid managed care populations, applying population health strategies to pediatric populations, optimizing specialized surgery care processes for children, or engaging in intensive care management techniques to engage a medical group's patients. We are excited to be able to share these very important stories with our readers.

What's more, we are presenting capsule summaries of additional Innovator Awards case studies, recognizing six Runner-Up teams whose accomplishments also deserve to be recognized and understood.

Please join us in congratulating all the finalist and runner-up teams in this year's Innovator Awards Program. We are honored and privileged to be able to share with you, our readers, these stories of accomplishment and innovation, with the hopes that many in the industry will be inspired to replicate—and perhaps even improve on—these noteworthy accomplishments.

—The Editors of *Healthcare Informatics*

FIRST PLACE WINNING TEAM

Yakima Valley Farm Workers Clinic

Can a physician organization that serves an underprivileged population make it in a managed care-driven environment? The folks at Yakima Valley prove it can be done—and done very well BY MARK HAGLAND

About 150 miles away from the glamour and hip chic of Seattle, the Yakima Valley lies in the heart of Washington state's agricultural and viticultural heartland, with apple, peach, and cherry orchards, bell pepper and corn fields, and vineyards, stretching as far as the eye can see. It is a very blue-collar region, and the Yakima Valley community includes many migrant workers, some of them undocumented, and many uninsured or underinsured.

Caring for about 130,000 area residents annually, the Yakima Valley Farm Workers Clinic (YVFWC) embraces its community, while its senior executives, led by CEO Carlos Olivares, have been working furiously to optimally serve their community in ways that acknowledge the perpetually straitened healthcare budgets involved. Indeed, they recognize that there will never be an abundance of resources available to serve the Yakima Valley patient population, 90 percent of whom fall below the poverty level.

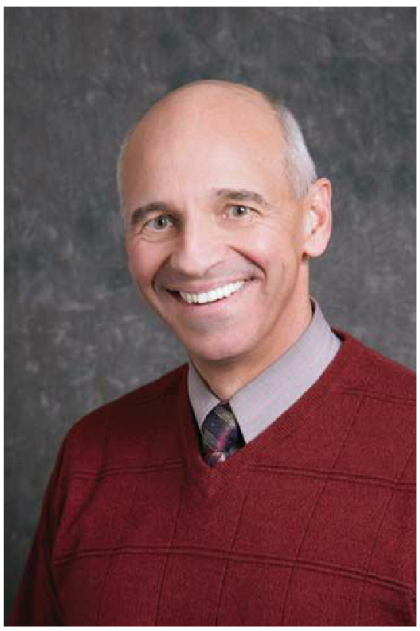
That's why Olivares and his colleagues at the Toppenish-based YVFWC, which encompasses 26 outpatient care sites, 1,400 staff, and 95 physicians and allied health professionals (52 physicians and 43 nurse practitioners and physician assistants; in addition, about 100 behavioral therapists are on staff), have had to create invention out of necessity, in order to optimally care for their hardworking, underprivileged population.

The key to enabling Olivares and his colleagues to optimally serve this community, after 35 years of effort? In a word, data, says Olivares. "Typically," he says, large organizations look at their future, and begin to analyze data they already have, and then they say, 'What do we want to do five years from now?' That level of strategy is much more difficult to successfully pursue in small organizations that don't have the data systems the larger ones have." What's more, he says, "We cannot continue to ask our providers to work harder, see more patients, document more, and improve patient care. We need to tap into our data to help them make the right patient care decisions, faster, and with greater accuracy."

Left to Right: Glen Davis, Carlos Olivares, Ross Ronish, M.D.

As a result, Olivares and his colleagues have invested heavily in IT, building a robust data warehouse that encompasses data from more than 10 sources; devel-

Carlos Olivares



Ross Ronish, M.D.

Glen Davis

oped a comprehensive set of clinical reporting tools that integrates directly into the clinical workflow of the organization and provides physicians and other clinicians with dashboard-based indicators for chronic care management; and have outsourced data analytics management to a vendor partner (the Burlington, Mass.-based Arcadia Healthcare Solutions), resulting in the freeing-up of time and intellectual energy on the part of senior YVFWC leaders to focus on IT and data strategy instead of core system maintenance.

The results of the appropriate infusion of data into care delivery processes have been diverse—and beneficial to the organization both clinically and financially. For example, providing the organization's physicians with real-time data-driven dashboards has helped those doctors to successfully achieve clinical outcomes goals across a wide variety of measures around diabetes, asthma, and prenatal care, and around the avoidance of ED visits and hospital admissions. And as a result, Olivares reports, "By achieving all the measures on the risk-based contracts we have, we received $1.6 million in differential payments last year." What's more, he notes, "It took us 18 months to get Level 3 recognition from NCQA [the National Committee for Quality Assurance]; we were accredited early last year. By achieving the Level 3 NCQA recognition, we generated $3.50 PMPM [per member per month], which translated into $3 million in incentive payments from our payers," who include Medicaid managed care and some commercial health plans.

Data-driven care delivery has not only been profitable for the organization; it has also positively changed the way in which physicians work, reports Ross Ronish, M.D., YVFWC's chief medical officer. "Physicians are trained to be pattern recognizers, and there are some strengths to that, but one of the weaknesses of it is that what is in your mind as a provider is what you've last seen," he says. "So if you ask physicians how they're doing with their patients in general, they'll look at their most recent patients, and will be wildly wrong. So using IT to provide a current picture for physicians will help tremendously."

Dashboards are essential to helping physicians dramatically improve their clinical outcomes and efficiency in a resource-straitened environment, Ronish says. What's more, their use helps all clinicians to work at the top of their license, he adds. "For example, we use behavioral health consultants, or BHCs, who work within our medical clinics, and who help providers to identify when psychosocial conditions are affecting patients and their outcomes, and helping to address things when, say a PCP is tempted to call a patient non-compliant," he says. BHCs actively analyze the patient record for narcotic use patterns, and benefit from being able to draw from medical, behavioral, and other data, drawn into the same systems. In one recent case, he notes, a BHC was able to clarify that middle-aged male patient was not non-compliant in taking his medications, but rather, suffering from a personality disorder, the clear identification of which necessitated a new medication management strategy. Having dashboards in place to analyze the use of narcotics for chronic pain makes such interventions possible, he emphasizes.

Indeed, says Glen Davis, YVFWC's chief operations officer, "The [information] system that we had been operating under for years involved a separation

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between clinical, social, psychological, issues, when they're really not separate. A dietary issue can cause either a behavioral issue or a medical concern or a dental concern, and systems are starting to show more of the psychosocial elements," he adds. "So we don't just do this with our behavioral health consultants; we also have dieticians who follow the very same model. And we're fortunate enough to have dental and pharmacy connected as well, all connecting the dots."

All of this data-connected care has been very important in the forward evolution of the Yakima organization. "As a result of a lot of this work, 95 percent of all our providers met all the meaningful use criteria for Stage 1 years 1 and 2; now we're heading into Stage 2," notes Davis. "And within 18 months, we achieved level 3 recognition from NCQA," underscores. The organization is also converting to a new electronic medical record (EMR), which will go live in August.

With regard to all the IT investments, Olivares says that "We knew we had to invest in the development of a data warehouse not only encompassing our EMR, but also pharmacy, dental, behavioral health; we have other types of systems that help us understand the condition of our patients, not solely restricted to the EMR. So we built that data warehouse to allow us to pull out data in a meaningful, actionable way. So we had to build out patient registries. For diabetics, for example, we needed to know what had happened to them before they came to see us. If they had gone to see the nephrologist, we needed to know that and know what happened. And that's through claims data. So we started to combine a whole host of information on the registries, to give our entire clinical care team an assessment of where this patient was today, and what we needed to do today to improve his care and outcome.

The key to understanding the landscape in which the Yakima Valley folks work lies in understanding how much everything is in motion these days. First, there is the health status of their population; Olivares notes that clinic leaders have recorded a 22-percent increase in identified obesity just in the past year, for example. Second, there is the opportunity that has opened up under the Affordable Care Act (ACA), through its Medicaid expansion provision. Both Washington and Oregon have gone ahead and expanded their Medicaid programs, and with 70 percent of YVFWC's patients being Medicaid enrollees, there is a great deal of potential for the clinic going forward, he says, though he immediately notes that many of those patients are already on a sliding fee scale because of their low incomes, and also, very importantly, that essentially, the Medicaid program is increasingly becoming, state by state, essentially a large managed care program, overall.

Still, there is right now a genuine opportunity to increase the insured patient base in the Yakima Valley, and the YVFWC's leaders are doing everything possible to build that base. Last year, Olivares reports, "We created health fairs, school information, roundtables, we went to churches. We explained what healthcare reform was about. We got about 3,000 new patients in Washington, and got about 4,000-5,000 new patients in Oregon. And in both of the states in which we operate, somewhere around 90 percent of those eligible for Medicaid are in Medicaid, and all are in a managed care environment. So the states of Washington and Oregon have contracted with managed care systems to address the needs of those who are Medicaid-eligible."

In other words, the opportunities abound to increase their patient base, but those opportunities are constrained by the fact that the vast majority of new patients YVFWC might attract will be Medicaid enrollees or potential Medicaid enrollees, and nearly all of those will be in Medicaid managed care, one of the most resource-limited populations to care for. So everything does circle back to the intelligent leveraging of analytics, clinical decision support, and other tools, to engage in population health management strategies around a population lacking in financial resources.

In the end, Olivares, Ronish, and Davis remain fiercely committed to caring for and serving that population, but they recognize the breadth of the challenge involved. "This elephant is indeed an elephant," Olivares muses. "And if you try to swallow it all at once, you'll find yourselves overwhelmed. But if you're willing to take risk in a managed care environment, and are willing to leverage data to do so, believing that you can improve patient outcomes, then you can do this, taking the elephant one bite at a time. Find a good partner like Arcadia that will work with you to analyze everything. And," he adds, "don't be afraid to fail." ◆

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Children's Health Alliance

Pioneering pediatric population health management BY RAJIV LEVENTHAL

Left to Right: Julie Harris, Albert Chaffin, M.D., and Deborah Rumsey

As the U.S. continues to move into the "new" healthcare—one that puts an onus on cost effective value-based care—the question is not whether healthcare organizations should respond to the current population health management (PHM) trend, but instead how they are going to innovatively do so.

To date, population heath strategies have been mostly focused on adults, which on the surface makes sense, considering that the highest-cost and highest-utilization population is in the adult world. Certainly, population health in a pediatric environment is a new frontier in population health management that few organizations have tried to tackle, because of the enormous amount of effort it takes to customize the analytics technology and clinical protocols to address the unique needs of children, says Julie Harris, director of quality programs at the Portland, Ore.-based Children's Health Alliance (CHA). CHA is a not-for-profit association of 100-plus independent primary care pediatricians in Oregon and southwest Washington who work together on improving quality in pediatric care through the Children's Health Foundation, formed in 2007.

Indeed, robust systems and models for pediatric population health management have simply not been standardized, says Harris, who is also director of quality programs at the Foundation. Many health systems treat children as though they

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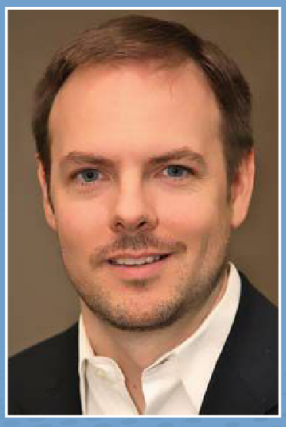

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are small adults, but their needs are very different. Managing conditions such as attention deficit hyperactivity disorder, autism, or multiple behavioral issues, requires different care approaches that adapt to the many developmental stages in a child's life, she says. "Everyone recognizes that improving the health of children improves the health of adults down the road. But that's not where volume and cost is," Harris acknowledges. "Also, managing the most complex adult issues focuses on maybe three or four medical conditions, whereas addressing the most complex issues of children spans 10 or 15 issues," she adds. "So the complexities are significantly higher in pediatrics, and that might also be why health IT's population health efforts haven't focused on this group."

Since 2009, the Foundation's goal has been to achieve better health outcomes by improving the understanding of child/family support needs and targeting proactive care management and coordination of medical, physical and behavioral health services for children, adolescents and their families, says Harris. "We wanted to look beyond the medical conditions of children, such as if a child was in a wheelchair or needed feeding assistance. Those are things that wouldn't show up in clinical diagnosis code, but affects the level of support and care coordination needed for that child and his or her health," Harris says. "We also included family factors, as children are dependent on their caregivers and parents. These are necessary for proper care coordination," she says. Looking at all of those factors allowed pediatricians to focus on different set of criteria for assessing the needs of the families and patients, as well as what it would take to carry out care management, says Harris.

WE WANTED TO LOOK BEYOND THE MEDICAL CONDITIONS OF CHILDREN, SUCH AS IF A CHILD WAS IN A WHEELCHAIR OR NEEDED FEEDING ASSISTANCE. THOSE ARE THINGS THAT WOULDN'T SHOW UP IN CLINICAL DIAGNOSIS CODE, BUT AFFECTS THE LEVEL OF SUPPORT AND CARE COORDINATION NEEDED FOR THAT CHILD AND HIS OR HER HEALTH.

—JULIE HARRIS

THREE PHASES OF PEDIATRIC CARE MANAGEMENT

Developing a pediatric-focused population health management framework is no small task, but it has become a pioneering achievement for the Children's Health Alliance. Despite the challenges involved, the Foundation was determined to create its own model for pediatric population health management and implement it through educational efforts and the use of PHM technologies. In 2009, the Foundation began a quality improvement program for asthma care management improvement, including the development of a pediatric asthma registry. The group has, to date, achieved 80-800 percent increases in the number of patients receiving evidence-based clinical protocols in pediatric asthma care, Harris notes.

In 2012, the Foundation began hosting monthly pediatric care management improvement collaborative sessions in the community. The goal was to develop office-based care management competencies in pediatric practices through facilitated sharing amongst independent practices, targeted education and community engagement forums. The result of this effort was the development of a methodology to risk-stratify children with chronic health conditions, informed by an assessment of medical complexity, patient functioning, and family factors, Harris says. "The assessment tool enables pediatricians to identify the level of support the child/family needs in order to optimally manage his or her overall health. Within the first 20 months of this quality improvement effort, over 80,000 patients have been assessed and stratified to guide appropriate care management support and services," Harris says.

Then, in 2014, the Foundation began implementing the successful child/family-focused pediatric care management approaches and quality measures it had developed into proactive care actions and alerts that could be supported by a population health management analytics solution. They chose a solution by the Alpharetta, Ga.-based Wellcentive, with the data aggregation, care management, and analytics capabilities to successfully support pediatric PHM by translating evidence-based pediatric protocols into actionable care alerts and measures that are meaningful in promoting high quality primary pediatric care—such as developmental screenings, immunizations, chronic condition management and preventive care, says Harris.

"We believed it was important to equip our providers with tools to drive a higher standard of care, and that this would help demonstrate the value of proactive pediatric care management. It would also help payers recognize the value of quality improvement innovations and measures driven from the point of care," she says. The solution integrates data from pediatricians' electronic health records (EHRs), insurance claims, and other clinical information to provide a more complete picture of their patients' health, Harris says. CHA includes 20 different pediatric care sites operating on nine different EHR systems, so much of the interfacing is still in progress, she notes.

A FLOURISHING SOLUTION

According to Albert Chaffin, M.D., pediatrician and chair of population health management at Children's Health Alliance,

Julie Harris

Albert Chaffin, M.D.

Deborah Rumsey

and also a pediatrician at Pediatric Associates of the Northwest [Lake Oswego, Ore.], the tool allows clinicians to explain what people have known along—that there are needs beyond just the medical diagnosis that aren't verbalized or explained well to others. "In pediatrics, we have found that you have the medical diagnosis, the needs of the patient, and the needs of the family," he says. "Most of the time, these are boundaries to improving the medical condition. We have recognized that for a long time. This tool allows us to put data into it, and be able to tackle the problem in a fashion that makes it more actionable and meaningful," Chaffin says.

Putting it into practice, care managers can easily be overwhelmed very quickly if you just use medical diagnoses, Chaffin continues. But pediatric patients are dynamic in moving—there are various different stages of child development—and that's why it works so well, he says. "You might have a kid who has lots of medical complexities and is being monitored well, the parents are involved and engaged, the social factors are in line, and medically he's okay, so you can drop the support level down," Chaffin says. "But we won't leave it there, we will revisit it after some time. So just like pediatric patients are dynamic in moving, this is a dynamic moving tool as well."

According to Deborah Rumsey, executive director, Children's Health Alliance, one of the driving principles of CHA is its board of 10 pediatricians, who before launching into any decision or investment, ask the questions, "What value does this bring to the patient? How does this improve quality of patient care?" As such, this tool "brings that value," she says. "After focusing [several] quality improvement efforts on care management of children across our communities, our pediatricians have difficulty seeing the complete picture of their young patients," Rumsey says. "Because of how care is administered in silos within our fragmented U.S. healthcare system, providers often have minimal visibility into other areas of a child's care and knew that gaining a 360-degree view was critical to better outcomes."

A key to the initiative, continues Rumsey, is to see beyond the walls of clinics in order to really care for the patient. "It's important to understand for pediatricians to see what's happening outside. There is accountability that is now on the primary care pediatrician, as they are expected to care for their population. Having these feeds from external sources can help them better understand and better coordinate care for patients," she says.

IT'S IMPORTANT TO UNDERSTAND FOR PEDIATRICIANS TO SEE WHAT'S HAPPENING OUTSIDE. THERE IS ACCOUNTABILITY THAT IS NOW ON THE PRIMARY CARE PEDIATRICIAN, AS THEY ARE EXPECTED TO CARE FOR THEIR POPULATION.

—DEBORAH RUMSEY

DEVELOPED BY PHYSICIANS

What's more, rather than being able to rely on existing standard models or templates for managing their populations or implementing best practices, the Foundation needed to perform much of the groundwork itself, says Harris. In fact, CHA practitioners and the Foundation found that even those standard pediatrics measures that did exist in many

cases weren't detailed enough to drive specific quality improvement action, she says. "The pediatrician members of the Foundation took action by forming a task force of a dozen physician and nurse leaders across multiple independent practices to blaze new trails by developing and customizing protocols themselves, resulting in a PHM solution with high clinical value and provider engagement," Harris says.

To this end, because the data is meaningful and actionable, providers have been on board, says Chaffin. The easiest example is with asthma care, he notes. "By using this information from the registry and the Care Management, Analytics and Reporting Tool (CMART), we were able to track their level of care over time, decrease their ER visits, and increase their medication adherence. A lot of that is driven through being able to measure ourselves against standards, see how we're doing and create benchmarks that we all want to meet. And we have been able to meet those benchmarks over the last few years," he says. "Physicians see that benefit and it drives them," Chaffin adds. "Is this something that will improve the health of our patients? This is not like what we get right now from private payers. That data is claims-based, and not necessarily meaningful. None of this is easy, but we all want to improve healthcare," he says.

Every year, CHA aims for a certain percentage of patients with asthma who have had an asthma well visit in the last 15 months. Currently, results include a 360 percent increase in development of home action plans for patients and a 230 percent increase in annual asthma well visits. What's more, the ED visit rate among their asthma population is consistently 20 to 40 percent lower than the benchmark population, and has dropped almost 40 percent since 2010, notes Harris. With the more sophisticated technology infrastructure in place, which builds PHM and care coordination into the care team workflow, CHA leaders say they expect to generate savings in other areas as well.

The immediate value of this project is an improved care experience for children and families, better outcomes and, eventually, lower costs, notes Harris. But the long-term benefit is more striking, she says. "The fact is that healthier children become healthier adults. By proactively managing the health of children in their population, CHA and the Foundation are helping set children on a trajectory toward lifelong good health." ◆

CO-SECOND PLACE WINNING TEAM

Texas Children's Hospital

When performance improvement, passion, and data analytics discipline meet

At Texas Children's Hospital, clinician and IT leaders have achieved pioneering breakthroughs in standardizing and optimizing care delivery in the critically important area of appendicitis care and appendectomy delivery BY MARK HAGLAND

What happens when you bring together several key ingredients—an organization-wide push for clinical performance improvement; a multidisciplinary approach to such improvement, with buy-in from clinician, administrative and IT stakeholder groups; and the discipline to apply analytics to complex care delivery processes, in pioneering ways? Well, if you are the leaders at Texas Children's Hospital, and you have the strategic vision, the intelligence, and the perseverance to see things through, you get industry-leading change.

The story of Texas Children's Hospital's breakthrough in a key clinical area began when leaders at the Houston hospital embarked in early 2012 on an assessment of their clinical programs to determine which areas needed quality and cost improvement, appendectomy quickly became identified as a key area. Nationwide, appendicitis is the most common acute surgical condition of the abdomen, accounting for more than one million hospital days per year and consuming 1.8 percent of hospital discharges for gastrointestinal diseases. Appendectomy is also one of the most common surgeries performed on children in the U.S. Nationally, best practices around appendectomy do exist that could help to streamline processes from the preoperative phase all the way through the postoperative phase; but leaders at individual hospitals like easy access to critical data in this area, and physicians and other clinicians lack access to important data at the point of care and analysis.

At Texas Children's Hospital, a diverse team of leaders has been working hard to optimize processes around pediatric appendectomy, seeking to standardize clinical practice and improve patient outcomes in this crucial area. Leaders of the team include Charles Macias, M.D., the hospital's chief clinical systems integration officer and the director of the Center for Clinical Effectiveness and Evidence Based Outcomes at the Baylor College of Medicine and Texas Children's Hospital; Monica E. Lopez, M.D., assistant professor of surgery in the Division of Pediatric Surgery and a Texas Children's pediatric surgeon; and Kathleen Carberry, R.N., M.P.H., director of the Texas Children's Hospital Outcomes and Impact Service.

> **THE KEY COMMON ELEMENT NEEDED IS THE ABILITY TO BUILD INTO THE EMR. AND A DATA ARCHITECT. SO ONCE THE DATA IS EXTRACTABLE FROM THE EMR, YOU HAVE TO HAVE SOMEONE WHO CAN EXTRACT IT.**
>
> —CHARLES MACIAS, M.D.

Macias, Lopez, and Carberry, all of whom had already spent years in clinical process improvement work, headed up the Texas Children's team on appendectomy processes, began in early 2011 to organize a permanent multidisciplinary care-improvement workgroup for appendicitis, leveraging their organization's enterprise data warehouse, along with associated analytics applications (from the Salt Lake-City based Health Catalyst), to gather and analyze data from the hospital's electronic health record (EHR) and numerous other sources, to evaluate appendectomy processes. The workgroup itself has drawn from a very broad spectrum of stakeholder groups within the hospital, including pediatric intensivists, surgeons, hospitalists, nursing, finance, quality improvement, and perioperative operations.

In the process of doing this work, the team has analyzed appendectomy procedure workflow, from diagnosis to after-care, and has come up with a variety of process improvements, including, for example, an evidence-based recommended practice incorporated into the workflow involving the optimal use of the antibiotic piperacillin-tazobactam to reduce surgical site infections.

Using the variety of strategies around process improvement in this

Charles Macias, M.D.

Monica E. Lopez, M.D.

Kathleen Carberry, R.N.

area, and leveraging IS to scrutinize the data they had been gathering, clinicians at Texas Children's have, within the past two years, been able to reduce postoperative appendectomy length of stay by 38 percent; reduce the average variable direct costs of appendectomy by 19 percent; increase EHR order set adoption rates by 36 percent; increase the percentage of patients receiving the recommended antibiotic as their first antibiotic by 53 percent; and decrease the length of time from diagnosis to surgery by 19 percent.

The impetus to examine appendectomy processes is far from new at Texas Children's. What is new, say leaders there, has been the turbo-charging of processes in the past few years, thanks to a concerted multidisciplinary effort and the strategic leveraging of IT to analyze and use data. "In the Department of Surgery," says Lopez, "there had been very strong efforts going back to 2003, related to clinical research, really, that was definitely hypothesis testing, but on a very small scale, in terms of a core team of people who systematically looked at appendectomies and other types of pediatric surgeries. So we already had a team formed that was interested in this. But more recently, since we joined hands with Dr. Macias's group and the outcomes and impact service, we've made great progress uniting the clinical research and real-time outcomes reporting, and using all those data to really guide any decision-making."

On the technical side of this initiative, Macias reports, "Access to the EDW involved an evidence specialist representing research practice; a data specialist who is a master's-level nurse, who understands data management; a business intelligence developer translating the data into graphs and visualizations; an outcomes analyst with a statistical background; and our EMR interface person who is a senior information systems analyst, who can build forms into Epic and make modifications; a complement of EMR experts; and a data architect. The key common element needed," he adds, " is the ability to build into the EMR. And a data architect. So once the data is extractable from the EMR, you have to have someone who can extract it."

That group of several IT and data experts came together with a clinical team drawn from a number of areas, but with strong guidance from Macias, Carberry, and Lopez. The resourcing of such an initiative is necessarily worked out of complexity, says Carberry. "With regard to the technical work, we've been connecting with an organization-wide business intelligence team," she notes. Performing this kind of work, she says, "forces you to really think as an organization as a whole, and to figure out how to prioritize care delivery. Because of the resource intensity, you're talking about millions of dollars in resource support" for all the initiatives going on at the hospital, she notes, "so you need alignment. Those teams are heavily matrixed. In our service, we have some dedicated folks and Dr. Macias has an order set person. So we do have some core decentralized folks, but we also are heavily matrixed."

BREAKING DOWN THE COMPLEXITY FOR UNDERSTANDING

On a very basic level, doing this kind of work—analyzing processes and outcomes, and moving forward to try to standardize clinical and care delivery processes—is difficult because of a fundamental lack of standardization of concept and process with regard to appendectomy care delivery, say the Texas Children's leaders. Lopez notes that surgeons nationwide—and there

(Continued on page 23)

THIRD PLACE WINNING TEAM

Bon Secours Medical Group

Navigating the bumpy roads of population health

One multispecialty medical group has invested in health IT systems and nurse navigators to achieve early returns in value-based care BY GABRIEL PERNA

To know where Bon Secours Medical Group (BSMG), a growing multispecialty organization that includes more than 600 Richmond, Va.-area physicians, is going on its journey to value-based, population health management, you have to know where Thomas Auer, M.D. and Robert Fortini, R.N. have been.

Dr. Auer, the CEO of BSMG and Fortini, the group's chief clinical officer, came to the organization in 2009 from the Queens Long Island Medical Group. They went from a heavily capitated environment to nearly 100 percent fee-for-service. The goal was to build value-based patient-centered medical homes (PCMH) and introduce the concept of team-based care to "our fiercely independent practitioners," according to Fortini.

Under the guidance of Auer, Fortini and other leaders at BSMG, they've come a long way in a few years. Certainly, there is a ways to go, but as Fortini says, "We've moved the dial a bit." In total, 27 BSMG sites have achieved PCMH recognition by the National Committee for Quality Assurance (NCQA), and seven are in the midst of applying. Furthermore, the organization has accountable care organization (ACO) contracts with many of its commercial payers and was recently accepted as a Medicare Shared Savings Program.

The medical group has created a PCMH environment where advanced information systems are gathering data from different sets of clinical and payer data to provide preventive care for high-risk patients. Technology alone though is not enough to create change. BMSG has invested in employing dozens of nurse navigators, who work at large and at individual practices and help to appropriately navigate the care for specific high-risk patients.

"We're very dedicated to population health and the transition to a different view on, how, particularly, primary care and then specialty care, is used and interacted with the community," Dr. Auer says. "It all starts with advanced patient-centered medical home. Finding the patients that we're not seeing and getting them in for care. It's easy to take care of what we see. It's not as easy to take care of the patients we don't see. It's an aggressive outreach philosophy to find the patients we are seeing and not seeing and take care of them appropriately. It sounds easy, it's not at all."

> **IT ALL STARTS WITH ADVANCED PATIENT-CENTERED MEDICAL HOME. FINDING THE PATIENTS THAT WE'RE NOT SEEING AND GETTING THEM IN FOR CARE. IT'S EASY TO TAKE CARE OF WHAT WE SEE. IT'S NOT AS EASY TO TAKE CARE OF THE PATIENTS WE DON'T SEE.** —THOMAS AUER, M.D.

The depth of BSMG's work to make the difficulties seem easy is why the organization stands out in a field of pretenders. Like everywhere else, the challenges of changing the culture and properly evaluating performance metrics exist at BMSG. Yet, not everyone can say they've invested as much resources, time, and energy as they have.

LAYERING POP HEALTH CAPABILITIES ON TOP OF THE EMR

From a technological perspective, everything begins with the organization's Epic (Verona, Wisc.) electronic medical record (EMR) system. Both the inpatient and ambulatory sides of the organization are on the platform. This allows for a "longitudinal perspective," according to Fortini. "Knowing what happens with a patient from the hospital to the home is great," he says.

Built on top of that EMR, BSMG has implemented population health capabilities to mine high-risk registries (35 in all) as well as multiple streams of payer data and various diagnosis codes (a capability from the Dallas-based Phytel) that ultimately helps stratify risk. The different sets of data can identify the risk category of a patient or the gaps in preventative care that another patient may have. The software has the

ability to push a message to the provider when a patient is in need of a service.

"The scalability of that [technology] is really powerful and something we couldn't afford to do in man hours," Fortini says. "It's really important to leverage that technology to essentially capture the at-risk segments of the population."

Once this is done, the communication element comes into play. The nurse navigators then call then patient and with a few simple questions, identify the risk for readmission or worsening of illness. However, this doesn't always work. That's where MyChart, the patient portal built within its Epic EMR, is a benefit. According to Auer, one-third of patients communicate with them through it. The tool allows patients to book appointments, renew prescription orders, or communicate securely with a provider if they have a question on something.

Joyce Rusincovitch, R.N., nurse navigator for an internal medicine physician practice at BSMG, says it can prove to be a vital form of communication between the two parties. Patient reminders through this platform can save on outreach calls.

"We can send messages to them if they we are having a hard time reaching someone through the phone, you know a lot of people are on the phone all day. We can just send them a MyChart message and let them know what we are trying to get a hold of them for," Rusincovitch says. "The younger population really appreciates that."

Not only can the nurse navigators, and other members of the care team, communicate with the patients through electronic means; they can also talk with each other. Rusincovitch and Angel Daniels, R.N. the clinical manager PCMH at Bon Secours, say this coordinates care, much faster in real time and more effectively.

CARE-TRAFFIC CONTROLLERS

Giving the nurse navigators this kind of capability is important, because as Fortini says, they are the "care-traffic controllers." As he tells it, there are two different kinds of navigators. Administrative managers, like Daniels, who are directing data and embedded navigators to the right place. Then there are embedded navigators, like Rusincovitch, who are in the weeds, acting upon that data directly with patient. Both sides are proof that the intersection of people and technology is the lifeblood of Bon Secours' Medical Group's advanced patient-centered medical homes.

The value of nurses in this role is certainly not lost on Fortini, Rusincovitch, Daniels, or anyone who understands how with their background, they can turn a complex care environment into a cohesive unit. "Nurses have the clinical background and understanding of many of these processes, we're dealing with them every day with our patients. We're used to being educators and looking at the patient as a whole and finding the barriers to their care. We're able to identify those social issues, the mental health issues, and a wide a range of things that allow them to be greatly involved with the management of care," Daniels says.

The other value nurses bring is relief. Doctors do not have the time to focus on those social and preventative care efforts as intently as they'd probably like. In the ideal setting, the nurse navigator and doctor work hand-in-hand to seamlessly provide preventative care for the high-risk and fill in the gaps. That's how it is for Rusincovitch, who says she is spoiled by the relationship she has with her doctors.

COWBOYS VS. PIT CREWS

Building this kind of relationship takes time. Auer and Fortini note that most doctors had no idea what to do with their embedded nurse navigators three years ago. Not only that but it was a brand new role in the organization that had to be created from the ground

Thomas Auer, M.D.

Robert Fortini, R.N.

Angela Daniels, R.N.

up. It took doctors a while to understand that the navigators weren't there to provide wound care. Now, in most places, Auer says if he pulled a navigator, he would get a wave of complaints from the doctor.

Despite this, Fortini still cites the cultural aspect of getting doctors to overcome their independent mindset and embrace a team-based environment as one of BSMG's biggest challenges. He calls it the problem of "cowboys vs. pit crews." "Doctors are traditionally lone rangers. They were trained that the buck stops with them," he says. "To make an ACO work, you need to play ball."

Another challenge is measuring outcomes, says Fortini, who notes that if he is going to be paid on performance, his performance has to accurately affect the outcome. The data is currently fraught with wrenches and outliers, which prevents this from being totally possible. He uses readmission rates as an example. "If a patient is discharged to a hospital to a rehab facility, which in some payer systems still shows up as hospital care, they're being readmitted. That shouldn't count as a 30-day readmission and in some cases, it does," he says.

Despite these challenges, BSMG has been able to achieve the all-too-important return on investment (ROI) for both technical and human resources while improving in several vital metrics. Yes this includes the aforementioned readmissions rate, which in the case of several payers is well below the national average. They're also able to handle more discharged patients per month, which will keep that readmission rate down.

WHAT'S NEXT

In the coming year, the advanced PCMH efforts will continue, as BSMG recently added urgent clinical care centers and retail clinics to the mix. They're putting nurse practitioners in supermarkets. They plan to add a telemedicine element, giving 24/7 access to providers. These moves are all about total access, Auer says. He and Fortini, two veterans of value-based population health, know there will be no shortcuts on this journey.

"It's not for the faint of heart. It's not a straight-line activity. It's very bumpy and it's very broad," Auer says. "You have to have super quality people, you have to create champions who are believers and sellers of their new world. And you need to spread that change. It's a critical change. It takes time. We've been at it five-and-a-half years and we have a long way to go. You can't do it overnight, you can't just do a quick NCQA application. It's a lot of people work," he concludes. ◆

TEXAS CHILDREN'S HOSPITAL *(Continued from page 20)*

are 15 at Texas Children's who perform appendectomies—all judge the types and levels of severity of cases differently, and make very different kinds of decisions regarding what kinds of antibiotics to administer, how long to administer them, and so on—even as the core of the invasive procedure itself is relatively straightforward. Even what surgeons tell the parents of children being operated on has been different. With regard to categorization, Lopez notes that "There is no variation in methods of diagnosis among the surgeons, but rather, they all describe their findings at the time of surgery differently. Each surgeon will describe differently how the appendix looks, and how that surgeon categorizes appendix appearance will vary, and that variation will influence the care management of each case." So one of the advances in this initiative was to provide the surgeons with an analytics-based visualization application that has helped surgeons use standardized vocabulary to categorize cases by appearance, leading to improved standardization of case management.

More broadly, Macias, Carberry, Lopez, and all the others involved in the initiative took time to break down all the variables in surgeon assessment of patient cases, perioperative care delivery, medication administration, and so on, and then, once they had isolated and identified all the variables, says Carberry, "Once the physicians saw the data, they knew what the problems were; and the presentation of the data to them validated what they already knew intuitively. But it was important to be able to track and measure the improvements," as clinicians worked to improve and standardize care delivery processes.

As a result, Lopez says, "From the evidence-based outcomes center that Dr. Macias leads, we with their help created practice guidelines that were evidence-based, and based on a rigorous review of the literature of existing guidelines at other hospitals and also incorporating guidelines from other hospitals, we created a single overarching guideline for appendicitis care that encompasses emergency room practice, and that standardizes the operative and post-operative approach" to appendicitis care at Texas Children's—with the results, as outlined above, that have been achieved.

Work remains with regard to integrating a number of aspects of clinical decision support into the hospital's EHR, the Texas Children's leaders concede; indeed, that is one of the areas they will be attacking next. But what the Texas Children's leaders have proven is that, guided by performance improvement-focused leadership and facilitated by strong data analytics work, even the most complex and non-standardized care delivery processes can be mapped, analyzed, and optimized. And that is an accomplishment with tremendous implications for patient care organizations nationwide, at this time of intense demands for system performance improvement across U.S. healthcare. ◆

INNOVATOR SEMIFINALISTS

INDEPENDENCE BLUE CROSS

Supporting the PCMH Model

For more than six years, the Philadelphia-based Independence Blue Cross has actively supported and promoted the medical home model; to date, more than 300 primary care practices in Independence's network are recognized by NCQA as medical homes, and those practices serve nearly 45 percent of Independence members. Independence's senior leaders recognize that true PCMH capability is only possible through intense IT and analytics facilitation.

Within the context of its ongoing support for the PCMH model, Indepence's chief informatics officer, Somesh Nigam, and its director of advanced analytics, Ravi Chawla, led the organization's informatics team in conducting a series of studies from 2009 to 2011 in order to evaluate the success of the medical home model and further prove its value in helping to deliver high-quality, coordinated patient care while helping to lower costs. The results of those studies were published in peer-reviewed policy journals.

Among the key findings: that the patients cared for in practices recognized as PCMHs had 10.8 percent fewer hospital admissions than control patients in 2009; 8.6 percent fewer in 2010; and 16.6 percent fewer in 2011. In addition, in 2009 and 2010, there was a savings in total medical costs of 11.2 percent and 7.9 percent, respectively, for patients treated in PMCH-organized practices.

Independence is moving ahead with further initiatives to support research into PCMH-based care models, and is collaborating with Penn Medicine on research initiatives looking into some of today's most pressing issues, including how to improve medication adherence for heart attack survivors.

CHILDREN'S HOSPITAL OF SAN ANTONIO

Optimizing Pediatric Dosing in Texas

The leaders at Children's Hospital of San Antonio (Tex.), a member of the CHRISTUS Health System, have been involved in a broad initiative to optimize provider ordering, particularly around pediatric medications, and especially with regard to pediatric dosing, long a historical problem in pediatric care. Project leaders worked intensively over a multi-year period with pediatric clinicians to create the following standardized content: over 170 pediatric-specific order sets with evidence-based recommendations where available; over 1,800 dosing sets associated with 372 medication profiles, providing clinicians with over 1,800 weight-based medication dosing strings; development of a pediatric medication dosing policy that provides ordering clinicians and pharmacists with defined guidelines for medication dose standardization/rounding, to ensure the dispensing and administration of practice and accurately measured medication doses based on weight; and development of an approved list of pediatric and neonatal ICU standard concentrations including associated dosing guidelines, maximum dosing, and rounding information to support the building of clinical content within the electronic health record.

All of these supports have been transforming pediatric ordering not only within the inpatient space, but in the outpatient space as well. Children's leaders note that 50 percent of pediatric care delivery within their health system occurs outside the walls of the hospital itself. Now, the clinicians, who may or may not have pediatric expertise, can quickly determine dosage for the medications for their youngest parents.

BLANCHARD VALLEY HEALTH SYSTEM

Population Health Management Powers Medical Home

For the past four years, Blanchard Valley Health System in Findlay, Ohio, and a large home appliance manufacturer have teamed up to tackle the healthcare value challenge. Together, these organizations established a technology-enabled patient-centered medical home (PCMH) initiative to get more value from providers and to encourage employees to better manage their health. Serving more than 4,000 combined employees, the medical home is driving better management of high-risk and high-cost patients, an increase in preventive care compliance, a drop in unnecessary ER utilization, and a return of $2.44 for every dollar invested in the program.

Critical to the success of the initiative is an end-to-end technology solution for population health management delivered by the Alpharetta, Ga.-based Wellcentive. The solution not only aggregates data about the medical home's population; it also empowers caregivers to take strategic action to improve outcomes, says Pat Beham, director, managed care, Blanchard Valley Health System. "With our Blanchard enrollees, we noticed three changes in the usage patterns," Beham says. "An increase in physician office visits and preventive visits; a 22 percent decrease in inpatient admissions (excluding deliveries), and an 8 percent decrease in ER visits. This initiative is a prime example of a forward-thinking local provider and employer working hand in hand to align incentives appropriately to tackle the value equation," Beham says.

NEXTLEVEL HEALTH

Virtual Health for Community-Based Care

In March 2014, the Chicago-based NextLevel Health Partners (NLHP) was awarded a contract with the Illinois Department of Healthcare and Family Services to provide care coordination services to seniors, people with disabilities, and those newly eligible under the expansion of Medicaid under the Affordable Care Act. A vital piece of this contract award was the utilization of health IT to support NLHP's community-based care model. As such, NLHP partnered with the Ney York City-based Virtual Health to implement a cloud-based care coordination system providing a high-tech solution to support NLHP's high-touch care coordination strategy.

NLHP's care teams are equipped with tablets and mobile phones, giving them the ability to have the full breadth of the technology platform's capabilities while accessing members at their homes, at providers' offices, at hospitals, and at various community-based sites, including homeless shelters, food banks and employment offices. Through a successful implementation and continuous partnership between NLHP and Virtual Health, NLHP care teams and in-network providers are able to enhance efficiency, carefully track and monitor members' health status in real-time and leverage the data to provide actionable interventions across the entire member population, resulting in improved health outcomes, enhanced quality, and higher efficiency, according to NLHP officials. As a result, to date, NLHP has been able to actionably engage with more than 50 percent of its member population in a matter of months, a statistic that is a far outlier among care coordination given the transient nature of the member population, its officials say.

PENN MEDICINE

Real-Time Data via a Mobile Patient Dashboard App

A Penn Medicine team has developed, and put into wide internal use, a mobile patient dashboard application that consolidates real-time patient data from nine clinical information systems at Penn. These include three electronic medical records (inpatient, outpatient, and emergency department) and six specialized systems (including lab, radiology, and admissions). The app— designed by a practicing Penn Medicine physician—offers physicians, nurses, therapists, pharmacists, dieticians, and lab and radiology professionals a faster, more convenient way to monitor patients, prioritize needs, and make treatment decisions, according to Penn officials.

Through the app, users can check real-time vital signs via easily viewable graphs that convey the patient's current and trended conditions. Other important clinical data that are available include allergies, medication with administration history (including home-based medications), radiology studies, and lab results. Unlike conventional EMRs, the Penn Medicine app presents these data in a display that is intuitive and designed to compliment provider workflow, say Penn officials. During the pilot phase for the Penn mobile app, care teams using the app were compared to a control group. Users accessed patient data from the EMR more frequently than control teams (12 vs. eight times per patient round). Penn leaders also found that the average log-in time for the EMR on a desktop is 53 seconds, but only 2.5 seconds on a mobile device, or 22 times faster. Based on an average of 40 log-ins daily, this translates into caregivers saving 33 minutes every day.

MILITARY HEALTH SYSTEM

Tri-Service Workflow Bringing Team Care to Patient Care

Tri-Service Workflow (TSWF) innovation is a multidisciplinary approach for the integration of IT systems into the clinical environment. The goal of TSWF is to improve overall quality of care across the Army, Navy, and Air Force Medical Services that together make up the Military Health Services (MHS). Prior to TSWF, clinicians in the MHS were frustrated with documenting and reviewing patient encounter notes in the electronic health record. There was no standardized workflow within an individual care team nor between patient care teams; the usability and performance of AHLTA was so poor, it led to profound provider dissatisfaction and became a barrier to the military being able to retain physicians.

To this end, an organic coalition of practicing providers known as the Tri-Service Workflow team came together. It employed a new methodology for organizational change management that integrated healthcare, policy/business, and IT communities together in the development of workflow solutions. Representatives from each service were then able to develop standardized tools and workflows for all three services that were sensitive to service-specific considerations. To support the workflow, every clinical team member was utilized to their highest level of training to promote team documentation. TSWF provided an analysis of the current technology systems impacting clinical end users.

One of the most significant accomplishments of TSWF is the standardization of the Army, Navy, and Air Force patient screening and intake process, officials say. This has strengthened the joint environment and moreover has decreased training times and staff downtime after permanent change of station while increasing interoperability. TSWF products are the standard documentation method for patient centered medical home (PCMH) in family medicine, internal medicine, and pediatrics for the entire MHS with products being used over 500,000 times each week. ◆

TECHNOLOGY INSIGHT SERIES

HCI HEALTHCARE INFORMATICS

MAKING VIRTUALIZATION A REALITY: UnityPoint Health and the Virtual Server Solution

As larger healthcare systems continue to grow, often merging with smaller regional and rural hospitals, information technology (IT) leaders are pressed to find innovative ways to deal with interoperability and data sharing across the enterprise. UnityPoint Health, a multi-campus health system in Iowa, needed to integrate a variety of radiologic and medical imaging systems across their rapidly expanding community.

To address the issue, this health system recently transitioned to a completely virtual server environment solution. Todd Holling, the Assistant Director of Clinical Legacy and Business Systems at UnityPoint Health, spoke with Healthcare Informatics about the challenges and opportunities of bringing together disparate systems across a large healthcare system—and how a virtual solution has helped leverage existing IT and medical imaging systems to achieve greater efficiency, improved care and increased cost savings.

Healthcare Informatics: UnityPoint Health has grown rather dramatically over the past few years. With so many different applications from so many different departments and institutions, what are some of the biggest challenges concerning interoperability and data sharing?

Todd Holling: The biggest challenge is that there's no, "one-size-fits-all" way to deal with the problem. There's never a solution that will be a perfect fit for everyone. UnityPoint Health is very much in a kind of growth mode as we integrate other partners into our system. And as we do that integration, we need to find ways to standardize as much as we can, creating the kind of platform that allows our partners to use our core systems. There are a lot of barriers. Many of our partners have ties to their old systems and may be reluctant to make a change. You have to address the question of how you can convert old data so it can be used by the new systems. What does that timeframe look like? What data moves to the new system? Where does the old data go? How do you retain that old data? There's a lot to consider.

How do you meet those kinds of challenges?

Holling: It's a fine balancing act. But it's one that can be managed with good communication—where the appropriate stakeholders are involved in those conversations early on, making sure everyone is up to speed. You also must have a systematic process in place to talk through all the issues. Because they can be difficult conversations—and you need to get your current users involved in those discussions so they can convey the benefits of using a standardized system. To let partners know that it's about coordination of care, sustainability efforts and optimization. Things that ultimately impact clinical care. So, early and often, you need to balance the different priorities of each site, get to a common ground consensus, and then have a collaborative process in place so you can get to a standardized end state where everyone is working on similar platforms.

Are there any issues that get magnified when your organization is in this kind of growth mode?

Holling: Getting buy-in can be an issue. And it's not a surprise. People at different sites get comfortable with where they're at—with the systems they have. Certainly, physicians do. And that's not to say that what they're using is necessarily the best product. But, they are systems that they know well. So the integration process can be a big culture change.

These physicians are coming into a larger institution. They're coming into a larger neighborhood where they'll have to

connect with more physicians and care team members. The support is going to likely come from a different avenue—in our case, it's a corporate location and we find local partners to support those systems.

But, again, if you focus on good communication early on, creating good decision documents that can demonstrate what you are doing to the community, you can get there. Get that information into the appropriate hands—and let those doctors start touching the new systems so they can get more comfortable. Do that and they quickly learn that the changes you make won't be so bad after all. And once they see that, they'll be part of a much larger network as well as a powerful system that has more tool sets and better support, they will really buy in. They have a real light bulb moment where they realize that their focus was on the wrong aspects of the change—and they will be able to, through this integration, open up a real community of care to help provide the best outcome for every patient, every time.

UnityPoint Health just made the transition to a virtual server environment to help assist with medical imaging data. Why? What are the advantages of such a solution as you are addressing interoperability and data sharing challenges?

Holling: First and foremost, virtualization allows for flexibility. In a traditional physical environment, if you exceed the bandwidth and growth capacity of a server, you have to then purchase another physical server—and keep adding more physical servers as needed. That takes time. It takes more money. It takes the whole lifecycle of a physical device.

Virtualizing allows you to scale out—and not up. That means, if you exceed your capacity virtualization, you already have the existing templates in-house for those virtual servers. You can add additional virtual servers literally within hours. So you can be much more flexible when you are compensating for growth—and all those eventual items that happen as that growth happens.

What kind of support did you receive during the implementation process?

Holling: We partnered a lot with McKesson on the virtualization process. We knew that we needed a solution that wouldn't just work for today, but one that would work for the next five years. McKesson understood that, too. So we never got a "No, you can't do this," or "We're not comfortable doing this," when we told them our requirements. Instead, they listened and said, "Yeah, let's do this together," and "This is not just good for you, but good for all." Ultimately, it ensured we had a successful virtual environment implementation.

Was it difficult to get buy-in from key stakeholders and physicians?

Holling: No. As we told the story about why we decided to move to virtualization, and the advantages of doing so, we got buy-in very easily. The fact that we can grow, be flexible and then continue to expand without the constraints of a physical environment spoke to them. Physicians don't want care interrupted. They don't want to hear, "We need to wait six months for a new infrastructure to be spun up before you can do that."

Does this solution change the way that clinicians work in different facilities across the organization?

Holling: It's hard to quantify how a virtual server impacts a physician behind the screen. But I would say that it has brought changes because our solution means less down time. If there's an issue with one server, you can switch to another virtual server in real time. That means that physicians can focus on patient care instead of down times and other unforeseeable IT issues. And that's ultimately what you want. You want the clinicians asking "How can I provide the best care for my patient?" Not, "How can I get around this IT problem?"

How does this solution work across different branded software systems or third party applications?

Holling: We used a product called Enterprise Image Repository that allowed us to easily work with third party applications that maybe weren't native to our standardized McKesson environment. And having a virtualized environment, again, allowed us to be very nimble. We could change the different operating systems to meet more restrictive applications needs in the third party world and with other systems. Virtualization allowed us to do that faster, less expensively and, ultimately, with greater success.

What would you like other growing hospital systems or accountable care organizations (ACOs) to know about this kind of solution?

Holling: Ultimately, we all want to create a standardized environment that is flexible and scalable. You have to mitigate the unknown—because you don't always know what's going to happen tomorrow, but you do have to have control of the environment today. So making the investment in the right technology helps you to avoid a lot of pitfalls. Virtualization has allowed us to navigate some pretty difficult waters—with the data tsunami you get when you're a healthcare system acquiring other facilities as well as partnering with different facilities. It allows your organization to be very dynamic. And helps ensure that your IT dollars are invested not just for now, but for the long term.

If you could offer one piece of advice to an organization considering virtualization, what would it be?

Holling: Do your homework. Think really hard about where you want to be as an organization not just today, but two, three, four and five years from now. The investment you may make today will have repercussions years in the future. Investing in virtualization allows you to consider your needs today—and those tomorrow, too. So don't think too much about today. Really focus on what you may need later on.

Best In KLAS: Shifts in the Provider Operations Landscape Influence Vendor Selection

As population health initiatives move forward, core EHR selection issues are emerging; and as interoperability becomes key, clinical/financial integration gains in importance

BY MARK HAGLAND

The "Best in KLAS 2014 Software & Services" report, released recently by the Orem, Utah-based KLAS Research, comes at a time when broad policy and business trends in healthcare are strongly affecting the healthcare IT industry. Most notably, intense efforts on the part of providers to engage in population health and accountable care arrangements are changing the landscape for core electronic health record/electronic medical record (EHR/EMR) vendors, while the need to interoperate between clinical and financial systems—coming out of the same trends around the shift towards population health and accountable care on the part of providers—is rearranging the landscape for vendors offering patient accounting and revenue cycle management solutions.

In that context, *HCI* Editor-in-Chief Mark Hagland interviewed Colin Buckley, director of research strategy at KLAS, on the EHR/EMR vendor segment results from this year's "Best In KLAS" report, and interviewed Boyd Stewart, a research director on KLAS's professional services and financial solutions team, to get their perspectives in those areas. Below are excerpts from both interviews.

WHEN IT COMES TO EMR/EHR, POPULATION HEALTH IS FORCING SHIFTS

What do you see as some of the biggest trends right now in the EMR/EHR vendor space?

Colin Buckley

Colin Buckley: In some ways, the story hasn't changed dramatically from previous years, though some vendors are struggling more than others. In terms of the major vendors on the acute-care side, we have Epic and Cerner still leading the pack, due to the integration, the more consistent service and delivery, as well as the hand-holding and knowledge and expertise, that they offer; then we've got Meditech and McKesson Paragon as two vendors not being considered nearly as much by healthcare IT executives as Cerner and Epic, and their performance has been uneven as well. Now, Allscripts in the anomaly; that's the one that really sticks out this year, that Allscripts had a pretty significant improvement in their score; and they had a significant improvement last year, too. We're hearing from their customers that they're pleased with how things have been going, with their strategy and acquisitions.

And we just put online today a report, the EMR Purchasing Plans Report, and for those who are switching, most of the consideration is still going to Epic and Cerner; Allscripts gets very little consideration from the outside. But the stability of their customer base has increased, and two-thirds of the folks currently on Allscripts told us they're definitely staying put. They've become optimistic; they've seen improvements in the Sunrise enterprise suite. So Allscripts was third place this year, and that derives from satisfaction with the suite of products that used to be the old Eclipsys suite. They've been maturing that product, and the satisfaction with it has

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slowed down attrition from Allscripts, but hasn't compelled most newcomers to consider it.

How will the competition for new contracts play out?

Based on the research we did for this new report, Epic and Cerner are still getting the bulk of the attention. Meanwhile, what will happen with the legacy EMR organizations—Meditech CS, and Meditech Magic? A lot of their customers are looking to upgrade to the latest Version 6, and they're headed in that direction. Version 6 is a new platform, so upgrading to Version 6 is really like doing a new implementation. But most of Meditech's customers are remaining loyal. Meanwhile, one of the biggest trouble spots has been around Paragon by McKesson, which has dropped, as they've struggled to deliver reliable upgrades.

Do you see overall satisfaction improving among vendors?

I don't think so. There may be a bit of leveling out happening. The distribution is probably spreading a bit.

Has the EMR market matured? Have the products matured? Or is that too general?

The products are better than they used to be, and most are improving to some degree or another. The question is, can the vendors keep up with the expectations that keep changing all the time.

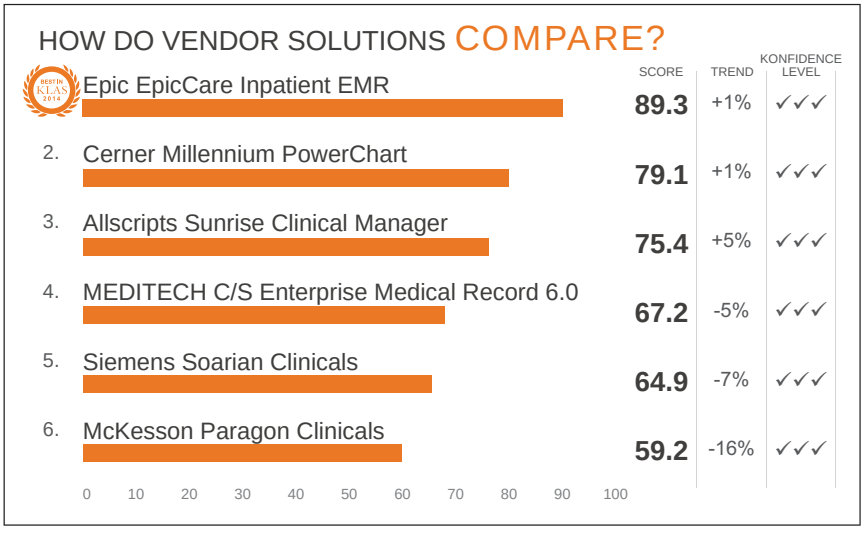
How has the meaningful use program impacted all of this? It appears to have made healthcare IT executives impatient with the pace of innovation on the part of core EMR/EHR vendors.

Yes, it's raising the bar all the time. meaningful use Stage 1 revolutionized the market. And now the expectations are far beyond just implementing a system and turning it on. And they're being asked to do things that are much more impactful. And even when some vendors are having some challenges, that is a form of maturation.

We're hearing about dissatisfaction with EHR capabilities overall.

There is a lot of that, and a lot of providers are anxious with demands facing them, even if they're not today's demands, and they don't see vendors meeting those demands. Last year, we did a perception study, and randomly called up providers and asked them questions. And one question we asked them was, if they were doing population health, what vendors they used today and what vendors they might be using. We asked which vendors were playing a role for them. And the most-often-mentioned vendor they said was playing a role and would do so in the future, were the EMR vendors. So I think there is a hope and an expectation that those EMR vendors will mature towards fulfilling expectations.

What's interesting is the diverse strategies of the top EMR vendors. Epic has been adding more functionality to its Healthy Planet population health module, while Cerner is putting together an entirely new population health platform, Healthy Intent, which is intended to be vendor-agnostic. I don't see best-of-breed population health solutions going away, but pieces of population health will be integrated into EMRs. And that makes sense, because ideally, for example, you wouldn't want to have to force a physician to go into a separate product just to check in about a patient who had a cold. And that's the benefit of an integrated core system. And some of the functionalities now in the best-of-breed products will migrate into the core EMR products over time. Still, in the case of Cerner, they're almost created a best-of-breed product being offered by a core EMR vendor. And of course, Allscripts acquired dbMotion; and Allscripts' customers saw that as a smart move.



Acute Care EMR Rankings

ON THE FINANCIAL SIDE, INTEROPERABILITY AND INTEGRATION ARE TOP OF MIND

With regard to patient accounting and revenue cycle management solutions, a core component of business software for virtually all hospital-based organizations, Boyd Stewart, a research director who is on the professional services and financial team at KLAS Research, seems significant shifts taking place based on the need for interoperability and integration between clinical and financial information systems. Below are

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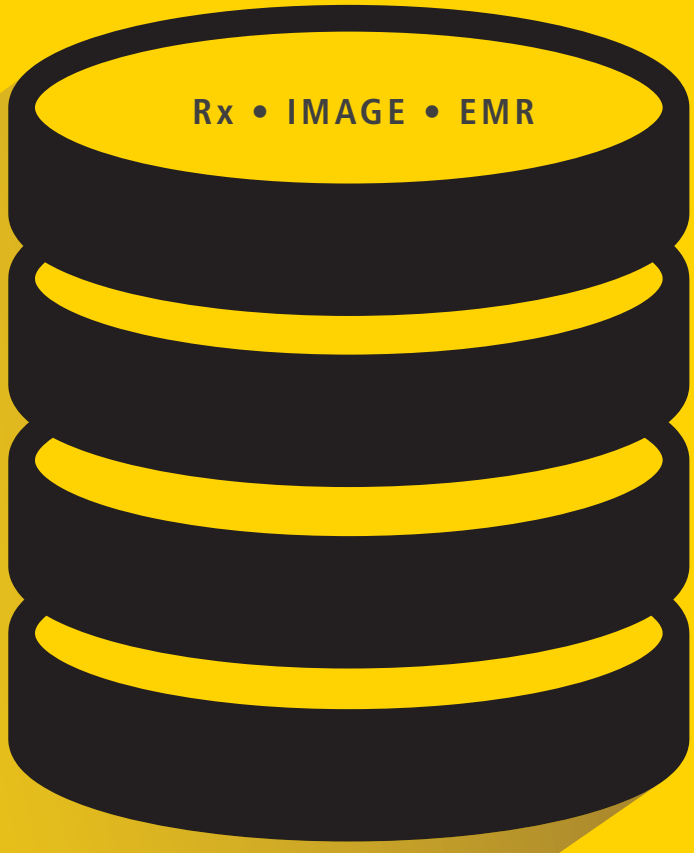

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excerpts from his recent interview with *HCI* Editor-in-Chief Mark Hagland.

How are CIOs and other IT executives feeling about the Patient Accounting and Patient Management category, which encompasses revenue cycle offerings, these days?

At the 50,000-feet-up level, we're seeing decisions around clinical IT selection driving the decisions around revenue cycle solution selection. The biggest question these days for providers is whether they should consider driving their organizations broadly towards single-source strategies on both sides of the divide—in other words, whether they should try to get their clinical and financial software from the same core vendors. When you look at the chart related to the top vendors in this area [see below], you'll see some vendors that offer integrated packages, and others that don't. If you were extremely desirous of getting a GE or QuadraMed clinical solution to interface with those companies' offerings on the financial side, they could probably help you somehow; but essentially, those two are best-of-breed solutions, and best-of-breed is not the main strategy these days.

The customers of both GE and QuadraMed are expressing satisfaction and telling us that those companies have been investing a lot in the functionality of their solutions. GE is usually chosen because their financial product is integrated across the inpatient and ambulatory spheres. That's not true of QuadraMed, but they still have a base of customers who are loyal to them.

Boyd Stewart

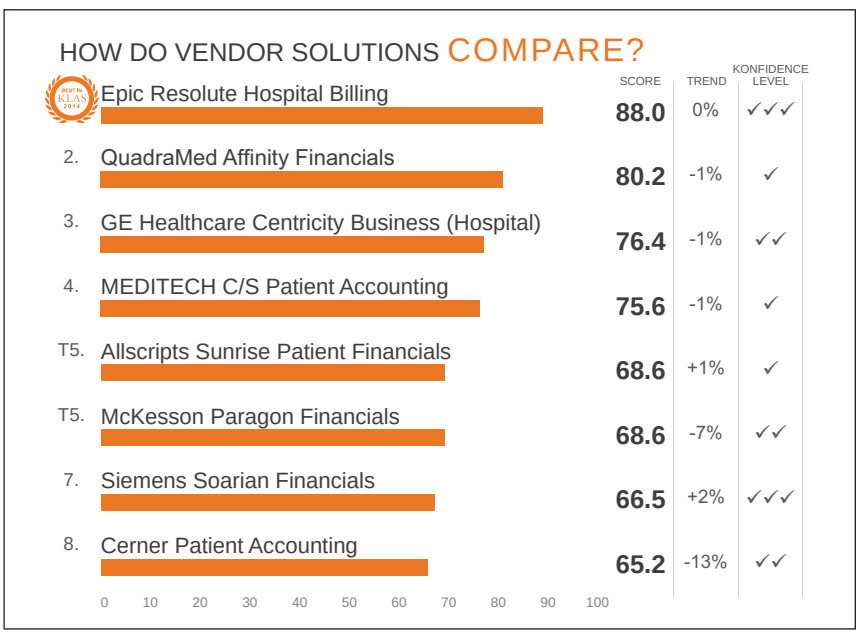
So more people will end up going with patient accounting and revenue cycle solutions offered by core EHR [electronic health record] vendors as well?

Yes. And Cerner is high up in terms of choice, in that regard. Meanwhile, the Cerner acquisition of Siemens is causing a lot of people to question whether they should stay with Siemens Soarian Financials, even as Cerner has promised that they would service Soarian Financials for 10 years. So, people are taking a wait-and-see attitude to see what happens. With regard to Cerner itself, Cerner has a strong clinical information system with high satisfaction levels; nonetheless, we've talked to CIOs at several organizations who are still waiting for that company's patient accounting piece to mature more so they feel comfortable getting it.

We spoke recently with a hospital CIO, who shared with us about a conversation he had with his CFO. That CIO reported to us that his CFO expressed the sentiment that the risk of getting an immature financials system is a higher risk than that of getting an integrated clinical and financial system at a high price. That organization is currently a Cerner clinical customer, and its executives are very happy with that side, but are considering Epic for everything because of the integration factor; they want a mature, stable patient accounting system, and want to keep that enterprise view. We've seen the senior executives at a few organizations talk that way.

So it seems clear that many healthcare executives are strategizing towards acquiring integrated systems combining the clinical and financial sides. Do you have any other broad predictions?

It's interesting, as we've seen the implementations on the clinical side take place, we're starting to get asked a lot more by providers the question, who can help me optimize my clinical systems? And a lot of work is going on, on the revenue cycle side, too. A lot of providers are still on legacy revenue cycle systems. And they're starting to see that they've got to optimize and make things flow better. And a lot of that flow is interoperating between the clinical and financial sides. ◆



Patient Accounting/Patient Management Rankings

The Leading Edge Awards 2015:

Solutions Leadership in Healthcare IT

For more than a decade, the editors at *Healthcare Informatics* have honored teams of leaders at patient care organizations for their innovations in leveraging healthcare IT to improve patient outcomes, control costs, enhance the effectiveness of clinicians, and improve patient and community satisfaction. Every Innovator Awards winning team (pp. 8-25) has acknowledged at least one partnership with a forward-thinking vendor partner.

So this year, for the first time, we, the editors at *HCI* have chosen to recognize healthcare IT vendor companies themselves, through a new program that we've named the *Healthcare Informatics* Leading Edge Awards. A number of healthcare IT vendor companies responded to our call for the submission of entries in the categories of clinician workflow improvement, interoperability, and cost savings.

And now, after a careful review by neutral judges drawn from the membership of *Healthcare Informatics'* Editorial Advisory Board, we are able to announce the winners in each of the three categories: Imprivata, Inc. (workflow improvement), Loop360 (cost savings), and Splunk Inc. (interoperability).

In the following pages, you will hear from senior executives at those companies articulating their sense of mission around what they do, and offering their perspectives on the future of vendor innovation in healthcare IT. Thank you to all the vendor companies that submitted entries this year, and congratulations to the winning organizations! We are delighted to honor these organizations, and look forward to sponsoring next year's Leading Edge Awards as well.

--The Editors of *Healthcare Informatics*

Leading Edge in Enhancing Workflow

BY KAYT SUKEL

Over the past decade, *Healthcare Informatics* has recognized healthcare leadership teams who have gone above and beyond in their use of information technology solutions with the Innovator Awards. But those innovators could not have achieved such success without dedicated vendor partners. To that end, *Healthcare Informatics* now brings the Leading Edge Awards, honoring vendors whose combination of expertise and innovation are shaping the future of healthcare systems. The 2015 winner in the category of Workflow Enhancement is Imprivata, Inc., the healthcare IT security company, based in Lexington, Massachusetts. Omar Hussain, president and CEO of Imprivata, spoke with *Healthcare Informatics* about the importance of provider productivity, why Imprivata's mission is to never lose a customer, and the challenges of creating meaningful systems in an ever-changing industry.

Healthcare Informatics: Tell me a little about Imprivata's mission as a company.

Omar Hussain: Our mission is to improve provider productivity. At the end of the day, as healthcare continues to adopt technology, you see that productivity often takes a major hit. And that hit impacts patient care and patient outcomes. Think about it: when a hospital adopts a new technology, providers often become less productive. They spend less time with patients and more time with these new systems. And if you want to improve patient outcomes, you need to find ways to help providers spend more time with their patients.

The healthcare industry is going through a major transformation when it comes to technology. And while there are a lot of long-term benefits, you'll see a lot of wasted time in the short term. Providers have to spend a lot of extra time with clinical systems, with accessing patient information they need, with communicating patient information with other providers. So addressing provider productivity challenges is a vital opportunity to improve patient care and patient outcomes—and by focusing on clinical workflow, we can help ensure that technology is helping instead of hindering the quality of care.

Healthcare Informatics: What are some of the biggest challenges that your clients face regarding clinical workflow?

Omar Hussain: Traditionally, healthcare has been a paper-based industry. That's changing now. But when you go from paper to an electronic system, one of the biggest pain points is accessing patient information, whether you are talking about adding information to a chart or looking up lab results. Because of regulations around patient privacy and safety, accessing patient information requires a username and a password. And you have to do that secure log-in every time you want to access any type of patient information. So if you're a doctor or a nurse, you might have to do that log-in multiple times in a single hour—every time you move from room to room.

That one simple thing is getting in the way of giving care. So what Imprivata does is improve that entire clinical workflow. It allows providers to focus on care. Because all that physician has to do is walk up to the computer, swipe a badge or put a fingerprint down, and they can instantly access the data they need. They don't have to go searching for it. They don't have to find different applications. They can customize their desktop—even as they move from workstation to workstation. And they don't have to worry about shutting their session down. Imprivata will do that for them. Taken together, that seamless workflow results in a huge savings of time. It improves productivity of the entire clinical staff tremendously—because they don't have to spend 20, 40 minutes per shift just trying to adjust patient information.

Healthcare Informatics: What role did clinicians play in developing that workflow?

Omar Hussain: Here is one thing that sets Imprivata apart as a company: We don't want to just throw technology out

"Providers have to spend a lot of extra time with clinical systems, with accessing patient information they need, with communicating patient information with other providers." —Omar Hussain

there, we want to build great products. We do our best to make the right investments and really understand what the problems are. We work closely with our customers—directly with the users—to understand how, where and why they use these systems. What is it they want to see? What do they need to see? How would they like to see it?


Omar Hussain

It's about taking a complicated problem and trying to simplify it so that physicians can get the information they want exactly the way they want it. And our goal is to never lose a customer. So we continue and will continue to work closely with our customers and do whatever it takes to allow them to be successful and reach their goals. That's how we've managed to grow as a company so significantly—and how we developed a reputation for finding a way to make our products work the way they need to.

Healthcare Informatics: Often, care providers are told they can't have an optimized workflow because of privacy and security issues. How do you give your customers the best of both worlds?

Omar Hussain: We are focused on drawing a bridge between security and convenience. For example, one of the HIPAA regulations is to make sure you always know who accessed what system when—who changed what medical record. Because, if something goes awry, you need to know what doctor made the change to that prescription or ordered that extra procedure. Instead of convoluted usernames and passwords, or multi-step authentication, we have created a simply but fair biometrics solution. It says, "I know exactly who you are when you put your finger down." It complies with all the regulations around authenticating a doctor or nurse. But it's so simply that it doesn't get in the way of providing care.

We have a new product, Imprivata Confirm ID™, to help manage electronic prescriptions for controlled substances. Doctors and patients want electronic prescriptions because they are so convenient. But there are strict requirements from the Drug Enforcement Administration (DEA) around how to securely enroll people and to ensure providers use two-factor authentication when signing a prescription. But just because it's secure doesn't mean it has to be complicated. Imprivata has developed a solution that is simple, easy and convenient for providers. Yet, it is secure and meets the DEA requirements. We show that convenient and bulletproof don't have to be mutually exclusive.

Healthcare Informatics: In your opinion, what sets you apart from your competitors?

Omar Hussain: We at Imprivata are passionate about building great products. We make incredible investments in our technologies and products. We are committed to the healthcare space. We are committed to make our solutions work for our customers. Not many companies say, "We never want to lose a customer." But we do—and we will do whatever we can to make sure our customers are successful.

Imprivata builds solutions that not only allow you to comply with government regulations but also help save you time. Our tagline is, "We enable healthcare securely." And we do enable our customers to use our systems, solutions that are fast and easy, and do so in a secure manner. Today, over 3 million clinicians worldwide at over 1,000 hospitals are using our systems. And they do so because they understand we are providing technologies that make workflow efficient and intuitive for their users.

Healthcare Informatics: How can your focus on provider productivity assist in improved care and reduced costs?

Omar Hussain: Any time you can give back to clinicians is huge—both in terms of improved care and cost savings. Today, the average nurse or doctor is spending less than 30 percent of their time on patients. So when you give them time back, you save by making sure their focus is on the patient—and you don't need to hire more people to provide that necessary care.

Healthcare Informatics: With an ever-changing landscape, how can healthcare information technology vendors help foster innovation?

Omar Hussain: When we first started Imprivata, our focus was all about accessing patient information. Because the challenge then was that doctors and nurses were wasting a lot of valuable time just trying to track down information. Our first product, Imprivata OneSign®, provides fast, secure access to clinical applications, virtual desktops, and patient information. But the industry is always evolving. And the technology has to evolve with it. So we pay a lot of attention to what our customers are saying. We listen to them as they tell us about the challenges they are facing. We are finding new ways to improve productivity, and save our customers lots of time, by listening to what they need. And that's how we stay ahead of the curve.

Imprivata Confirm ID came about because our customers told us they were struggling with dealing with upcoming DEA regulations around e-prescribing of controlled substances. They told us they wanted a solution that was easy, where doctors could be easily authenticated, and where they knew that they were complying with all DEA regulations. We went to work and built a solution that they didn't need right at that moment—but that they knew, and we knew, they would need later. And so we had a product that could deal with the issues when those DEA regulations finally came down the pipeline.

By working closely with our customers and our design partners, we can try to stay ahead of the changes that are coming. And, in doing so, we can build quality solutions that are of high value to them. That's what we've been doing for the past 10 years. And that's what we'll continue to do. ◆

TECHNOLOGY INSIGHT SERIES

HCI HEALTHCARE INFORMATICS

A NEW ERA IN HEALTHCARE: Health Relationship Management

Joshua Newman, MD, MSHS, Chief Medical Officer & Product Strategy, Salesforce.com, shares why health relationship management is what's required to reduce costs and improve patient outcomes as the healthcare industry continues to evolve.

Customer relationship management (CRM) is a buzzword across multiple industry verticals. And for good reason: having systems that can successfully manage an organization's interactions with current and future customers brings a significant return on investment. The White House Office of Consumer Affairs found that it is 6-7 times more expensive to gain a new customer than it is to keep an existing one—and a 2011 study by Nucleus Research estimated that for every dollar spent on CRM, an average of $5.60 came back to the company.[1,2]

Despite such benefits, healthcare, as an industry, has been slower to adopt CRM practices. And that's to their detriment. ***Healthcare Informatics*** spoke with Joshua Newman, MD, MSHS, Chief Medical Officer & Product Strategy, Salesforce.com, a company dedicated to improving healthcare through better relationship management, about the emerging need for health relationship management, what today's patients expect from healthcare organizations, and how the right CRM strategy can help reduce costs while improving overall quality of care.

What is health relationship management?

Joshua Newman: Health Relationship Management is the category name we use to describe the application of CRM into the industry complexity for healthcare. In the U.S., certainly, we are now moving away from diagnosis and treatment of disease and focusing more on wellness. And it makes sense—because by the time you develop a chronic disease, it's too late. This move to population health management means you have to really think about how to engage with patients, how to get them to take the right actions, so they can stay healthy. And to have those insights, you have to bring together data from disparate sources in a complex ecosystem, turn it into an actual workflow you can use, and then collaborate and communicate with it. That's a whole new category of service and marketing—one where you are engaging your customers, your patients, before their care, while they are in your care and then after they receive care.

Why is this becoming more important in the healthcare industry?

Newman: It's about putting the patient at the center of the experience. It's about knowing who they are, understanding their preferences, and being able to effectively communicate with them across any channel, whether it's a clinical encounter, text message, email or phone call. There are so many ways that patients can access care today. The cloud and mobile revolution has changed everything. And patients are expecting the same kind of experiences they are seeing in every other aspect of their life.

The model of care that we've been practicing in the U.S is not cost-effective. It's not getting the outcomes we want—yet we pay significantly more for it. So we need to fundamentally re-think our approach. How should we be delivering care? When? Where? Both the patient and their providers need a complete view of patient information so we can deliver better care, across channels, when and where patients need it. This is essentially a customer relationship management problem.

So what should patients expect from good health relationship management?

Newman: They should expect opportunities to get care access anytime, anywhere and any place. So much of healthcare is behavioral. It's not just what happens in front of the clinician. It's all those little moments throughout the day—throughout your life—where you make choices about your health. Today, healthcare systems are not set up to support that kind of paradigm. But health relationship management systems, with cloud service and communities products, allow you to create a very open, expansible community so that anyone can be engaged

Patients want systems that are optimized for their health. One that is geared to their goals and needs—and shows them what their options are. *– Joshua Newman*

to help a patient achieve his or her health goals. With high-deductible insurance plans, patients want to be more informed. They want to stay healthy. And while the healthcare industry, historically, has really focused on supply side interventions, we are moving to demand-side. And that makes customer relationship management that much more important.

Patients are going to expect transparency, customized information and multi-channel access. Today's system is so inefficient. Everywhere a patient goes they are asked the same questions, over and over again. Healthcare organizations have whole departments that are just trying to correct bad information. And so much of the information we collect today is optimized for billing. Patients want systems that are optimized for their health. One that is geared to their goals and needs—and shows them what their options are. It's going to be a revolution. And it's, I believe, the most exciting time in 50 years to be in healthcare.

What does having a panoramic patient view across settings give both providers and patients?

Newman: Number one: It gives them better health faster. The average person sees 3-6 providers today who often have disconnected patient records. While each provider is doing his or her best, their view of a patient's condition is limited by their access to patient information. Having a panoramic view of each patient gives us a lot more real-time information about what matters most for that individual. We need a connected way to access this information, verify it and then get it in the provider's hands at the point of care. And we need to make it easy to use on any device at any time.

Why haven't electronic medical records (EMRs) closed that gap?

Newman: Every system is good for a certain purpose. But no system does everything—and if it tries to, it becomes incredibly complex and burdensome to maintain. As much as eighty percent of what determines your health happens outside the clinical setting and EMRs weren't designed to capture that kind of information. EMRs were optimized for billing, transactions and clinical protocol compliance. They weren't designed for today's health management. We have a new need in healthcare for a patient and provider engagement platform.

This solution can integrate with the EMR, offering complimentary capabilities to improve health. It is an agile, extensible platform that enables multi-channel communications across mobile and web devices, connects with existing systems holding patient records, aggregates that information to allow insights and track actions, and is easy to configure for the ever changing healthcare requirements.

To create such a system requires an incredible amount of data. How can healthcare organizations make sure they are getting the most from their data without drowning in it?

Newman: This is where technology can help us dramatically. The old world of intelligence was very slow and expensive. But we now have whole new ways of clearing data as well as new visualization tools that allow users to really interact with the data and ask good questions—the right questions. Part of the power of healthcare is, if you can get data and put it together, make it available to patients and providers, there's so much learning that can be unlocked. The next generation of tools can take computing and new visualization technologies to allow you to store and query infinitely indispensable data right in the palm of your hand. And that is what's needed to transform our healthcare outcomes.

How can health relationship management help healthcare organizations to reduce costs while increasing the quality of patient care?

Newman: Salesforce's tagline is "we are the customer company." We learn from our innovative customers to create successful platforms that allow them to focus on the business problems they need to solve instead of on tools or software. By embracing our health relationship management platform, we've seen our customers reduce patient management costs by over fifty percent—while also increasing patient satisfaction and improving health outcomes. And we help them create these new efficiencies in weeks rather than months or years. The key is to build closer relationships among patients and providers. Do that and you'll see the benefits. Do that and you'll see improved health.

References

1. http://nucleusresearch.com/press/crm-returns-5-60-for-every-dollar-invested-nucleus-research-finds/
2. http://blogs.salesforce.com/company/2013/07/bad-customer-service.html

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Leading Edge in **Interoperability**

BY KAYT SUKEL

Over the past decade, *Healthcare Informatics* has recognized healthcare leadership teams who have gone above and beyond in their use of information technology solutions with the Innovator Awards. But those innovators could not have achieved such success without dedicated vendor partners. To that end, *Healthcare Informatics* now brings the Leading Edge Awards, honoring vendors whose combination of expertise and innovation are shaping the future of healthcare systems. The 2015 winner in the category of Interoperability is Splunk, Inc., a San Francisco, California-based company focused on optimizing operational intelligence. *Healthcare Informatics* spoke with Tapan Bhatt, vice president of business analytics and Randy Rosshirt, healthcare solutions expert, about the importance of operational intelligence, how to not be overwhelmed by data and why the right platform can "future-proof" your organization.

Healthcare Informatics: How would you characterize Splunk's mission in healthcare?

Tapan Bhatt: Our mission is to make machine data usable, valuable and accessible for everyone. The key term here, of course, is machine data. We have a very broad definition of that—it's data that can come from any kind of application, network or sensors. In the past, there weren't any technologies that could allow people to easily mine and make sense of all that disparate data. Our name, Splunk, comes from spelunking, or exploring dark, underground caves. Because we explore this type of machine data that was previously unexplored—and help our customers use it to make better business decisions.

Healthcare Informatics: Splunk works across a variety of industries. Is there something different about working with machine data in the healthcare space?

Randy Rosshirt: Healthcare has data challenges like no other industry. Healthcare information technology is all over the place. And the machine data culled from those systems is all different shapes and sizes. Having a flexible platform can help aggregate silos of data across hospitals and bring a contact and visibility to it that solve all types of problems across the healthcare operation—from clinical analytics to population health data.

> "Healthcare information technology is all over the place. And the machine data culled from those systems is all different shapes and sizes." —Randy Rosshirt

Tapan Bhatt: Splunk is definitely a horizontal platform—but healthcare is a space where there needs to be more of a focus on data because of healthcare information exchanges, because of the need to protect patient health information. So even thought Splunk is horizontal, it's very applicable to today's healthcare data issues. And as the broader healthcare model evolves, with even more systems offering data, it's going to be even more important that healthcare organizations can get the data they need for meaningful use requirements.

Healthcare Informatics: How do you define operational intelligence? Why is it so important for the average healthcare organization to have?

Tapan Bhatt: Operational intelligence focuses on machine-generated data in real-time. So you can look, analytically, at what is happening with your streaming data in real time so you can discover things about your organization that you never could discover before. With a lot of relational analytic platforms, you have to define what you're looking for beforehand. You have to understand the kind of answer you want back from the data before you ask the question. But one doesn't always know the exact question. So operational intelligence is having the ability to explore this machine data in real-time—and ask any question you need to ask.

Healthcare Informatics: Healthcare organizations, today, have a lot of different systems that generate data. What are some of the biggest challenges to make all of those systems interoperable so you can gain that critical operational intelligence?

Randy Rosshirt: Healthcare, traditionally, has gone out and found the best application for a particular use case. So, over time, healthcare organi-

zations have developed tremendous silos of information. So knowing what's really going on in your operation, what's going on across your organization is difficult. It's hard to put all that data together in context so you can get out the intelligence you need. But if you have the ability to pull data from all those silos in real time, and get a true picture of what's happening, you can better utilize your resources and lower your costs. If you can gather that data in real time without the need of connectors, you have better information at hand to make the right decisions to reduce costs and improve care—and it's all data-driven.

Tapan Bhatt

Healthcare Informatics: With so much data available, how can Splunk help organizations make sense of it all in order to help them reach their goals?

Tapan Bhatt: It's easy to get overwhelmed by it all—by the scope and the magnitude of the data. What do you do with it? How do you handle it? But if you start with a specific use case in mind, you can use the data to solve that problem and then use that as a basis to adjust and handle other questions. I think we've seen, with our customers, is they start small and then grow big. As they see the flexibility of the platform, they are able to really drill down and find the answers they need. And as they get more comfortable, they find more and more use cases to use it with.

Randy Rosshirt: One of our customers is starting an integrated research campus. He told me that he didn't want to still be planning a year from now. He wanted to get things kicked off and start showing value at the end of the year. If you go with a data warehouse, you will still be planning in a year. But Splunk is built to start small and grow.

As you learn more about the problem and more about the data, you grow your solutions and solve more problems. It's a platform to build on. You don't have to boil the ocean. You don't have to buy everything upfront. You don't have to know everything that you're going to do in the future. You can start small, solve one problem, and grow from there.

Healthcare Informatics: What do you want to tell healthcare organizations that are struggling with interoperability issues?

Tapan Bhatt: Focus on the problem you are trying to solve. It's not about how to make sense of every bit of the data. It's how can you use that data to solve your problems. For example, one issue may be regulating security problems to better protect patient privacy. You have a deluge of information coming from all these connected devices that have been introduced across the hospital. So the problem you are trying to solve is how are physicians using these devices? How are they making sense of the information provided by those devices? And that can help you put policies in place to regulate privacy accordingly. So it's not about just trying to make sense of all the data that you have. But to put data in the context of the problems you are trying to solve.

Healthcare Informatics: How can an operational intelligence platform lower costs and improve the quality of patient care?

Randy Rosshirt: You have to be able to understand where you need to improve efficiencies and make better decisions about care. And doing that requires having the right information at the right place at the right time. You get that by bringing data together in real-time. By creating context around the decision that needs to be made—whether it's about better schedule or an investment on an expensive piece of equipment.

Healthcare Informatics: Healthcare presents an ever-changing landscape. How can Splunk help healthcare organizations keep up with such a dynamic environment?

"You have to be able to understand where you need to improve efficiencies and make better decisions about care. And doing that requires having the right information at the right place at the right time. You get that by bringing data together in real-time." —*Randy Rosshirt*

Randy Rosshirt: Splunk helps "future-proof" your environment. As things change, regulations and problems and needs, Splunk adapts to new data quicker than anything. With Splunk, you can keep indexing new data even if it's changed, correct it at search time, or look at it differently at search time. But nothing affects the collection of data. So it works very well in a dynamic, changing environment. And, because of that, it has tremendous potential—and be the kind of technology that can help make the transformation of healthcare in this country work. ◆

Leading Edge in Cost Savings

BY KAYT SUKEL

Over the past decade, *Healthcare Informatics* has recognized healthcare leadership teams who have gone above and beyond in their use of information technology solutions with the Innovator Awards. But those innovators could not have achieved such success without dedicated vendor partners. To that end, *Healthcare Informatics* now brings the Leading Edge Awards, honoring vendors whose combination of expertise and innovation are shaping the future of healthcare systems. The 2015 winner in the category of Cost Savings is Loop360 Healthcare Solutions, an Austin, Texas-based vendor that takes a 360° view of your healthcare needs. Vipul Mankad, M.D., founder, chairman and chief medical officer of Loop360, spoke with *Healthcare Informatics* about the importance of clinical analytics—and why identifying quality issues before they happen can offer your organization significant cost savings. He also emphasized how predicting adverse, expensive medical events allows the organization to focus care coordination resources and reduce costs.

Healthcare Informatics: Tell me more about Loop360's overall mission.

Vipul Mankad, M.D.: Our mission is to make a positive impact on the quality of healthcare—and the cost of healthcare in our society. To accomplish that mission, we develop technologies that assess evidence-based care and predict those adverse events that result in expensive care. Because, if we can help provide better ambulatory care, we can both improve the quality of patient care and prevent excessive costs, for example, those related to unnecessary hospitalization.

Healthcare Informatics: What are some of the biggest challenges you see healthcare organizations facing when it comes to managing those excessive costs?

Vipul Mankad, M.D.: First, it's not easy to align the incentives of providers, insurance companies, patients and society. All of those groups need information. But in healthcare, too often, we're data rich but information poor. There is a lot of data in the physician's offices, from patients and family members and from insurance companies. But, historically, we haven't made good use of that data. As a result, the CEO, the doctor, the patient or the patient's family does not have actionable information.

Healthcare was slower than many other industry to move from paper to information technology systems. And now that there's been a fundamental change in the way we process information in healthcare, we've done a good job of creating electronic records—and we've even made many of those records interoperable. We have standards so different systems can talk to each other. But while all those repositories have information, they don't have state-of-the-art analytics to help us make the best use of information. And actionable, clinical and predictive analyses are required to use all that information so that we can really manage costs.

Healthcare Informatics: How can making sense of all that data help to lower the cost of care?

Vipul Mankad, M.D.: The first thing that any analytics platform needs is to integrate data from disparate sources and make it analyzable. You need to clean and scrub the data so it can be used. And the analytics need to be agnostic of the EMR systems. The platform needs to be able to take data from any system, regardless of what kind of electronic medical record (EMR) system or business system you have. The system must also integrate the insurance company data, often provided in a different format. And all the other data systems, labs or images, that are part of your organization. Once that database is created, you often see data presented in dashboards. A descriptive deployment of common diseases, high-cost patients and locations where higher costs are occurring. And while that's helpful, it doesn't give you the whole picture. It is like driving a car while looking at the rear view mirror. It does not tell you where future costs or quality problems are.

That's where Loop360 distinguishes itself. Because we offer advanced analytics that can analyze the performance of providers to see if what their practice is consistent with nationally accepted clinical guidelines. Why is this important? Because we know that patients in the U.S. only get about 50 percent of the recommended care—and often they are receiving excessive care not recommended in the guidelines. So our analysis places an emphasis on unnecessary care, that which is not consistent with guidelines. We call it "Don't Do" guidelines. Our analysis allows you to catch those instances, have a dialogue with providers, and then reduce that unnecessary care and unnecessary costs.

Healthcare Informatics: Many healthcare organizations are moving to accountable care organizations (ACOs). How can Loop360's analytics help them manage the changes that come with such a move?

Vipul Mankad, M.D.: ACOs have three objectives: One, to measure and

improve quality. Two, to reduce the growth of healthcare expenditures. And three, to improve the health of the population that is being served by the organization. Quality improvement requires a continuous measurement—so you can identify opportunities to optimize quality performance while the care is provided, well before the annual quality reporting deadline. Loop360 has analytical tools in place to identify excessive care, so that you can reduce it in a timely manner. And that improves overall health and patient experience because patients don't want all that unnecessary care that adds to their inconvenience and expense, and may even have side effects.


Vipul Mankad, M.D.

In addition to detecting unnecessary care, our tools also help you identify the care that is necessary and often missed; that can improve outcomes for a patient. For example, with diabetics, a careful follow-up plan should include a hemoglobin A1c test—as well as a discussion about diet, exercise and medications. Asthma patients should be on appropriate medications to prevent exacerbations. Appropriate care avoids any future complications and expensive hospitalizations.

Good quality assurance program should include monitoring performance on standardized measures, evaluation and improvement. And one of the ways that Loop360 distinguishes itself is that we don't just report quality once a year, we do it concurrently and continuously. And by doing so, you can find out where you can intervene throughout the year to better coordinate your care, improve your quality and reduce major cost drivers like hospitalizations.

ACOs will always have limited resources. For example, ACOs may only have a certain number of care coordinators. So, with predictive analytics, you can help predict which patients are likely to experience an adverse event that may require hospital care—and with good ambulatory care, you can prevent those potential hospitalizations. Predictive analytics help to focus care coordination on the patients that need it most. That will reduce overall costs, first by reducing staffing costs and then, reducing hospitalization—and it's also better for the patient so they can live a happy, productive life at home.

Healthcare Informatics: How can the right analytics help organizations get past data fatigue—and use all the information they have to their best advantage?

Vipul Mankad, M.D.: If you need a glass of water to quench your thirst, you would not open the fire hydrant. You don't want to create thousands of pages of reports. You want to see just the most important information presented at the right time and at the right place so that you can act on. Of course, that data is going to differ based on your role. The ACO manager needs different information than, say, someone in the billing department. The doctor needs a different set of information than, say, the patient or the family.

But meeting the ACO manager's information needs is a great example of why having the right analytics is so important. The ACO manager needs a 360° view of the entire ACO patient population—and predictive modeling so that the manager can make decisions about resource allocation. The manager can't assign a handful of care coordinators to care for thousands of patients. You need to have the tools so you can focus care coordinators on a limited number of patients who have preventable problems. On the other hand, physicians need a 360^0 view of each individual patient they are treating, not only what they are providing in their office but what the patient is receiving from all providers. Physicians need one kind of data, the patient needs another. The patient, through his or her own secure portal, should be receiving education that is customized to their own situation. When patients are engaged in their own care, the quality improves and costs go down. You don't want to load anyone with tons of data they don't really need. You want to make sure you give the data that is applicable so everyone knows what each person can do to improve the quality of health care and ultimately, quality of life.

Healthcare Informatics: How can the right analytics solution help cut costs without sacrificing quality of care?

Vipul Mankad, M.D.: By working with clinicians, Loop360 has put its data mining focus on common quality problems in healthcare that are actionable. We provide the analytics to help identify the patients with high probability of being admitted and those that require more care coordination. If you can prevent a hospital admission for chronic disease, you will see quality improve and costs decline.

Of course, there are different types of quality issues. There may be too much care being given where it isn't needed. There may also be too little care being given—or inappropriate care being given. Having the right analytics in place can help you detect all of those different quality issues. And taken together, if you can identify those problems and act on them, you will see improved care for your patients and reduced costs.

Healthcare Informatics: What is your vision? Where do you see Loop360 in three to five years?

Vipul Mankad, M.D.: At Loop360, we wish to harness the power of big data and advanced analytics to improve care of individuals, enhance health of the population and reduce costs. Loop360 has already achieved those goals for new breed of healthcare organizations as they were established in their first phase. As we move forward, and the low hanging fruits have already been plucked, Loop360 analytics will become even more important. We cannot simply work harder; we have to be smarter. Combining clinical insights and data mining capabilities, we will bring the right information to the right people at the right time, and contribute to achieving the "triple aim." ◆

ONC Annual Meeting: Federal Leaders Are Ready for Interoperability Action

ONC pushes for feedback on its interoperability roadmap as challenges lie ahead

BY RAJIV LEVENTHAL AND DAVID RATHS

Following the first draft release of its interoperability roadmap, federal health IT leaders continued to push the need for greater interoperability and more specific standards at the Office of the National Coordinator for Health IT (ONC)'s Annual Meeting in Washington, D.C. on Feb. 2., 2015.

Karen DeSalvo, M.D., National Coordinator for Health IT, opened the day by saying that the government has listened to the health IT community's suggestions on how to make technology work for better health, and they are ready to "execute those actions." She mentioned President Obama's recent commitment to interoperability as well, finally urging the audience to give their thoughts on the first draft of the roadmap, with public comments due on April 3, 2015. "If we do it right, we build a pathway to get to a place where we have a learning health system," DeSalvo said.

Regarding the need for greater interoperability in healthcare, Erica Galvez, interoperability and exchange portfolio manager at ONC, noted that the typical Medicare beneficiary receives care from two primary care providers and five specialists each year, signaling a huge opportunity for care coordination. "Individuals and providers need access to the right information at the right time in a manner they can use it to make decisions that impact their health regardless of geographic or organizational boundaries," Galvez said.

In the near term, she continued, providers should be able to send, receive, find, and use a common set of clinical information. "Health data needs to flow in the delivery system, but also outside the system, and that is what I see as key to the roadmap," Galvez said. In terms of measuring success, she said it will be "based on the data sources that we have currently and measures we're able to track currently. We put this framework in the roadmap, and we want comments on it."

COMPUTABLE PRIVACY

Regarding patient privacy, Lucia Savage, ONC's chief privacy officer, stressed that the inconsistencies in rules about permission to access, use, or disclose makes it difficult to build software systems that accurately capture, maintain, and persist this data. "But we need software systems to capture and persist both written individual directions and what is permitted without a written individual direction. So how do you manage consent? Savage said her idea is to stop managing it and make it computable. "Let's make computers be able to do this so we can write privacy rules that software can capture. That's my vision," she said.

According to Savage, capturing a patient's consent choice on a piece of paper isn't interoperable. "We can have all the technical standards in the world, but if consent is with pen and paper, the whole system crashes to a halt," she said. To achieve health, she added, an individual's electronic health data needs to be digitally connected to their consent choices. "Healthcare providers and their health IT systems need to know what to do when the patient does not document a choice. Telemedicine, community health supports, and other innovative delivery processes will be stunted if we cannot make privacy computable," she attested.

There are far too many variations in consents, Savage continued. "Sometimes they're paper, sometimes they're not, some states require a witness signature, go figure that. States are philosophically aligned, but privacy and consent laws vary and result in a patchwork that complicates data transfer," she said, bringing up an example of mental health definitions in New York versus Connecticut. To this end, Savage brought up "basic

choice," a concept present in ONC's roadmap. Basic choice is the choice an individual makes about the use and disclosure of their health information generally, including electronic exchange of health information that is not subject to heightened use and disclosure restrictions under state or federal law. "Some people don't want their information shared, and if that's the case you have to move on," Savage said.

Chiming in about interoperability standards, Steven Posnack, ONC's director of standards and technology, said there is a huge need to "get more specific." He said, "I challenge the whole industry, ONC included, to get down to a certain level of specificity when talking about the type of interoperability that we want. I see too many inconsistencies in interpersonal communication today," he said. As such, he said feedback from the industry is crucial. "Do not be innocent bystanders," he urged the audience. "We need your participation."

FEDERAL HEALTH IT STRATEGIC PLAN

Speaking on ONC's federal health IT strategic plan earlier in the day, Barclay Butler, Ph.D., the director of healthcare technology integration for the Defense Health Agency (DHA), applauded ONC for doing a good job of listening and incorporating suggestions from federal partners in the plan. (The plan was open to public comment and will also receive comments from the federal Health IT Policy Committee by the end of March.)

Besides operating 54 hospitals, DHA also works with 380,000 private-sector providers for 10 million beneficiaries who get care through the Tricare insurance program. "That is driving the need for interoperability," he said. "We need to get information back from those providers into the DoD record to provide continuity of care," he said.

Butler said DHA has been following the evolution of the federal health IT strategic plans over the past several years, and understands the importance of engaging with ONC on its progress. "We are moving from adoption to creating value, and aligning partners across the federal government and the private sector," he said.

He also pointed out some challenges that still need to be addressed, including provider directories, patient matching, security and protection of data. "We also need implementation guides," Butler said. "We all have standards, but they don't help if a C-CDA [Consolidated-Clinical Document Architecture] that comes from a new partner is based on their interpretation of that standard and it is one I can't immediately read."

Butler also said that measuring interoperability is a tricky business. "It is not about the number of transactions," he stressed. "We share a million and a half data points every day with the VA system. So what? Measuring the number of transactions is not the answer. How is the data being used and is it affecting the quality of care?" ◆

ADVERTISER INDEX

HCI HEALTHCARE INFORMATICS

VENDOR PERSPECTIVE:

Encore Health IT Consulting

Not Your Mama's EHR Install

Encore's Dana Sellers and Tom Niehaus talk about the new era of EHR implementations—what healthcare organizations have learned in the past 10 years, why healthcare organizations need experienced mentors to find success, and why data now trumps process in any install.

In 2004, President George W. Bush issued an executive order mandating that most Americans be given access to electronic health records (EHRs) within 10 years. It's now 2015—one year past the former President's stated deadline—and most healthcare organizations have at least some experience with EHR implementations. But with new regulations regarding privacy and meaningful use, patient care organizations are looking to build smarter, more agile EHR systems that can meet the needs of today—and tomorrow. This is not your mother's EHR install. Healthcare Informatics spoke recently with Dana Sellers, Chief Executive Officer (CEO), and Tom Niehaus, President and Chief Operations Officer (COO), at Encore, A Quintiles Company, a Houston-based healthcare IT consultancy dedicated to helping healthcare organizations realize true value from clinical data, about why healthcare organizations need to think a little differently about EHR installs the second time around.

What are the important lessons that healthcare organizations have learned from their initial forays into EHR systems?

Dana Sellers: When people were thinking about putting in EHRs the first time around, they were predominantly considering what happens inside the walls of the hospital. Today we live in an integrated healthcare world. You can't just think about what transpires inside of those walls. Healthcare leaders are looking for integrated solutions that include the ambulatory world, the ability to be interoperable, the ability to have patients flow from the emergency department to the acute setting and back, just to name a few. And, they want systems that can handle all of that seamlessly. It's an evolving healthcare world. I like to say it's not your mother's EHR implementation. It really is a different world.

Given that understanding, what should healthcare organizations focus on when considering an EHR—whether it's an upgrade, a rip-and-replace or a new implementation?

Sellers: Most healthcare organizations have learned a lot—they are knowledgeable and much more sophisticated when it comes to clinical systems. It makes you wonder, "with all that experience, what is still so hard about this?" The integrated nature of today's EHR systems means that success requires engagement throughout the organization because the applications are so complex. You can't fall prey to thinking about functions in silos. It's important to step back and look at both processes and data as they flow across the entire organization. To achieve success, there needs to be alignment across the top—and active participation from all stakeholders.

If today's EHR installs aren't an IT project, what should the role of the IT department be, as organizations look to the future?

Sellers: Certainly, the IT organization plays a major role in driving the project. But if the rest of the organization doesn't step up—if they don't come to the table and help drive organizational ownership and organizational change—then the project is more likely to fail. Strong governance and strong project leadership are essential. Projects of this magnitude are larger than any other project an organization has likely undertaken before, so you need that strong leadership.

Tom Niehaus: For projects with technology components it is the job of IT professionals to take responsibility for the technology. Each work team should include an IT professional with the skills to provide the right technology methodology and approach, but the complexity around business intelligence and analytics requires additional and specific expertise. The scope of this type of project is so broad that it presents challenges. It is important to have the right governance in place to ensure future value.

Encore has gone on record as saying that process used to be king, but that today, data will rule. Tell me a bit more.

Sellers: Process is one of the big things that has changed since the first time we implemented EHRs. Before, the primary focus was on the technology—how to use technology to streamline the process. Not just to automate things, but to enhance them. That was difficult and we saw a great deal of process redesign going on. But now, vendors have accumulated best practices, so today, implementation begins with those best practices. But what's become clear is that it's possible to implement great processes and still end up with an implementation that doesn't capture the data needed to lower costs or achieve efficiency. So we see now that the time to think about data and data governance is at the beginning of the implementation—not after you go live and start trying to use that data.

How should healthcare organizations consider regulatory requirements as they embark on EHR installs—optimizations or new builds?

Niehaus: It's important to have a system that includes information from inside the walls of the hospital as well as outside the walls of the hospitals. And, that means it can get very complicated very quickly because of the number of different applications. The reality is that regulatory issues and regulatory compliance are part of the game. It's important for the program to be able to look across the enterprise, to weave in all the different projects that are going on, and then make sure things are being done in a consistent way. Having a plan or road map for addressing things like regulatory issues well into the future will help achieve success.

What is the most important piece of advice you'd give to healthcare organizations to help ensure they find success in their EHR installs?

Sellers: There's no question that we have very sophisticated IT departments today. They have already implemented EHR systems—and they have quite sophisticated users. But it would be foolish to think that an organization can do the same kind of implementation that they did the first time around. So the best advice that I have for today is to know the successful leaders in your organization. Know good project managers, know the people who understand the clinical systems, know the people in whom the users have confidence—the people whose leadership they really trust. They know their stuff. But they may not know much about this new project or application—so shore them up with people who do—and who are prepared to transfer the right knowledge and skills they need.

Get a coach or a mentor who will work at your side to make sure you understand the nuances of the particular application you've chosen—and any potential pitfalls. Understanding the little things that are unique to that vendor application can make all the difference. And it frees you up to deal with the other issues on the list like engaging leadership, getting the right PMO in place or getting to data that is distributed across siloes. With the right coach or mentor in place, you know what the issues are—and you can ensure that you are addressing those issues right from the beginning.

How can Encore help organizations meet their goals in building the right systems to help lower costs and improve the quality of patient care?

Niehaus: I would tell you three things:

We begin with the end in mind. Having a clear understanding of eMeasure and reporting needs, along with specific clinical, patient safety and quality goals is essential to guide decision making early in the process. Encore has methodologies, tools, and best practices to help our clients address the most strategic aspects of the project from the beginning.

We are very good at helping our clients do a great job of planning for the implementation. One of the most important requirements is to have a rock solid total cost of ownership (TCO) projection. You cannot afford surprises on the TCO. Next, you need an honest assessment of your organization's readiness for a transformational implementation project along with strategies to address risks and gaps. Finally, we can help our clients consider some of the strategic aspects of the project, including looking well beyond the walls of the hospital by looking at strategies for community outreach, population health, and analytics.

Finally, I would tell you that we are becoming uber-focused on helping our clients become self-sufficient when it comes to implementation and ongoing support of their EHR, thereby reducing their TCO. As Dana said earlier, engaging Encore as a coach to work shoulder to shoulder with the client's team is a great way to accelerate the learning process. Another way is to have Encore provide operational and technical backfill for the client's staff, thereby freeing them up to fully participate in the implementation project.

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The Key Ingredient in Change: Leadership

Today's leaders are incorporating a more team-oriented approach to change management

BY TIM TOLAN

Tim Tolan

If you were to analyze this year's winners of the *Healthcare Informatics* Innovator Awards Program, you would likely see similarities in the leaders of all of the organizations that are being recognized. While their styles may differ, the common thread and key ingredient you will find in each organization is leadership. Leadership requires the vision and passion of the person at the helm to direct and guide their team on a common path to ensure the mission is accomplished. Many leaders are met with resistance as they chart the course for their organization with their belief on what is the most intelligent path to take, and what they feel it is also the right path. Their vision may not be popular with their teams; but that's where true leadership comes into play.

There are many different styles of leadership, and when your vision requires you to make difficult choices, like many healthcare leaders, you have to be able to articulate the value to each individual stakeholder that you need to have onboard. This can be more than tricky.

I know during my own career I've had leaders that mandated a new course for the organization without getting the necessary buy-in for the very people that had to execute against the new vision or business model without a lot of discussion. This sort of "my way or the highway" leadership approach is old school and very problematic for today's workforce. It's really bad leadership in so many ways. The traditional leadership style of top down management is slowly changing into a more cooperative approach that empowers employees to openly share their ideas and engage in the conversation instead of adopting the mandate.

As more organizations embrace this new way of management a new style of leadership is beginning to emerge. Collaborative leaders take a more open approach in the workplace. Out with the old and in with the new. Traditional corporate hierarchies are being replaced with a more team oriented approach. Those employees that never had a seat at the table are being asked to share their thoughts and ideas. What a fresh approach! This style is not only inclusive but it also builds loyalty in replaces dissatisfaction with a more vibrant and positive workforce that can more easily take on the challenge of the big vision because their ideas matter—before they never had a chance to participate. To execute a big vision you have to rally the troops to get the job done. If employees are empowered and invited to be a part of shaping the leaders vision, there is no end to what an organization can accomplish.

IF EMPLOYEES ARE EMPOWERED AND INVITED TO BE A PART OF SHAPING THE LEADERS VISION, THERE IS NO END TO WHAT AN ORGANIZATION CAN ACCOMPLISH. —TIM TOLAN

I often reflect on a more traditional (non-healthcare) company and leader and his life's mantra. Robert Woodruff was an accomplished businessman and philanthropist. He became president of The Coca-Cola Company in 1923 and guided the company until his death in 1985. Under his leadership, he helped shape the company from a local soft drink business into the world's best-known brand. In his private life, Mr. Woodruff preferred to remain in the background, making anonymous gifts that greatly enriched the city of Atlanta. His philanthropy transformed the small, bustling railroad town into a world-class city, and he made significant gifts to Atlanta's health, education and cultural institutions.

Whatever he gave to the city or to various charities he did so anonomysly. On his desk sat a quote embodying his life's creed: "*There is no limit to what a man can do or where he can go if he doesn't mind who gets the credit.*" Now that says it all.

Congratulations to this year's winners of the *Healthcare Informatics* Innovation Awards Program. You may not realize it, but you've already made a big impact on healthcare by your innovative vision, and for that, we thank you and your team. ◆

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