THE NEW WORLD OF THE HEALTH SYSTEM CIO:

CONSUMERS, CONSOLIDATION AND CROOKS

Prepared for the Scottsdale Institute

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Executive Summary: CIOs from eight leading healthcare organizations convened in September 2015 for the annual Scottsdale Institute Fall CIO Summit. This report highlights many of the key challenges faced by today's healthcare CIOs and suggests some key focus areas and strategies to position healthcare organizations for success in the year to come.

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SUMMIT PARTICIPANTS

- David Bensema, MD – Baptist Health Kentucky
- Kyle Johnson – Eastern Maine Healthcare Systems
- Jonathan Manis – Sutter Health
- Bill Russell – Saint Joseph Health System
- Bruce Smith – Advocate Health Care
- Subra Sripada – Beaumont Health
- Jim Veline – Avera Health
- Laishy Williams-Carlson – Bon Secours Health System

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Introduction

Eight CIOs from some of America's leading health systems gathered together Friday, September 25th for the 2015 Scottsdale Institute Fall CIO Summit. The CIOs were from diverse backgrounds and diverse organizations, primarily with a regional footprint. All of the organizations face growing information technology needs in the face of shrinking margins.

It was a full day of lively discussion and interaction. As the day's participants made introductions they revealed some of the top challenges they are facing in their respective organizations. The list was long and included merger and acquisition activity, security challenges, new non-acquisition partnership models, new payment models, population health, optimization of existing systems, provider and other user adoption of existing systems, consolidation and the move to "systemness" and trying to stay competitive in a market rife with new competitors and changing consumer needs. Interestingly, in spite of being just one week away from the October 1st go-live, ICD-10 was not mentioned as a top challenge by any of the CIOs.

In this paper, we'll take a deeper look at the challenges CIOs are facing as well and identify some key focus areas and strategies for the coming year.

Challenges

NEW PAYMENT MODELS

One of the biggest challenges for CIOs today is the changing landscape in payment models. Primarily this is the movement towards population health or value-based care in their organizations. Advocate CIO Bruce Smith states that Advocate now has one million lives under contract for their population health initiative. Likewise, Bill Russell at St. Joseph Health System says that they are building a clinically integrated network to move towards population health and now have over 200,000 lives under risk contracts.

Beaumont

Subra Sripada, CIO at Beaumont Health, notes that Beaumont was formed from the merger of 3 health systems specifically to "prepare for the move toward population health and value-based care".

There is a tremendous amount of IT infrastructure needed for value-based care and in-house health plans, which is also a trend. In some cases insurance companies are helping to provide some of the infrastructure. For instance Blue Cross Blue Shield in Michigan, as part of their collaborative provider partnerships, has supported health systems in providing infrastructure for IT systems, disease registries and other tools. But in most cases in the midst of this transition, CIOs are being challenged to decide whether or not to provide services in-house or to outsource significant IT services. Neither is a sure win.

Jon Manis, from Sutter Health, shared that Sutter outsourced much of the IT infrastructure for population health but there have been challenges with this approach. Specifically, responsiveness, prioritization, integration and costs have been problematic issues. They are now moving to bring the support systems and infrastructure back in-house. Laishy Williams-Carlson from Bon Secours Health System notes that when Bon Secours launched their Medicare Shared Savings Program (MSSP) they partnered with a major insurer to outsource care management. Bon Secours quickly found however, that while patients may be reticent to work with their providers for care management, they are much less likely to want to do so with an insurance company. "So we spent a lot of time integrating with them for less than optimal results."

Getting traction with the new tools needed to be successful in value-based care hasn't been easy. Kyle Johnson from Eastern Maine Healthcare Systems, a participant in the Pioneer ACO program, says "we have been pretty much doing population health with pen and paper and not having analytics in place." They are now moving to implement Cerner's HealtheIntent platform and develop robust analytics. At Advocate, Bruce Smith is using the same platform for registries and has cobbled together everything else. The challenge he is having there is that Advocate care managers say that this is working well, but providers complain that it is not. Bruce went on to say that physicians generally are not looking at registries carefully as part of their normal workflow and others are generally managing the information in the registries. Laishy Williams-Carlson agreed and stated that this is just one of many examples of IT tools that are not integrated into provider workflow and that is a significant challenge.

EMHS
Access to Quality Healthcare SM

"We have been pretty much doing population health with pen and paper and not having analytics in place."

Kyle Johnson, CIO,
Eastern Maine Healthcare Systems

As organizations have begun to focus intently on these new value-based payment models, many CEOs are pushing their health systems to develop their own health plan. They say they need this to be able to succeed in population health and without removing the middle man only the insurance companies will be successful. Because of that, about half of the organizations these CIOs represent have created their own health plans. But many note that having a health plan has caused problems with some payers. For instance, Advocate in Illinois has struggled with one of their major insurance partners which has challenged that if Advocate is going to have a health plan, then they are going to hire doctors. Similarly, Jim Veline from Avera Health, notes that when CHI/Alegent started a health plan, they suffered a 15-20% drop in revenue in one market because of a payor exclusion. Eventually CHI leadership negotiated a successful compromise.

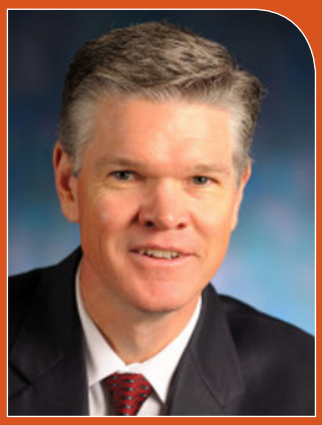
A particular struggle for all organizations participating in value-based care is managing the need for real-time data. Health plans have historically managed with delayed claims-based data, but now they want real-time data to be able to manage their costs. Added to that struggle is that claims data alone is no longer enough. Value-based care requires integration and management of clinical and other data as well.

OPTIMIZATION

BAPTIST HEALTH

"Systemizing is the biggest issue we face right now. We can't focus on volume-to-value until we do this."

David Bensema, MD, CIO, Baptist Health Kentucky



Optimization of existing systems continues to be a major challenge for CIOs. Dr. David Bensema, CIO at Baptist Health Kentucky, notes that his organization is just starting their Epic implementation. They are a seven hospital system that previously functioned as seven individual hospitals. They are now working toward a more system-wide approach in terms of developing governance and reducing variability. He does note that they will use the Epic implementation to enhance the focus on clinical measures and user experience as well.

Kyle Johnson, who has a lot of experience in the analytic space, notes that to prepare for value-based care Eastern Maine is quickly implementing a data warehouse. They are also in the midst of a deep optimization effort within Cerner. Currently their Cerner implementation has a tremendous amount of customization. They are trying to move back to a more of an off-the-shelf, easier to maintain platform.

At Advocate, the primary electronic health record is Cerner, but the medical group uses Allscripts. CIO Bruce Smith notes that one of their biggest challenges is adoption and training. Jim Veline from Avera Health says that the next big optimization focus at Avera will be physician productivity and related to that the next round of development will be working to do a significant upgrade integrating tablet-type devices. At Sutter Health they are proud of their industry-leading Meaningful Use program, but CIO Jon

Advocate Health Care

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"Currently we only use 30% of available functionality. The tendency is to put in more and more software, but we are not using what we have."

Bruce Smith, CIO, Advocate Health Care

Manis concedes that physicians and clinicians are not yet using the full functionality and all available features of their single-instance, system-wide Epic EHR.

All of the CIOs expect to face big challenges as they work to optimize their systems. But one of the most surprising and persistent challenges they face in this area is leadership and governance. The problem is that there is an unclear definition of who should be in charge of optimization. Is it operations or is it IT? There are certainly arguments for both, and often IT is on the surface the obvious choice because they have the underlying project management infrastructure. However, the CIOs agree that the work is often more successful when clinicians and operations lead optimization efforts and IT supports.

Another big problem is that of trying to fund the optimization work. CIOs are challenged to get more value out of the already implemented software but they have to do so in the face of low health system margins and subsequently shrinking IT budgets. Many feel that they will need to look for new, innovative ways to stretch IT budgets and deliver the most value. For instance, Bill Russell at St. Joseph Health System decided not to invest in implementing a new electronic health record when providers complained about problems with EHR usability. Instead he is using developers to build a web layer on top of the legacy Meditech product to improve the user experience.

MERGERS AND ACQUISITIONS

Certainly one challenge that these and most CIOs continue to face is that of M&A activity. Most health systems have been in some sort of discussions over the past few years and the trend is expected to continue for years to come.

With mergers and acquisition come the challenge of IT and shared services consolidation. Subra Sripada from Beaumont Health notes that his organization is the epitome of these challenges. Beaumont is a four billion dollar a year company with five thousand physicians and thirty-five thousand employees in southeast Michigan. It was formed from the merger of three organizations to prepare for the move toward population health. Subra notes that his biggest challenges are reducing fragmentation. They are quickly marching toward making Epic their main system and then working to consolidate the three organizations into a unified structure.

Kyle Johnson and Bill Russell, at Eastern Maine and Saint Joseph Health Systems respectively, have been through similar activities and Bruce Smith notes that Advocate is currently working through a potential merger with North Shore. They too are preparing for significant consolidation efforts.

SECURITY

Perhaps the most top-of-mind issue for the CIOs at this forum was security. Across the board, the group felt that health systems are behind where they should be in terms of security. Laishy Williams-Carlson from Bon Secours Health System has a good deal of practical experience in this area. After internal security assessments conducted for Bon Secours highlighted opportunities, Laishy was involved in overhauling the Bon Secours security program. Bon Secours brought in an external consultant to perform a security gap assessment and provide recommendations for improvement. She notes that Bon Secours is making progress, primarily because the CEO and Board became very engaged around security issues. They understood that a significant investment in resources and technology would be required and supported the increased budget for IS security. The CEO and certain Board members are briefed on progress frequently, initially bi-weekly and now monthly.

Laishy emphasized that Bon Secours is making progress because of the Board and CEO commitment – "the changes to technology and process are easier than the changes to culture. Without broad executive-level support, the CIO and CISO are fighting with one hand tied behind their back."

Laishy Williams-Carlson, CIO,
Bon Secours Health System

The other CIOs quickly chimed in with how important having good support at the senior leadership level is for success. At this point breaches are "expected to occur" says Jim Veline, "it's incredibly important to have your CEO and Board's involved in creating solutions."

In order to be successful, CEOs will need to be much more involved as will Board and audit and compliance committees. The Board may need to be educated and have an advanced understanding of the issues surrounding health data security. CEOs need to understand there may be much more expense involved with managing security than they have traditionally budgeted and in addition there may be more difficult change management leadership needed at the executive level.

In terms of how much more expense, it's hard to say. On a quick around the room response, CIOs say their organizations are spending anywhere from six percent (6%) to twenty percent (20%) of their current IT budgets on security. Tracking this expenditure and getting in the right range will be important over the next few years. To assist with that the Scottsdale Institute's Health IT benchmarking tool will increasingly be addressing IT spend on security going forward so that organizations can compare themselves against other similar organizations.

Another key subtopic was the need for better tools to help assess security concerns and discuss them at the board and senior executive levels. Unveiled at this session was the new Healthcare Information Security Assessment (HISAM) tool. Created by Impact Advisors and soon to be available through the Scottsdale Institute, the HISAM tool is designed for such communication and education purposes. Not intended to replace in-depth assessments and detailed planning, it clearly and graphically reveals the maturity of your healthcare IT security practices. The CIOs in the room applauded the availability of such a tool and certainly feel that there is great value in using the tool for regular internal assessment. However, they noted that perhaps there could be even greater value of the tool by having an external objective reviewer complete this audit tool so that their organizations could have an objective assessment of their security practices.

Avera

Jim Veline states "Their agenda drives the results we get. We want routine audits and to be able to see the trajectory" in terms of security.

Jim Veline, CIO, Avera Health

The conversation also turned to some specific challenges to security that are particularly formidable. For instance external vendors are a big gap for most of the organizations these CIOs represent. Jon Manis notes that biomed devices are a particular challenge. "Many biomedical devices offer a long useful life. While that may be beneficial from a value perspective, it can create a vulnerability from a security standpoint. Today's risk-threat environment was not envisioned or anticipated even 3, 5 and 10 years ago when some of these devices were originally designed." In order operate securely, these devices must be upgraded, replaced or isolated on a private network. This adds both cost and complexity, and it adds to the support and maintenance burden. An option might be to continue to use the equipment but just not place it on the network at all, but that can disintegrate data and it may disrupt workflows. Some potentially vulnerable areas take CIOs totally off guard because they simply didn't know that the equipment communicates anywhere outside of the system. Laishy Williams-Carlson notes that she learned, for instance, that the DaVinci robot communicates back to the vendor.

The practice acquisition area is also a very difficult one. In the midst of these acquisitions old legacy systems are often acquired, but many times CIOs don't even know they exist because they are not connected to the health system network.

Another key area of risk is employees taking work home and unencrypting data in order to be able to do their work at home. They often do that with the best intentions, but unknowingly undermine data security.

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In addition to data theft, says Jon Manis, "data ransoming is on the rise in our industry."

Jonathan Manis, CIO, Sutter Health

Unlike hackers who steal data, a ransom hacker uses a phishing message or attachment to install a virus that encrypts data where it resides. Nothing is actually stolen, rather the data becomes inaccessible. The hacker then offers an encryption key to unlock your data for a price." More pervasive is phishing. It's becoming harder and harder to simply look at an email and tell if it is a phishing attempt. "In our personal and professional lives, phishing emails are becoming increasingly more sophisticated with the inclusion of company names, logos, and appropriate salutations and signature blocks pulled from public communications and corporate press releases. An individual may open an email or click on a link or on an attachment without paying close attention during their busy day and just like that you can introduce a virus or create a potential security breach."

COMPETING FOR AND RETAINING PATIENTS

PATIENT ENGAGEMENT

A much different challenge for CIOs is keeping up with IT needs to keep patients engaged. In this day of consumerism in healthcare, CIOs are challenged with finding ways for technology to be a differentiator. But just trying to figure out what consumers want can be challenging. Says Laishy Williams-Carlson, "Operationally we know that we need to move from a sickness industry to a health industry, but we're not sure that our community or our patients want us to." In response to discussion about primary care doctors and health systems being disintermediated by retail health, online sites and other competitors, Bill Russell notes "this is scary- if we limit ourselves to just chronic and acute illness we are limiting our market. We need to influence the culture so that the primary care doctor is relevant to health every day. How do we make ourselves relevant to those healthy 30 year olds?" He goes on to say that if health systems can't somehow find a way to gain back preventive care and simple visits those health systems will ultimately become just acute care centers. Saint Joseph's is a forward thinking organization in a progressive market. They are planning on continual decline in traditional revenue streams. In response, they are focusing on new models for delivery that emphasize convenience, transparency and improved access at a lower cost.

Jon Manis agrees, "Many of the once traditional acute care services are now moving into consumer-centric specialty clinics. For example, you can now find urgent care facilities, weight-loss centers, corrective vision facilities, maternity care, cancer treatment, dialysis centers, cosmetic and ambulatory surgery centers, ….all moving into the spa-like retail space. Today, many health services are moving out of hospitals and clinics and into the malls and shopping centers of America. Tomorrow the same services will be available online or accessible by a Smartphone app." In the Silicon Valley, one of Sutter's geographic service areas, "marketing traditional hospital and clinic services just doesn't resonate with consumers. Young, healthy, connected populations want immediate mobile access to health services. When they do need to visit a facility it needs to be open and available at their convenience. High quality care and exceptional customer service at a low cost are now table-stake assumptions. Access and availability are the new differentiators. There is a very low tolerance for wait times of any length and long-term, patient-provider relationships seem to be much less important to this increasingly mobile and socially connected generation."

Long a mantra of the healthcare community, quality is no longer a differentiator, especially with the new transparency around quality. Consumers will no longer be willing to pay for "premium quality." Patients assume quality, and the participants believe it's all going to come down to cost, access, convenience, and choice.

What about wearables? According to Laishy Williams-Carlson the use case for chronic patients is clear. Blood pressure and glucose monitoring make perfect sense. But when it comes to things like Fitbit providers are saying, "Why?" At Sutter Health they are connecting to exercise machines, spin bikes and many other devices and putting the data into the EHRs. Doctors may not need this information for all patients, but Sutter views their EHR as an individual's health record and many people use these kinds of data to track, maintain or improve their health and wellness. As to why doctors don't want the data to be included, Subra Sripada sums it up by saying "where there is data, there is risk." This coupled with the already overwhelming amount of data providers need to sort through to make decisions makes provider overload a real risk.

TELEHEALTH

Telehealth was an area of focus at this Summit in 2014, and it is back again this year as a major focus. Penetration of telehealth services in the health systems represented is all over the board. Most of the organizations have at least started to implement some telehealth services, particularly those that also own a health plan. Jim Veline's Avera Health has the most advanced program of those in the room, and perhaps one of the most advanced telehealth programs in the country. While Avera does have a direct-to-consumer product for which they partner with American Well, the overwhelming majority of their telehealth work is in the provider-to-provider arena. Along with the commonly implemented e-ICU and e-stroke services they provide to other health systems in the region and beyond, they also provide some other services that have not yet become commonplace like e-emergency, e-pharmacy, e-school nurse and services to long term care facilities. The telehealth program is large enough at Avera that it has its own sales

team, accounting team and back office functions dedicated to this business unit. In addition the program supports 3 medical directors, a Chief Nursing Officer, a completely independent site, and many pharmacists, physicians, intensivists, and others.

What is interesting about the Avera program is that the focus is nearly all on cost saving models as opposed to increasing revenue. In spite of that, services like e-Emergency and e-School Nurse do generate new patient volume at Avera through referrals. "Doctors like to refer to people they trust. ED doctors are changing their referral patterns based on a virtual relationship with a provider at another site."

Sutter Health is also advanced in this area. According to Jon Manis, to augment their consumer portals, online services and Smartphone apps, Sutter Health is now looking at health and wellness attachments for iPhones. "We see a real opportunity to support chronic care and health maintenance with iPhone attachments. We are even considering otoscope attachments for iPhones as a potential inclusion in our send home packages for new moms." In addition to e-stroke and e-ICU services they also have e-Surgery in place to do virtual surgeries in Europe. At Baptist Health Kentucky they are not only using e-ICU and e-Stroke programs, but are preparing to use telehealth in retail clinics to perform provider-to-provider consultations and to make determinations about the acuity of referrals.

RETAIL CLINICS

In terms of retail clinics, Dr. Bensema notes "we underestimated the speed of growth after the first two years of operation". Baptist Health has 17 clinics in Walmarts. While they are generating a large number of new patients for the health system from this strategy, the primary initial reason for the strategy was cost avoidance and avoidance of readmissions for managed Medicaid populations. They found that in this population if the Walmart clinics were not available, the patients would have gone to the ED. Instead they made lower cost services available where consumers wanted them.

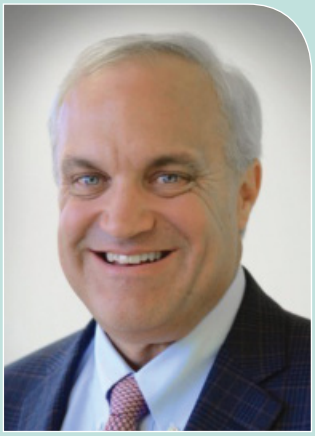
Others note that the case for involvement in retail care is less obvious. Big retailers like CVS and Walgreens already have bricks and mortar in place and have a low overhead for adding retail clinics. Even though they may lose money on clinics, the resulting sales keep the margin friendly. This is simply not the case for health systems. But the evidence is clear, patients, especially the less than 30 crowd, are willing to do a lot more in terms of self-service in order to have more convenient access at a lower cost. With that being the case, clinics with a lot less staffing and a lot more technology solutions could begin cropping up in employee clinics and other areas.

PATIENT PORTALS

These CIOs felt that patient portals are in general a problem. First, patients aren't in large part engaging with portals. Dr. David Bensema states that at Baptist Health, "we're still struggling

with the 5 percent meaningful use requirement for patient access." The way health care systems use portals also reflects some cultural barriers. Subra Sripada notes that his organization initially supported release of results to the patient portal with a delay to allow time for physicians to review the data. Now as more competitors in the market are leveraging existing technology to release results sooner, some same day with some restrictions, that has forces his organization to do the same.

Bill Russell notes that poor portal adoption is in large part related to the technology itself. Instead of focusing on improved patient engagement with portals, Bill's organization has invested in new companies to focus on initiatives like building a customer engagement platform that is vendor agnostic, developing predictive modeling capabilities, developing an overlay for physician experience, implementing machine learning to assist in decision support and other key projects. The goal is to utilize experience from other industries to innovate in healthcare.



St. Joseph Health℠

"It's because we still don't understand the consumer. Name another industry that uses portals. The whole concept is really antiquated."

Bill Russell, CIO,
Saint Joseph Health System

SOFTWARE DEVELOPMENT

That brings up the final challenge in this category, the question of whether to use internal resources for development or use vendors. Bill Russell states "Through partners we have hired 100 developers to develop tools for Saint Joseph, because we believe we know our communities the best." But that philosophy is not universally shared in the group. Subra Sripada doesn't believe that health systems should be software developers. Bruce Smith notes that "the problem in healthcare is that we are so vendor dependent. Vendors are building generic software to work for everyone. We should be developing some of our own stuff." But to do software development you have to be willing to have some failures. Jon Manis shares a view somewhere in the middle. "I think what healthcare needs is more standard work. The truth is, the EHR systems available today offer basically the same functionality. These are transactional systems and we need to use more than 30% of the features available in these systems before we start modifying standard systems or developing our own software solutions. Chances are, our requirements are really not unique and the functionality may already exist in the standard version of an installed system. I don't think our primary efforts should be focused on customizing, modifying or developing transactional systems. Where we should be developing software solutions is in those areas that differentiate us in the marketplace, improve the efficiency of our clinicians or, perhaps most importantly, provide additional access and higher value to the patients, customers and communities we serve." The other CIOs agreed.

What's a CIO To Do?

In the face of all of these challenges, the role of the CIO can be vexing, but here are some key areas that this Summit's CIO participants agreed should be priorities for the coming year.

LEADERSHIP

Perhaps more than ever before, CIOs need to be true health system leaders. Information technology will likely be the key differentiator for health systems for the foreseeable future. That said, CIOs will need to be persuasive as they work to gather CEO and Board level support for key initiatives like security. In addition they will need to be forward thinking and help lead the charge for innovation within healthcare.

New roles like Chief Health Integration Officer and Chief Innovation Officer and many others will become common. These roles will create more demand for information technology and interfaces with outside sources. CIOs need to be prepared to be deeply involved in innovation, research dissemination, marketing, patient experience and virtually every other rapidly changing area in healthcare and still be able to support ongoing traditional operations.

Perhaps the strongest take away is that CIOs will need to work side-by-side with their operational partners to assist with developing new ways to fully engage patients in their care as well as optimize software to improve efficiency, reduce costs and fully engage providers.

SECURITY

The CIOs offered several strategies for waging the war against intruders. Most certainly use of a standardized assessment tool, particularly if administered by an outside objective reviewer, will be helpful to gauge progress and facilitate conversations with senior leadership.

Some other more tactical suggestions included:

- Working toward all healthcare data being stored centrally. In other words, eliminating the ability to store healthcare data on a laptop or other device, but instead moving back to dumb terminals and devices such as Chromebooks with a high speed connection so that nothing can be downloaded or stored.
- Constantly educating and reminding users about data security practices. One idea is using the employee intranet site to display a ticker tape banner with security headlines several times a month.

- Placing tracking software on laptops in case they get lost and working toward being able to remotely wipe them.
- Filtering all incoming email against an internal contact list.
- Utilizing data loss prevention (DLP) to screen, filter and block items that potentially represent a breach. Internally reading anything considered a potential breach may be hugely expensive in terms of time and resources, but may be necessary until better technology emerges.

There will most certainly be rapid fire improvements in healthcare organizations' approach to data security. CIOs will need to be vigilant to stay abreast of industry best practices.

MERGER AND ACQUISITION

Merger and Acquisition activity will continue as the need for health systems to aggressively grow seems critical to survival. CIOs will need to focus on rapid consolidation of information technology and "systemizing" in order for their healthcare systems to be prepared for the volume-to-value transition. They will also need to put in place robust shared governance and strong foundation systems while maintaining flexibility and managing change.

OPTIMIZATION

Most health systems have in recent years implemented electronic health records and revenue cycle software. The focus now needs to be on maximizing the value from those investments.

Governance for optimization activities continues to be a challenge, but CIOs should be focusing on pushing leadership of optimization activities to operational owners with IT being a supporting cast member. Key focus areas for optimization need to be on standardization and reduction of variability, workflow efficiency, EHR usability, education, maximized adoption of tools and of course, preparing for value-based care.

COMPETING FOR (AND RETAINING) PATIENTS

Finally, for the foreseeable future CIOs will need to make staying ahead of the curve in terms of finding ways to engage patients a central focus. A corollary to that is finding ways to maximize provider time by using machine learning and other tools. Funding innovation may be risky and most certainly against the prevailing culture in healthcare, but to differentiate their health systems CIOs need to allocate a pool of funds for innovation and be willing to take on the risk.

Conclusion

Today's healthcare CIOs face many challenges and the leadership skills required to combat these challenges have never been greater. For the year to come, security, optimization to prepare for value-based care, and innovation to help health systems compete for patients will need to be the key focus areas for leading CIOs. With much on the line, there is considerable risk. But without taking the risk to innovate, healthcare as we know it may quickly fade away, only to be supplanted by disruptors from other industries. Today's CIOs need to lead. They need to invest significant time, and potentially resources, to keeping up with industry best practices. And perhaps most importantly they need to maintain a razor sharp focus on preparing for the future.

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