

The CIO's Guide to Implementing EHRs in the HITTECH Era

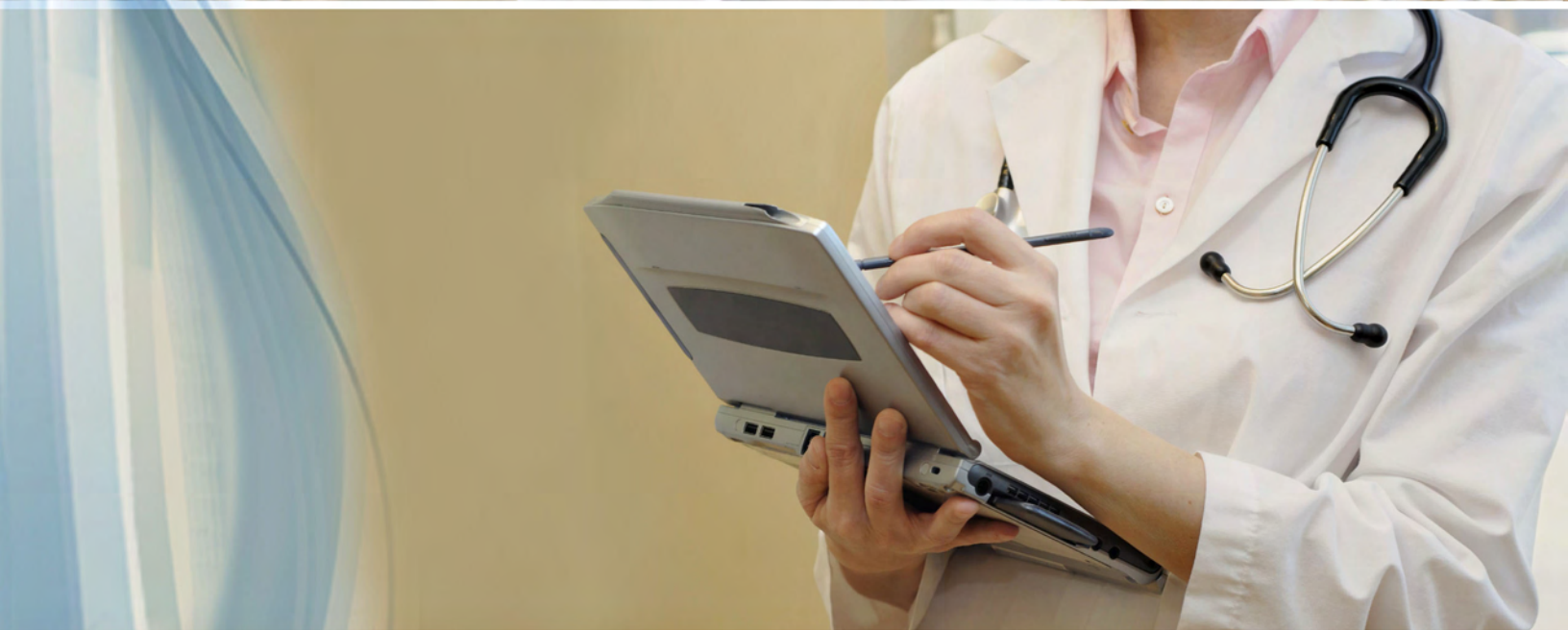


Table of Contents

Preface

Acknowledgments

1: Understanding the Basics of the HITECH Funding Program	1
2: Assessing Incentives for Meaningful Use and Weighing Them Against Costs	5
3: Assessing the Organization's Current State in IT, Charting a New Course	9
4: CEOs, Senior Executives Set Vision and Lead the Change to EHRs	13
5: Managing Expectations a Key for Project Support	17
6: The Role of the CIO in EHR Implementations	21
7: Considering New Role Players for EHR Implementation	25
8: IT Staffing is Key to Achieving Meaningful Use	29
9: Communication Dispels Fears Surrounding the EHR Conversion	33
10: EHR Implementation is the Perfect Time to Improve Workflows, Processes	37
11: HITECH Heightens Need for Providers and Vendors to Work on Partnerships	42
<i>11A: Product Certification Program Aims to Ease Decision-Making Process</i>	47
12: Should IT Planning Change to Achieve Meaningful Use Objectives?	48
13: Training and Implementation Support are Crucial Success Factors	52
<i>13A: CHIME Members Share Tips on Implementing Effective Training</i>	55
14: Building Physician Support for EHR Efforts	60
15: Making Go-Live Showtime and a Celebration	64
<i>15A: One Way to Approach Planning for Go-Live</i>	68
16: Meaningful Use Rules will Require Data Collection	69
<i>Full List of Contributors</i>	73

Preface

The CIO's Guide to Implementing EHRs in the HITECH Era evolved from the College of Healthcare Information Management Executives' (CHIME) collaborative effort with the American Hospital Association (AHA) to prepare hospitals for changes expected as a result of the stimulus funding provisions of the HITECH Act. That joint initiative led to the creation of the [*Health Care Leader Action Guide on Implementation of Electronic Health Records*](#), released in July 2010.

In an effort to further assist CIOs and IT executives nationwide, CHIME is providing this guidebook with expanded guidance for those leading EHR implementation efforts. It contains more information for both CIOs and other members of the C-suite. In addition to descriptive text on particular facets of EHR deployment, this CIO guide provides extensive action points on each topic, offering a variety of steps that IT executives can follow to assemble a solid foundation for their organization's clinical systems.

Written and compiled by CHIME's Senior Director of Communications, Fred Bazzoli, this guide builds upon the wealth of experience that hundreds of CHIME members have had in installing clinical systems at their organizations. EHRs require profound organizational change; strong guidance and commitment from senior executives; and a detailed game plan for implementation.

CHIME plans to continue researching and publishing guidance on implementing clinical systems. As HITECH and healthcare reform take hold in the U.S. over the next few years, the use of information technology is likely to become crucially important for organizations that want to survive and thrive in this evolving healthcare environment.

About CHIME

CHIME is the professional organization for chief information officers and other senior healthcare IT leaders. CHIME enables its members and business partners to collaborate; exchange ideas; develop professionally; and advocate the effective use of information management to improve health and healthcare in the communities they serve.



For more information about CHIME, please visit us online at www.cio-chime.org.

Acknowledgements

The research conducted for this guidebook stems from the vast experience and knowledge of CHIME's membership. With input from nearly 170 CHIME members who lent their guidance on the building blocks of successfully implementing EHR systems, the information contained in this guidebook is grounded in the reality of experience in hundreds of hospitals across the U.S.

Additionally, content contained in this guide was reviewed for accuracy and validation by an independent group of CHIME members who have immense experience implementing clinical systems. They include:

John P. Glaser, PhD, FCHIME, CHCIO
George "Buddy" Hickman – Albany Medical Center
Richard D. Lang, EdD – Doylestown Hospital
Edward W. Marx – Texas Health Resources
Pamela G. McNutt, FCHIME – Methodist Health System

CHIME is extremely grateful for the support and involvement of its membership in raising the level of industry knowledge during this critical time for our nation's healthcare organizations. To view the list of contributors at the end of this document to see the complete list of individuals who helped make this guide possible.

Chapter 1: Understanding the Basics of the HITECH Funding Program

Keywords

American Recovery and Reinvestment Act of 2009 (ARRA)

Electronic health records (EHRs)

Health Information Technology for Economic and Clinical Health Act (HITECH)

Information Technology (IT)

Meaningful use (MU)

Summary

The Health Information Technology for Economic and Clinical Health Act (HITECH) aims to give healthcare organizations incentives to install electronic health record systems. A number of conditions must be met in order to qualify for payments, and chief executive officers (CEOs), chief information officers (CIOs) and other senior executives need to work collectively to successfully adopt technology and manage the changes these systems will bring.

The creation of the HITECH Programs under the American Recovery and Reinvestment Act of 2009 (ARRA) has the dual purpose of stimulating the economy and encouraging the implementation of “interoperable health information technology and electronic health records,” according to proposed regulations released in December 2009.

In addition to injecting an estimated \$23 billion into the economy, in the form of additional Medicare and Medicaid payments to providers, HITECH aims to accelerate adoption of healthcare information technology (IT) and utilization of electronic health records (EHRs). The ultimate vision is to improve the quality and value of American healthcare. After the original legislation was passed, Congress approved legislation that provides incentives for hospital-based primary care and specialist physicians. Other hospital-based physicians – radiologists, pathologists and anesthesiologists – are still excluded and are unlikely to be included. The program leaves out long-term care facilities, inpatient psych hospitals, and cancer centers.

As with many government programs that offer the promise of additional federal monies, there are several stipulations that organizations must meet in order to qualify:

- Payments can be made only to eligible hospitals and eligible providers, as defined under the ARRA legislation passed in February 2009. Expanding eligibility, as has been discussed for hospital-based physicians will take additional legislation.

- Payments through the Medicare program are made retrospectively, after a provider has borne significant cost in purchasing and installing IT systems and supporting infrastructure. The program also operates under state Medicaid, where most of the Medicaid money can be obtained in the first year based on purchasing a system only, rather than having it installed or achieving meaningful use (MU) of EHRs.
- Providers will be required to demonstrate MU of EHRs. For the first stage of the program, hospitals must meet a core set of 14 objectives, and also meet five of a menu of 10 objectives, with one of those being a population and public health measure. Future stages are expected to present an ever-rising standard of what constitutes meaningful use of EHRs. The objectives are set out in three stages, scheduled to begin in fiscal years 2011, 2013 and 2015; providers not making progress toward implementation are subject to a penalty phase after 2015.
- Providers must use certified technology to qualify for payments. Separately, the federal government has issued proposed rules that establish a temporary certification program, which will be replaced by a permanent certification program by 2012. Final rules for the temporary certification program were released in July 2010; final rules on the permanent program will be issued in the fall of 2010.
- Technology used by providers must adhere to an initial set of standards and implementation specifications, which were released in an interim final rule in the spring of 2009.

Provider organizations have focused a great deal of attention to the final list of objectives that will be used to determine whether a provider is meaningfully using information technology. MU criteria was established to accomplish five goals: to improve quality, safety and efficiency, and reduce health disparities; engage patients and families in their healthcare; improve population and public health; improve care coordination; and ensure adequate privacy and security of health information.

In attempting to implement systems that achieve MU objectives, the biggest risk for organizations is that they will rush to implement systems. This may lead organizations to make hasty vendor choices, fail to get clinician buy-in and do a careless job of achieving process change.

Shifting an organization to a new mode for capturing, sharing and maintaining healthcare information requires extensive involvement of multiple members of an organization's senior executive team. This involvement needs to occur at the earliest stages of the project so senior executives can perform the following objectives, which are among those essential to the successful rollout and adoption of EHRs.

- Gaining organizational support
- Fitting HIT into an organization's strategic plan and organizational culture

- Estimating capital and operating expense requirements
- Ascertaining new IT roles and/or need for increased staffing
- Managing change, and ensuring clinician involvement and buy-in
- Assessing products for certification and their long-term fit with strategic direction
- Meshing IT planning with initiatives beyond an organization's walls

It is crucial that healthcare organizations' CEOs have a working knowledge of other aspects of IT implementation so that they can provide appropriate support to the CIO, coordinate efforts effectively with other senior executives, interface with the board and other constituencies within the hospital, be an advocate with the medical staff and be able to discuss the organization's vision and tactics involving IT intelligently in public.

Still, MU requirements and other components of the federal effort to encourage the use of EHRs will become increasingly important over time, as objectives become more difficult to achieve and as non-compliant providers will be at risk for reductions in Medicare/Medicaid reimbursement if EHR implementations are not completed by 2015.

EHRs are also expected to affect many healthcare business relationships in communities, as physicians increasingly look to hospitals for help in adopting EHR systems and as organizations face increased demands to share healthcare information with other providers and with patients.

In sum, the push to implement EHRs will cause significant change in many aspects of care delivery, and the cost of implementation and degree of coordination required to achieve success will involve regular attention and participation from an organization's CEO and senior executives. Provider success in achieving MU will serve as a foundation for upcoming payment reform.

For more information:

Website of the Office of the National Coordinator for Healthcare IT

<http://healthit.hhs.gov>

CHIME Resources on Latest Meaningful Use Regulations

<http://www.cio-chime.org/advocacy/index.asp>

Office of the National Coordinator for Healthcare IT on Meaningful Use

<http://healthit.hhs.gov/portal/server.pt?open=512&objID=2996&mode=2>

Office of the National Coordinator for Healthcare IT on Standards and Certification

http://healthit.hhs.gov/portal/server.pt?open=512&objID=1153&parentname=CommunityPage&parentid=11&mode=2&in_hi_userid=11113&cached=true

AHA Definition of Meaningful Use

<http://www.aha.org/aha/content/2010/pdf/10-ib-def-meaning-use.pdf>

AHA Health Information Technology Advocacy – Meaningful Use
<http://www.aha.org/aha/issues/HIT/100226-hit-meaningful.html>

CHIME HANYS Summary of CMS Proposed Rule (January 2010)
[http://www.cio-chime.org/advocacy/CHIME HANYS summary of CMS Proposed Rule.pdf](http://www.cio-chime.org/advocacy/CHIME_HANYS_summary_of_CMS_Proposed_Rule.pdf)

Executive Summary of CHIME’s Comments on Proposed Meaningful Use Rule
[http://www.cio-chime.org/advocacy/CHIME Exec Sum Feb23 \(2\).pdf](http://www.cio-chime.org/advocacy/CHIME_Exec_Sum_Feb23_(2).pdf)

HIMSS Fact Sheet on Meaningful Use and ARRA
<http://www.himss.org/ASP/ContentRedirector.asp?ContentID=72903>

Chapter 2: Assessing Incentives for Meaningful Use and Weighing Them Against Costs

Summary

Organizations need to correctly measure the cost of achieving meaningful use of electronic health records vs. the expected payback in terms of stimulus fund payments. Senior executives also need to assess intangible benefits and the total cost of ownership for an EHR system.

Healthcare organizations that want to ramp up their use of EHRs to achieve stimulus payments under the HITECH Act must carefully assess those potential payments and compare them to anticipated costs of the technology, services, time and effort needed to achieve compliance.

A variety of calculators are publicly available for healthcare organizations to use to calculate potential stimulus fund payments. However, because most hospitals are at different stages in implementing EHRs, there is tremendous variability in estimating costs for achieving compliance with MU objectives and qualifying for payments.

Many hospitals are viewing the stimulus fund payments as a cost offset to a necessary investment, or catalyst in their efforts to automate. The payments will be received only after a healthcare organization bears significant costs for implementation, and they will only cover a percentage of the overall total costs; hence, executives of these organizations are looking at other strategic imperatives in driving EHR adoption.

At hospitals now implementing EHRs in an effort to achieve stimulus funding, there is extensive involvement by senior executives in estimating EHR costs and potential stimulus payments, as well as other potential savings that might provide a return on the health IT investment. However, many organizations report that they view the move to digital records as a strategic imperative, a “cost of doing business” in the digital age that must be pursued in order to keep an organization competitive.

Organizations should avoid viewing EHR implementation as a pure cost-benefit calculation because it is clear the government is moving toward a payment system that is based on quality, efficiency and safety, and EHRs will be a necessary foundation should a healthcare organization want to thrive. Instead of merely relying on a pure ROI calculation, cost-benefit calculations should center on this question: *How much would it cost to prudently accelerate our progress, and if we did, will we qualify for a larger incentive or avoid penalties?*

Still, costs must be considered due to of the enormity of the investment. According to the results of a Healthcare Information and Management Systems Society (HIMSS) Analytics survey released in May 2010, as many as 40 percent of U.S. hospitals “may be at risk financially and operationally for not meeting MU criteria,” and thus organizations implementing EHR systems cannot assume that they are certain to receive stimulus funding. (See <http://www.modernhealthcare.com/article/20100521/NEWS/100529983>)

Ongoing operational costs also have to be considered, both directly related to the support of the system as well as higher nurse staffing needs and overall higher costs. In its comments on the proposed MU regulations, CHIME notes that the impact analysis in the proposed rule “seriously underestimates the total cost of ownership for these systems and overstates the amount of incentive payments that will be paid if the proposed rules are implemented without modification.” Additionally, “acquisition of software licenses is just one part of the total cost of implementing systems...other implementation costs and ongoing expenses that are essential to system implementation over the first five years typically are at least six times the cost of acquiring the software license from a vendor. Added costs include internal and external resources, most commonly vendor support and hiring dozens of consultants to help an organization successfully implement the application.”

Hospital executives also must take into account productivity declines likely to occur during the weeks and months after implementation. For example, a study recently released by Arizona State University researchers found that EMR adoption in hospitals is often associated with higher nurse staffing needs and increased costs in the first three years of implementation. (See <http://www.ama-assn.org/amednews/2010/05/17/bisf0521.htm>)

Benefit realization will require hospitals to achieve gains in productivity, care performance and service improvements. Federal incentives should not be viewed as the only reason to bear the expenses attached to EHR implementation; thus organizations should derive multiple kinds of value compared with the costs.

Executive Guidance

- As senior executives, discuss the current state of the IT plan and how far along the organization is in its timeline to adopt clinical systems. While some tradeoffs may be made to expedite some implementations, trying to rush implementation to achieve full stimulus funding may carry too high a cost, compared with the stimulus payment. Question to ask: *Will rushing the process actually create future problems, make the environment less safe, or increase back-end costs?*
- The executive team must be aware of all situations and plans, in order to achieve top-level support and buy-in.
- Senior executives need to decide how to manage the effort and the interdependencies across the organization, including where additional project efforts must be sponsored or chartered.

- Some organizations are pairing efforts of the CIO and chief financial officer (CFO); for example, using the CFO's expertise in financial matters to research the true financial impact of incentives as well as costs for non-compliance. Additionally, some organizations are pulling in auditors to help craft scenarios to weigh opportunities and costs.
- Task one entity within the organization with responsibility for providing the formal estimates of potential HITECH incentive payments. Consider forming another entity to serve as an EHR strategy committee, comprising senior leaders who are responsible for implementing required changes to achieve full incentive payments.
- Conduct a gap analysis of current deployed functionality vs. the final MU use standards. Work with a trusted vendor to tie payments to achieve compliance to expected incentive payments.
- Senior finance executives and/or the finance team must decide how heavily to factor ARRA reimbursement into financial modeling. Dependence on stimulus reimbursement may be problematic if an organization is unable or delayed in qualifying for payments.
- Be aware of all factors that will increase the total cost of implementation, such as consulting services, adoption of evidence-based tools, training costs and additional staffing during initial implementation.
- Involve vendors in discussions, and factor in their willingness to collaborate and help the organization achieve full stimulus funding.
- Some organizations are involving their clinical staff early on to educate them on what will be needed to achieve compliance with MU objectives. One organization had a four-hour MU workshop focused on what the vendor and hospital need to do for Stage 1 – attending were the chief operating officer (COO), a general VP, chief medical information/informatics officer (CMIO), chief nursing information/informatics officer (CNIO), Health Information Management (HIM), admitting, IT leadership and directors from laboratory, radiology and pharmacy.
- Also at the earliest stages, begin to communicate the convergence of IT with quality, thus highlighting IT as an enabler in the coming new era of healthcare focus.

Recommended Reading and Tools

Calculator: *Incentives for Adoption and Meaningful Use of Certified EHR Technology Hospital Incentive Payment Calculator* (For AHA Members)

<http://www.aha.org/aha/content/2009/spreadsheet/090220-it-hosp-ben-calculator2.xls>

Blumenthal, D. *Stimulating the Adoption of Health Information Technology*, NEJM 1477-1479 (2010).

CHIME Member Comments

“We’re not doing a formal ROI study. We had made the decision to replace our Clinical System before ARRA; ARRA just sped up the timeline. We consider it to be a cost of doing business, and it will provide better quality care. Our finance team is not counting on the ARRA reimbursement in any financial modeling. There are 2 presidential elections and 4 congressional elections before the final payments are made.”
- **Bruce Kelly**, Chief Information Officer, Mercy Memorial Hospital System

“At Aurora, Government Relations is responsible for providing the formal estimates of the potential HITECH incentive payments...we already have a fully deployed EHR but estimate that it will cost us \$20 million over three years to meet the Stage 1, Stage 2 and Stage 3 requirements. We have regular updates the Aurora leadership, including the CEO and COO on the HITECH project and incentive payments and have an Aurora EHR Strategy Committee, made up of senior leadership responsible for implementing required changes and ensuring that we achieve the full incentive payments.”- **Philip Loftus**, VP IS and CIO, Aurora Health Care

“We developed a 7-year strategic IT plan back in 2007. After careful analysis, we plan to stay the course and not attempt to rush our implementations in a hasty attempt to receive incentive payments. The total cost of our project (clinical and business IT solutions) is \$32 million. The ARRA reimbursement is estimated at \$6 million. The ROI is \$3 million. Hence, we are staying the course and not looking to accelerate.”
- **Kimberly Kalajainen**, Vice President and CIO, Lawrence & Memorial Hospital

“Our health system was working toward advanced clinicals, CPOE, and all of the positive patient quality outcomes that result from an engaged organization from the top-down before stimulus ARRA reimbursement was even a consideration. The addition of possible ARRA reimbursement now gives our health system and physicians an added incentive to moving quicker on our journey.” - **Mike Hibbard, RN, MHSA, PMP**, CIO, Mercy Health Partners of Southwest Ohio

To read additional comments about assessing incentives for meaningful use, [click here](#).

Chapter 3: Assessing the Organization's Current State in IT, Charting a New Course

Summary

Most organizations have a wide variety of applications in place, however, what they have and what meaningful use will require of them needs to be assessed. This can provide guidance in determining the organization's roadmap to its desired future state. That discussion is most successful when it gains support from a broad constituency within a healthcare organization.

The growing interest in implementing electronic health records to the level specified by meaningful use objectives places a premium on organizations' ability to determine where they are in the process and how much further they need to go.

Conducting a gap analysis – assessing the difference between the current state of readiness and the future “ideal” state – is sometimes viewed as purely a function of IT, with top information systems personnel leading the analysis and then quantifying current and future technology needs that will be required to achieve technological harmonization.

MU objectives can provide a rough, general guide for healthcare organizations that want to determine where they need to be in order to qualify for stimulus funds under the HITECH Act. However, organizations must consider different routes before arriving at their final destination – many are using different approaches in implementing IT, depending on their individual strategies, cultures, markets and structures. For example, an academic medical center in a competitive metropolitan market is likely to have different applications, infrastructure, vendor-supporting and technology management practices than a free-standing suburban hospital with different mission-centric objectives, community and medical staff dynamics, and abilities to fund IT.

For many organizations, it is natural for the top IT executive to take a leading role in conducting an assessment of current technology. Until now, IT leaders have played the primary role, up until this point, in building an IT deployment strategy. In many cases, the organization's top IT executives have also been interacting with, or leading, steering committees that provide broader guidance for IT direction in an organization.

With the convergence of HITECH planning as well as healthcare reform, many organizations are aware of the increased stakes involved in healthcare IT. They're dedicating more resources to support assessments of the current IT state, what the organization wants to achieve in the coming years, and the IT resources that are needed to get there.

It is not just a simple matter of determining what technology needs to be in place to meet objectives and qualify for stimulus fund payments. Increasingly, the term governance is

being linked to IT implementation, maintenance and management. IT planning is attempting to answer the following questions:

- What will the governance be?
- What is the capacity for change?
- What are the idiosyncrasies that we are dealing with?
- What are our particular needs and our political landscape?
- How do these needs align or compete with other needs?
- Does our portfolio align to our mission and current business and clinical objectives?
- What can we do to manage risk with such a “busy” portfolio?

The perception and history of successes, accomplishments and failures; the relationships that are in place or vacant; and the skills within IT are all important components of any planning that occurs in getting IT to a particular future state.

Many organizations also begin the process of building buy-in for IT system changes at this point by involving others in the assessment process. Some of these executives brought into the process are involved on a first-hand basis in the actual assessment of the organization’s information systems. Other executives are getting involved by participating on bigger teams that are assessing an organization’s readiness to meet MU objectives or its preparation to thrive under healthcare reform. Executives who are more commonly involved in these efforts include chief medical officers (CMOs), chief nursing officers (CNOs), CMIOs and CNIOs.

Still other organizations are framing and expanding the discussion of IT by citing the need for quality improvement or by inviting clinicians to get involved in initiatives that improve care, patient safety and clinical quality. Some have formed clinically driven evaluation teams that work with the executive team to work through the process.

CEOs are playing a variety of roles in the assessment phase. Some IT executives are reporting their findings to the CEO and board committees on a regular basis, while in other organizations, CEOs are aligning themselves as key partners in the process, and other members of the senior executive team are brought in to provide feedback and increase buy-in. Having responsibility for IT discussions reside with an oversight committee; defining MU as part of a larger initiative; or blending it into a strategic plan helps to place MU discussions into a larger context.

Oversight committees may take on various forms, and there may be several active groups in which dialogue occurs with the intent to form consensus among different EHR-use stakeholders. HITECH may be viewed as its own program for progress tracking, or it may be seen as tactical requirements that are handed off to EHR-related project managers. Clinical adoption through MU in its broadest sense is the key success factor of all EHR-related initiatives, and organization change efforts to support it should be pervasive.

Executive Guidance

- An organization should first develop a comprehensive IT strategic plan that is aligned with the organization's strategy.
- An organization's CIO should conduct one-on-one interviews with all key stakeholders and a large number of physician interviews as well. These interviews should be in addition to staff level activities in which data collection is taking place.
- A project management office, which can provide direction for an EHR implementation, should be in place.
- Use existing committees, such as an IT steering committee, to play a key role in assessing the current state and create a desired future state. Or form one, such as a MU subcommittee – possibly cross-functional – specifically to address achievement of MU objectives. One hospital organization went so far as to create a MU “czar” and team dedicated only to this task. In any event, governance must be very strong and chaired by non-IT members.
- Task senior executives to get involved in aspects of the assessment where appropriate – for example, the CMO can help assess current clinical systems, and what needs to be done to improve them.
- Incorporate discussions and coordination with work done by the committee that oversees the strategic direction for the organization, so IT direction can be included in the hospital's goals and objectives.
- Communication with and the involvement of senior executives can be facilitated by promoting the top IT executive to be included in the C-suite. Reconsider this appointment in light of the expected impact of EHRs, the possibility of increased reimbursement, and how EHRs will impact every facet of the organization.
- Conducting gap analysis is not merely determining what technology is or is not in place – it also involves assessment of corporate readiness for change, and requires a plan of action to assess people and processes to find out if they can adopt technology and adapt to change.
- Measure progress, gaps and work to be done on a scorecard or “readiness matrix” that visually presents the work that lies ahead.

- Understand how state health information exchange requirements align or don't align with HITECH standards and timelines. Develop additional tactics to manage those concerns as necessary.
- If the organization relies heavily upon an IT vendor, share the gap analysis with them, and get quotes for how to fill the gaps. Those quotes can be considered within the capital budgeting process, and it provides a way to get "in line" earlier with suppliers.
- Assure vendors are keeping organizations current on status of HITECH compliant software release plans, timing, and timing adjustments, HITECH infrastructural prerequisites and other systems environment interdependencies.

CHIME Member Comments

"Our executive team has been very supportive of my efforts to make this IT project the No. 1 priority for the entire health system. That decision was the defining moment for this organization's ability to meet the developing requirements for national healthcare reform. I work closely with the CEO and the rest of the executive team on all of the communications to the medical staff and employees. Being part of the executive team is necessary to enable this type of success." - **Dave Roach, VP/CIO, Kadlec Health System**

"IT is far from the only "attention" grabber in our organization. IT readiness, as it relates to MU, has been mine to address. I am addressing it by trying to influence operations that they need to take the point on this. My systems and applications can get us to the threshold, but operations has to leverage the tools in order to demonstrate use. Operations and patient safety and quality have to take more prominent roles."
- **Dennis P. L'Heureux, MS, CPHIMS, FHIMSS, Senior VP for Planning and CIO, Rockford Health System**

"We handle this in several ways: within IT, we have a specific roadmap, a strategic plan and have, or will have conducted a number of assessments and gap analyses for ARRA and/or MU. Within the organization, we have a strategic team and incorporate the IT direction in the hospital's goals and objectives."
- **Eddi Staffini, CHCIO, IT Director, Sibley Memorial Hospital**

"We do not focus on the 'Meaningful Use' requirements as a separate initiative. We have merged those requirements into our larger Advanced Clinical Systems Strategy and simply highlighted those areas that address Meaningful Use. The Meaningful Use requirements are the 'low water mark' for advanced clinical systems." - **Mary Carroll Ford, MBA, CHCIO, Vice President and CIO, Lakeland Regional Medical Center**

To read additional comments about assessing an organization's current state, [click here](#).

Chapter 4: CEOs, Senior Executives Set Vision and Lead the Change to EHRs

Summary

The CEO and the senior executive team must fully support the organization's efforts to implement an electronic health record. This support must be tangible, public and sincere. The CEO puts forth the organization's vision for improving quality and patient safety and positions IT as a key strategy for achieving the outcome.

While there is no exact formula to follow in implementing an EHR system, one ingredient to success appears to be the complete and unqualified support of the senior executive team, beginning with the CEO of the organization.

An informal survey of CHIME members found that the vast majority saw full senior executive support for an EHR implementation as a key factor to success.

It is crucial for the CEO and other senior executives to demonstrate that an EHR initiative is not an IT project, and it is not like most other hospital projects. The implementation of an EHR is a transformational initiative, and if its potential is to be realized, the organization will need to undergo foundational change to achieve mission-supporting objectives that include specific improvements to patient care and safety, often requiring that the organization restructure care delivery to meet the changing requirements of a reforming healthcare system.

Despite the many competing voices that call out for each senior executive's attention, an EHR implementation will demand significant involvement and participation. That is because electronic records will affect nearly all of the diverse constituents in the care delivery process; they will change work processes and content, individual workflows and the very culture of the organization. Those in the C-suite who must lead this change are best prepared if they understand that it may indeed be profound.

"The move to an EHR does not only require senior executive support – it requires senior leader champions for the process," says Kim Ligon, director of information services and CIO at DCH Health System. "They can't just support the project; they have to lead the charge or it becomes 'just an IT project.'"

Lack of full support for the implementation change effort will lead to a solution that does not see meaningful adoption by clinicians.

Caregivers whose jobs will be affected by an EHR must see active involvement by senior executives, particularly the CEO, COO, CMO, CNO and chief quality officer (CQO), in the

planning and conversion to a digital system. Without a high level of participation and leadership, front-line workers may perceive EHRs as an “of-the-moment” program and resent the change and increased workload it represents. A successful transition requires a workforce that participates in design and knows what to anticipate; those expectations must be set forth by the executive team.

“Remembering the maxim, ‘Culture eats strategy for lunch,’ the primary objective of the CEO and other senior leadership is to set the cultural tone,” said Bill Spooner, CIO at Sharp Healthcare. “They must live the vision and position themselves as the executive sponsors.”

To prepare the organization to work through the implementation process, the CEO and other senior executives must get involved in the early planning for EHRs, including the obvious steps of agreeing to a timeline, process and budget for the transition. In most organizations, the CIO takes the lead in developing these plans, with input from other executives. For instance, budget projections should encompass all expenses that will be involved in the total cost of the project, including hardware, EHR and third-party software products, maintenance support, implementation build support, internal people resourcing, third-party medical vocabulary content, implementation build tools, training content and support, implementation go-live support, loss of productivity during the rollout, and technology infrastructure changes.

With approval from the full executive team, the CEO and other senior executives then need to get involved in the implementation process and otherwise reiterate support for the effort. A member of the executive team, or the team as a whole, can take on the role of project sponsor and assume responsibility for the success of the project, perhaps aligning senior management compensation incentives to ensure the success of the effort. Senior executives particularly need to enlist the support of CMOs and CNOs, and/or create CMIO and CNIO positions to interact with clinicians and gain their support.

Throughout the process, the CEO and other executive team members can best develop support by demonstrating that the EHR process has sufficient financial support, and that digital records symbolize a clinical transformation process that hospital leadership plans to follow from this point forward. While support for the adoption of EHRs needs to be supported by key providers and medical committees within the facility, senior executives need to create the vision for where the enterprise is going, and the need to increase quality and efficiency. Specific improvement metrics to track progress and outcomes should be targeted and, at this stage, should include HITECH measures.

CIOs need to have positive and trusting relationships with other senior executives in the organization. All executives need to work together, sending a clear message that the use of an EHR system is not optional but will become a condition of employment or practicing medicine at the organization.

Executive Guidance

- The EHR-enabled transformation should be a thread that runs through the organization's overall strategic fabric, and it should be documented in its strategic plan. The organization's board must also be actively involved in monitoring progress to an appropriate level of assurance.
- Senior executives, led by the CEO, should agree on the transformational scope, the approaches to organizational change, and resourcing the effort. They need to agree that the EHR implementation is a top priority for the organization for the next few years.
- The CEO needs to set the vision for the implementation, truly understanding how EHRs will help an organization achieve clinical transformation to greatly improve quality, safety and the patient experience. IT efforts then support these goals.
- A senior executive, preferably a clinical executive, should take on the role of the project sponsor, and have full support from, and access to, the CEO. The project should be viewed as a top-driven strategic priority.
- As executives move from planning to communication, they need to emphasize the importance of the project to the organization, connecting the EHR back to the organization's missions and goals. They need to be in a visible leading role and be supportive of the initiative by "leading the conversation."
- Beyond words alone, executives need to commit funding and additional staffing as needed, as well as their own efforts. They should participate in key transformational activities, including governance meetings and communication events.
- Executives should endorse governance structures that guide and build support for IT initiatives surrounding EHR implementations. For example, an executive-level IT steering committee can bear responsibility for a strategic information services plan.
- Executives, and the CEO in particular, need to demonstrate the commitment of the organization to invest in efforts to increase efficiency in tandem with IT usage. This can include Lean, Six Sigma and other process improvement methods and techniques, investments in personal change assimilation, clinical use and other forms of workforce education.

CHIME Member Comments

“What the CIO needs most is the unqualified support of the CEO and other Senior Executives. They absolutely must share the vision, and see where the organization wants to end up and understand why. Along the way, there are going to be groups the need to be persuaded, coaxed, cajoled or just plain told to get on the bus or get off. That must be supported all the way to the top. To do that, they must have and fully share the vision. It starts with the CEO, and then the rest of the Senior Team. If the CEO does not get it, and support it, things may end up in jeopardy.” - **Stephen M. Stewart, MBA, FACHE, CPHIMS, CHCIO**, CIO, Henry County Health Center

“First and foremost is talking the talk. If they don't understand what the next five years are going to bring, it will not happen. Clinical transformation will be huge for some organizations, and that will be to get not only the employed hospital staff to change the way they do business but also the physicians that work in the hospitals. It will be imperative that the executive staff understand, support and back this change. Computers are just the tool; the change is by the people.” - **Mary Jo Nimmo**, Director of MIS, Lenoir Memorial Hospital

“Make it the organization's Job 1 and recognize it is a change in culture, not just a technology project. An EHR implementation is the most complicated undertaking a hospital will ever do – it will affect staff, providers, ancillaries and patient care. If it's not Job 1, don't do it!” - **Jack Kowitt**, Senior VP and CIO, Parkland Health & Hospital System

“Senior executives can help facilitate the organization's move to an EHR by having high visibility at all meetings. For example, throughout our health system, our EHR journey is a standing agenda item for every meeting. This has been requested by senior leadership and thus motivates those leading other meetings to make sure they have the most current information before their meeting is held. Visibility is also very important, on all shifts. This visibility and rounding reinforces to staff that, yes, this is important and is not just the “project of the day” but truly a care transformation journey.” - **Mike Hibbard, RN, MHSA, PMP, CIO**, Mercy Health Partners of Southwest Ohio

“CEOs support change and advocate IT's importance by making sure that quality and patient safety are on the top of the agenda. That is really all they have to do. The EHR and IT's importance becomes a tacit part of the strategy when CEOs tout, espouse, and drive safety and improvement goals... We've been asking the wrong question for years: ‘How do we get organizations to support IT and an EHR?’ Instead, the right question is, ‘What are we doing to make our organizations the safest and most efficient providers of care?’ The answer to that is no longer in question.” - **Richard Lang, EdD**, Vice President and CIO, Doylestown Hospital

To read additional comments about CEOs and other senior executives setting the vision, [click here](#).

Chapter 5: Managing Expectations a Key for Project Support

Summary

Misconceptions often surround electronic health record projects; thus, senior executives will need to take a proactive role in calibrating the expected results from an implementation effort. The organization needs to see sincere support from top executives for a project of this magnitude.

Organizations that are planning to increase the functionality of clinical records systems are likely to encounter pushback from their staff. That is especially true in the early stages of adopting EHRs where few users have a base of knowledge and experience in using such technology.

In order to equip users to learn innovative systems, adapt workflows and accept new responsibilities related to EHRs, they must participate in the planning and selection process from the earliest stages, including educational training.

CIOs that have experienced the evolution process from paper records workflows to EHR-centered systems often cite expectation management as one of the key success factors for a variety of reasons:

- Clinicians have established preferences for the ways they practice medicine and provide care. They will expect that any variation from their preferred practice pattern will take more time and require more work – which is almost always the case. They have to be warned about the effects of the coming learning curve.
- To “sell” the use of an EHR system to clinicians, IT executives might be lured to take the easy road and make promises that the new records system can’t achieve immediately. Prospective users may then consider these systems as a viable solution that will universally save time and make care delivery easier.
- Decision-makers who hear sales pitches from healthcare IT vendors are likely to receive messages that oversell benefits while minimizing hardships.

Hospital executives must be completely honest in communicating the amount of work involved when making the transition to EHRs. Anything less is disservice to the front-line staff using the systems, and will negatively impact confidence in the organization’s leadership.

So how does leadership encourage potentially reluctant users to make the changes that will be required? Organizations that have successfully implemented EHRs frequently use several key steps to gain support and manage organizational expectations.

- From the very top, executives must communicate that they understand the additional work that will be required, but that leadership is completely committed to making the change to EHRs.
- Implementation of an EHR must not be an end in itself, and users will not buy into a change only because it will mean more reimbursement for the organization. Rather, EHR transitions must be inextricably bound to a healthcare organization's most significant visions – better patient care, increased patient safety and generally impacting patient care in a positive way.
- All stakeholders need to be involved in every step of the process, including product selection, workflow redesign, customization and validation. In the clinical realm, this means an EHR conversion needs considerable buy-in and effort from medical departments.
- Communication keeps the user community informed about where the organization is in the process and what comes next. Users' expectations can be shaped through sharing easy-to-understand explanations of what lies ahead and the long-term benefits they will experience.
- Staff must recognize the post-implementation phase, which is when optimization of the system occurs. Turning a new system on is not the finish line.
- Training brings users comfort, enabling users to replace fear with facts.
- Training needs to be ongoing so that users don't just stop at knowing just enough about a new system to survive it – continuation of education helps users become more proficient and professional.

Managing expectations hinges on solid leadership skills. Open communication and an honest approach increases trust in the transition process. IT executives must prepare for the worst possible scenarios and work ahead to have solutions ready as needed. New users must believe executives understand the strain that will be involved and will make sure they have resources to learn the new system and survive the time it will take to make the switch to EHRs.

Executive Guidance

- Some IT executives believe that expectation management is a shared responsibility of the clinical executive sponsor and CIO. The clinical sponsor can set expectations regarding benefits, such as improved patient safety and quality, and opportunities for better productivity and delivery, and richer data for research and clinical uses. To fellow executives, the CIO should play a role in messaging expectations regarding

vendor product efficacy and implementation support delivery, required investment, timelines and scope management, and alternative approaches to infrastructure and end-use delivery.

- While IT is heavily involved in EHR implementation, it should be invisible as much as possible; expectation management and project oversight should have broad, visible organizational support.
- Strong CEO and board-level support for an EHR project is crucial. CEO support, in particular, needs to be visible and show the top executive is engaged in the project. Project governance should include the CEO, while any senior committee for the project should be populated by senior executives, physicians and nurses.
- Committees charged with overseeing clinical IT delivery can play a role in setting expectations for the EHR and setting organizational priorities.
- Overall vision needs to be continually emphasized – executives must consistently communicate that the process has to be done right, with the proper planning, education and training, and the adoption plan must be carefully monitored. The message must be clear, especially to the physician community, that there is “no turning back.”
- Despite the likelihood that new functionality will slow once-routine processes; staff must be challenged to not just learn survival techniques with new technology, but to look for process changes that best take advantage of the functions of the EHR.
- Physician involvement is key. Organizations that have succeeded in EHR implementations say they have sought out *at least* one physician to take the lead in the area feeling the biggest impact by the electronic enhancement. That physician then becomes the spokesperson and supporter for the effort.
- The physician spokesperson must be a trusted medical staff colleague. He or she must remain a practical advocate throughout the most challenging of times during the EHR implementation lifecycle. At the same time, he or she needs to be a key change agent, knowing how to demonstrate empathy while also motivating physician behavior change in ways that are in tune with organization culture and authority to act.
- Senior executives must realize that governance and funding are big issues that the organization must own as a whole; costs and oversight efforts are going to be greater than expected.
- Communications and marketing can play important roles in ensuring that key IT topics are messaged correctly, often and effectively.

- Stakeholder participation and input is needed throughout the process. An organization should establish ownership at the lowest level by engaging staff and clearly defining the vision, goals and expected involvement of every stakeholder involved.
- Training programs should not merely educate users on nuts-and-bolts of an implementation, but should emphasize an expectation for the use of the system.

CHIME Member Comments

“My first statement to my CEO and board is, don’t think of an EHR as an ROI project but rather an ROQ – return on quality – project. Although not directly measurable, EHRs, thru improved quality of care over time, should drive down the cost of care – and thus achieve the ROI – but it will take time.”

- **Brian D. Patty**, VP and Chief Medical Informatics Officer, HealthEast Care System

“We focused on quality – the most compelling argument we continually made for CPOE was based on a before-and-after workflow assessment. We never say adopting technology will be easier or faster. However, we do say that the overall process will be better (although not necessarily each step).”- **Rick Warren**, VP and CIO, Allegiance Health

“We’ve had an EHR for some time. It was always in our case a physician-driven effort. The design, rollout and support model came from faculty groups (medical staff) that owned the process. It wasn’t an IT project. We tried to be clear in our goals that it was there to impact patient care in a positive way – no ROI, standardization or efficiency goals.” - **George McCulloch, MA, MBA, CHCIO**, Deputy CIO, Vanderbilt University Medical Center

“I find the Gartner Hype Cycle is a very valuable tool in managing expectations; it is important to be realistic in expectations and manage the learning curve to allow people to come out the other side better. This is not a journey for the faint of heart. This is a journey for those willing to walk down a few alleys, get lost, ask for direction and, who knows, find a new place and become a leader in your own right. Discover new places, new ROI, and new relationships.” - **Mary Carroll Ford, MBA, CHCIO**, VP and CIO, Lakeland Regional Medical Center

“Honesty, communication and trust are huge. Admit issues and problems, do not hide them, and work like heck to resolve them, but above all else, stay the course of your vision, while addressing the issues as they arise. Some will try to derail the process early, but leverage your credibility and stay the course. I tried to tell (executives) this would be as much fun as a root canal, but if properly anesthetized the root canal was not so bad, nor was the recovery.”- **Stephen M. Stewart, MBA, FACHE, CPHIMS, CHCIO**, CIO, Henry County Health Center

To read additional comments about managing expectations, [click here](#).

Chapter 6: The Role of the CIO in EHR Implementations

Summary

The CIO will lead the organization's effort to achieve meaningful use and maximize stimulus payments. CEOs and their senior executives must support the CIO within the organization to enable synergy with all stakeholders in achieving a healthcare IT plan.

CIOs at the nation's hospitals are feeling the pressure to deliver stimulus fund payments for their healthcare organizations in the coming years.

“Senior management is counting on meeting meaningful use (objectives) in the first year,” noted a CIO at a hospital in New Jersey. “It is my responsibility to make that happen.”

Under the direction of their CEOs, senior executives and boards, CIOs play a crucial role in analyzing their organization's readiness to meet MU objectives and determining a game-plan to meet goals over the next few years to acquire the maximum amount of HITECH stimulus funding as possible.

To realize these goals, CIOs are reaching out to their CEOs, fellow senior executives and clinicians. Creating a broad consensus of support for healthcare IT has proven to be a critical success factor in efforts to shift to EHRs. Alternatively, the perception that any implementation is just an “IT project” – with no direct linkage to an organization's mission, clinical performance or business objectives – will make the change process twice as difficult, if not impossible.

Many CIOs have been preparing for a conversion to digital records in recent years, taking steps to ensure that an organization's digital infrastructure is in place and robust enough to handle the demands of an electronic record-keeping environment. These basic building blocks include the installation of networks, servers, emergency I.S. redundancy, required security precautions, and application installation. Business continuity has been a prime focus.

With MU objectives now clearer as a result of the release of final regulations by the Centers for Medicare & Medicaid Services, CIOs have a clearer picture of what specifically has to be done to achieve these targets for using EHRs. Planning has become apparent as a result and has grown both more complicated and crucial.

Still, CIOs will need to interact with various executives within their healthcare organizations in order to orchestrate the complicated installation and acceptance of EHRs.

For example, the linkage of MU to reimbursement will involve financial considerations, and CIOs will need to interact with the CFO to understand cost report timing and to minimize the impact of EHR purchases on cash flow, which could hamper many organizations because of the large expenditures involved.

Other areas of concern for CIOs in the MU era include:

- Clinical operations relationships because of the need to gain buy-in and support from clinicians at the facility.
- Evolving relationships within the organization, such as with quality departments.
- HITECH and HIPAA security regulations, which will raise the ante on protecting sensitive patient information.
- IT strategic planning updating, as needed, to achieve MU.
- IT staff hiring and retention so the organization can deliver on healthcare IT when and where it is needed.
- External contacts, which can include community physician practices as well as other organizations with which health information will need to be exchanged in the future. These activities also can include health information exchange development activities in their communities.
- Vendor communication to ascertain where IT suppliers in providing products that will meet MU objectives.
- Building relationships with the organization's community affairs or government affairs officers.

Many CIOs are their organization's experts on MU requirements; knowing what the implications are for the organizations, framing any discussions, and facilitating plans to achieve objectives.

The shifting of responsibilities makes this an interesting time for CIOs, who find they have new expectations in reporting to other senior executives and their CEO. Growth in responsibilities is also placing some CIOs out of their comfort zones, particularly those who are more task-oriented. The current environment requires top information executives to embrace new responsibilities, many of which will require additional training, and tighter integration with support from their CEO.

Executive Guidance

- There is great variation as to whether an organization's top IT executive is included among its executive leadership. At minimum, IT executives need regular interaction with their CEOs and access to other members of the leadership team with whom they will have ongoing interactions to achieve MU.
- While a CIO may be the point person in any approach to achieve MU objectives, these healthcare IT initiatives will affect many, if not all, aspects of hospital

operations. Thus, there is obvious need for visible backing of the CEO and other senior executive team members to assure success.

- The CIO and CFO should form a close working relationship. The IT needed to achieve MU will require large capital outlays and involve ongoing support expenses.
- CIOs should be encouraged to work on informal one-on-one networking and relationship building, both with the senior team and with department directors. These relationships enable a flow of information about what people are thinking and current thoughts around what will help the organization achieve its objectives with IT.
- Assist the CIO, as needed, in discussions with key IT vendors. Many CIOs have ongoing relationships with vendor representatives, so CEOs need to be sensitive to how their CIOs would benefit from their participation.
- Encourage CIOs to participate in educational activities that increase their understanding of HITECH/ARRA provisions. In addition to federal initiatives, state plans are also expected to vary, so CIOs should be urged to get involved in initiatives that help them stay abreast of specific rules for their state.
- Encourage CIOs to escalate awareness of roadblocks to the implementation process to senior executives, if not to the CEO, for attention and action. Organizations need to communicate that timelines for implementation are tight, that there is a risk of penalties for non-compliance, and that the initiative has the attention and support of the top executives.
- The senior IT executive should play a lead role in authoring and updating an IT strategic plan that supports overall organization strategic operating plans, including necessary components for MU.
- In addition, the senior IT executive should work closely with the project manager to delineate milestones for implementing new clinical systems to ensure that objectives are met that will help the organization meet MU criteria.
- The CIO also should be involved in efforts to keep the entire organization informed about the progress of a new system and progress toward achieving MU. For example, the CIO can develop a task force charged with attaining MU and grants, and have them report directly to the board.

CHIME Member Comments

“I am first and foremost expected to build and maintain a team of individuals that will deliver the HIT required when and where it is needed. They also somewhat expect me to maintain external contacts with whom I regularly communicate. Exchanging ideas, listening to others to learn what has worked or hasn't worked is important. Learning to apply this knowledge to our environment here is equally important. I pretty much have to keep a three-year view of what I plan to do while remaining flexible, recognizing individual pieces and parts may change positions on the timeline.” - **Alan Whitehouse**, CIO, Oconee Regional Medical Center, Inc.

“My current senior team expects a game plan and review of where we are today and what we still need to do to make meaningful use a reality in 2011. The most important role I currently have is to maintain the I.S. strategic plan, provide leadership, change as needed, be cost-effective and stay focused so the plan is executed in a successful manner.” - **Richard Mohnk**, CIO, HealthAlliance Hospitals, Inc.

“My senior team expects me first to attend webcasts and presentations to stay abreast of the changes coming and determining how we can meet the criteria; to work with the vendor(s) to determine where they are and to evaluate their ‘road maps;’ to evaluate where we are (honestly) and what we need to do to meet the criteria. Simply put, the CEO and senior executives are counting on me to get us where we need to be to meet the stimulus and obtain all of the moneys available to the hospital!”- **Jane Harless**, Director of Information Systems, Saint Francis Hospital

“My first responsibility is to make sure our technology can qualify. The second is to identify the areas of concern and categorize what issues are related to system functionality and what issues are process-related (human behavior). IT will be responsible for identifying the issues at hand and forming relationships with nursing/physician champions to implement the changes.” - **Tim Pugsley**, IT Manager, Nebraska Orthopaedic Hospital

“My most important job is to consult with the users on how they use the tools we have given them. We have what we need to make MU. We need to use them correctly. I am blessed with a clinical group and medical staff that actually get that, and are willing to drive to use it right, even if it means process change. While yes, some docs still complain about CPOE two years later (and do not hesitate to let me know that) we are still at nearly 75 percent compliance overall for all orders. We are proud of that. I get great support, albeit at times a bit reluctantly, to make this happen. All the years of trust-building are really paying off at crunch time right now.”- **Stephen M. Stewart, MBA, FACHE, CPHIMS, CHCIO**, CIO, Henry County Health Center

To read additional comments about the CIO's role, [click here](#).

Chapter 7: Considering New Role Players for your EHR Implementation

Summary

More hospitals and integrated delivery systems are relying on CMIOs and CNIOs in efforts to bridge the gap between clinicians and IT staff. Regardless of whether or not organizations have these dedicated positions in place, the need for hospitals to involve their clinicians is vital to the success of electronic health record implementation.

The enormity of the challenges involved in implementing electronic health records systems – and particularly the need to gain clinician participation and support for these projects – are prompting some organizations to create positions for specialized executives who can work in both the caregiver and IT domains.

Many organizations are turning to CMIOs or are seeking the addition of a CNIO. Estimates suggest that about 2,000 hospitals and healthcare organizations have CMIOs (similar data is not available for CNIOs).

While not all hospitals have these positions, most acknowledge the need to employ an individual with the responsibility of building caregiver adoption of EHRs, and leading doctors and nurses to participate in activities that will facilitate the use of clinical care applications. This can include developing clinical order sets for computerized provider order entry systems (CPOE) or participating in product selection or customization efforts.

Some hospitals have decided not to create CMIO or CNIO positions. For many smaller organizations, it is difficult to fund new positions or find candidates. At other facilities, chief medical officers (CMOs), chief nursing officers (CNOs), or other related clinical positions, are assuming duties that result in improved communication between clinicians and the IT staff. Other organizations have management structures that preclude the creation of more executive positions. Some CIOs, who have been in their roles long enough to build strong relationships with clinicians, can interact with them effectively in the process of implementing EHRs. Those organizations where CMIOs or CNIOs have not been added, generally agree that employing physician and nursing leadership is a critical element to success.

Hospitals that have added CMIO or CNIO positions feel the role has made a positive impact on their organizations. Many hospital executives agree that CMIO/CNIO roles are instrumental because they provide additional leadership that increases clinicians' willingness to use EHRs. CMIOs and CNIOs bring the most value to an organization when they

partner with the information systems department to enable the transition from paper to digital records.

Strong proponents of the CMIO position say it's crucial in implementing an EHR, and that small hospitals should try to fill the role, even if only on a part-time basis. Supporters believe the CMIO is imperative for the entire organization, and plays a central part in workflow design and optimization, which provides the bulk of return on an EHR investment.

Organizations with one, or both, of these positions say they meet different needs. CMIOs assist organizations with physician adoption and leadership, while CNIOs help organizations achieve success in outcomes reporting, quality reporting, workflow improvements and data assessment, and generally allowing the nurses' voice to be heard in the implementation process.

The CMIO role, in particular, has evolved over the years, away from merely serving as a liaison between medical and IT staffs. Now, CMIOs are getting more involved in technology decisions and helping use data derived from clinical records to develop improvements in care delivery.

Key job responsibilities for CMIO and CNIO roles include:

- Communicating with clinicians, serving as the clinical voice of the project
- Communicating with IT on potential “pain points” of clinicians
- Involving clinicians with the IT process, including vendor selection, gaining their support
- Acting as a change catalyst or ambassador, both motivating and otherwise reinforcing clinician behavior change
- Assisting in education
- Designing and testing information systems
- Improving workflow
- Developing order sets, standardizing care plans and designing clinical decision support
- Facilitating and managing design validation and implementation support
- Leading the transition from paper to digital record-keeping
- Reporting (outcomes and quality) based on digital records
- Documenting and broadcasting realized clinical benefits

CMIO and CNIO roles potentially can help organizations that want to implement EHRs under the strict timelines. However, organizations can successfully implement EHRs if they have a CMO or CNO who is open to taking on some informatics responsibilities or if they have physician advocates, sponsors or partially funded roles in IT that can provide critical insight, feedback and leadership.

Whether or not these executives hold formal CMIO/CNIO titles may not be important if an organization has talented, credible clinicians who happen to have significant IT knowledge.

Furthermore, hospitals will need to have a plan in place for bringing clinician involvement and support to its EHR implementation process.

Executive Guidance

- Executives who carry the responsibility for interacting with physicians need strong leadership skills and knowledge of IT. They need strong support from the organization to help move EHR projects move forward.
- Clinician involvement in the governance process overseeing EHR selection and implementation is essential. CMIOs/CNIOs can fulfill this role, as can CMOs and CNOs who understand the importance of IT to the organization.
- Similarly clinician involvement during design is central to workflow acceptance. Also, selecting design through various standing clinician committees is important in principal and in practice to gain support.
- In some organizations, CMIOs are playing a lead role in identifying changes that need to be made to ensure compliance with meaningful use objectives.
- Executives tasked with interacting with physicians on informatics issues can benefit from the support of a team of IT-savvy clinicians that can extend their reach to effectively and quickly communicate with the medical staff.
- Clinician champions, or a team of such champions, can successfully influence physicians to use IT and communicate doctors' concerns to the IT department.
- Getting physicians to use a system often involves providing one-on-one physician assistance and training, and working to gain overall support from the physician community. While this is a cornerstone of the job description for most CMIOs, all organizations will need to develop a plan to provide extensive support for physicians for any EHR implementation to succeed.

CHIME Member Comments

“Upon the start of implementation (several years ago), Children’s added a CMIO. This year, we’ve added a CNIO...we’ve just started the on-line nursing documentation process. These professionals add much more credibility to the process changes, the waste-removal efforts, and the “connection” between IS professionals and clinical professionals. They’re invaluable across the board.” - Drexel DeFord, FCHIME, Senior Vice President and CIO, Seattle Children’s

“At Catholic Healthcare Partners, we have added a corporate CMIO, (and we’re) in the process of hiring CMIOs for each of our nine regions. This position is key to our success for driving change with clinicians and possessing the credibility so that it is not an “IT initiative” but truly a clinical transformation.” - **Mike Hibbard, RN, MHSA, PMP, CIO**, Mercy Health Partners of Southwest Ohio

“We have not (created these positions). We have a Strategic Steering Committee with physician representation, and a Development Committee that implements solutions. The Development group has a core set of RNs that interface with the clinicians, with support from fellow team members, which include a pharmacist, radiology rep, lab rep and others. In addition, we have senior level representation at several key medical committees, where clinical automation is a frequent topic; members include our COO, CNO, and CMO typically.” - **Gregg Martin, CIO**, Arnot Ogden Medical Center

“We have a very physician-driven organization and did EHR a long time ago. Since then, we have added four CMIOs – Outpatient, Inpatient, Cancer and Quality. I know if we had had these (when we did our EHR) they would have made a difference. IT staff don’t have the street credibility to negotiate tough decisions. Just having a CMIO isn’t enough. The CMIO has to have the credibility across the organization; that’s why we have so many. Also they have to be an honest broker of the relationship and be capable of pushing either IT or the business to do the right thing.” - **George McCulloch, MA, MBA, CHCIO**, Deputy CIO, Vanderbilt University Medical Center

To read additional comments about CMIOs and other new roles, [click here](#).

Chapter 8: IT Staffing is Key to Achieving Meaningful Use

Summary

Healthcare providers that want to accelerate adoption of electronic health records systems are likely to face a competitive market for IT staff needed to get the job done. Providers are using a variety of approaches to fill vacancies. Senior executives must endorse these efforts and realize that staffing needs will create additional expense to both implementation and support.

Healthcare providers are likely to face large staffing gaps as they attempt to implement EHR systems. While IT staff positions historically have been difficult to fill, especially clinical roles, many healthcare IT executives expect the shortage of qualified staff will intensify in the next few years.

The staging of incentives in the HITECH Act puts a premium on moving quickly toward EHR implementation. Organizations can get more overall stimulus funding by qualifying for incentive payments as soon as possible.

Both providers and HIS vendors need to add staff to meet demand simultaneously. Estimates based on data from the Bureau of Labor Statistics, Department of Education, and independent studies indicate a shortfall over the next five years of approximately 50,000 qualified IT workers required to meet the needs of hospitals and physicians' practices as they move to adopt EHR systems.

In December 2009, the federal government announced an \$84 million program featuring government grants to support training and development of new health IT professionals. However, it will take time before those programs yield qualified workers who can fill needed roles for providers.

Until this group matriculates into the workforce, hospitals and other care delivery organizations are taking steps to manage gaps on their IT staffs so they can deploy EHR systems. An informal survey of CHIME members found a variety of strategies in play; overall, most IT executives say they expect to pay a premium to ensure they will have enough staff for implementing EHRs.

Due to the likelihood that demand will surpass supply, CIOs need to educate senior executives that their organizations will likely face higher initial and ongoing costs to retain sufficient IT staffing.

Some CIOs report that they are leaning more heavily on their vendors to supply startup staffing as in-part implementation expense of contracts or to provide accurate estimates of staffing requirements that the hospital will need to fill. However, some IT executives expressed concern about relying too much on vendor estimates, particularly those made during the bidding process for a project contract. Some fear that the pre-award estimates may underestimate the actual need for IT staffing.

IT consultants can also help hospitals fill staffing voids. However, several IT executives voiced concerns about the limitations of consultants who provide services on an as-needed basis. Those expressing concern believe that there are benefits if the in-house implementation and support teams play a material role in the rollout and thus feel they have ownership in the local project.

Many organizations are looking internally, or working within their local markets creatively to meet expected IT staffing needs.

For example, some top IT executives are looking at their organizations' clinical workforce members to identify those who have an interest in IT and also have first-hand knowledge of their organizations, culture and workflow. Other organizations are looking to hire younger, less-experienced healthcare IT-capable workers who can be mentored by more experienced IT staff on EHR projects.

Other organizations are trying to become increasingly creative in scheduling projects, staging them with strict management. They are also keeping an eye on costs on other IT projects so that additional funds can be directed to staffing or staff augmentation consultants.

Additionally, organizations are working harder to retain qualified IT staff. These initiatives can range from increasing pay to keep salaries near the top of the wage scale (and potentially draw other IT staff from competitors), to providing less tangible benefits, such as recognition or emphasizing the altruistic impact that an EHR project can have on healthcare delivery in a community.

Executive Guidance

- Carefully stage the project to manage resourcing over time while attempting to plan the go-lives around periods of projected productivity and patient activity lulls, such as when patient census office visits are expected to be low.
- Document the need for additional staff. It's often a long-term process to educate senior leadership to understand why more IT staff is needed, because they might not understand that a significant portion of the effort occurs behind the scenes or after hours.
- Find new sources of IT staff among current employees in the organization. For example, some clinical staff that have an interest or demonstrated aptitude in technology may be lured to the IT side. Some of them may in fact be tiring of

caregiving responsibilities and welcome a switch in responsibilities. Work to develop an internal recruitment pipeline.

- Bring talented clinicians onto the IT staff, even if only on a temporary basis for implementation. One facility asked its best nursing staff to take full-time positions in IS to support the implementation, filling those vacated positions with more easily available recent nursing school RNs. Having nurses and others from different areas of the facility active in the implementation also diminishes the perception that the project is IT-centric.
- Consider reorganizing the IT staff during an implementation – with an informatics team handling the EHR implementation and a more traditional IT team to handle network infrastructure and hardware. The functional portion of the IT department can benefit from hiring analysts with clinical backgrounds.
- Provide retention bonuses to encourage commitment through the implementation period.
- Tie training certifications to retention. If an organization invests in an employee to become certified on a vendor product, they must commit to a pre-determined employment period.
- Offer new opportunities for professional development, career advancement and more money by creating a staffing agency.
- Use consultants appropriately, perhaps to backfill staff while they are training and building new clinical systems. Or some consultants can be hired to fit areas of need, such as fostering clinician adoption of EHRs.
- Have a pool of staff supplementation consultants ready to be able to take on smaller project requests that are outside the main goal of implementing the clinical system, so that other departments' needs are met.
- Create a tailored strategy for the organization. For example, some IT executives say they are hiring new grads to work closely with experienced analysts in mentoring relationships.
- Create and fill positions that otherwise would be a crucial void during implementation, such as positions to be IT liaisons who work directly with physicians as support.
- Develop partnerships with neighboring schools and explore the potential for internships.

- Work closely with administration and human resources on creative retention approaches. For example, offer retention bonus plans to reduce turnover, and monitor pay scales to assure that wages are competitive for the market.
- Do not underestimate the retentive power of sincere thanks and recognition of IT staff contributions to an implementation effort. Show care and interest in ensuring that staff balance work and life. Provide training and tools staff need so they feel they are advancing professionally.
- Create a realistic, achievable career ladder to provide promotion opportunities to IT staff.

CHIME Member Comments

“Our most effective steps have been to ensure that we are positioned as the best place to work. Enterprise-wide, that is our vision – best place to work, best place to practice medicine and best place to receive care. About 95 percent of our 15,000 employees can recite that vision. Specifically to IT, we work to be a pleasant, collaborative, nurturing environment. We have a low turnover rate; many who leave come back. We work to keep salaries and benefits competitive as well. That said, the forecasted need for an additional 50,000 HIT workers brings caution and angst. We are watching the local market closely.” - **William A. Spooner, FCHIME**, Senior Vice President and CIO, Sharp HealthCare

“It is extremely important for organizations to understand that the adoption of EHR technology is more of a journey than a destination, and they need to budget not just the capital funds to implement one, but the ongoing operational funds to support the staff that will maintain it.”- **Gregg Martin**, CIO, Arnot Ogden Medical Center

“On a long-term basis, identifying the resources on the operations side that can be pulled back onto the project at any time for providing assistance is critical. This will be needed for testing of updates, rolling out new functionality and staying current as workflow processes change. Staffing for support of the EHR is always more of an art than a science. A lot depends on the complexity of the system, the competency of the users and the degree to which staff have adjusted to the new paradigm of patient care.” - **Todd Richardson**, CIO, Deaconess Health System

“The best clinical IT analysts come from internally. They understand our culture and our workflow. I can teach the IT piece. Working with nursing leadership, we are identifying those individuals.” - **Bruce Kelly**, Chief Information Officer, Mercy Memorial Hospital System

To read additional comments about IT staffing, [click here](#).

Chapter 9: Communication Dispels Fears Surrounding the EHR Conversion

Summary

Sharing the details of the implementation process with all stakeholders - starting with product selection and continuing through to post-implementation resolution of issues – is a critical factor in the deployment of electronic health records.

EHRs represent the fog-shrouded unknown to many workforce members of a healthcare organization. The communication that surrounds implementation efforts plays an important role in the success of an EHR rollout. Many CIOs whose organizations have implemented EHRs say effectively sharing information on a project is an important dynamic in winning over users.

“Multiple presentations at multiple meetings, newsletters, published timelines, celebrations of successes and milestones – you name it, I use it,” said a CIO at a Midwest-based integrated delivery system. “There is no such thing as over-communication when it comes to an EHR project.”

An effective communication plan requires a matrix of thinking and organization. Messages must be aimed at various audiences within a healthcare organization over the entire span of a project, from initial communication to the board, to ongoing publicity throughout the organization, from implementation announcements to reports of follow-up enhancements and additional training.

As healthcare IT becomes increasingly linked to a strategy for the delivery and improvement of clinical care, initial messaging from the CEO, board and senior executives should set the tone for the importance of an EHR project and should continually be emphasized throughout the duration of the project. IT leaders can participate in the larger effort of communicating with staff, physicians and the community. Additionally, healthcare organizations are augmenting their EHR communication efforts by taking advantage of the marketing and communication staff at their facilities.

Some organizations also engage their IT steering committees in providing communication on major projects, lending additional credence to the information that is being shared.

The status of a project can be reported with varying degrees of detail, depending on the intended audience. For example, executives may be satisfied with brief verbal summaries of key projects to inform them of current status, challenges being encountered, and steps being taken to meet those challenges. By contrast, general users may receive updates on projects

and expected benefits; as system training approaches, planners can give these users more details on what will be expected of them.

Liaisons also can help bring the messages on EHR progress to specific audiences. For example, an organization can identify site liaisons for each location at which EHRs are being rolled out, and these liaisons can be responsible for site-specific communication, in coordination with project leaders. Similarly, a physician at each entity (or for each specialty at a larger hospital) can be the doctor liaison, serving as the source of project knowledge for fellow physicians.

More broadly, organizations that have successfully implemented EHRs keep information flowing on a regular basis, as needed by their constituencies, and in a variety of formats.

Many organizations make heavy use of electronic forms of communication to spread the news – they use email, an existing intranet or a project portal. However, for some audiences, communication is most effective when it's done on a face-to-face basis, in settings ranging from group town hall meetings, one-on-one encounters, use of existing medical staff committee and nursing management meetings, and project-organized decision validation and messaging work groups.

It is particularly important to engage department managers and physicians on a personal basis. Both need to be kept up-to-date on current progress and know what will be expected of them as the EHR implementation process advances. They will want assurances that their concerns are being addressed and that IT staff will be responsive to their needs.

Organizations often use visual metaphors to provide a reference point to the process and the progress to date. These can include road maps, thermometers or a “mascot” maturing from infancy to adulthood. Signage, posters and other visual cues in high-traffic areas keep progress top-of-mind for hospital staff, warning them about changes in the system, new capabilities or opportunities for training.

Front-line users crave communication that reinforces the perception that IT staff or project team members will be available, especially when the switch is turned on for a new system. Communication is still important after go-live, with users needing to report concerns, problems, workflow issues and usability concerns. A change management process is important at the back-end, to prioritize fixes and change requests.

Executive Guidance

- Recognize the variety of audiences for communication on the EHR implementation. All need appropriate high-level updates as well as demonstrations of how the system works.

- Early communication from the CEO sets the tone for the importance of the EHR project to the organization, laying out the projected steps for the project and the overall vision.
- Members of any cross-functional team providing input on an IT implementation should be tasked with communicating progress to those in their departments or areas.
- In light of the importance and far-reaching effects of EHRs, IT executives should develop a communications plan with their organization's marketing and communications departments – these professionals have experience planning messaging and timing information releases to achieve maximum impact.
- In addition to being publicized in electronic media, EHR updates should appear in any printed publications to catch the attention of as many users as possible.
- Physician communication requires special attention and effort. For familiarization and information briefings, use staff newsletters, focused e-mail, handouts, meetings with medical staff and office managers, and office visits. However, some CIOs caution that physicians may not be concerned or interested in what may be happening more than six months in the future – “They are most interested by what will affect them soon (now),” said one veteran CIO at a Midwest integrated delivery system.
- Absolute transparency and honesty are critical to maintaining credibility. Senior executives in general and IT staff in particular must demonstrate compassionate responsiveness to concerns and issues, even though issues may not be solved to everyone's satisfaction.
- As users gain experience with a system, they will have much to share on improvements, especially regarding usability and issues they encounter. Organizations should provide a non-threatening way to provide feedback.
- Milestone events, such as go-lives and achieved targets, merit celebrations. These events also communicate that progress has been made with an EHR project.

CHIME Member Comments

“We use regularly recurring ‘town hall’ meetings with proper time allotted for questions and answers. We also try to be absolutely transparent to all employees who are curious or anxious about the changes. On the hospital and clinical side, we try to listen more to their concerns and needs and ‘back in’ those inputs into our ongoing planning sessions.” - Curt Kwak, CIO, Providence Health & Services

“Our intranet has been very valuable in providing information on our various phases of implementation. With our current CPOE project, we have set up a site on our intranet where we post all minutes to the subgroup meetings, and we have created hyperlinks to various topics important to physicians so they can follow workgroup decisions... We have many options including a link to submit questions, and links to work team membership so they can contact a member with questions. We have also created a newsletter that goes out once a month to the medical staff’s personal e-mail addresses.” - **Denise Purington, BSN, RN**, Vice President and CIO, Elliot Health System

“At the end of the day, it comes down to open, frequent, honest, meaningful communication. Bad news does not improve with time, when there is some, and there will be, so just get it out there. Joy has a way of telling its own story, but do not forget to celebrate victories... We do all the little things: newsletters, signage, progress graphs and so on, but the battle gets won with people talking to people. You simply have to make telling the story as much a part of your life as coming to work: You do it every day.” - **Stephen M. Stewart, MBA, FACHE, CPHIMS, CHCIO**, CIO, Henry County Health Center

“A wise former boss of mine once said, ‘Just about the time you’re sick of telling people something, some of them are just starting to get it!’ The bottom line is that relentless communication is an absolute requirement for all major projects. I have challenged my entire team to spend more time in the departments and with the users they support.” - **Vince Vitali**, Vice President and CIO, Advocate BroMenn Healthcare

“We used every committee that was clinical to get involved and report to. We made sure we were on agendas again and again. Clinical leadership knew who was involved and therefore who to talk to. Publishing things works for admin types – clinicians want to hear it from people that they work with. We still did the formal committees, reports and such. It just wasn’t of value to the people that were really affected.” - **George McCulloch, MA, MBA, CHCIO**, Deputy CIO, Vanderbilt University Medical Center

To read additional comments about ways that communication helps dispel fear, [click here](#).

Chapter 10: EHR Implementation is the Perfect Time to Improve Workflows, Processes

Summary

Implementing new clinical systems in response to the HITECH Act also represents an opportunity to take a fresh look at workflows and processes that can be updated to take advantage of the capabilities of new systems. Senior executives must foster a culture of continual, ongoing improvement, and end-users must be engaged to get their input on what exists now and what it needs to develop into.

Deploying a new electronic health record system represents a huge challenge, and with the pressures added by the rush of attaining stimulus funding, it may not appear to be the best time to closely examine the processes by which care is delivered.

But many IT executives believe that the implementation of an EHR represents an optimal time to improve workflows and redesign existing processes. EHRs and supporting technologies bring previously unavailable tools for gathering, sharing and organizing data, and new opportunities for cutting inefficient, dangerous and time-wasting steps that have evolved into processes over time.

Many organizations that have implemented clinical systems have found benefits that far outweigh “hard” cost savings. Efficiencies gained by redesigning workflows and processes pay dividends for years to come, and create an active, engaged culture among staff. However, optimization is not a one-time event; once it starts, it truly never ends.

To ensure that maximum efficiencies are derived from projects, some are beginning to require an examination of workflow and processes as part of the charter for a project. Hospitals are embracing process improvement methodologies, such as Lean, Six Sigma, Continuous Quality Improvement and others, that give staff a chance to improve operations.

When it comes to process improvement, hospitals and their staff are at a crossroads. Many struggle with cultures that adapt to change slowly, or only with resistance, while others are frustrated by existing processes and see automation as enabling the organization to improve care, efficiency, safety and make life easier for day-to-day users.

For any process improvement effort to succeed, significant support from the CEO and other senior executives, who need to imbue an organization’s culture with the need to continually improve care delivery, is needed. Senior executive assistance is also important to ensure process improvement initiatives linked to EHRs are not viewed simply as IT projects.

Many hospital organizations that have undertaken process improvement place the responsibility with the project sponsor. Those who own this responsibility often are motivated to achieve results because they are tasked with achieving the return on investment or the expected benefits of a project.

But achieving significant process improvement takes buy-in and participation from those who are involved in day-to-day tasks and are motivated to improve care delivery.

Revising workflows and processes is a complex process that is not restricted to one period of an implementation cycle.

Representing the proactive aspect; as hospitals ramp up for using EHRs, they can map out current-state processes ahead of the go-live and then develop future state processes. Process improvement can also be reactive; after the application is live and end-users have experience with it, they will discover new ways to make their work processes more efficient. Over time, hospitals can audit their processes and applications periodically to continue improvements. Thus, there is an evolutionary approach to upgrading processes and functionality through continuous improvement efforts.

Efforts to enhance processes also affect the goals of training. “Training is 90 percent new workflow and 10 percent technical navigation,” asserts Edith Dees, vice president and CIO of Holy Spirit Health System.

At Cooper University Hospital, a variety of end-user clinicians were trained on the EHR system along with the IT clinical information systems staff. “The collaborative effort has allowed the organization to assess current processes prior to the implementation and have the end-users determine best practice,” said Emma Brandon, director of clinical information systems. Clinicians who trained in the system validated new workflows and championed changes among peers. Such an organic approach creates ownership of the changes, and gives participants a vested interest to see the change through, while working with IT as a partner in the transformation.

Improvement and efficiency activities can be exasperating – the pursuit of a perfect solution can negate adoption of an improvement that can be continuously perfected. In other cases, third-party consultants may be required to optimize process improvement efforts. Consultants can make suggestions to end-users about changes in workflow philosophies that will enable an organization to take full advantage of new clinical systems.

Executive Guidance

- Senior executives, and particularly the CEO, set the tone within the organization for creating a culture of change for the purpose of improving care, efficiency, safety and customer service.

- Make workflow redesign and process improvement a part of the charter for the EHR project. Workflow redesign tasks should be added to the work plan, with specific owners assigned to them. Process redesign may take as long as the implementation itself; however, the more upfront work invested in redesign, the more likely anticipated benefits will be achieved.
- Work to develop an integrated implementation methodology that combines process improvement with information system activities. Gain support from senior executives so IT solutions are not deployed in the absence of process improvement activities.
- Seek active and early involvement from departments that will be affected by a clinical system implementation and are being asked to help improve workflow and processes.
- As part of the design phase, document the current workflow, then determine which steps can be eliminated as a result of using the new application. After the new system is implemented, this documentation can be used to audit results. It is not uncommon for new users to revert back to pre-existing workflows, because that is what they have become comfortable with.
- One of the critical success factors for EHR workflow improvement is pre-partnering. The process of clearly and comprehensively identifying user specifications and system requirements is key to an EHR project's success. A thorough quality planning process (workflow and process requirements gathering) is a critical success factor. No one spends enough time figuring out processes. To do this effectively, the IT leaders must cultivate strong relationships between the IT project team, users, and stakeholders to ensure that the user needs and expectations are under constant focus and review. When these areas are thoroughly understood, then and only then, can a new method, process, or workflow can be introduced.
- Consider using outside consultants for a fresh, impartial, arms-length review of workflows and processes. Some organizations suggest using local university students studying in this area to assist with the process.
- Focus on processes where clear benefits can be gained, leaving others to be tackled after the system goes live, when end-users can see what it's like to function in the new electronic environment.
- Identify those who are providing care within the organization who can identify needed improvements and can incorporate technology into solutions.
- If feasible, set aside a pilot area where new processes can be tested and perfected prior to a wider rollout.

- Find other similar organizations that have encountered similar workflow or process challenges and discuss how they have achieved improvements.
- Training should not just teach users how to “push buttons” on the new clinical system, but should acclimate them to new workflows and the reasons why they are being implemented.
- Design and plan for reactive workflow and process improvement, enabling end-users to continue to look at process improvement after becoming comfortable with the new clinical system.
- Process and workflow redesign are only successful as efforts when they are coupled with change management. Also take into account the organization’s culture and related issues.
- Conduct pre- and post-process analysis with those who perform day-to-day functions in affected areas; include their managers and administrators in this analysis, if appropriate.
- Include time to re-examine workflow adaptations. As systems are rolled out during the planning phases, organizations should review results and redirect them as needed.

CHIME Member Comments

*“The implementation of the EMR in a hospital setting should not be about implementing new software tools and technology. Hospitals must use this opportunity to redesign their model of care and optimize workflows, and support those activities with the technology tools. We preceded each phase of our EMR implementation with a deep look at our practices and workflows. It’s essential that clinical transformation is the goal and the technology is used to support it.” - **John Bosco**, CIO, North Shore - LIJ Health System*

*“My experience tells me workflow design is either like a root canal, or it is a game. I try to keep the team focused on the end objective, and to walk backwards from there to the current state. The future state is nirvana, and the current state is reality today. I use an analogy from my father: It is hard to know where to go until you recognize where you have been. The real issue here is to pick people who can see broadly and can sell dreams and ideas.” - **Stephen M. Stewart**, MBA, FACHE, CPHIMS, CHCIO, CIO, Henry County Health Center*

“This is very difficult. Even though we emphasized this from the beginning, it is very hard for end-users to redesign their processes until they know and understand the new system, and they generally don't have a very good idea what it entails until after go live. You will find that people will continually fall back on their current workflows, and many people don't know anything else. The only way I've found to break through this is to engage an outside business consultant who understands best practices and can implement those changes in the department.” - **Alec Cheloff**, Chief Information Officer, Massachusetts Eye & Ear Infirmary

To read additional comments about ways workflow re-design, [click here](#).

Chapter 11: HITECH Heightens Need for Providers and Vendors to Work on Partnerships

Summary

Provider and health information technology vendor relationships will grow in importance over the next few years. Providers will need to be particularly careful in determining whether a vendor's products are certified to meet each stage of meaningful use objectives, and other factors including timing of HITECH-compliant software versions and associated infrastructure changes that will require more interdependency.

Relationships between hospitals and vendors of healthcare information systems will be entering a new era as stimulus funding becomes available to providers. Both hospitals and vendors will to collaborate in order to succeed under HITECH.

While CIOs express the need for closer partnerships with vendors to achieve mutual goals, the advent of HITECH will require more vigilance by providers that are purchasing systems. While providers need to buy certified systems to qualify for incentive funding, they will also need more open communication with vendors about what it really means to implement a HITECH-compliant solution. They will also need contractual assurances that products will integrate with necessary systems and data exchanges, and that vendors will maintain applications to future meaningful use objectives which will likely be more challenging in future stages of the program.

Product certification, while intended to bring confidence to providers buying electronic health record products, is currently a cause for uncertainty for many providers. While final rules have been issued for a temporary certification program, certifying bodies have not yet been selected, and much remains unclear about the process for maintaining certification status as well as how certification standards will change over time. Final rules for the permanent program for certifying EHR products are not expected until the Fall of 2010, and it is not clear how well the temporary and permanent programs will be aligned. IT executives say provider organizations now require clauses in vendor proposals and contracts that promise their products and services comply with MU objectives.

Achieving MU use will also cause providers to place a premium on integration, because current and future objectives will require a high degree of workflow and data integration, application interoperability, and data sharing amongst EHRs. Providers will demand compliance with all relevant HIE standards required by various standards and integration bodies. A challenge that all parties face is the lack of clarity of the Stage 2 HITECH requirements and the associated timeline and specifics regarding structured medical vocabulary use and data exchange standards.

Although there are many additional factors to evaluate before deciding to buy an application, providers will feel pressured to make timely decisions due to rising industry concern about the effects of contained demand and whether delays will occur because vendors are unable to sustain. Anecdotal evidence already suggests that vendors are scheduling implementations further out due to lack of capacity to meet current industry demand. Providers say they will continue to hold vendors to a high standard, using contracts and penalty clauses to meet deadlines.

The factors outlined herein regarding EHR acquisitions also apply to those who are halfway through their EHR implementation effort.

Many CIOs see vendor relationships as being crucial for the long-term success of the hospital in achieving MU. That is particularly true as consolidation is likely to occur on the vendor side, over time, and as providers compete for vendor attention for implementation and upgrade assistance.

“Vendor relationships in a post-EHR world will continue to be vital to all of us for success,” said Mike Hibbard, CIO of Mercy Health Partners of Southwest Ohio. “The relationship can flourish if it is truly established as a partnership, or it can take a nosedive if an ‘us-and-them’ mentality exists.”

Most IT executives said they would expect increasing levels of transparency, technical information communication and customer responsiveness.

“Vendor relationship management is a big part of the CIO’s job,” said Gregory Veltri, CIO at Denver Health. “When relationships are ineffective, it causes churn and increased spending and rework to replace a system that may have been underleveraged because of the lack of communication and creating an adversarial relationship with core IT partners.”

However, providers realize that once they sign a contract with a vendor, it will be difficult to make significant changes in products without seriously affecting their chances of receiving stimulus fund payments, because they may not be able to demonstrate MU during a transition between systems.

“The healthcare delivery industry has been moving steadily toward greater consolidation in vendor software solutions as a strategy to promote greater data integration and containment of ongoing support costs,” said David Weiss, senior vice president and CIO at BJC HealthCare. “For those health systems adopting this strategy, there is a natural expansion of dependence on a single or small set of ‘vendor partners.’ Once this strategy is adopted, the cost of moving a large portion of your software solution portfolio to another vendor is almost prohibitive. Holding your vendor accountable for superior solutions and support services can be a tough management process.”

Lack of standardization among vendor-provided health IT applications is also an issue that will continue to affect providers.

“The fact that we have placed so much emphasis on interface standards, to get applications with similar functionality but dissimilar structures to communicate, is a strong testament to the industry’s proclivity for wheel-reinventing,” said Richard Lang, Vice President and CIO at Doylestown Hospital.

One contributing factor, says Lang, is that there does not seem to be any incentive for developing an application standard in the marketplace.

“On the surface, mass standardization for mission critical healthcare system applications could be the beginning of the commoditization for HIT software components,” he said. “Any threat to the healthy revenue streams, generated by proprietary software solutions, contributes heavily to the lack of software application standards in our industry. The entrepreneurial HIT vendor of the future will focus on ‘adding value’ to an accepted and ubiquitous application standard in lieu of clinging to the dysfunctional proprietary developmental model that does not first and foremost serve the need for information integration. HIT application standards are needed before we can begin to seriously plan for data integration across the enterprise and beyond.”

Executive Guidance

- Expect delays in the vendor certification process and build in project timeline delays to allow for product certification.
- Requests for information (RFIs) and requests for proposals (RFPs) should ask for specific vendor disposition regarding product certification and data exchange capabilities.
- Other typical measures of vendor assessment – financial stability, commitment to software development and research and development, the long-term position of the vendor, integration with existing client software solutions, product acquisition and maintenance costs, and the vendor’s reputation for client support – continue to be important in the HITTECH era.
- RFIs and RFPs should question vendors’ potential timelines for interoperability and integration capabilities. Providers should expect specificity around claims of full integration.
- Providers should look closely at product roadmaps. As time goes on, providers will need to plan implementations and upgrades to coincide with the increasing requirements of MU objectives for different stages; implementations and upgrades will need to be based on vendors’ projected delivery dates for MU functionality.

- The timeframe for the assessment process likely will be compressed to validate solutions that will fit MU plans and strategies, adding extra pressure on IT staffs and those involved in the product-selection process. There will be a premium on swift and precise assessments, and that may require additional resources from the organization to achieve this.
- Long-term, anticipate changes in the method of gaining rights to use a product. Some industry voices expect this will change from a licensing and support model to a content or services model.
- CIOs need to be involved in managing communication and product issues, leveraging vendor resources to develop strategy, and projecting roadmaps and directing product enhancements. They should engage vendor executive leadership to build strong partnerships, reduce cost and create effective communication that enhances the relationship.
- Communication between providers and vendors will be essential, particularly as providers need to stay current with vendors' current software releases. Version changes may be extensive if vendors are unable to retrofit some changes back as patches to earlier releases of their products.

CHIME Member Comments

"If it isn't MU or ICD10, I really don't have time for it. That's an exaggeration, but not by much. As the EHR needs to be certified, I suspect the burden will be on me if I cobble together multiple systems. We will need to have an increasingly myopic focus." - **R. Hal Baker, MD, FACP**, Vice President and CIO, WellSpan Health

"I think this push to get MU money is a little bit like bait and switch; I am concerned that everyone (clients and vendors) is going to be so focused on meeting the qualifications that they are going to overlook the 95 percent of the other system capabilities that ensure what we are all here to do – take care of patients...Overall, I think product assessment, if conducted properly, should slow down, but not significantly." - **Eddi Staffini, CHCIO**, IT Director, Sibley Memorial Hospital

"Our relationships with vendors will continue to evolve and grow, as this is one critical element in managing IT spending and strategy that should be controlled and managed by the CIO in addition to being a visible part of the relationship with business units and executive staff." - **Gregory Veltri**, CIO, Denver Health

"The vendor holds the customer's meaningful use timeline in its hands. We've already experienced this firsthand by narrowly making an implementation date for an important component of meaningful use. Had we missed this opportunity, it would have put us far behind the mandated meaningful use timeline."
- **Thomas G. Fairfax (Tom), BSIT**, Director of IT, Bothwell Regional Health Center

“As we get closer to the timeframes for requesting incentives, upgrade delays will not be tolerated as they have in the past. The vendors will be held to their development schedules. The relationship will be reshaped because we are reliant on upgrades (to certified software) to request millions of dollars.” - **Patricia A. Lavelly, FACHE, CHCIO**, Senior Vice President and CIO, Memorial Health University Medical Center

To read additional comments about vendor partnerships, [click here](#).

Chapter 11A: Product Certification Program Aims to Ease Decision – Making Process

Summary

The HITECH Act requires healthcare organizations to use “certified” electronic health records in order to qualify for stimulus fund payments. In addition to providing these assurances of certified products to the government, certification is also expected to assure providers that the products they are installing are capable of helping them achieve meaningful use objectives.

The government’s efforts to create a program to certify healthcare IT products are both at a crossroads and in transition. In mid-June, the Office of the National Coordinator for Health Information Technology (ONC) released a final rule establishing a temporary certification program for HIT. Later this year, it expects to issue a final rule for a permanent certification program that is expected to replace the temporary program in 2012.

Under the temporary program, the ONC expects to accredit as many as five Authorized Testing and Certification Bodies (ONC-ATCBs) to both test and certify products that are either complete EHRs or modules that comprise an EHR. They will test both vendors’ commercial products as well as any self-developed applications that providers are using.

The newly released final regulations indicate that previous product certifications will not be grandfathered into the temporary program. With few exceptions, certification rulings issued by the industry’s previous certifying body, the Certification for Health Information Technology, will not be carried forward because such an action would be inconsistent with statutory requirements for certifying EHR technology.

The cost of certification by ONC-ATCBs will be set by the open market, and the government did not set rates in its recently released regulations.

To a great extent, it will become the responsibility of vendors to bear the expense and responsibility for having their products certified. Providers will be responsible for selecting and using certified products, or certifying self-developed EHR software.

Further changes are expected as the temporary program is transitioned to the permanent certification program. While an organization’s CIO will bear primary responsibility for tracking changes and requirements of the certification program, senior executives should also be aware the program will be changing, and that certification criteria is likely to become more demanding over time. The final rule for the temporary certification program indicates that MU requirements in 2013 or 2014 could be different and possibly more stringent than in 2011 and 2012, and that products will need to be retested and recertified as compliant with new standards, as early as mid-2012.

Chapter 12: Should IT Planning Change to Achieve Meaningful Use Objectives?

Summary

With the prescriptive nature of meaningful use requirements, healthcare organizations are taking a fresh look at implementation schedules for clinical systems, aiming to determine how best to tweak timelines to maximize stimulus fund reimbursement.

A year ago, most healthcare organizations had a general strategy for increasing their use of electronic health records and clinical systems. Those plans came under increasing scrutiny as the federal government began outlining its approach for deciding on whether healthcare organizations are meaningful users of EHRs.

The plan outlined by the Centers for Medicare & Medicaid Services in December 2009 established a set of criteria, functionality and usage for EHRs. Suddenly, healthcare organizations faced a dilemma – should they entrust their original strategies or change priorities to increase their chances of achieving MU and obtaining stimulus funding?

While the final version of the regulations gives healthcare organizations a bit more flexibility, many questions remain, especially as organizations look ahead to achieving MU criteria and formulate strategic IT plans.

Still, many organizations have opted to adjust their existing plans in an attempt to maximize probability for stimulus funding. For most, managing the gaps between plans and MU objectives spread over four to five years is increasing the complexity of their rollouts.

According to a CIO of an East Coast hospital, the approach is to weigh short-term financial gains against the potential for long-term success.

“We developed our initial strategy based on our desire to successfully rollout an EMR in both our inpatient and ambulatory environments,” he said. “The introduction of the MU requirements has caused us to re-evaluate. It has also set up some tension where we need to assess the desirability of hitting a particular deadline for MU against the initial goals and risk analysis we did in developing our plans. The MU requirements introduce the possibility of overstretching our ability and rushing the implementation, which would be a mistake in the longer term.”

This matter may extend into anxieties of organizational priority. The sequencing designed into an EHR plan may have been developed in consideration of specific clinical, patient

safety and quality goals. When making adjustments to any plan to meet MU requirements, it is mission-critical to ensure that those elements remain paramount.

Many healthcare organizations are facing concerns as they consider altering their IT planning. In many of these organizations, the top IT executive is doing the research, framing the discussion, and weighing the benefits against possible risks. However, for most organizations, senior executives are coming together to provide general guidance for the CIO on how radically to change IT strategies.

Some organizations are opting to rearrange project timelines and priorities to place themselves in a greater position to qualify for stimulus fund payments. As a result, senior executives are discussing the impact such decisions will have on spending rates necessary to more tightly outcomes with MU objectives.

Decisions to adjust priorities depend on whether organizations believe they can do so without bringing additional scope-related risk to an implementation, without alienating clinicians, or placing too much stress on IT staff. Some IT executives say that the detailed functional requirements included in the proposed regulations have caused them to focus on areas they had not planned on pursuing.

For organizations currently undergoing an EHR implementation, they may have sufficient flexibility to focus on aspects of implementation that would be of the most value to achieving incentive funding – that could result in a shift in priorities and implementation schedules. For organizations that have recently deployed their EHR, MU requirements can be reflected in their enhancement schedules for EHR products to address areas in which there are gaps of capability.

Any decisions on accelerating implementations of clinical systems also needs to be made in the broader context of competing priorities a hospital or health system may be facing. These can lie within the IT field while impacting the entire organization, and may include items such as a revenue cycle system replacement or implementation and integration of new departmental clinical applications. Of even broader concern are major enterprise changes, such new campus building construction or clinical business programs to ensure market growth. Balancing such priorities requires extensive discussion and agreement from senior executives.

Organizations should also be aware of the impact that meeting MU objectives might have on user perceptions. Previously, organizations could develop an IT rollout strategy based on users' vision and perceived needs. The need to meet MU criteria brings external pressure to bear on an organization's IT strategy, and many users might not embrace the shift in priorities to meet MU objectives.

Executive Guidance

- Senior executives need to discuss their willingness to adjust any existing IT strategies for clinical system rollouts in light of MU requirements.
- Further, executives need to analyze risks for changing current timelines, particularly for overextending existing resources, risking rushed implementations and measuring additional expenses that would be required.
- Senior executives should measure the impact of current or planned IT projects and capital or strategic initiatives as competing interests to meeting MU objectives.
- MU objectives need to be considered in light of other pressures that will be facing IT departments – in recent months, proposed federal regulations also were aimed at certification, MU, vocabulary and technology standards, data reporting, and privacy and security. The leadership team should consider all such demands, and determine gaps for what needs to be done, then should charter projects in areas where additional material efforts are needed. Other requirements can be handed off to appropriate project or application managers to be treated as additional scope or new operating build requests.
- Broad organizational support for meeting objectives may be attained by focusing a new or existing committee’s attention on MU. A steering committee can provide vision and strategy approval as needed.
- IT departments and senior executives can help manage expectations regarding any changes in implementation schedules. IT can confirm commitments to delivery dates; stress the importance of meeting project dates to end users; assess the current project work list and sidetrack or slow down non-MU projects; and warn end users that non-MU IT projects are not likely to be undertaken in the near future.

CHIME Member Comments

“We absolutely are prioritizing our project in order to demonstration MU as soon as possible...I welcome this pressure because it helps our executive leadership prioritize our plethora of projects.” - Edith C. Dees, Vice President/CIO, Holy Spirit Health System

“We’re rushing our clinical system selection and implementation slightly. We have also tabled the selection and implementation of a badly needed revenue cycle system and general financial system. We are a small, nimble organization – I plan on using that trait to allow us to tweak our implementation.” - Bruce Kelly, CIO, Mercy Memorial Hospital System

“We are in the process of wrapping up a very detailed gap analysis that we will complete when the final requirements for Stage 1 are published. What we are finding is that our strategic initiatives are right on course with MU but maybe not in the same order of adoption. The detailed functional requirements are causing us to focus on some areas that we didn't necessarily plan on as part of implementation. We will be optimizing some processes much sooner than we would have without MU.” - **Patricia A. Lavelly, FACHE, CHCIO**, Senior Vice President and CIO, Memorial Health University Medical Center

“MU has brought a heightened sense of urgency and an element of worry, as there are many dynamics for us before we can achieve MU. These include delays associated with vendors’ ability to deliver yet-to-be-defined certified products, along with the rollout sequencing we need to consider across bringing seven hospitals on-line... There is a lot of coordination discussion and planning under way.” - **Mike Ward, CHCIO**, Senior Vice President and CIO, Covenant Health

“The Final Rule requirements were substantially reduced from the interim Final Rule. But we won't know where Stage 2 is going to be for some time, and the bar could be substantially higher to that regard. So I've heard it said that the Final Rule feels like we've just been told the marathon is now only a 5K. So what we worry about now is, as we are nearing the finish line, the judges may be standing there yelling, ‘Keep running! It really is a marathon!’” - **George “Buddy” Hickman**, Executive Vice President and CIO, Albany Medical Center

To read additional comments about IT planning changes, [click here](#).

Chapter 13: Training and Implementation Support are Crucial Success Factors

Summary

Training new users on how to use a clinical system is an important investment that is often overlooked as senior executives consider plans to implement clinical systems. A variety of strategies, backed by support immediately following go-live, are effective in helping users learn how to use a new system.

There is no shortage of anxiety when a hospital or physician practice begins to use an electronic health records system. Tasks that were once done intuitively become a labor of mouseclicks and keystrokes that seem to involve a secret code. Data easily found in a paper chart seems hidden somewhere on a computer screen.

For most organizations, the success of their multi-million dollar investment in an EHR system depends on staff willingness to use it. Time pressures, lack of computer skills, fast-paced work environments with stressful patient care loads, antiquated workflow processes and other factors line up to oppose an implementation, as well as the training needed to use a new system.

In any healthcare setting, training in advance of using a new EHR system and tangible support for the implementation in its first days and weeks of use are critical success factors for facilitating the deployment.

There is wide diversity of opinion about how to gain the greatest benefit from training and make education efforts effective. But in an informal survey of members of CHIME, several overarching themes on training emerge:

- Sometime during training, learners must break away to participate in training sessions outside of their normal work environment and away from their day-to-day duties.
- Effective training uses several approaches that attempt to cover the variety of learning styles and preferences of a diverse hospital staff.
- In addition to being offered in classroom settings, training programs need to take advantage of other avenues for getting knowledge to people – workbooks/user guides, quick reference guides, Web-based instruction, one-on-one trainers, and “super-user” assistance.
- When well-designed, computer-based training modules offer the ability to train both inside and outside of the classroom. Further, questionnaires and EHR-based practice sessions enable closed-loop measurement of trainees’ comprehension and retention. Further, the information garnered from closed-loop tests may help identify those

- who could serve as super-users and support their co-workers. They also can show those who may need additional support before and during go-live efforts.
- Workforce members are likely to retain only a percentage of what they learn in training in advance of actually using a new system. Thus, training and support is critical the day of go-live, and in the days and weeks that follow.
 - As users' knowledge base grows, they can be further trained to incorporate systems' advanced functionality and to take a fresh look at how workflows and processes can be improved.

Foundational to any EHR implementation is communicating that hospital executives understand the importance of training and are committed to equipping users so they can become comfortable with the new system. Senior executives must factor in the expenses of training – both in terms of classroom and other education costs, as well as support staffing to get users past the transitional learning period – in any budget for implementing an EHR system.

Without strong executive support, new users may view training as an imposition placed on them by the IT department, a burden that coexists with their ongoing work duties. Instead, training needs to be framed as supporting an organization's vision to improve patient safety and care, and meaningfully use EHRs in ways that benefit patients, staff and the organization. The deadlines set for achieving MU objectives are likely to add a sense of urgency to implementations and, by extension, training timelines also will likely occur over a shorter period of time.

Supporting physicians through training involves additional complexities, and organizations will need to be creative to engage these busy clinicians in learning how to use a hospital's EHR. During go-lives, facilities will need to provide at-the-elbow support for physicians and otherwise help them cope with productivity declines that typically occur during a transition to an EHR.

Many hospitals say physician champions and super-users are effective in bringing peers up to speed on how to use clinical systems. Others facilities have involved clinicians in the design and delivery of EHRs as a way of enhancing buy-in and subsequent training.

Senior executives need to understand the importance of clinical system training, particularly in achieving the level of buy-in and use that will be required in the MU era.

Executive Guidance

- Senior executives should plan on offering a wide variety of training delivery systems. Offering an assortment of learning options helps accommodate different users, learning styles, work schedules, uptake levels and varying degrees of familiarity with computers.

- Training must be perceived as being driven by the organization and not the IT department. The training program can logically extend from the governance process, through which a clinical system is selected and designed.
- A training program can use both carrots and sticks. Users who learn the system can qualify for perks and be credentialed to work on the new system; as a stick, clinical staff may not receive a log-in password to use the system without first demonstrating proficiency.
- Design training to incorporate more than just keystrokes. Training provides a starting point, if not fertile ground, for considering workflow changes and process redesign. In addition, education on operational changes, policies and workflow protocols can be integrated as well. Scenario-based training is useful in assuring EHR-based workflow education.
- “Training the trainer” works in situations where the trainers are able to help their peers learn the ropes of a new system.
- Physicians need go-live support that helps them learn the system and keep frustrations to a minimum. Have a well-thought out training schedule strategy – for example, staggering training so nurses and unit clerks know the system first can enable them to provide at-the-elbow support for physicians in sufficient numbers after go-live. Whatever the approach, it needs to be physician-driven to succeed, and it needs to adapt to physician preferences, site of preference and schedules.

CHIME Member Comments

*“What has been effective for clinical staff is a combination of classroom-based training and then on-floor support for a period of time during transition of new technologies. MU will not change this approach. What has been effective is staff knowing senior management is dedicated to patient safety and quality so that support staff have proper buy-in and see these technology changes as better for our patients.” - **Charlie Caruso**, CIO/Vice President of Business Process Improvement, Goodall Hospital*

*“Depending on where providers are, the move to an EHR is a fundamental change in how they do business. Process re-engineering with them involved is critical, and at-the-elbow support at go-live and following is critical. If you are going to spend any money on a system, don't skimp on the training and, more importantly, on the support at go-live.” - **Todd Richardson**, CIO, Deaconess Health System*

*“There is not one way to do training, especially when it comes to the physicians; you have to meet them on their own turf and fit into their schedules. One thing that we found works well is creating short video ‘how to dos.’ These are basically a video of the screen showing how it’s done with a voiceover narrating the process.” - **Charles “Chuck” Christian**, FCHIME, Director of Information Systems/CIO, Good Samaritan Hospital*

Chapter 13A: CHIME Members Share Tips on Implementing Effective Training

Training design

*Our best training approaches include clinician involvement in both design and delivery. These approaches are also classroom based and on the floors and always involve hands-on systems work. We have in some cases augmented training with computer-based training. Closed-loop training is also a best practice as it helps us understand who "gets it" and who will require some additional support. Further, the clinicians involved in application design are also the best in coaching training design or occasionally proctoring training courses to magnify why things are the way they are. - **George "Buddy" Hickman**, EVP and CIO, Albany Medical Center*

*Where possible, we prefer to use online training tools; if that's not possible, we will do one-on-one or classroom training, depending on the circumstances. MU will stretch our testing and training capabilities. For a nugget, I'd suggest identifying process changes and incorporating new process into system training. Allow time to practice after training, but do not train too far in advance. - **Richard Beran**, Director of Information Services, Fremont Area Medical Center*

*Our key to successful implementation seems to be taking the time to collect a lot of hands-on user feedback before final selection and implementation. Training has been small-group and one-on-one, and as a result, buy-in has been immediate. I am concerned, however, that our approach will not allow us to meet the aggressive timeline set before us by the government. - **Tina McConnell**, Director of Information Services, Central Michigan Community Hospital*

*Like any major project, it has to be driven from the organization and not IT or IS. With MU, we are placing key members of the nursing staff in charge of applications with IT oversight. They are able to train on the system and have a larger sense of ownership of the project. - **Steve Stark**, Assistant Administrator/CIO, Cass County Health System*

*The key to effective training is to develop every training delivery system imaginable – self-study, classroom, CBT, one-on-one and others –because we all learn differently. However, just have one competency verification tool. The second nugget is to use a train-the-trainer approach. In our first CIS live, floor nurses knew they too would eventually "get it" because one of their own was showing them the ropes. We visually identified support resources with a distinctive shirt. No vendor or consultant was issued any of these shirts. These shirts were coveted and prized by the staff who earned them. - **Edith C. Dees**, VP/CIO, Holy Spirit Health System*

*Training is a challenge. We use train-the-trainer, classroom settings, memos, intranet information... none of which works 100 percent in today's healthcare environment. - **Richard Mohnk**, CIO, HealthAlliance Hospitals Inc.*

*Our key to successful training is to have it done by the operational areas that "own" the system functionality. - **David Dyer**, VP and CIO, Somerset Medical Center*

Our most successful training approach was in our clinic setting. Our onsite Clinical Systems Coordinator sat down with each nurse/provider team individually, mapped out their current processes and then mapped out how those current processes could fit into our new EMR software. This was our chance to cleanup their processes as well. In questioning them about their daily routines, we found out that some of them were taking a lot of extra, unnecessary steps. "Because that's the way it's always been done" was heard quite a bit. We put the kibosh on that phrase and said, "If you could, how would you do it?" After that, our Clinical Systems Coordinator created step-by-step training guides specific to each nurse/provider team that depicts their processes and procedures. The adoption doubled after we implemented this. - Heidi J. Engle, Chief Information Officer, Glacial Ridge Health System

Training for our clinicians at Catholic Healthcare Partners has been very effective for several reasons: 1) Mandating training and the log-in is only provided after the last class and competency test. 2) It has been successful to split up the class into sessions of four hours, another four hours, and then two hours. 3) Another effective approach has been to pre-assign seating in the classes, so that those that need additional help are in an aisle set or next to a "super user." All of these strategies have been very effective and received good reviews. - Mike Hibbard, RN, MHSA, PMP, CIO, Mercy Health Partners of Southwest Ohio

We are refining our deployment model to have intentional, prescriptive alignment among training, workflow and tool deployment to enhance our ability to automate in a way that is repeatable, trainable, and sustainable over time. We have added resources that are dedicated to training on advanced clinical processes. - Mark Zirkelbach, CIO, Loma Linda University Health Services

Who should teach?

The best trainers are seldom your system experts. Do not try to force good analysts to train adults – it usually is not their forte. - Dave Roach, VP IS / CIO, Kadlec Health System

For nursing and other clinical areas, the use of "super users" who participate in the configuration and testing of the products and then assist with training is very effective. - Kimberly Kalajainen, Vice President and CIO, Lawrence & Memorial Hospital

Our organization recognizes the importance of training for all applications, and we have a large team of IT trainers within a separate education department. I'm not sure it is a "nugget," but we have found that having staff with strong IT backgrounds on the training team, as well as project management skills, makes the training much more effective. - Jim Turnbull, Chief Information Officer, University of Utah Hospitals and Clinics

Classroom Training

We are concentrating on getting folks in a classroom setting, away from their regular duties. Relying on them to use online training, while continuing to work a full schedule, is a recipe for failure. Just as the staff has to "buy in" to the new system, management has to support them with training and scheduling their work to accommodate the training and ramp-up period. Then get them utilizing the system as soon as possible. If a more than a week goes by, they will lose over half what they learned. - **Corey M. Zeigler, CPHIMS, CSCS**, HIT Program Manager, Fort Drum Regional Health Planning Organization

A classroom-based approach is the most efficient and has the highest retention outcome for the new user, because they get out of their daily workplace and focus on learning the product. However, classroom training normally only works for hospital employed staff; physicians typically reject a classroom approach out-of-hand. They want one-on-one, at-the-elbow training. - **Denton Arledge**, Vice President and CIO, WakeMed Health & Hospitals

Blended Training

For major training initiatives, we have always used a blended training approach, both web-based and instructor-led. For smaller initiatives, we use quick reference guides. - **Joseph DeVenuto**, System Vice President - Information Services and CIO, Norton Healthcare

Rather than bringing nursing into a classroom, we deployed a self-paced CBT that was followed up with unit-based mandatory assessment of learning and check-off related to use of the system by the clinical educators. - **Lynn Brookshire**, CIO, Charleston Area Medical Center Health System

Process re-engineering with them involved is critical, and at-the-elbow support at go-live and following is critical. If you are going to spend any money on a system, don't skimp on the training and, more importantly, on the support at go-live. We have used classroom training, one-on-one training, video snippets on CD or from our Internet site, as well as handouts. There is not a single right answer, as users learn in different ways and at different speeds. - **Todd Richardson**, CIO, Deaconess Health System

We do just-in-time training with at-the-elbow support for clinicians. We've found this to be most effective. Lengthy classroom training is mostly forgotten. - **Rick Warren**, VP and CIO, Allegiance Health

Supplementing traditional classroom training with e-learning has proven effective in reducing post-live reinforcement, but it has not eliminated it, by any means. We will improve as we adopt e-learning more as primary vs. secondary training. - **William A. Spooner, FCHIME**, Senior Vice President and CIO, Sharp HealthCare

What has been effective for clinical staff is a combination of classroom-based training and then on-floor support for a period of time during transition of new technologies. MU will not change this approach. What has been effective is staff knowing senior management is dedicated to patient safety and quality, so that support staff have proper buy-in and see these technology changes as better for our patients. - **Charlie Caruso**, CIO/VP Business Process Improvement, Goodall Hospital

We are a system of seven hospitals. We produce training materials centrally, but training is the responsibility of each of the hospitals. Over the past year, we have moved as much as possible to web-based training, but there are still some courses that require hands-on training. For CPOE, we have found that classroom training, followed with at-the-elbow support, is most effective. We get the nurses and unit clerks proficient in order set order entry while the physicians are using paper versions of the order sets. After both parties are proficient, we go to CPOE, and the nurses and unit clerks become the front line of at-the-elbow support.
- **Ralph W. Swain**, Corporate Director, IS Applications, Eastern Maine Health Systems

Physician training

We're still using formal classroom training for all but physicians. For physicians, we're using CBT, video clips, proctored training and one-on-one training. - **Melinda Y. Costin**, VP of Applications, Baylor Health Care System

We plan to train nurses first, to enable them to perform at-the-elbow support of physicians when the "how do I..." questions come. This is a model that I have seen used at other organizations. Of course, we also plan to have several dedicated staff (with certain T-shirts to make them visible) on each floor for a few days when go-lives occur. We also plan to open a cyber café in each hospital to give physicians a quiet, private place they can go to get on a PC. IT staff will have posted hours when someone will be at the cyber café to answer questions and help physicians through trouble points. - **Mike Ward**, CHCIO, SVP\CIO, Covenant Health

In another hospital system, after many failed efforts to train doctors real-time, the Medical Staff Executive Committee (not the hospital) MANDATED a one-hour classroom training session. The docs bit the bullet and came, learned it in one hour, and everyone was happy. In a month, we trained over 500 doctors and extenders. The fact is, though, we had to fail the first few times, and then classroom training had to be a physician-driven approach. Whatever we do this time for CPOE and MU will be physician-driven. I believe that these aggressive timeframes for MU may force our medical staff to be more open to other more efficient approaches like a classroom approach. - **Denton Arledge**, Vice President and CIO, WakeMed Health & Hospitals

We have developed an internal training and took the train-the-trainer approach to begin with, but it has expanded to specialists that are located on the floors to assist the physicians when needed. There is not an easy way to eliminate paper entirely, so these individuals do concurrent scanning of paper documents to keep the EHR up to date in a real-time mode. They also assist when needed in nursing, but only to the level of their prior positions in health information. They are our super-users and are called first when there is a problem.
- **Don Cope**, Director of IT, Faith Regional Health Services

With physicians, we do classroom training but find the most effective use of our time is at-the-elbow support during go live. We have also started with some web-based training to minimize the classroom training time, and that has really helped speed up the learning curve for those that won't or can't sit in a classroom very long. - **Patricia A. Lavelly**, FACHE, CHCIO, Senior Vice President and CIO, Memorial Health University Medical Center

One-to-one with doctors is the best method we have had. We also have in place at-the-elbow support for the first week or two after training and a special telephone support line with direct link to a super-user and pharmacist who can answer questions specific to ordering. - **Daniel Morreale, FCHIME**

We have used classroom, at-the-elbow, video and paper-based training. At this point we don't believe it will change our approach. Our nuggets would be having physicians train physicians, taking the physicians out of their offices for the training, teach it them, give them time to use it in the training environment and lastly, be with them the first couple of weeks they begin to use it. - **Roger Hertz**, System Vice President and CIO, Nebraska Methodist Health System

Training and communications – always a challenge with any physician community – is really the key to success. It's important to have a visible presence on the floors and in the clinics, real-time one-to-one training, tutorial presentations at section meetings and classroom offerings work best in our environment. Training is a labor-intensive investment that has significant returns. - **Mary Anne Leach**, Vice President and CIO, The Children's Hospital

We employed for the first time an independent third party to do some "tips and tricks" training for our physicians in their offices in an effort to leverage our system capabilities. - **Lynn Brookshire**, CIO, Charleston Area Medical Center Health System

There is not "one way" to do training, especially when it comes to the physicians; you have to meet them on their own turf and fit into their schedules. One of the items that we found works well is creating short video "how-to-dos." These are basically videos of the screen showing how it's done with a voiceover narrating the process. - **Charles "Chuck" Christian, FCHIME**, Director of Information Systems and CIO, Good Samaritan Hospital

While I have conducted most of the training, it has always been in partnership with clinicians and physicians. My nugget is, tell the truth, tell it often, tell it consistently, and have the support of the clinical and physician committee. To do that, they have to be involved in the process AND the governance. - **Stephen M. Stewart, MBA, FACHE, CPHIMS, CHCIO**, CIO, Henry County Health Center

Chapter 14: Building Physician Support for EHR Efforts

Summary

Physicians are an integral part of the electronic medical record implementation process. It may be particularly challenging to gain buy-in from community physicians who are struggling with their own efforts to implement an EHR.

All significant actions with a patient occur as a reaction to physicians' orders; thus, they have a remarkable and lasting influence on organizations.

Gaining physician support for using a hospital's clinical systems is imperative as hospitals seek to achieve prescribed objectives that define meaningful use of EHRs and qualification for stimulus fund payments.

Most hospital executives understand that gaining physician compliance is by no means assured. Physicians already are feeling pressured to install EHR systems in their own offices. Now, many face the prospect of having to learn a different system for each hospital at which they have privileges. Physicians must use a system efficiently when they come to treat patients at a hospital so that they can continue the day-to-day pace and routines they have become accustomed to. Hospital executives fear how much work and political capital might be required to gain clinician adoption.

One CIO at an East Coast hospital summarizes the dilemma this way: "As a community hospital, we have no ability to enforce adoption, short of a board directive...Progress on CPOE adoption is very slow; without a significant carrot or stick for the independent physician, we doubt we will achieve much more than 25 percent of CPOE adoption."

Many hospitals realize the necessity of engaging physicians in the process of clinical system adoption. These facilities are proactively asking physicians to be involved and responding to their feedback. In many cases, healthcare organizations are encouraging clinician involvement in the EHR process by adapting some of the already existing governance structures through which physicians have traditionally had their voices heard in hospitals.

"We have found (governance functions) to be effective ways for physicians to engage with IT and feel that they have a voice in design and implementation, particularly as it affects their medical practice," said a CIO at a Colorado hospital

Governance approaches for IT have a variety of names, such as a Physician IT Council. Typically, these efforts attract the participation of multiple physicians, and they can operate with the blessing of long-standing physician committees, such as the medical executive

committee, physician steering committee or physician advisory council. Physician panels that are tasked with working on IT matters provide an effective venue for physician concerns to be heard and answered.

In addition, hospitals are providing new ways for physicians to provide their input on EHR systems. Facilities are looking for clinicians who will advocate the cause; providing training that reflects physicians' needs in learning how to use the systems; and offering other support that will help them with the process.

CMOs and/or CMIOs often play crucial intermediary roles between the physician community and the information systems staff. Physician leadership is critical – as one medical director colleague expressed it, “Physicians don’t lead, don’t follow, and don’t get out of the way. They are self-empowered.”

In addition, organizations can support physicians in a variety of ways to help them adapt to using EHRs. When asked about strategies for gaining physician support, members of CHIME provided the following examples of current practices in their facilities:

- Allow physicians time to test-drive the system and incorporate their preferences, and give them chances to participate in design sessions, order set development and preference building
- Provide functionality physicians want, like single sign-on, “follow me” capabilities, remote access, cell-phone coverage, etc.
- Introduce functionality at physician group meetings, ask for feedback, and then listen and respond to complaints and concerns
- Develop communications campaigns to ensure everyone is informed and invited to participate in planning and implementation; publishing information in a variety of formats can help save a physician from attending a meeting
- Organize physician engagement dinners
- Design systems with accessibility that enables physicians to work from their offices or homes
- Create financial incentives tied to the level of system usage
- Provide a variety of approaches, times and locations for training, including at physician offices
- Have a cadre of super-users who can assist physicians who do not frequently see patients in the hospital
- Provide top-level support, including doing house calls at physicians' offices or homes

Executive Guidance

- Develop an advisory committee to empower physicians, giving them input and oversight into clinical system projects in the hospital. Drive toward physician ownership of the project.

- As senior executives, be prepared and rehearsed for pushback, especially when the new system seems to be hindering, rather than improving their work.
- Offer support and perhaps monetary compensation in the form of stipends in recognition of time invested to physicians that participate in IT-related efforts (such as writing order sets for CPOE or participating in design validation) or serve as physician champions or super-users.
- Engage in listening through the CIO, CMO, CMIO and IT staff. The CIO or a designate with stature should be involved in influential committees such as the medical executive committee or quality committee.
- Extend personalized training to physicians and also to their office staffs so that they know how to use the system and how to access necessary clinical information.
- Underscore benefits of EHRs that extend to the physicians and their patients; particularly highlight the beneficial effects on patient safety and quality of care.
- Create a communications plan aimed specifically at physicians, paying special attention to their information needs, using a variety of media in communicating with them.
- Work “inside out” – ensure heavy training and usage of clinical systems by nurses, residents, physician assistants and hospital-based physicians, then approach non-hospital physicians with the message that there exists plenty of staff available to help them.
- Do not curtail training or support for physicians. Training should be promoted as an investment that will pay dividends in time saved by physicians later on. Top-notch support alleviates physicians' concerns that they are on their own in using a new system. Easy access to support is a key both during and after go-live.
- Optimize the EHR based on physician feedback; physicians want their voices to be heard and asking their assistance in optimization helps build trust and create a partnership with the hospital to create the best EHR possible. Utilizing quarterly releases, timed with communication campaigns to publicize significant changes, can help reduce confusion that can be caused by too-frequent tweaking.

CHIME Member comments

“We are in the process of re-creating a ‘general’ Physician IT steering committee. The general committee was disbanded in 2006 in support of more focused committees. However, with the increase in automation, we believe it is once again time to re-engage a more general physician group...Physician input has been one of the key factors in our success in implementing the various systems we currently have in place.” - **Diana K. Hilburn**, VP Information Technology and CIO, Via Christi Health, Inc.

“The short answer is we are leveraging the ARRA and HITECH requirements to the hilt, along with Joint Commission requirements for signed, dated and timed orders, which are always a problem with paper records...We do not mandate use of our clinical system, but more than 95 percent of our clinicians use it to retrieve information. The last mile for us is CPOE. Currently, about 35 percent of our total orders are entered via CPOE, and we are active with the medical staff committees to transition to an ‘organic’ process that is driven by the medical staff and not IT or the administration.” - **Gregg Martin**, CIO, Arnot Ogden Medical Center

“We have a Physician Support Services team that serves as a liaison between the physicians and IS regarding what their needs are, how to maneuver in the system, how to connect remotely, and any other concerns they may have. We have a very robust Communications Plan aimed specifically at this group.” - **Melinda Y. Costin**, VP of Applications, Baylor Health Care System

“We are really driving for physician ownership of the project. It comes from a mandate from our medical staff to stop having one foot on the dock (paper record) and one on the boat (EMR). The medical staff executive committee is committed to making the system work for all physicians regardless of level of interaction with the organization.” - **Dave Gravender**, Vice President and Chief Information Officer, Kaweah Delta Health Care District

The bottom line is this – obtain corporate alignment because this is clearly not an IT project but a corporate priority to better support the community; create a vision; provide a supportive atmosphere and resources to enable providers to adapt to change; and resort to sanctions only as a last resort.” - **Edith C. Dees**, VP/CIO, Holy Spirit Health System

To read additional comments about physician support, [click here](#).

Chapter 15: Making Go-Live Showtime and a Celebration

Summary

Go-live is that “turn on the switch” event during which the new system becomes widely used by the hospital workforce. Careful planning and attention to detail is important to make the transition successful and ease users through the changes they will encounter in their work as a result of using the new systems.

Beginning use of an enterprise clinical information system such as an electronic health record is a pivotal event for healthcare organizations. Months of research, planning, building, and organizational preparation are to be put to the test as the hospital switches from its previous method for keeping paper-based patient records to now entrusting patient data to a new electronic system and its associated workflows and processes.

The workforce, if not prepared, can feel pressured and frustrated as they adapt to using a new system outside of a training environment. Clinicians’ experiences with a new system in those first few hours and days could affect their working relationships with the IT department on future projects as well.

With those risks in mind, preparation for the go-live event is of crucial importance. While go-live is sometimes viewed as a one-time, 24-48 hour period of transition, the success of go-live is dictated by the weeks and months that precede and follow it, meaning planning and leadership through the transition are crucial.

Certain themes of activities emerge as important for healthcare organizations that want to adequately plan for success when they bring clinical systems into use on a wide-scale basis.

Preparation and testing: Getting ready to make the switch to a new system begins weeks, if not months, in advance of the actual event. Sufficient time needs to be allowed for training, testing, communicating with new users and setting up the tactics for user support, especially in the first days of the conversion.

It is crucial to test applications in controlled experiments in the weeks leading up to a wide-scale go-live (see chapter 15A for story by Jane Harless).

Communication: The unknown elements of a go-live may induce fear and resistance. The workforce community needs to know what will change, how it will change, when the change will take effect, how it will affect their caregiving, and the level of support they can expect during the transition period.

Training: Chapter 14 touched on effective training approaches. It is essential to train users in advance, but training should be proximate to the go-live date. In addition, training should continue through the go-live period, and there should be creative methods of providing just-in-time education for items and tasks that are handled infrequently.

Scheduling and staffing: In anticipation of widespread deployment, organizations should reduce the number of patients that a provider is required to see during the go-live stage or otherwise adjust workloads. Some organizations use a standard of increasing staffing for the two weeks prior to go-live as well as the two weeks after the event. Alterations to patient and staff schedules and acquisition of agency support are expected.

Support: This is important on a variety of levels during the go-live. Sufficient IT staff needs to be on the unit, available to answer questions and begin the process of resolving problems. Even more important is the availability of super-users, who are typically clinical staff that have been involved in special training and testing of applications. Often, these individuals are not assigned clinical duties during go-live.

IT staff also needs to be ready for issues. Many organizations set up a command center that can be easily accessed around the clock. IT staff should also be on hand for rounding with caregivers, particularly in the first hours on the new system. At-the-elbow assistance is effective in the first days of using a new system.

Finally, executive visibility is also a key supporting tactic, especially for the clinical executive sponsor and the CIO, demonstrating the importance of the event and the commitment of IT at resolving any issues.

Problem resolution: IT staff should have a plan in place to track all issues and report the status of resolutions to clinical management. This tactic will assist management and staff in getting to a place of comfort in knowing that all issues are being logged and tracked until resolved.

Issues will be characterized as either break/fix or enhancements. Break/fix problems will carry more immediate resolution while enhancements may wait longer. This division of issues both helps with expectations as well as makes apparent those issues that are to be addressed with priority.

Even as every effort is made to handle issues as they arise, all senior executives and board members should be informed of preparations for the go-live and to anticipate the likelihood of complaints from end-users as part of the normal reaction to change.

Empathy and appreciation: Change in work patterns and no-option use of new technology is trying, and planning needs to demonstrate appreciation for staff as they go through the transition process. Food, beverages, visibility and extensive verbal affirmation help. Support staff should be prepared for dealing with frustration and know how to patiently assist new users. Accomplishments need to be celebrated, and planning should

include achievable wins that displays progress is being made, leading to encouraged optimism and long-term support.

Executive Guidance

In addition to the general suggestions listed above, here is additional guidance regarding making go-live a successful experience:

- Communicate the chain of support and how to access help to all users before go-live. Put a sticky label on each PC with the go-live command center hotline phone number. The IT command center should be able to accommodate at least three simultaneous calls.
- Utilize the workforce portal or intranet site to message statuses on important items. Assure that staff knows that this will be the case. Provide frequent updates to these messages.
- Track the type of questions or requests being received. Commonalities are likely to emerge, and frequency may be symptomatic of areas of inadequate training, lack of full preparation or otherwise suggest areas for immediate workflow enhancements with system use.
- For major go-live events, enforce a freeze on the technical environment both before and after go-live (one facility adheres to a freeze of 90 days – 60 days before go-live and 30 days after).
- Have on-site support staff easily identifiable, which can be easily accomplished with colorful shirts.
- Realize that all go-lives are not the same. Some may be limited in scope (for example, just involving one nursing unit at a time), while others may involve a larger portion, or all, of a facility. Vary go-live approaches based on the nature of the system being implemented or the scope of the rollout.
- Set accurate expectations for what will occur during a go-live. Be honest about the transition and its accompanying challenges.
- Have an independent audit project done. Hire an impartial auditor who is willing to listen, presents no fear of recrimination from special interests, acts in the organization's best interest and has a broad base of project and/or industry experience.
- Compile a final project report. The final report should include a project summary, comparison of "planned" vs. "actual" and list any outstanding issues.

CHIME Member Comments

*“The crucial ingredient is extra support capacity by both the internal resources and any applicable third parties. Whatever is recommended for headcount support to be there, double it, even if this means people end up being under-utilized. Go-live is show time and you want it to both look like, and actually show, that you're prepared for any scenario. The assumption, of course, is that all the testing, training and validation have proceeded accordingly to get you to this point.” - **Charlie Caruso**, CIO/VP Business Process Improvement, Goodall Hospital*

*“We blanketed the hospital with experienced EMR resources in order to achieve a smoother activation. For the first two weeks, we had two people on each patient care unit, 24x7. This was incredibly expensive but a big contributor to adoption and non-eventful activations. In addition, we had super-users on every unit that were supplied by various departments, such as nursing and allied health. We had a very extensive training program (that offered several approaches for learning the system). Despite the huge training effort, which included refresher training immediately before activation, many users did not retain the information. So the on-site activation resources were very critical to our success.” - **John Bosco**, CIO, North Shore - LIJ Health System*

*“Six months before go-live, I generally have a dedicated system cutover analyst begin the work of interviewing all end users to understand how their processes are going to change; to understand the interconnectedness of the current systems and how they will transition to the new system; and putting together a minute-by-minute cutover plan that describes each detailed step of the transition from old system to new. During cutover weekend, that plan becomes the script to follow and monitor. Then, you need to prepare for the worst, even though you've planned for success. The go live weekend and following week needs to be staffed on the floors and in a call center specifically for the go-live, 24x7, until it's not needed any more. We have generally prepared for two weeks of post-live support, but have dismantled after one week because of the pre-planning we did ahead of time.” - **Alec Cheloff**, CIO, Massachusetts Eye & Ear Infirmary*

*“The most crucial nugget is listening. Be present, everywhere, and listen. Have easily identified resources the users can go to for questions. Take notes. Be available and do not take a hard line on any topic or request for change. A hard "no" creates anxiety for the end user. Ask the end users their preferred communication mechanism for announcements, and post fixes or changes.” - **Jane Maskus**, Vice President and CIO, Lawrence Memorial Hospital*

To read additional comments about go-live strategies, [click here](#).

Chapter 15A: One Way to Approach Planning for Go-Live

Jane Harless, director of information systems at Saint Francis Hospital in Charleston, W. Va., shares the following approach in preparing for go-live.

I actually think that the go-live phase starts several weeks before the actual go-live. Core team members need to be selected for the development of the application. These members need to come from the department(s) utilizing the applications. A group of super-users needs to be identified and trained on the system. Both of these groups should be scheduled to cover all departments/shifts during the go-live week.

The first critical step is a controlled parallel. Normally this should be five weeks before go-live. In this phase, select a number of patients per day and run them through the existing system/process and then also through the new system. Control parallel should last five working days. Core team members handle the controlled parallel. This helps to determine if there is functionality that was missed in the build. It also should be used to ensure that the new system is dropping the charges to the patient accounting system appropriately and that there are no billing issues. If there are billing issues, this allows enough time to resolve them or delay go-live until they are resolved.

In the three to four weeks before go-live, conduct an end-user parallel. During this period, a number of patients are run through the new application/system on every shift. The purpose is to ensure that everyone has a chance to utilize the new application in the test environment. This helps discover access issues, functionality issues and also gives end-users time to use the new system. It reinforces the training they have had and gives them some hands-on experience with the new system. It does create double work on the staff, but it prevents many go-live day issues.

The day before go-live complete a final check of all equipment. If possible, a validation of user log-in should be completed.

At go-live, super-users and core team members need to be scheduled to work with the staff. Positive attitudes from core team members are essential. They need to be in the units as the go-live occurs to address issues; help process flow; and maintain “calm” with the staff. A command center needs to be established so that issues can be resolved as quickly as possible. Food should be provided to the department or unit. Senior staff on the system should provide positive reinforcement, and clinicians must feel tangible support in the process.

Go-live is more than day one. This process needs to continue for at least a week, and then a higher level of support needs to be provided to the department for several weeks until there is a stabilization period.

Chapter 16: Meaningful Use Rules will Require Data Collection

Summary

Providers will need to demonstrate their compliance with meaningful use requirements, and in some cases will require them to collect data that is a mix of both electronic data and other information. Many executives expect that additional manpower will be needed to gather and report required information.

As with many other government programs, healthcare organizations will need to do more than just install electronic health record systems to qualify for stimulus fund payments. The government will be expecting data to document both quality improvements and achievement of HIT functionality measures.

These efforts are expected to fall primarily on organizations' health IT departments, but they will also impact other sectors, such as quality and health information management.

With the release of the final rule on July 13, more questions were raised than were answered regarding how organizations can demonstrate MU of EHRs and therefore qualify to receive stimulus funds through the HITECH Act. In an audio-conference in mid-August with officials from the Office of the National Coordinator for Healthcare IT and Centers for Medicare & Medicaid Services (CMS), it is apparent the two agencies are still working out details of the rules by which providers will be assessed in qualifying for stimulus funding.

According to an analysis of the final rules by Health Policy Alternatives Inc. for CHIME, CMS will allow providers to use attestation in 2011 and 2012 to demonstrate MU, except for clinical quality measures for which CMS will require electronic submission in 2012. CMS will require a one-time attestation after the end of the EHR reporting period involved, which will be done through secure mechanism, such as an online portal, with guidance on the secure mechanism. CMS also expects to require demonstration of MU through automated reporting over time.

CMS leaves open the possibility that it may test options to use existing and emerging healthcare IT products and infrastructure capabilities to meet other objectives – such as use of registries or direct electronic reporting – but would not require participation in a test as a condition for incentive payments.

Reporting quality data also will involve challenges. For the 2011 payment year, CMS finalized its proposal that, in order to meet the MU requirement, eligible professionals and hospitals must submit required clinical quality data along with an attestation that certified EHR technology was used to capture the data elements and calculate the results, and that all the

data submitted is complete and accurate.

Data to be reported for each of the required measures are numerators, denominators and exclusions. Results are to be reported to CMS for all applicable patients, not just Medicare and Medicaid beneficiaries. The final rule specifies the elements of the attestation, which will utilize the same system used for other MU objectives.

For the 2012 payment year, the final rule requires eligible professionals and hospitals to begin to report required data on quality measures electronically. CMS intends to provide one or more alternative options for electronic submission, which may include intermediaries. For 2012, electronic submission will be through a CMS-designated portal. CMS plans to test submission through Health Information Exchange/Health Information Organization or through registries for possible future implementation. CMS plans to post the technical requirements for submission on or before July 1, 2011, for Medicare eligible professionals, and on or before April 1, 2011, for Medicare eligible hospitals and critical access hospitals.

CMS plans to post on its website the specific technical mechanisms and deadlines for attestation and electronic submission and to provide this information through various educational products in development.

Providers are concerned that some of the reporting requirements will be labor-intensive compile since some of the information will require data collection and reporting manually. The requirements are in addition to existing Medicare quality-reporting efforts, and so are expected to add to providers' quality reporting burden. Providers will need to rework and expand document and data capture.

The rules also require providers to submit data to demonstrate they are achieving specific MU objectives. Details for achieving some of these requirements and how to exhibit compliance remained unclear as of mid-August. Many providers expect they will require manual assistance to gather needed information.

Proving achievement of MU objectives in some cases will span multiple departments in hospitals, and many CIOs predict they'll need additional resources both to gather data and write reports as needed. They say that many of the transactional systems in place today don't perform well in gather the kinds of information required or in providing reports that will meet the MU requirements. Hospitals may need to invest in business intelligence or decision support systems to augment their efforts, these CIOs say.

Senior executives will need to depend on the CIO for guidance on data collection efforts needed to substantiate the achievement of meaningful use, but need to expect that assistance beyond the walls of the IT department, or additional investment, will be necessary.

Executive Guidance

- Continue to monitor data collection requirements as issued by CMS. CHIME will also be seeking clarification of reporting requirements and posting information as it becomes available.
- Conduct a gap analysis to determine potential problem areas for reporting.
- Ensure whether current or anticipated electronic clinical systems have needed reporting capabilities, or whether additional systems or approaches will be needed by the organization.
- Organizations should consider implementing a small, flexible committee to address the needs of reporting because of the mix of IT-generated and manual data that will be required.
- Data collection will become an integral part of the documentation process. It may have implications for standardizing reporting for an organization, particularly those that have to demonstrate compliance at the individual provider level.
- Ensure that systems to be used will include required data elements for MU compliance, and plan to educate staff on the importance of consistently reporting on these data elements.
- Check with HIS vendors to ensure that expected versions of systems will have reporting capabilities that will help an organization demonstrate MU compliance.

CHIME Member Comments

*“Data collection will be integral to substantiate meaningful use. We are working on some advanced analytics to establish the reporting for meaningful use. One problem is that that mechanism is still undefined, but largely, the main problem in providing meaningful data is that many of the transactional systems in place today don’t do that well. To get what is anticipated to be required you will probably need to have a business intelligence or DSS system in place.” - **Linda Reed, RN, MBA, VP/CIO, Atlantic Health***

*“We anticipate that reporting of the collected data will be painful given the lack of strong reporting tools in most of the products we use. - **Kimberly Kalajainen, CIO, Lawrence & Memorial Hospital***

*“The biggest problem will be generating these reports directly from the EHR. Our hope is that we are allowed to use our data analytics warehouse system, which is interfaced / integrated to our EHR to generate many of the data requirements. If this is deemed not acceptable, then we will be in a world of hurt. - **David Dyer, CIO/VP IT Services, Somerset Medical Center***

“The bigger issues are preparing for the quality indicators and making sure that our documentation is set up to further automate the capture of some of this data so we can more easily report on the numbers to demonstrate compliance. We have teams working on the re-work and expansion of our documentation and data capture. It is a huge and ongoing job. Right now it is kind of a brute force effort, and I am concerned about where we are going to be by next year.” - **Kim J. Ligon**, Director/CIO, DCH Health System

List of Contributors

CHIME would like to thank the following individuals for their contribution and without whom; this guidebook would not be possible:

Douglas A. Abel, CHCIO – Anne Arundel Health System
Donna Agnew – Presbyterian Healthcare Services
Jody Albright – Overlake Hospital Medical Center
Paul Alcala – Northbay Healthcare System
Linda Allen – Monongalia General Hospital
Jim Anzeveno – Faulkner Hospital
Denton Arledge – WakeMed Health & Hospitals
Jerry Aubert - MSU Health Information Technology
William Avenel, FACHE – Central Georgia Health System
R. Hal Baker, MD, FACP – WellSpan Health
Gary Barnes, CHCIO – Medical Center Hospital
Jonathan Bauer – Somerset Hospital
Heath Bell – Kish Health Systems
Richard Beran – Fremont Area Medical Center
Marilynn Black – Kingman Regional Medical Center
Tom Bluhm – Island Hospital
John Bosco – North Shore - LIJ Health System
Len Bowes – Intermountain Healthcare
Emma Brandon – Cooper University Hospital
George Brenckle – UMass Memorial Healthcare
Lynn Brookshire – Charleston Area Medical Center Health System
Shelia Bruce – Trover Health System
Joe Bubacz – Laurel Health System
Carolyn Byerly – Stanford Hospital & Clinics
Al Campanella – Virtua Health
Charlie Caruso – Goodall Hospital
David Chabner – Sky Lakes Medical Center
Alec Cheloff – Massachusetts Eye & Ear Infirmary
Praveen Chopra – Children's Healthcare of Atlanta
Charles “Chuck” Christian, FCHIME – Good Samaritan Hospital
Sonya Christian – West Georgia Health System
Charles Colander – Elmhurst Memorial Hospital
Bill Colbert – University Health Care System
Judy Comitto – Trinitas Regional Medical Center
Don Cope - Faith Regional Health Services
Rick Corn - Huntsville Hospital
Judy Corzine, CHCIO-Eligible - Stormont Vail Healthcare
Melinda Y. Costin – Baylor Health Care System
Peter Courtway – Danbury Health Systems, Inc.
Charles Covin - Eastern Connecticut Health Network, Inc
Randy Davis - NorthCrest Medical Center

Edith C. Dees - Holy Spirit Health System
Drexel DeFord, FCHIME - Holy Spirit Health System
Joseph DeVenuto - Norton Healthcare
Robert Dulak - New York Methodist Hospital
David Dyer - Somerset Medical Center
Adrienne Edens, FCHIME - St. Luke's Health System
Heidi J. Engle - Glacial Ridge Health System
Douglas Fain - University of Tennessee Medical Center
Thomas G. Fairfax, BSIT - Bothwell Regional Health Center
Jennifer Fall – Gillette Children's Specialty Healthcare
Lawrence Farrell - Washington Adventist Hospital
Gene Fernandez - L.A. Care Health Plan
Paul Foelsch, CHCIO - Mercy Hospital Iowa City
Mary Carroll Ford, MBA, CHCIO - Lakeland Regional Medical Center
David Furnas, CHCIO - Gila Regional Medical Center
Louis Galterio - SunCoast RHIO
Steve Garske - Childrens Hospital Los Angeles
Deborah Gash, CHCIO - Saint Luke's Health System
Ken Gilles - Innovis Health
Mark Gilliam - Ardent Health Services
John P. Glaser, PhD, FCHIME, CHCIO
Michael Gomez - Our Lady of Bellefonte Hospital
Joel L. Granick, MD – Cancer Treatment Centers of America
Dave Gravender - Kaweah Delta Health Care District
Gary Hall - Estes Park Medical Center
Mark Halladay, CHCIO - Thompson Health
Jane Harless - Saint Francis Hospital
Jim Hampton - Bozeman Deaconess Hospital
Roger Hertz - Nebraska Methodist Health System
Mike Hibbard, RN, MHSA, PMP – Mercy Health Partners of Southwest Ohio
George “Buddy” Hickman - Albany Medical Center
Diana K. Hilburn - Via Christi Health, Inc.
Cheryl Homan - Lima Memorial Health System
Red Hutchinson - Lakes Region General Hospital
JD Jackson - Consolidated Health Systems
Mike Johnson - Gaston Memorial Hospital
Ralph Johnson - Franklin Community Health Network
Kimberly Kalajainen - Lawrence & Memorial Hospital
Bruce Kelly - Mercy Memorial Hospital System
Charles Kitzman - Shasta Community Health Center
Jack Kowitt - Parkland Health & Hospital System
Petra Knowles, CHCIO - Southwest Washington Medical Center
Ed Koschka - Community Health Network
Arthur Krumrey - Loyola University Health System
Ken Kudla - Salem Health
Curt Kwak - Providence Health & Services
Rick Lang, Ed.D. - Doylestown Hospital

Patricia A. Lavelly, FACHE, CHCIO - Memorial Health University Medical Center
Mary Anne Leach - The Children's Hospital
Mark Lederman - Interfaith Medical Center
Darrell Leonhardt - Arkansas Children's Hospital
Dennis P. L'Heureux, MS, CPHIMS, FHIMSS - Rockford Health System
Kim J. Ligon - DCH Health System
Elizabeth Lindsay-Wood - Tampa General Hospital
Philip Loftus - Aurora Health Care
Jackie Lucas - Baptist Healthcare System
Gregg Martin - Arnot Ogden Medical Center
Ron Margolis - University NM Hospital - Health Science Center
Edward W. Marx – Texas Health Resources
Kara Marx - Methodist Hospital
Jane Maskus - Lawrence Memorial Hospital
Randy McCleese, CHCIO - St. Claire Regional Medical Center
MAJ Eric McClung - Eisenhower Army Medical Center
Tina McConnell - Central Michigan Community Hospital
George McCulloch, MA, MBA, CHCIO - Vanderbilt Medical Center
Chuck McDevitt - Self Regional Healthcare
Michael McTigue - Saint Barnabas Medical Center
Pamela G. McNutt, FCHIME – Methodist Health System
Angie McWhorter - Harbin Clinic
Richard Mohnk - HealthAlliance Hospitals, Inc.
Daniel Morreale, FCHIME
Deane Morrison - Capital Region Health Care
Jerry Mourey - Aspirus
Pamela Mon Muccilli, FCHIME - William W. Backus Hospital
Jim Murry - University of CA, Irvine Medical Center
Mary Jo Nimmo - Lenoir Memorial Hospital
Albert Oriol - Rady Children's Hospital San Diego
David Orme - Rehabilitation Hospital of the Pacific
Tom Pacek - South Jersey Healthcare
David Parker - Jackson County Memorial Hospital
Brian D. Patty - HealthEast Care System
Jim Peelgren - Peace Health Medical Group
Cindy Peterson - Henry Mayo Newhall Memorial Hospital
Dan Pletcher - Geneva General Hospital
Chuck Podesta - Fletcher Allen Health Care
Laszlo Pook - National Jewish Health
George Popp - Laboratory Alliance of Central NY, LLC
Tim Pugsley - Nebraska Orthopaedic Hospital
Denise Purington, BSN, RN - Elliot Health System
Jayashree “Jay” Raman
Linda Reed, RN, MBA - Atlantic Health
Todd Richardson - Deaconess Health System
Dave Roach - Kadlec Health System
Rob Rhodes - Houston Healthcare

Peggy Romano - Seabastcook Valley Hospital
Christi Rushnell - Health First, Inc.
Dale Sanders - Cayman Islands Health Services Authority
Mike Sauk - University of Wisconsin Hospitals & Clinics
Scott Schreier - Mt. Ascutney Hospital and Health Center
Lance Smith - St. Tammany Parish Hospital
William A. Spooner, FCHIME - Sharp HealthCare
Tressa Springmann - Greater Baltimore Medical Center
Steven Stanic - Baptist Health Systems
Eddi Staffini, CHCIO - Sibley Memorial Hospital
Steve Stark - Cass County Health System
Stephen M. Stewart, MBA, FACHE, CPHIMS, CHCIO - Henry County Health Center
Ralph W. Swain - Eastern Maine Healthcare Systems
Karen Thomas - Main Line Health Information Services
Helen Thompson, FCHIME - Heartland Health
Lac Tran - Rush University Medical Center
Stephen Tranquillo - Thomas Jefferson University Hospital
Jim Turnbull - University of Utah Hospitals and Clinics
Sheldon Tyndall - Haywood Regional Medical Center
Laurene Vamprine - Erlanger Health System
Gregory Veltri - Denver Health
Vince Vitali - Advocate BroMenn Healthcare
Lynn Vogel, PhD, FCHIME, CHCIO - Univ. of TX M.D. Anderson Cancer Center
Michael Ward - Anderson Hospital
Mike Ward, CHCIO - Covenant Health
Rick Warren - Allegiance Health
David Weiss - BJC HealthCare
Alan Whitehouse - Oconee Regional Medical Center, Inc.
Alec Williams - Samaritan Regional Health System
Laisy Williams-Carlson - Bon Secours
Bill Winn - Iverson Memorial Hospital/Medicine Bow Tech
Susan Wolff - NCH Healthcare System
Corey M. Zeigler, CPHIMS, CSCS - Fort Drum Regional Health Planning Org.
Michele Zeigler - Summit Health
Mark Zirkelbach - Loma Linda University Health Services