The New Healthcare Enterprise

Leveraging Healthcare IT to Achieve Connected Care, Healthcare Reform

Highlights

Produced in partnership with

HIMSS Media

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The goal of healthcare reform legislation – from the HITECH Act of 2009 to the Patient Protection and Affordable Care Act of 2010 (ACA) – is to improve the quality of care and clinical outcomes in a cost-effective manner. Federal mandates are spurring the deployment of healthcare information technology (IT) to help enable a new healthcare enterprise, one that emphasizes collaborative care across the continuum, essentially tearing down the walls separating inpatient and outpatient facilities and even patient homes to achieve this transformative concept of connected care.

Table 1:

Please rank, in order, the five most important considerations for clinical technology purchase decisions, with "1" being the most important and "5" being the least important. Leave all others blank.

The technology:	1	2	3	4	5
Is linked to EMR adoption	43%	16%	10%	12%	18%
Expands or enhances EMR functionality	23%	26%	14%	16%	20%
Is interoperable with EMR	24%	31%	21%	17%	7%
Is interoperable with existing clinical information systems	21%	22%	25%	19%	14%
Can be leveraged for multiple projects	8%	8%	26%	28%	31%
Can be implemented in phases/modules – by department and/or facility	6%	10%	23%	26%	36%
Supports standardization across the enterprise	10%	10%	36%	28%	16%
Drives measurable clinical improvements (e.g., reduced mortality)	32%	18%	11%	23%	16%
Drives measurable operational improvements (e.g., reduced LOS, reduced cost of losses via asset tracking)	11%	40%	16%	13%	19%
Supports physician recruitment efforts	23%	15%	15%	39%	8%
Supports new program development	22%	0	28%	17%	33%
Connects inpatient, outpatient and other organizational entities (e.g., physician offices, homes, clinics)	27%	10%	12%	16%	34%

Electronic health record (EHR) and electronic medical record (EMR) systems[1] are the most widely adopted healthcare IT, driven by financial incentives from the Medicare and Medicaid EHR Incentive Programs. Indeed, the Centers for Medicare and Medicaid Services (CMS) reported that by the end of June 2013, EHR reimbursements totaled more than $15.1 billion. The new healthcare enterprise, however, requires adoption of other platforms, applications and devices to maximize their investments in EHRs and EMRs and ensure coordination of care in order to meet all healthcare reform initiatives. Just as important, these healthcare IT solutions need to be interoperable with and seamlessly connected to the EHR or EMR so clinicians and other staff across the healthcare enterprise can securely yet easily access and share real-time patient information to design, deliver and measure high-quality care.

HIMSS Media conducted a survey earlier this year, on behalf of Philips Healthcare, a leading provider of healthcare enterprise software solutions and medical devices, to determine how hospitals and health systems are prioritizing technology investment and adoption to address healthcare reform initiatives, as well as preparing to meet meaningful use Stage 2 criteria, which begins in 2014. Of the 142 respondents, 85 percent represent either standalone hospitals or integrated delivery networks (IDNs). With nearly 40 percent of respondents in C-level positions, with the predominant position being CIO, and another 30 percent comprising IT directors and managers, the survey provides a solid snapshot of the current state of healthcare IT in the acute-care setting.

Table 2:

In choosing clinical technologies, please identify the relative importance ("1" being most important and "5" being the least important) of the following:

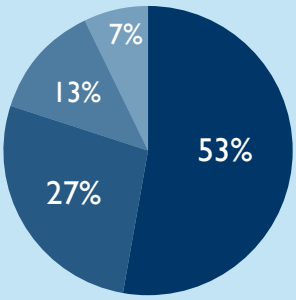
Clinical technologies	1	2	3	4	5
Price	15%	12%	18%	20%	17%
Ease of use	16%	22%	23%	19%	14%
Interoperability with EMR	44%	28%	11%	8%	6%
Evidence-based proof point (e.g., improved clinical outcomes, reduced LOS)	18%	20%	18%	17%	15%
Support services (lifecycle management)	5%	10%	13%	17%	21%
Interoperability with infrastructure	13%	20%	22%	13%	19%

[1] EMRs replicate all aspects of a healthcare provider's paper charting. EHRs are essentially EMRs with the capability of following the patient from healthcare provider to healthcare provider, thereby enabling electronic exchange of information and messaging. For the purposes of this white paper, however, the two terms are interchangeable.

" Our proximity to the patient provides us with deep clinical knowledge because we are the providers, the analyzers and the interpreters of near patient high-resolution data and we support interoperability with information that is further away from the patient's immediate setting such as demographics and diagnosis and other data in an EHR and other clinical systems. "

– Joe Frassica, Vice President, CMIO and CIO for Philips

Figure 1:
What is the general breakdown of your budget on technology purchasing?



53%	EMR applications
27%	Interfacing and integration
13%	Network infrastructure
7%	Desktop, server hardware

Key to Stage 2 meaningful use: connectivity and interoperability

Not surprisingly, when asked to rank the five most important considerations for clinical technology purchase decisions, 43 percent of survey respondents ranked technology that is linked to EMR adoption as the top consideration, followed by technology that drives measurable clinical improvements (32 percent) (Table 1). With eligible hospitals and health systems having already achieved or in the process of achieving Stage 1, many are now preparing for the next, more demanding set of criteria – with interoperability a key focus, and going beyond aggregating and digitizing data to driving real-time actionable information at the point of care, measuring clinical outcomes and sharing patient information to improve the quality of care. According to Sara Coulter, Director of Government & Industry Relations for Philips, healthcare organizations are looking for ways to bridge the gap between their EMRs and other technology used to manage patient data in their healthcare enterprise.

"Clinical device and systems integration is a very important component of a hospital's meaningful use strategy," said Coulter, who is on the College of Healthcare Information Management Executives (CHIME) board of trustees. In her discussions with CIOs and IT managers, she found that hospitals and health systems are looking at integration of devices and specialty systems, such as labor and delivery or cardiology systems, with EMRs as they approach Stage 2 meaningful use criteria. "The bar has been raised for Stage 2, and providers are going to need to collect more clinical data, meet more quality metrics reporting requirements, add clinical images to EHRs and focus on EHR interoperability," she said. "Specialty systems will help providers meet meaningful use requirements, and also improve the quality and amount of patient data reporting by leveraging information from many sources."

On the clinical side, EMR adoption rises when patient information can be quickly and easily retrieved, and clinicians can better manage their patients' care when they have a comprehensive view of their patients. On the IT side, by reducing the number of points of interfacing to one standards-based connection, hospitals and health systems can streamline information systems interfacing and IT management as well as reduce costs.

The HIMSS Media survey results show that hospitals and health systems are seeking and deploying solutions for their interoperability and clinical information sharing capabilities and the benefits they deliver when interfaced with EMRs (Table 1). Clinical information systems that are EMR ready are also desirable for their ability to directly "talk" with other clinical information systems to easily provide image access. A look at the combined top two rankings for technology capabilities that are important considerations for clinical technology purchase decisions – technologies that are interoperable with EMR (24 percent and 31 percent), expands or enhances EMR functionality (23 percent and 26 percent), is interoperable with existing clinical information systems (21 percent and 22 percent) and drives measurable operational improvements (11 percent and 40 percent) – reveal a demand for interoperable solutions and EMR augmentation.

When asked to identify the relative importance in choosing clinical technologies, EMR interoperability, at 44 percent, was by far the most important consideration for survey respondents (Table 2). With Stage 2 meaningful use criteria requiring more complex health information exchange among healthcare providers, interoperability of clinical IT systems is critical. The ability to share patient information is also necessary for Medicare fee-for-service program providers to meet CMS's Medicare Shared Savings Program (MSSP) requirements to become an accountable care organization (ACO). Hospitals and health systems must be able to coordinate care with their ACO partners in order to deliver high-quality care in a cost-efficient manner and share in the savings it achieves for the Medicare program.

Enhancing EMRs for improved quality of care, reporting and measuring

EMR applications, selected by 53 percent of survey respondents, were identified as garnering the lion's share of their healthcare organization's technology purchasing budget, with interfacing and integration applications being selected by 27 percent (Figure 1). Many hospitals and health systems recognize that EMRs alone cannot meet the new requirements or other healthcare reform initiatives. "EMRs must meaningfully use the information across a hospital's network to

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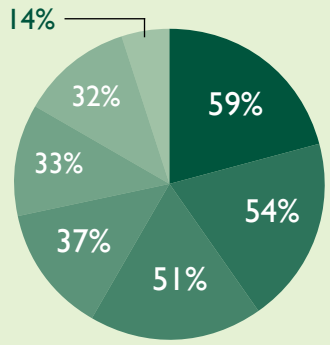
As clinical data grows exponentially and is captured and exchanged among EMRs across the healthcare enterprise, CIOs and IT directors will need to better manage the data and make it easily accessible to clinical and business end-users. "Clinicians are confronted with a lot of data from multiple systems, devices and other sources," said Heather Willis, Senior Director of Marketing for Patient Care & Clinical Informatics at Philips. Deploying clinical decision support tools at the point of care helps synthesize huge amounts of data into more granular and clinically relevant information.

Figure 2:

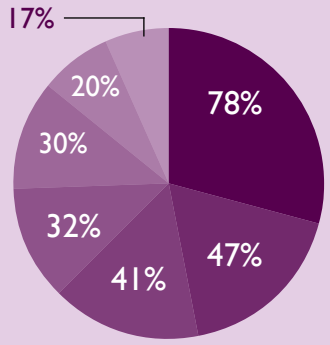
What new technologies are you deploying to meet healthcare reform initiatives? (Select all that apply.)



59%	Clinical devices
54%	Mobility solutions
51%	New EMR
37%	Home/telehealth technologies
33%	Early warning systems (clinical)
32%	Remote monitoring solutions
14%	Other

Figure 3:

Identify external entities to which you are deploying your IT systems to address healthcare reform requirements. (Select all that apply.)



78%	Physician office
47%	Ambulatory surgery center
41%	Diagnostic imaging center
32%	Urgent care center
30%	Patient home
20%	Other
17%	EMT services

Mobile connectivity for providers in and outside of traditional care settings

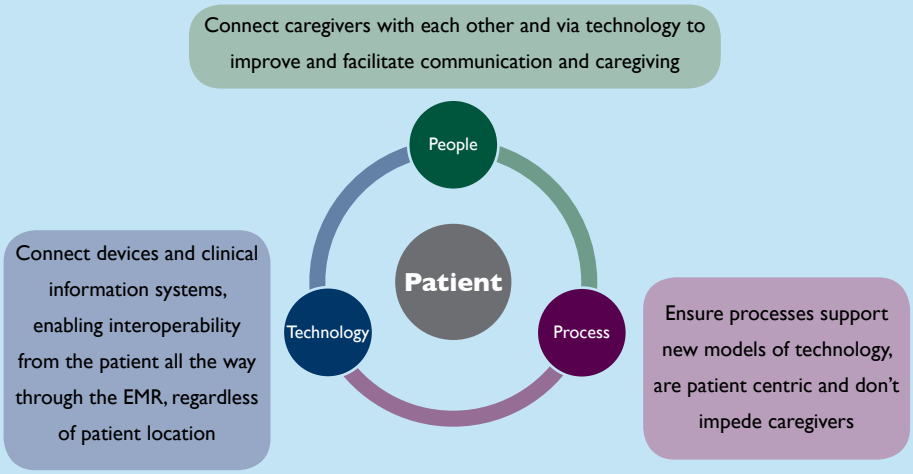
Extending technologies outside hospital walls, into outpatient settings and patient homes, will enable healthcare organizations to coordinate care across all patient touchpoints. By feeding key patient data such as vital signs and medical images from the home and outpatient settings, respectively, into the EMR, a patient's medical record will be up to date, comprehensive and centralized. Authorized clinicians can then easily access this comprehensive data to aid clinical decision support, meeting the twin goals of improved clinical outcomes and cost effectiveness. Survey participants reported deploying their IT systems to the following entities to address healthcare reform requirements: physician offices (78 percent), ambulatory surgery centers (47 percent), diagnostic imaging centers (41 percent), urgent care centers (32 percent) and patient homes (30 percent) (Figure 3).

Using IT systems to coordinate care is key to achieving numerous healthcare reform initiatives. The Hospital Readmissions Reduction Program under ACA requires CMS to reduce payments to hospitals with excess readmission ratios for patients with acute myocardial infarction, heart failure and pneumonia within 30 days of being discharged. The maximum penalty will increase to 2 percent for discharges starting in 2013 and 3 percent in 2014. Coordinating care with primary care, specialists, other caregivers, and patients and their family members can help keep patients from returning to the acute-care setting. Care coordination will also be critical in

[2] American Academy of Pediatrics, Committee on Injury and Poison Prevention. (1996) Safe transportation of premature and low birth weight infants. Pediatrics. 97:758-760.
[3] Bellomo, R., Ackerman, M., Bailey, M., Beale, R., Clancy, G., Danesh, V., . . . VITAL Care Study Investigators. (2012) A Controlled trial of electronic automated advisory vital signs monitoring in general hospital wards. *The Journal of Critical Care Medicine*. 40(8): 2349-2361.

Figure 4:

The concept of connected care puts the patient in the center, with clinical IT systems supporting people and processes.



keeping patients healthy and sharing in financial savings for ACOs participating in CMS's MSSP.

Clinical mobility solutions are ideal technologies to leverage for care coordination into the community because of their rapid adoption among clinicians. Indeed, according to the 2nd Annual HIMSS Mobile Technology Survey, which was released in December 2012, 93 percent of physicians already use mobile health technology in their daily activities and 80 percent use it for patient care. While 51 percent of the HIMSS Media survey respondents indicated that their healthcare organization was deploying a new EMR as a new technology to help them meet healthcare reform initiatives, 59 percent and 54 percent identified clinical devices and mobility solutions, respectively, as recent acquisitions targeted to meet compliance (Figure 2).

"Recognizing not only these adoption trends but the fact that there are third-party app providers with whom some healthcare organizations wish to partner,"

A concept that is being widely embraced by clinicians and patients. As survey results show, hospitals and health systems already recognize the value of clinical devices and mobile solutions. These types of solutions may help hospitals and health systems effectively and cost-efficiently extend their clinical capabilities outside of traditional care locations, allowing for any change in the health status of their patients to be proactively handled to prevent potential hospitalizations or re-hospitalizations.

Anticipating greater adoption of telehealth

Hospitals and health systems are also deploying other solutions such as home/telehealth technologies to help them coordinate care, with 37 percent of survey respondents confirming their use to meet healthcare reform initiatives.

"Two thirds of the annual $2.8 trillion healthcare spend occurs in the outpatient environment and 56 percent of this is personnel related," said Brian Rosenfeld, CMO for Philips' Telehealth Solutions. "To bend the cost curve, healthcare organizations will have to utilize technology, to leverage resources and people." Hospitals and health systems will need both technology and expertise to remotely manage intensive care units, patients on the medical and surgical floors and patients in their homes. Leveraging resources and people requires decision-support tools that extract data elements from clinical systems such as HIEs, EHRs, and PACS to enable clinicians in remote locations to obtain actionable information, according to Rosenfeld (Figure 4).

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