

A Balanced Approach to Meeting Healthcare IT

# COMPLIANCE

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THE INTEGRATION GENERATION | A WHITE PAPER SERIES



## KEY QUESTIONS ADDRESSED IN THIS WHITE PAPER INCLUDE:

- What does HITECH mean for a CIO responsible for resource utilization and ensuring the IT infrastructure is aligned with the strategic and operational plans?
- What's the best approach for an interface manager tasked with optimizing stability, functionality and costs for the IT infrastructure with the intent of laying the groundwork for increased capabilities?
- What actions can be taken now to ensure your facility is well positioned with a robust foundation containing the flexibility and adaptability necessary for future healthcare IT initiatives?

## HITECH AND MEANINGFUL USE – WHAT'S IMPORTANT TO HEALTHCARE PROVIDERS NOW

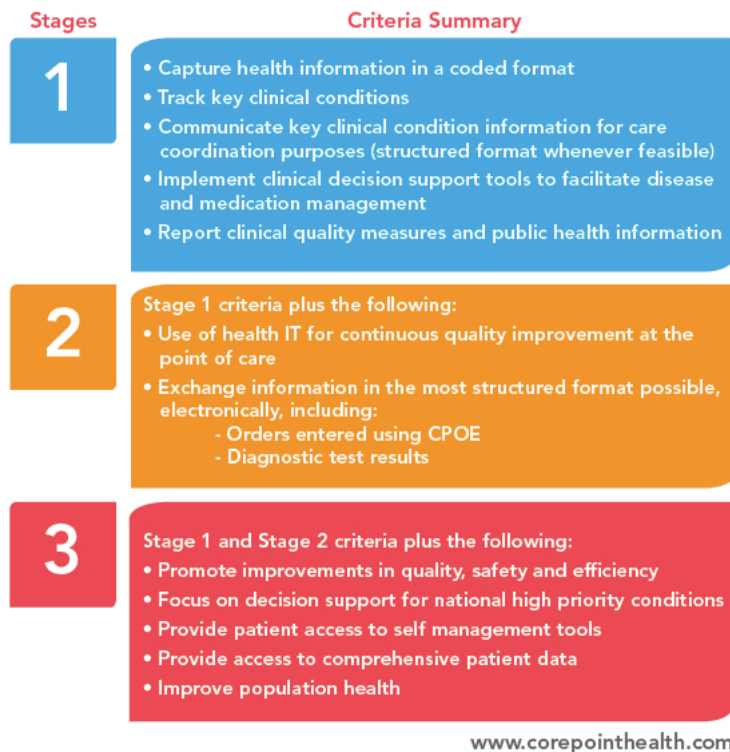
Healthcare providers and vendors are reviewing guidelines and preparing to make changes necessary for compliance with the American Recovery Act of 2009 (ARRA) and related acts and provisions such as HITECH – Health Information Technology for Economic and Clinical Health and the new concept of meaningful use. There are substantial incentives for professionals and hospitals under HITECH and to be eligible to receive payments, professionals and hospitals must be able to demonstrate meaningful use of a “certified” electronic healthcare record (EHR) system.

ARRA, HITECH, and meaningful use were all introduced in 2009 with preliminary definitions and criteria. Regulations for HITECH and meaningful use were published by the Centers for Medicare and Medicaid Services (CMS) and the Office of the National Coordinator (ONC) for Health IT on December 30, 2009. The rules were published in two parts: an ONC interim rule (IFR) that covers standards and certifications of EHRs and a notice of proposed rulemaking from CMS defining the meaningful use of Health IT.

There are three stages planned for the meaningful use regulations and incentives that begin in 2011 and conclude in 2015. Despite concern over what healthcare standards would be included in the meaningful use regulations, the IFR does not introduce drastic changes, at least not in the Stage 1 requirements. The stated goal of the HITECH act is to “improve patient care and make it patient-centric through the creation of a secure interoperable nationwide health information network.” What's included in these provisions and what do they mean for healthcare IT providers?

The following is an overview of the three stages for achieving meaningful use as they are currently outlined in the IFR on Standards and Certification criteria.

## OVERVIEW OF MEANINGFUL USE STAGES



Perhaps the best way to understand the immediate implications of meaningful use for healthcare providers is to focus on what has been communicated by Dr. David Blumenthal, National Coordinator for Health Information Technology, U.S. Department of Health & Human Services. Dr. Blumenthal, in his role as National Coordinator for Health IT, issues ongoing updates on matters related to the transformation of healthcare IT as part of HITECH.

In an update from October 2009, Dr. Blumenthal emphasizes the importance of enabling health information for physicians and healthcare providers rather than simply encouraging the adoption of technology.

*"By focusing on 'meaningful use,' we recognize that better health care does not come solely from the adoption of technology itself, but through the exchange and use of health information to best inform clinical decisions at the point of care... It will lead us toward improvements and sustainability of our health care system that can only be attained with the help of a reliable and secure nationwide electronic health information system." Dr. David Blumenthal, National Coordinator for Health Information Technology, October 1, 2009*

The ONC plans to take an incremental approach to standards adoption with consideration for current standards as well as those yet to be defined. Input will be incorporated from federal advisory committees, public comment, assessments of industry readiness, and future meaningful use goals and objectives developed for the EHR incentive programs.

A key message from Dr. Blumenthal to hospitals and healthcare providers at this stage of the healthcare IT evolution is to take relevant actions based on evaluations of their IT infrastructures in their organizations.

*"Armed with an understanding of the discussion of meaningful use as it unfolds, providers can begin to consider how their own practices or organizations might be reshaped to enhance the efficiency and quality of care through the use of an electronic health record system. Be assured you will not be alone as you seek to adopt an EHR system." Dr. David Blumenthal, National Coordinator for Health Information Technology, October 1, 2009*

First Payment Year	Payment Year				
	2011	2012	2013	2014	2015
2011	1	1	2	2	3
2012		1	1	2	3
2013			1	2	3
2014				1	3
2015					3

1 Stage 1  
2 Stage 2  
3 Stage 3

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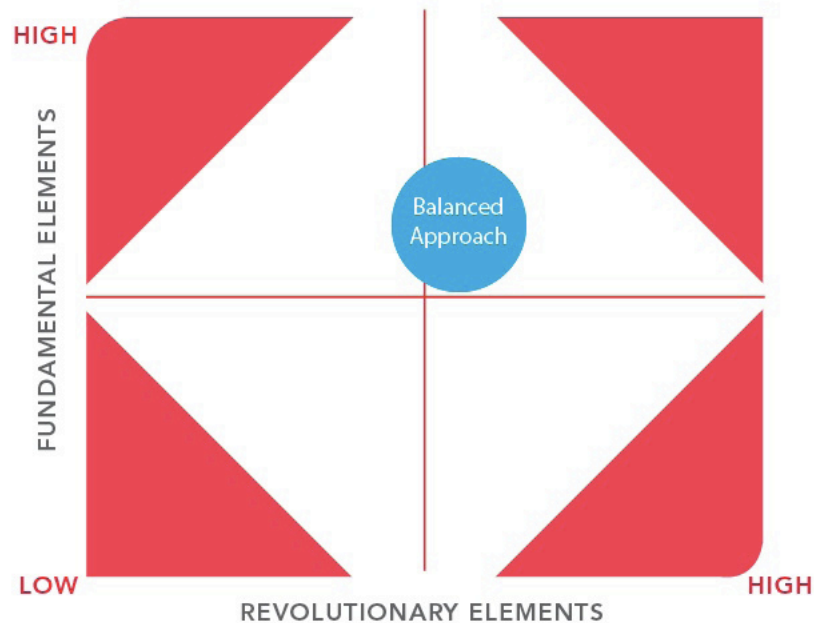
## THE IMPORTANCE OF A BALANCED APPROACH TO HEALTHCARE CONNECTIVITY

Given the uncertainty and evolving nature of the regulatory standards for healthcare IT, what is the best course of action now for healthcare providers that want to ensure their IT infrastructures are eligible for HITECH incentives beginning in 2011? Should they take a conservative approach and wait until there is greater regulatory definition and specificity in the compliance criteria before making significant changes to their IT infrastructure? Or, conversely, will they be ahead of the curve by assuming the regulatory standards and certification criteria will not deviate substantially over time and begin to aggressively modify their IT infrastructures?

The path chosen by healthcare providers will have a major impact on their eligibility to receive future incentive payments.

The best approach for transforming healthcare IT infrastructure requires striking a balance between making sure the fundamentals are in place now while simultaneously laying the groundwork for where infrastructure needs to be in five years. Simply put, a balanced yet forward-looking approach to healthcare connectivity is needed.

## APPROACHES TO HEALTHCARE CONNECTIVITY & IT INFRASTRUCTURE



As illustrated in the above graphic on healthcare connectivity, providers should try to achieve a model that positions them high on the fundamental elements axis and towards the center or slightly skewed to the right on the revolutionary elements axis. This will ensure a balanced approach – addressing all the fundamentals but augmented by a visionary perspective that facilitates future growth.

Healthcare providers should avoid an IT infrastructure strategy that includes elements that are marginal or too extreme in direction and functionality. Adopting technologies that are too far outside the mainstream or designed to do granular tasks will exact a toll as requirements escalate over time and interface standards evolve. Providers should strive for a stable infrastructure that is architecturally designed to provide flexibility and choice – attributes that will allow adaptability for future growth and standards compliance.

## CRITICAL AREAS OF HEALTHCARE CONNECTIVITY & IT INFRASTRUCTURE

Let's examine four critical areas that should be addressed by interface managers as they begin to modify their IT infrastructures to meet the criteria necessary to demonstrate meaningful use of a "certified" EHR system. These areas already represent major challenges in today's healthcare IT environment and will become even more acute with future requirements driven by meaningful use.

1. **Interfacing Growth.** Additional interfaces will be required to meet meaningful use requirements. How will these interfaces be developed and tested without substantial budget increases?
2. **Added Connectivity.** More connectivity will be required to external service providers and constituents such as referring physicians, pharmacies, and health information exchanges (HIEs). Essentially, the ability to extend

connectivity outside the four walls of your healthcare facility to the larger community.

3. **Healthcare Standards.** The importance of ensuring greater adaptability and flexibility will be required to navigate and support multiple standards – these include CCD and CCR, HL7 2.3.1 and HL7 2.5.1, but will also include additional standards driven by the regulatory efforts.
4. **Effective Management.** Effectively managing the integrated IT environment will become an even greater challenge given the overall expansion of interfaces and connectivity requirements.

**INTERFACING GROWTH.** Additional interfaces will be required to meet meaningful use requirements. This is an area that is often a bottleneck in the IT infrastructure for many healthcare facilities due to the significant time and costs associated with implementing and testing interfaces for various applications.

Historically, HL7 interfaces were created using point-to-point configurations that allowed communication between pairs of applications independent of other applications. Over time, point-to-point models proved to have several drawbacks: the significant costs and time for implementing initial interfaces, the costs for adding new or replacing existing applications, and costs associated with monitoring and maintaining the connections over the lifespan of the applications.

Point-to-point solutions are examples of technology solutions with limited or outdated functionality, incapable of providing advanced capabilities that will be required in future interfacing environments.

As technology progressed, many healthcare facilities moved to an interface engine model that reduces costs and time for the initial and subsequent interface implementations by leveraging data across applications. Data can be reused from a sending application by filtering or changing the data format through a mapping function so that it matches each individual receiving applications' requirements. This greatly reduces the number of individual endpoints required between applications and substantially reduces the costs of implementing an integrated system.

With this powerful innovation, adding and/or replacing existing application interfaces typically requires a fraction of the time and costs necessary in point-to-point models with new interfaces up and running in hours compared to days, weeks, or even months. Hard dollar costs can be reduced by as much as 20 to 30 percent in addition to the time savings.

This is a good example of a balanced approach to making infrastructure improvements – the use of data leveraging capabilities that provide real cost and time saving advantages while allowing the facility to meet the future requirements for new interface development driven by meaningful use.

Interface engines are more than simple connectivity devices – they are healthcare integration platforms supporting the diverse operations of a care delivery organization both internally and externally to the connected community. These sophisticated platforms can now manage application interfaces, optimize workflow, and provide critical data for operational decision making – advanced capabilities that drive major improvements in overall IT productivity and efficiency.

Interface engines can deliver more in today's environment while ensuring the right capabilities or platform is present for future requirements. Leveraging a modern interface engine within your IT infrastructure is part of a strategic plan that ensures a balanced approach.

**ADDED CONNECTIVITY.** More connectivity will be required to achieve reliable, secure and accurate information exchange among the healthcare constituencies. Traditionally data connectivity in the hospital environment was limited to internal communications within individual facilities. That has changed in the past decade with rapidly escalating requirements for connectivity outside the four walls of a healthcare organization to the larger community and remote locations.

## **THERE ARE A NUMBER OF FACTORS DRIVING ADDITIONAL CONNECTIVITY IN THE HEALTHCARE ENVIRONMENT:**

- Physician practices that require patient lab or test results in secure electronic forms
- Hospitals that need demographic data electronically
- Pharmacies that require information exchange for patient drug orders with caregivers
- Radiology practices that need to send patient reports to referring physicians electronically
- Participation in HIEs and Regional Health Information Organizations (RHIOs)

In addition, many healthcare organizations have strategic initiatives for growth that include creating new partnerships with other healthcare organizations and referring physicians, setting up satellite clinics, and establishing educational and training programs designed to meet the needs of the community.

A healthcare facility's IT infrastructure should be capable of meeting the demands for connectivity to trading partners throughout the community – potentially hundreds or thousands of remote sites or EMR systems. Important considerations here are greater outreach into the physician community using technology that is easily scalable and minimizes costs for establishing new partnerships. Federal mandates such as meaningful use and state regulations will also drive increasing connectivity requirements towards a connected community of healthcare providers.

The latest community exchange systems are designed to efficiently and securely expand the interchange of patient data beyond the hospital firewalls and into the larger community. These community exchange systems are platforms for the efficient, accurate communication of healthcare information through secure web services transmitting data between remote points of care or EMR applications and a centrally located system. Superior to older technologies using TCP/IP connections through VPNs, these systems are designed with simple-to-use interfaces providing centralized monitoring, proactive trouble shooting, and quick setup for adding new clients.

These platforms provide full message processing, mapping, parsing, testing, and monitoring. Support is included for all data types including HL7 and XML messages, as well as continuity of care documents or records (CCD/CCR) and enables interoperability between all systems. All these capabilities serve to create a robust interfacing environment that reduces deployment costs, eases the burden on the support staff, and meets increased demand for integration in the care community.

The adoption of community exchange systems is another example of a balanced approach to infrastructure design – selecting technology that delivers proven technological innovation designed to support future growth and connectivity demands with lower total costs of ownership.

**HEALTHCARE STANDARDS.** More adaptability and flexibility is essential for supporting an environment with existing multiple standards and the new standards coming as a result of regulatory and compliance efforts. Today's common interface standards include both EHR integration and EMR vendor data specifications: all versions of HL7 (including HL7 2.3.1 and HL7 2.5.1), HL7 Clinical Document Architecture (CDA), HL7 Continuity of Care Document (CCD), Continuity of Care Record (CCR), or X12, NCPDP, etc. Healthcare interface managers are already faced with navigating a complex environment of interface standards in advance of the new, emerging standards.

Given the growing need for standards compliance, what can interface managers do to ensure their IT infrastructures are up to the task now and well-positioned as new standards emerge?

Interface engines offer a number of capabilities that reduce interface development cycle times including the use of menu-driven logical builds in the development process. Using a test-as-you-develop approach to interface development delivers high quality interfaces within hours versus the days or months required with older solutions.

This approach allows interface managers to meet internal data exchange requirements as well as those driven by HITECH and meaningful use. The interface quality is improved by checking conformance against HL7 and other standards as well as user-defined specifications. This is far more efficient and powerful than older methods that use programming languages specific to each application interface.

As mentioned in the previous section on Interfacing Growth, a major advantage of interface engines is their ability to act as middleware to leverage one application interface to multiple applications as needed, resulting in significant time and cost savings. The interface engine reformats the data by using a map to translate the data into the standards formats (HL7, CDA/CDR, vendor specific) required by the receiving applications. This feature greatly reduces the number of endpoints required for communications between applications and minimizes the overall costs for creating an integrated system. This illustrates the flexibility and adaptability of modern interface engines – a prime example of advanced technology delivering value today, and capable of meeting the demands of an increasingly complex standards environment in the future.

## **KEY BENEFITS AND ADVANTAGES OF THIS FLEXIBILITY AND ADAPTABILITY INCLUDE:**

- Use of test-as-you-develop approach to interface development delivers high quality, standards compliant interfaces in dramatically reduced cycle times
- Streamlined process for building, testing, and deploying new patient data exchanges
- Standards leverage – meeting multiple healthcare standards through a single platform, delivering time and cost savings
- Rapid deployment of new application interfaces driven by emerging regulatory standards

**EFFECTIVE MANAGEMENT.** Managing the integrated IT environment will be even more challenging as new applications and data standards drive additional interface requirements, often without additional budget allocations. Older healthcare IT systems were typically comprised of discrete components designed to perform specific functions – not to provide comprehensive system-wide management.

In the current and future healthcare environment, it's essential that interface managers have the ability to centrally manage their connected care community.

Today's interface engines provide the necessary monitoring of all connections from a centralized location. These monitoring capabilities include the ability to quickly view the state of all connections, view detailed information about each connection, and create alerts when problems arise. Unlike older healthcare IT systems, interface engines are immediately aware when connections fail. The ability to instantly gain a centralized view of all connections and their status allows the interface support team to respond and quickly resolve problems. This, in turn, has a major impact on maintaining high connection availability, ensuring that physicians receive patient data in a timely manner.

These systems have the ability to provide both proactive alerting and configurable alerts for highly critical application interfaces. Alerts can be set to notify users when issues occur on connections that may have a negative impact on the system. These alerts are visible on the monitoring window and can be configured to send an email to designated support staff that may not be actively monitoring the system.

Another important new role performed by interface engines is providing operational views of healthcare facility operations since the majority, if not all data flow, go through these systems.

Interface engines have the ability to capture and store data, and then present it graphically to decision makers who use it to gain insights about facility operations. These systems provide multidimensional views of healthcare operations and have the capability to drill several layers deep into the data to gain understanding of workflows or departmental activities. Key metrics and critical information are essential for decision makers evaluating options for improved patient care and facility operations.

A balanced approach – focusing on the fundamentals of managing an integrated environment while providing leverage for new, expanding requirements – is essential. If there is a potentially overlooked area of the challenges ahead, it is in the management of the expanded connected environment. Close attention needs to be paid to this dimension.

## **MODERN INTERFACE ENGINES AND THE CONNECTED HEALTHCARE IT ENVIRONMENT**

Healthcare providers are currently considering their options for meeting eligibility requirements for the announced healthcare initiatives included in the American Recovery Act of 2009 and related acts and provisions such as HITECH, meaningful use and the ONC interim rule IFR covering standards and certifications of EHRs.

Dr. Blumenthal is providing updates and commentary on the unfolding healthcare reform process and advises healthcare providers to assess and evaluate how their organizations can increase efficiencies and quality of care through the use of EHR systems. He stresses the importance of the exchange of health information rather than simply the adoption of technology as the ONC reviews input from the public and a variety of advisory committees as they create the future EHR incentive programs.

Healthcare providers must decide whether to wait until regulatory standards are more fully defined or assume that emerging standards will not deviate greatly from their current versions and begin to make changes to their infrastructure.

The best approach for healthcare providers is one that balances core fundamentals with system architectures that are designed for flexibility and adaptability – attributes that are a bit on the revolutionary side that promote future growth with reduced costs and resources. Technology that is limited in capability, scalability, or incompatible with other mainstream healthcare IT technologies should be avoided.

## **FOUR CRITICAL AREAS THAT ARE CENTRAL TO MEETING THE CRITERIA NECESSARY TO DEMONSTRATE MEANINGFUL USE INCLUDE:**

1. **Interfacing growth** - the cost effective development, testing, and deployment of additional interfaces
2. **Added connectivity** – extending beyond the hospital to service providers and constituents in the larger community
3. **Healthcare standards** - ensuring greater adaptability and flexibility for the interfacing environment today and for future requirements driven by emerging standards
4. **Effective management** – meeting the challenges of managing an integrated IT environment that is increasingly complex due to the previous three driving forces

Modern interface engines are designed as healthcare integration platforms that perform a range of functions within the “four walls” and to the external partners of a facility. New application interfaces can be developed, tested, deployed and monitored in a fraction of the time and avoids costs required for point-to-point solutions due to advanced data leveraging capabilities.

Community exchange systems as extensions of interface engines are designed to efficiently and securely expand the exchange of patient data beyond the hospital firewalls and into the larger community through secure web services. These modern healthcare middleware systems are designed with the flexibility and adaptability to support today’s multiple standards and easily adapt to the new standards coming as a result of HITECH and meaningful use.

Underlying this approach requires a comprehensive, facility-wide monitoring of all connections from a centralized location allowing the interface and/or IT support team to respond quickly for problem resolution.

Healthcare IT will be undergoing significant changes with the coming regulatory standards that will transform our health system into a nationwide electronic health information system. To adapt to these changes, healthcare providers should strive for a balanced approach in updating their IT infrastructures – one that covers all fundamental operations and yet embraces the architectural flexibility and adaptability essential for future success.

## **ABOUT COREPOINT HEALTH**

Corepoint Health has the healthcare IT experience and strength to deliver a dramatically simplified approach to internal and external data integration and health information exchange for hospitals, radiology centers, laboratories, and clinics. Our next generation software solutions are transformational and will streamline your IT environment, provide a fast track to achieving your interoperability goals, and create operational leverage within your organization. Corepoint Health’s solutions achieve a needed balance of being both intuitive and sophisticated while delivering solid functionality and performance.

At Corepoint Health, we back our proven solutions with proactive, responsive customer support, service, and training. You will experience a truly collaborative approach in our services and support. The Corepoint Health difference will enhance the way you approach integrated healthcare, streamlined workflows, and optimized operations.

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