Issue Brief:

Key Components of a Successful HIE Strategy

Background

What is the best way to build a health information exchange (HIE)? Answering that question is the focus of communities and states, hospitals, health systems, and physicians across the country in the wake of the American Recovery and Reinvestment Act of 2009. ARRA is offering providers across the country incentives for adopting electronic health records (EHRs) to improve healthcare quality, safety, and efficiency while reducing costs.

Providers must rapidly demonstrate "meaningful use" of health information technology to qualify for federal stimulus funds. The ability to electronically exchange health information – between providers and from providers to patients – is an essential requirement of meaningful use.

ARRA funding will go a long way to stimulate HIE growth, but without a rational, workable, and prudent strategy, the money may not be put to optimal use. And once the funding is gone, individual physicians and communities may not have advanced as far as hoped for or needed.

A strong, logical HIE strategy is paramount. This issue brief discusses an HIE deployment approach that enables physicians, hospitals, health systems, communities, and states to rapidly and cost effectively exchange health information and coordinate care. The approach builds a solid exchange foundation on which subsequent functionality can be added according to specific needs and timelines. The brief also outlines technology advances that support this approach.

The five key components of a strong HIE strategy are as follows:

1. An incremental, bottom-up deployment approach
2. Standards-based interoperability
3. Support for care collaboration and coordination
4. Coherence
5. Flexible and adaptable technology

1. An Incremental, Bottom-up Deployment Approach

An incremental, bottom-up approach to deploying HIE is the most effective way to produce both immediate and lasting value in the community. The bottom-up approach involves first connecting hospitals, physician practices and ancillary service providers (such as reference labs and imaging centers) at a local level, as opposed to a top-down approach that attempts to connect all possible stakeholders at once.

Importantly, this incremental approach adapts to meet the needs of any HIE initiative – whether the entity is a hospital looking to electronically exchange health information from the acute care setting to ambulatory practices or an established health information organization (HIO) seeking to enable care coordination among multiple healthcare entities across a community or state.

The first step is to engage healthcare providers where care is delivered – connecting disparate information systems and automating clinical messaging and workflow to create a solid (and well-adopted) HIE foundation. The HIE can then build upon that foundation and provide greater and greater value over time by adding functionality and services.

An important aspect of this first step is automating core healthcare transactions – ordering and resulting tests, referring patients between providers, and coordinating information among care teams. In accomplishing this critical step, the HIE foundation connects core hospital systems (e.g., lab, radiology, transcription, ADT, emergency department), electronic health records (EHRs), practice management systems, labs, and other entities in such a way that information flows securely across the HIE infrastructure.

Automating core transactions:

- Creates immediate value for providers – e.g., improved information quality and time and money savings – leading to user satisfaction and high early-adoption rates.
- Enables a lower-cost and more rapidly deployable approach than common methods of building an HIE, which require extensive and expensive infrastructure to accomplish the same goal.
- Facilitates the meaningful exchange of health information between hospitals and physician practices that have an EHR and those that have yet to adopt an EHR.

As more and more connections come online and the HIE grows from the bottom up, the process of deploying additional functionality onto this foundation can begin including:

- Aggregating and staging health information for community use.
- Applying identity management services to ensure the correct longitudinal health record for a patient is identified.
- Implementing a record locator service (RLS) to access data from all participating data repositories across the community.
- Establishing community health records and registries for information access and analysis.
- Deploying gateway services to exchange information with external networks like the NHIN, other HIEs and public health agencies.

The bottom-up approach – which focuses first on system integration and exchange at a local level with local systems in use by providers today – has proven successful in a wide range of environments. It delivers significantly more value in a shorter timeframe and at a lower cost than traditional "build it and they shall come" models of HIE deployment that focus first on aggregating, standardizing and normalizing data in a centralized manner. The old "one size fits all" approach to HIE has proven to be much less effective and cost efficient.

2. Standards-based Interoperability

It is imperative that the HIE strategy address the disparity in information systems across care locations today while ensuring future interoperability and security as the landscape evolves over time. Therefore another component of a strong HIE strategy is interoperability based on standards.

The reality is that today's environment does not adhere to any one specific standard or approach – many methods are used and even common "standards" such as HL7 have several flavors.

The HIE platform must adapt and interoperate with a wide array of products and solutions in use by providers today, including core hospital systems, many different ambulatory EHRs and practice management systems, and local devices in physician practices such as EKGs, printers and other medical devices – to name just a few.

In addition, as the local HIE capabilities expand, interaction with other private and public HIEs becomes essential to achieve broader and deeper care collaboration across a region, state, and the nation. The HIE solution must be "future proof," complying with all current privacy, security and communication standards while still being open and adaptable to future standards as they evolve.

3. Support for Care Collaboration and Coordination

In today's predominantly paper-based world of healthcare – particularly in ambulatory clinics and physician practices where the majority of healthcare is delivered – a successful HIE strategy needs to reach beyond the basic exchange and access of information to support efficient care coordination and collaboration among providers.

Providers need the ability to share and synchronize information about specific patients through peer-to-peer communications in a highly secure "professional social network." Authorized providers involved in delivering care to a patient need a 360° perspective on a patient's past and current care, thereby reducing the potential for medical errors, eliminating redundant tests and procedures, improving provider-to-provider coordination, streamlining workflow, improving patient and provider satisfaction, and cutting down on administrative inefficiencies.

More:

It is this level of patient-centered care collaboration and coordination among providers who have established a care relationship with the patient that is the key to truly meaningful health information exchange and use of electronic health records. It is also key to improving health across the entire community as the HIE builds out to create a complete and accurate community health record and up-to-date patient registries and related entities.

4. Coherence

What makes such ideal collaboration possible in the real world of healthcare is coherence – connecting information, services, and people together in a meaningful way to achieve collaboration and offer a 360° view of patient health. Technology advances are driving a revolutionary convergence of clinical, financial, and social networks to create a new healthcare model called Health 4.0 that makes patient-centered care coordination a reality.

Health 4.0 bridges systems, networks and people to create a coherent care model that keeps the patient in focus at all times. It connects cloud services; bricks-and-mortar clinical, administrative, and financial networks; local applications such as PMSs and EMRs; and the community of people that care for the patient.

Meaningful use set the stage for Health 4.0 by expanding the definition of an EHR to include modular applications designed to create, maintain, and exchange standardized data sets. Such an EHR model can be brought to market at a price point well below most current models – giving a whole new population of providers access to the product. Open platforms that run modular applications and leverage cloud services to bridge brick and mortar networks, effectively create a healthcare "operating system."

A Health 4.0 operating system makes a "virtual IDN" possible. Historically, a full bricks-and-mortar IDN requires that everyone be under the same ownership. The Health 4.0 model enables organizations and affiliated physicians that work together but are not part of the same entity to collaborate on a platform and create a high level of coordinated care, much like what happens in the top IDNs across the United States.

With the Health 4.0 operating system, a new type of coherent EHR emerges. Of particular importance to this coherence is a technical concept called the linked patient object that brings online care team collaboration to a new level. This network-based method of storing and sharing information enables entities across a community to manage patient data in a private, social network consisting of the patient, primary care provider, specialists, hospitals, payers, and others focused on care delivery. The object collects and distributes information across the care team to ensure that everyone has a coherent view of the patient and understands the patient's health status at all times.

The Health 4.0 operating system also becomes a natural means of exchanging further information among care team members, including orders, referrals, and clinical summaries. The operating system is connected to local systems, external clinical and financial networks, and an unlimited amount of further services and resources.

Patients, too, can be active participants in the Health 4.0 paradigm – a necessary participation for true coherence to be achieved. By downloading a distributed client onto their home PC or mobile device, they can easily update the care team on their status and progress. The client captures local data (for example, from monitoring equipment) and automatically sends it to the providers managing the patient's care.

The first Health 4.0 platform is called iNexx, from Medicity.

5. Flexible and Adaptable Technology

A successful HIE strategy must encompass technology that delivers the functionality necessary to facilitate patient-centered care collaboration. The technology must enable a flexible foundation – electronically connecting providers regardless of their level of technology sophistication across disparate care locations and information systems so that health information flows securely.

Essential to the success of the HIE project is the ability to incrementally add functionality as needed to achieve goals over time. Once the foundation is established and health information is flowing throughout the community, the functionality of the HIE initiative can be expanded – deploying the right mix of applications and cloud services to meet cross-organizational and community goals.

Consider the need for enhanced HIE services outlined in relation to several use cases:

USE CASE	ESSENTIAL HIE FUNCTIONALTIY
A patient presents in a hospital emergency department (ED) and no information resides within the core hospital systems. An ED physician needs to query the community to locate any previous medical history or encounters with other healthcare providers in the area or throughout the state.	Aggregate patient information from across the community to create longitudinal health records. Provide secure access to the information through an easy-to-use, intuitive end-user application.
A community is hit with a flu outbreak. Hospitals and physicians in the area need to quickly identify populations of patients that have been diagnosed with the flu or presented with a flu-related symptom across any care location in the community. Once these cases are identified, they need to be reported to the state public health department and the CDC.	Establish gateways to exchange information with other HIEs, registries, government organizations, and public health agencies based on communication standards and protocols.
Providers need to report quality metrics to qualify for meaningful use.	Apply analytic services to turn the raw aggregated data into information for measuring outcomes and improving performance.

These use cases represent just a sample of the functionality that HIE technology must facilitate. Use cases and functionality needs are evolving and will continue to evolve in the dynamic healthcare environment. Technology solutions must be flexible and adaptable to meet both today's and tomorrow's needs.

Summary

An effective and efficient HIE strategy takes into account the needs of providers at a local level and offers functionality to facilitate care coordination from the bottom up until local, community, state, and national HIE requirements are met.

Propelled by ARRA and meaningful use, advances in technology are poised to usher in a wave of innovations. The technology infrastructure chosen to drive an HIE initiative must therefore be adaptable, scalable, and innovative to accommodate the dynamic and evolving healthcare landscape.

The definitive piece in the strategy is selecting technology that enables providers to realize Health 4.0 – always keeping the patient in focus and empowering all authorized providers to collaborate and coordinate care proactively. The technology must enable providers to meet meaningful use requirements today and prepare for new care delivery models, such as accountable care organizations (ACOs) and the patient-centered medical home, while also preparing for changing reimbursement guidelines as proposed by CMS. An effective HIE strategy should meet your needs now while simultaneously "future proofing" your organization and community for whatever tomorrow may bring. For more information on how to develop a successful HIE strategy, visit www.medicity.com.

MEDICITY

THE Standard for Meaningful HIE