The Top Five EHR Implementation and Integration Imperatives
How to Identify Them and Achieve Success

Introduction

Since the push to deploy electronic health records (EHRs) began in earnest with passage of the Health Information Technology for Economic and Clinical Health (HITECH) Act, health IT vendors have encountered and overcome many organizational and technical challenges to implement complex repositories of clinical and administrative data. This being the case, health systems seeking to implement EHR technology can learn valuable lessons from the experiences of early adopters.

For example, one essential first step before undertaking an EHR implementation is to establish the end goals, or “technology intention,” of the solution to be deployed. A consensus understanding both the specific EHR technology that is needed and what it is expected to accomplish should serve as a framework for the entire project.

Healthcare organizations that wish to achieve a successful implementation should be prepared to address the following five EHR integration imperatives:

- Secure organizational buy-in;
- Document unique organizational data and workflow requirements;
- Connect disparate IT systems based on standardized data terminology;
- Map data sets to enable the exchange of health information; and
- Leverage customization capabilities.

Organizational Buy-in Sets the Stage for Success

Before executing an EHR implementation project, gaining buy-in across the organization is important. Despite the clinical and administrative benefits that have been realized by early EHR adopters, fear, uncertainty and doubt still exist throughout the industry with respect to the sustainable value of this technology.
Regardless of the degree of existing modernization, concerns around hardware/software costs, interoperability challenges, workflow disruptions and job security are constantly on the mind of all healthcare organizations—from senior executives down to end users. Accordingly, successful organizations are taking a bottom-up approach – rather than a top-down approach – to an EHR project as more often than not individuals further down the chain add valuable insight to the process.

It takes only a quick Google search to find the myriad of cautionary tales of failed EHR implementations based on the “force-feeding” strategy. These stories clearly show that organizational stakeholders often resist working with a system that was built without the benefit of their input. Relying solely on the direction of healthcare executives – who in many cases have long left behind the clinical trenches – may undermine an EHR deployment because the technology does not fit well into actual workflow. There is much to be gained by collaborating with end users who understand the day-to-day nuances attached to their particular workflows.

To avoid becoming a statistic in the annals of EHR deployment letdowns, organizations should appoint a visible leader to act as an EHR champion and change agent. This champion can then galvanize and engage individuals across all levels of the organization from the outset of the project. It’s crucial to effective change management.

These engaged stakeholders should have the authority to make decisions on behalf of the organization, and should receive hands-on access to applications so that they can provide real-world feedback on how well the solutions assimilate into their unique workflows. Empowered individuals within the organization then form part of a feedback loop that provides much-needed direction to the EHR integration process.

### Document Existing Data and Workflow Requirements

Once organizational buy-in for an EHR implementation project has been secured, the organization’s current data and workflow requirements should be analyzed. A shoehorn approach to EHR integration will force legacy data elements and workflows to fit the system—instead of customizing the system to accommodate existing parameters. It is rarely a good idea to request a standard “canned” workflow template from a vendor, as each organization’s data and workflow requirements are unique.

One caveat: Empower the staff and clinicians who actually do the work to map and redesign workflows, so that the EHR is built accordingly. To maximize the value of the EHR, during the analysis take into account workflow processes that may be introduced post-deployment.
The creation of detailed workflows for each administrative and clinical function will help guide selection of the system itself. A healthcare organization may choose to deploy a comprehensive EHR that has the capacity to support clinical specialty areas – such as behavioral health and oncology – but should be careful to avoid integrating solutions after the fact to avoid compatibility issues. Ideally, organizations should identify solutions needed up front and select a system that is capable of integrating and aligning with those solutions.

Achieve Interoperability through Standardized Data Terminology

The ultimate goal of widespread EHR adoption is interoperability. Taking it a step further, the healthcare industry recognizes that achieving interoperability – the capacity to connect disparate EHR systems based on standardized data terminology – is essential to the success of electronic health information exchange. Leveraging an integrated EHR with open standards is another way for organizations to meet Stage Two of Meaningful Use. Upping the ante is the fact that Stage Two of Meaningful Use focuses on electronic data exchange requirements that healthcare organizations must meet to qualify for government incentive funds and avoid penalties. Stage Three of Meaningful Use with an emphasis on new models of care, clinical decision support, national health initiatives and universally-adoptable data standards may push this even further.

Disparate EHR systems that cannot communicate using a common language make the seamless exchange of clinical information difficult, if not impossible. If health data cannot be shared electronically, the EHR simply becomes a standalone technology capable of talking only to the sum of its parts. This scenario defeats the overarching purpose of EHR deployment, which is to enhance patient care and streamline efficiencies through the exchange of data among decoupled systems.

Look for Experience Working with Multiple Data Standards

To achieve interoperability, EHR data systems require a set of common terms in order to communicate. Several ongoing initiatives are under way for adopting data terminology standards within the industry, with the federal side being a good example of a sector experiencing this push for interoperability and open standards. These include the Direct Project, which focuses on the technical standards and services necessary to securely share data, and the EHR/HIE Interoperability Workgroup, an organization founded with the objective of creating a uniform set of standards to increase the adoption of EHR systems and HIE services. While some inroads toward achieving standards-based interoperability for EHRs exist, industry-wide adoption of a completely uniform set of standards has yet to occur.
Take, for example, a universal terminology standard like HL7. It defines a number of terminology standards that enable disparate EHR systems to communicate with each other. Two versions of HL7 – 2.3.1 and 2.5.1 – generally are recognized by the industry as the go-to standards for meeting certain EHR certification requirements. The compelling new FHIR standards emerging from the same HL7 group have the potential to revolutionize the capability to exchange interoperable data using a realized “virtual patient record.” In terms of web and mobile access to EHR services, HTTP-based approaches to service-oriented architecture (SOA), like SOAP-based and JSON/REST-based APIs, provides yet another means for achieving interoperable and integrative services.

Healthcare organizations should expect vendors to have experience working with these and other emerging standards in the context of an integrated EHR.

Map Data Sets to Ensure Health Information Exchange

Data mapping involves “matching” elements between a source system and a target system. For example, two separate databases might contain the same elements under different names in each system—such as “hypertension” vs. “htn.” Data mapping enables these two databases to connect and communicate, and is a critical component of EHR interoperability.

In order for data mapping to be performed accurately on the front end, a vendor must fully understand how the relevant data is used by the organization. This means understanding all data touch points within existing systems, in order to fully recognize the implications of each potential mapping change.

Mapping and normalizing data provides the ability to integrate disparate systems and query information as a single data set. As a result, a “map and gap analysis” to establish specific data requirements for an EHR ultimately provides valuable insight regarding the organization’s workflows, as well as any shortfalls that the proposed EHR must address.

Leverage Customization Capabilities

Collaboration is critical to ensuring a successful EHR implementation. A healthcare organization must be able to clearly articulate the overall business rules and workflows that a proposed EHR solution will be required to accommodate. On the other hand, vendors should be able to demonstrate an understanding of the organization’s needs by proposing a solution that best fits its requirements.

In short, an EHR solution should fit seamlessly into the organization’s business rules and regulatory requirements—not the other way around. As part of the vetting process, healthcare
organizations must ensure that vendors have the resources available to make changes to software code that mirror the organization’s needs. For example, coders may require the ability to design templates based on the organization’s specific workflows. Unfortunately, however, not every vendor is capable of making customized changes to its EHR software.

By sticking closely to the "technology intention" framework determined at the outset of the EHR implementation process, healthcare organizations can play a proactive role in directing the design of a solution that best matches its needs. An EHR is not a "one size fits all" technology, and a healthcare organization should pass on any vendor that insists standard templates will work regardless of the organization’s unique desires and goals.

On the other hand, the challenges of re-engineering efforts around the modernization of a first-generation EHR implementation are both compounded and different. Although the initial hurdles of modernization and the transition from paper-based workflows and processes to digitally-supported equivalents has already been achieved, the task of delivering meaningful updates without impacting existing EHR-supported processes may be even more complex than those faced during the initial EHR implementation. Furthermore, thoughtful reconstruction of now-legacy APIs – if present at all – within the existing EHR could potentially disrupt workflows that have grown dependent on the easy exchange and delivery of existing data and services.

Deploy an EHR that’s Right for You

EHRs are here to stay. Whether an organization chooses to deploy an EHR to comply with healthcare reform legislation, to remain operationally competitive, or both, it is critical at the beginning of the process to develop a clear plan that includes input from individuals across the organization.

Conduct interviews and ask probing questions. Look for a vendor that understands the EHR as a holistic system, and that can actually implement the system it has designed. When healthcare organizations commit to addressing these five integration imperatives and following a strategic “technology intention” framework, they will have all the tools in place to ensure a successful EHR implementation.