WHAT TO EXPECT FROM YOUR HIE

RelayHealth eHEALTH INITIATIVE

INTRODUCTION

Federal funding under the Health Information Technology for Economic and Clinical Health Act (HITECH) has been spurred the burgeoning rates of health information technology adoption across the United States. Incentive payments have helped providers overcome the steep costs of implementing electronic health record and health information systems, which in turn have laid the groundwork for widespread electronic health information exchange (HIE). HIE holds the potential to radically transform care by ensuring that accurate and up-to-date information is available to providers at the point of care. However, some providers, hospitals, and health systems have been reluctant to integrate or adopt health IT systems capable of robust electronic data exchange due to financial, cultural, or competitive concerns. This paper describes the characteristics of successful enterprise HIE implementations and presents ten reasons why providers should participate in an HIE.

ATTRIBUTES OF SUCCESSFUL HEALTH INFORMATION EXCHANGE

Implementing an enterprise-wide health information exchange is no easy feat. Existing information systems must be redeveloped to interface with one another. Provider workflows will be fundamentally altered. Users must be trained to utilize the new tools at their disposal. Full implementation can take years to complete and cost millions of dollars. Even if these challenges are accounted for, an enterprise-wide exchange system may not ultimately function as planned. Successful HIE implementations share a number of key characteristics, such as creating interoperability between disparate systems, integrating with existing clinical workflows, providing a comprehensive patient record, and facilitating patient engagement. Without these characteristics in place, an enterprise-wide exchange may further deepen reluctance to adopt health IT and share patient information.

INTEROPERABILITY

Interoperability refers to the compatibility of disparate electronic health systems to exchange and utilize shared information. Pre-existing information and practice management systems are rarely designed to seamlessly communicate, particularly in larger health systems with multiple departments, specialties, practice areas, and service offerings. Many older systems were implemented in an era of siloed care, when records and results were delivered through more primitive telecommunications channels rather than through a shared health IT infrastructure. As such, much of the information contained in one system may not be readily transferable or understood by another.

Moreover, comprehensive records systems implemented in a hospital or ambulatory care setting are often different than the specialized products used by ancillary care providers such as labs or long-term care. While these disparate systems may share common standards and protocols, they are designed with specific clinical uses in mind and consequently offer distinct ways for providers to input patient data. Varied clinical vocabularies, content structures, coding schemas, and security protocols are all challenges that an enterprise-wide data exchange must overcome to deliver accurate patient information at the point of care.

WORKFLOW

Another key challenge that successful data exchange implementations must overcome is avoiding disruption of provider workflow. Providers develop specific routines to augment patient care and manage the many

competing demands of the clinical environment. Implementing a data exchange can challenge a traditional workflow as providers must learn to integrate new data feeds into their routine. Though an HIE solution often offers providers new care tools such as clinical decision support or analytics, providers must learn when to use these appropriately. Moreover, they will not want to exit existing practice management solutions to login to other platforms to take advantage of these tools. As such, successful HIE implementations must leverage existing systems whenever possible to minimize disruptions.

A successful health information exchange solution must be driven by a robust clinical integration engine to achieve interoperability and make use of legacy investments. The exchange platform must be able to translate disparate data feeds into a standardized format without sacrificing the meaning of the data. This process of aggregation and normalization requires a system capable of accurately identifying unique components of a patient's data and stitching them together without creating duplicate records due to discrepancies caused by variations in data elements or human error. To ease the burden on the provider, the data exchange platform should also offer flexible consent management, privacy, and security capabilities that are consistent with or augment existing policies.

COMMUNITY HEALTH RECORD

By integrating disparate systems, an enterprise health information exchange makes it possible to feed all of a patient's data into a comprehensive community health record. Lab and test results, imaging, care summaries, medication information, and other essential data elements are combined to create a complete picture of the patient which is accessible from all points of care. By aggregating data across care settings, comprehensive records enable a healthcare delivery organization to improve patient safety, cost containment, care quality, and operational efficiency afforded by clinical data exchange.

For example, aggregated patient records offer a powerful data source for enterprise-wide analysis. Analytic software can help administrators and clinicians identify bottlenecks in care, evaluate the health of an entire population of patients, stratify a population by risk for readmission, pinpoint the most appropriate or cost-effective treatment, target patients for personalized interventions, and more. Organizations interested in participating in new care models such as accountable care organizations, pay-for-performance initiatives, or patient-centered medical homes will require such functionalities to lower costs, manage populations, and coordinate care.

PATIENT ENGAGEMENT

Tools for patient engagement further enhance the power of a data exchange platform. Patient-centered care relies on patients to become accountable for their health and engaged in their ongoing care across the continuum, including disease prevention, intervention, and management. Many aspects of care are left in the patient's hands, such as medications, home monitoring, and preventive health. However, managing a disease can be a frightening and overwhelming prospect for a patient, which can lead to non-adherence or readmission.

Successful health information exchange strategies can empower patients through dashboards and messaging tools that enable patients to view their records, communicate problems to their provider, and learn more about their condition. When patients have access to their data, they can track their health to improve dis-

ease management or review their information to prevent medical errors caused by inaccuracies. Additionally, efficiencies resulting from health information exchange can improve a patient's experience within the health system. This can in turn foster increased patient loyalty and participation, leading to a virtuous cycle whereby patients collaborate with their providers to improve the quality of their care.

10 REASONS TO JOIN AN HIE

Providers can reap rewards for participating in a successful enterprise exchange typified by interoperable systems, minimal workflow interruptions, an accurate and comprehensive patient record, and an effective patient engagement strategy. The following are then things providers can expect from their enterprise HIE:

ACHIEVING MEANINGFUL USE

Many providers have elected to implement electronic health records to qualify for incentive payments under the Meaningful Use program. A number of the program's requirements can be facilitated by an enterprise data exchange platform. For example, data exchange can fulfill Stage 2 requirements of Meaningful Use such as incorporating lab results into an EHR, exchanging summary of care records, reporting to an immunization or disease registry, determining whether a patient has an advance directive, and communicating relevant health information to patients. Stage 3 is expected to increase the number and scope of requirements requiring information exchange.

FOSTERING PATIENT ENGAGEMENT

An enterprise data exchange serves as a powerful tool for putting information into the hands of patients via an accessible point such as an online portal or personal health record. Patients can use the information to become active participants in their own care, taking the steps necessary to monitor and manage their conditions. Health information exchange platforms can also offer informational and educational resources for patients to learn about the complex medical issues they face. Moreover, a health information exchange platform can improve the quality of care by offering patients the ability to communicate directly with their providers to share updates on their condition, append their medical record, and correct any errors. In fact, enterprise health information exchange implementation has been associated with increased patient-provider communication and patient satisfaction.[1]

POPULATION HEALTH ANALYSIS

An HIE can help translate actionable data into meaningful insights for care at the population level. Analytic tools can be applied to the aggregated care records from the HIE to identify gaps in care, provide evidence for the comparative effectiveness of various treatments, prospectively assess the risk that patients will develop a chronic condition, gauge service utilization and cost, compare provider performance, and predict future trends. Population-level data analysis is an essential component of pay-for-performance programs and accountable care organizations, which reimburse for services based on improvements in the overall health of a patient panel.

[1] Vest JR, Miller TR. The association between health information exchange and measures of patient satisfaction." *Applied Clinical Informatics*. 2011 Nov 2;2(4):447-59.

IMPROVED CARE COORDINATION

With a comprehensive patient record available at the point of care, providers no longer have to worry about requesting information about other patient encounters or not knowing how, where, or when a patient was treated within the healthcare system. Access to information can improve transitions of care across the continuum by offering a complete view of a patient's medical history, empowering providers to make informed treatment decisions and improve the overall quality of care provided as a result.[2]

REDUCTIONS IN UNNECESSARY TREATMENT

Integrating diagnostic, imaging, and screening results into a patient's record allows providers to view the outcomes of previous tests and avoid ordering duplicates. Access to an HIE has been shown to reduce the number of laboratory tests ordered on behalf of patients who have been tested previously by nearly 50 percent.[3] Reducing the number of unnecessary tests can generate savings by avoiding the costs of testing and time lost as a result of analyzing and sharing the results.

IMPROVED PATIENT SAFETY

Results delivery via a health information exchange can also help providers prevent patient safety issues such as medication errors. Access to the community health record enables providers to view an accurate list of a patient's medications without relying on patient-reported information. Data exchange systems may also offer capabilities for alerting providers when they have prescribed a treatment with contraindications to the patient's current regimen. Finally, by automatically aggregating data, HIEs can reduce the need for manual data entry and the risk of human error.

QUALITY REPORTING

Many value-based initiatives that have emerged out of health reform require participating organizations to submit quality measures to illustrate progress on outcomes. Quality reporting typically relies on claims data, which can take weeks to process and lack important details. By drawing directly from clinical patient records, an enterprise health information exchange platform can record and aggregate quality measures in real-time. Quality reports can often be submitted to the receiving entity through the data exchange as well.

PUBLIC HEALTH REPORTING

Likewise, enterprise health information exchange can facilitate connectivity to public health systems for public health reporting and surveillance. An enterprise platform can automatically transmit information about notifiable events and syndromic surveillance to public health authorities, and submit data to disease and immunization registries. By integrating information from multiple sources, an HIE can mitigate deficiencies of a single source and improve the overall completeness of the data being transmitted.[4] Healthcare organizations can use the information to monitor disease prevalence within their patient population and target interventions when necessary.

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[2] Pevnick JM, Claver M, Dobalian A, et al. "Provider stakeholders' perceived benefit from a nascent health information exchange: a qualitative analysis." *Journal of Medical Systems*. 2012 Apr;36(2):601-13.

[3] Hebel E, Middleton B, Shubina M, Turchin A. "Bridging the chasm: effect of health information exchange on volume of laboratory testing." *Archives of Internal Medicine*. 2012 Mar 26;172(6):517-9.

[4] Dixon BE, McGowan JJ, Grannis SJ. "Electronic laboratory data quality and the value of a health information exchange to support public health reporting processes." *AMIA Annual Symposium Proceedings*. 2011:322-30.

IMPROVE ADMINISTRATIVE EFFICIENCY

Health information exchange can optimize efficiency by simplifying administrative functions. For instance, a robust health information exchange platform can automate orders, registration, referrals, and prescribing. Reducing paperwork can free up valuable time for providers to interact with patients. Administrators can also analyze HIE data to determine service overuse, high cost but less effective interventions, supply chain efficiencies, and other potential areas for cost-savings.

PROTECT HEALTH INFORMATION

A robust enterprise exchange helps providers maintain the security of protected health information. Patient and provider matching and authentication ensure that patient records can only be accessed by authorized parties. Auditing tools track who has accessed a patient's data, providing further assurance that information isn't viewed or shared without authorization. An enterprise exchange also keeps protected data under local management.

CONCLUSION

Though a powerful tool for improving the quality of care, increasing administrative efficiency, and reducing overall costs, health information exchange remains a challenge for many healthcare delivery organizations. Organizations can benefit from an HIE platform capable of integrating disparate clinical and administrative systems to create a shared community health record, augmenting provider workflow while minimizing disruptions, and providing tools for patient engagement. Benefits include meeting benchmarks for meaningful use, providing data for population health analysis, enabling patients to participate in their care, reducing administrative and clinical costs, and improving patient safety, among others. As providers journey further down the path laid out by health reform, health information exchange will only grow more important for achieving the goal of a higher quality, lower cost healthcare system.