IHE SUCCESS STORY

KeyHIE® builds an industry-leading connected community of care with GE Healthcare's eHealth Solutions

KeyHIE
Keystone Health Information Exchange

SUCCESS SNAPSHOT
Keystone Health Information Exchange
Northeast and Central Pennsylvania

CHALLENGE:

- Accessing critical patient information at the point of care in emergency departments
- Connecting patient encounters in a fragmented healthcare system where information is kept in silos
- Reducing surging healthcare costs and improving efficiencies

SOLUTION:
GE Healthcare's eHealth Information Exchange, including an IHE compliant document registry and repository with web-based clinical portal, covers seven actively participating hospitals and physician practices serving nearly 3 million patients.

STANDARDS-BASED PROFILES IMPLEMENTED:
The following IHE Profiles: PIX, XDS, XDS-SD, ATNA, BPPC, CT, XD-LAB

RESULTS:

- Providing rapid and secure access to previously unavailable patient information in Emergency Departments
- Publishing discharge summaries, history & physical documents and radiology reports within the HIE
- Improving quality of care and care coordination through increased information flow and transparency

BACKGROUND:
Connecting central Pennsylvania healthcare communities

Keystone Health Information Exchange

Keystone Health Information Exchange (KeyHIE®) is a growing network of healthcare providers in 31 counties of central and northeast Pennsylvania, serving nearly 3 million patients, many in Medically Underserved Areas. Members of the KeyHIE governance group have designed their Health Information Exchange (HIE) to roll out in phases, growing the system's value and overall adoption over time.

Geisinger Health System, an integrated delivery network recognized for its innovative use of healthcare IT-supported care coordination, is an original and active participant in KeyHIE. Currently, KeyHIE interconnects Geisinger and five other regional hospitals – Community Medical Center, Evangelical Community Hospital, Shamokin Area Community Hospital, Mid-Valley Hospital and Moses Taylor Hospital – for a total of seven facilities.

Geisinger was awarded a $2.3 million grant from the Agency for Healthcare Research and Quality (AHRQ) to extend the KeyHIE-connected community to additional regional hospitals, long-term care facilities, home health organizations, and physician practices. In addition to attracting stakeholders, the five-year AHRQ grant is helping to make new clinical applications and document types available within the HIE. The grant is intended to measure the value of the HIE and user adoption.

Leveraging KeyHIE's infrastructure is a key element in Geisinger's $16 million Keystone Beacon Community project, which aims to extend the HIT-driven coordinated care model to more constituents. Case managers access KeyHIE for patient information and, as a result, reduce the time they spend collecting critical patient information locked in different systems. This is a significant enhancement from their current mode of communication, which occurs via fax, email, voicemail and postal service.

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CHALLENGE:

Making critical information available at Emergency Departments' point of care

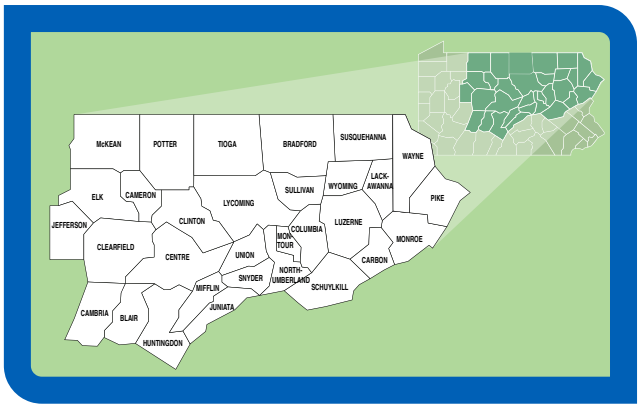
KeyHIE's first phase goal was to provide critical patient information to local Emergency Department (ED) teams at the point of care – the right information at the right time and place. The ED is often the place where the least information is available about a patient, and speed is a factor in providing the best treatment.

Faced with disparate EMR systems that supported participating hospitals' emergency departments, it was clear that point-to-point integrations were not going to achieve greater clinical data transparency and sharing.

KeyHIE's initial research identified that care providers needed access to history and physicals, problems, medications and allergies, and discharge summaries. KeyHIE needed a highly scalable solution; one that was open and based on industry standards, rather than a proprietary approach that required all participating organizations to converge on a single technology. KeyHIE also wanted a system that would support both unstructured, text-based documents as well as structured documents. KeyHIE stakeholders chose to leverage existing systems and data sources in place, work incrementally, and adopt national models and standards.

SOLUTION:

Implementing a flexible, scalable solution to meet current and future needs



KeyHIE selected GE Healthcare's eHealth Solutions to power their community Health Information Exchange. Today, KeyHIE has nearly 3 million patients in the Master Patient Index (MPI) across the seven active hospitals.

GE Healthcare's standards-based, scalable solution supports KeyHIE's significant expansion plans to connect additional hospitals, skilled nursing facilities, long-term care settings, affiliated physician practices of various sizes, and even home health providers.

GE Healthcare's eHealth Information Exchange allows organizations to leverage existing HIT investments to improve care quality by connecting disparate health information systems to provide a comprehensive patient-centric view of data. With GE's solution, physicians with certified EMRs are able to view HIE data within their EMR workflow, and in some cases import data directly into their EMR. In addition, GE's solution provides a web-based clinical dashboard, linking patient encounters from multiple EHR's and allowing providers who do not have an EHR to access data from external organizations.

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INTEROPERABILITY IN ACTION:
Standards and Profiles

Using GE Healthcare's Information Exchange, KeyHIE adheres to IHE standards, which are thoroughly tested in North American Connect-a-thons, including the following standards:

- PIX profile: an IHE standard for cross-referencing patient IDs across systems;
- Basic Patient Privacy Content (BPPC): an IHE standard to mechanism to record the patient privacy consent;
- Audit Trail and Node Authentication (ATNA): an IHE standard to secure access control via secure nodes and request and retrieve audit logs from external communities;
- Consistent Time (CT): an IHE standard to coordinate time across network systems;
- Cross enterprise document sharing (XDS): an IHE standard to register, store and query/retrieve patient-centric documents located within the HIE
- Cross enterprise document sharing-scanned documents (XDS-SD): an IHE standard for sharing scanned documents located within the local HIE community such as discharge summaries, history & physical documents and radiology reports.
- XD-LAB: an IHE standard for exchanging laboratory results

RESULTS & BENEFITS:
Building a connected community of care to increase efficiencies and improve care coordination

KeyHIE's implementation strategy was to begin sharing information using low cost, high value patient information then continue to build incrementally. The initial focus of the Health Information Exchange was to provide rapid and secure access to patient information at the point of care in Emergency Departments. Through the HIE, physicians now see patients problems, allergies, medications, lab results, history and physical documents, as well as discharge summaries and radiology reports.

Early research to validate a long-term business case for HIEs looked at radiology reports and emergency department visits.

- Studies show that 20% of hospital radiology tests are duplicates[1]. By leveraging shared information in KeyHIE to reduce half of the current duplicate radiology tests, KeyHIE's potential savings is over $5M annually
- Potential annual savings from more efficient ED processing is estimated to be as much as $1.6M based on studies performed in Indianapolis[2]

Linking inpatient hospitalization encounters to outpatient care providers by publishing discharge summaries to the HIE, KeyHIE has reduced the time delay and potential for miscommunication that occurs when hospitals provide only paper discharge summaries.

The second phase of the KeyHIE project aims to take even greater strides in care coordination with the implementation of a medical home case management model. Focusing on patients with chronic conditions and funded by a prestigious Beacon Community Initiative Grant, Geisinger will work with KeyHIE to make their model of case management available to a community of more than 250,000 residents. KeyHIE will empower case managers with easy cross team communication and auto-generated notifications of patient encounters to provide effective treatment across the continuum, reducing re-admission rates and total cost of care.

[1] Center for Information Technology Leadership, [2] HIMSS News

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TESTIMONIAL:

James Younkin, Director, Keystone Health Information Exchange

"Making a decision to choose a standards-based HIE solution has positioned our community perfectly to meet upcoming meaningful use and national requirements. We are very pleased with results to date and feel well prepared to continue to adapt to meet future needs."

HOW CAN INTEGRATING THE HEALTHCARE ENTERPRISE (IHE) HELP YOU?

Find out more at www.ihe.net

Use of IHE-based systems is a wise choice because IHE provides a proven foundation to support a connected healthcare environment by solving the interoperability challenges faced by today's healthcare providers. Most clinical settings use a wide variety of systems and modalities from different manufacturers and as a result, exchange of patient data is a significant challenge.

IHE provides a solution via a common framework, referred to as IHE "Profiles" that enable the coordinated use of established standards such as HL7, DICOM, OASIS, and many others. IHE profiles address critical interoperability issues related to information access for care providers and patients, clinical workflow, security, administration and information infrastructure. IHE also defines a process by which these profiles are subjected to rigorous validation and conformance testing.

Together this framework and process result in health IT systems that are able to communicate with one another better, are easier to implement, and allow care providers to more effectively use information.

Why IHE?

Use of IHE helps clinical end-users resolve interoperability challenges. The ability to efficiently and securely access and exchange patient health data has long been a difficult challenge to resolve. Now with the addition of new incentives such as demonstrating "Meaningful Use' in the United States and similar mandates elsewhere in the world, IHE provides a proven solution to resolve health IT interoperability challenges. Use of IHE enables a collaborative environment between healthcare providers and industry leaders to improve the effective and secure exchange of patient health information.

Benefits of using IHE-based Systems for Hospitals and other Enterprise Clinic al Settings:

- ***Fewer interfaces:*** It's not unusual for a 100-bed hospital to have dozens of interfaces - with IHE-based systems the need to create and maintain costly interfaces is greatly reduced.
- ***Meeting reporting requirements:*** Products developed using IHE can help end users more easily meet reporting requirements such as Meaningful Use in the United States and similar requirements worldwide.

Benefits of Using IHE Frameworks for Health IT Product Developers:

- ***Reduce and improve product development cycles:*** By implementing IHE, vendors can streamline their product development cycles by leveraging this integration capability across multiple customers, thus allowing staff to focus more attention on creating new product features and functions.

Founded in 1997 by HIMSS and RSNA, IHE is a global non-profit organization with stakeholder engagement of hundreds of volunteers representing the healthcare community worldwide.

Learn more about how IHE can help you, visit ***www.ihe.net*** *or email* ***secretary@ihe.net****.*