Wisconsin HIE Optimizes Community Care

Communication among ED clinicians and federally qualified health centers in the Milwaukee area was improved, including real-time access to patient historical-encounter data.

A successful health information exchange (HIE) depends on more than just sharing data, according to Kim Pemble, executive director of the Wisconsin HIE (WHIE). In order to optimize impact for clinical care in the community it serves, a successful HIE should be able to bring patient information together in real time through collaboration and information sharing across multiple healthcare organizations, she contends. Additionally, such projects should consider secondary applications of the data, such as in support of public-health surveillance.

Wisconsin has experienced firsthand the challenges of establishing a successful regional HIE. The WHIE recognized the importance of engaging a broad spectrum of stakeholders and sought members from all area healthcare providers, payer organizations, state and local governments, public health officials, community interest, patient advocacy, pharmacies, reference laboratories, and numerous other stakeholders.

Individuals from these organizations worked to establish the framework of WHIE, including bylaws, board structure, vision and mission. This process was funded in part through a grant from Connecting Communities for Better Health. Subsequently, funding for WHIE has been through a contract with the Wisconsin Department of Health Services (WDHS), through a Medicaid Transformation Grant, and contributions from participating health systems. This funding established and operated the ED Linking project of WHIE.

The inability to effectively understand the full, comprehensive history of patient information causes a number of deaths each year, and medical errors are among the leading cause of death and injury for patients. Many of these medical errors are caused by a lack of timely and accurate information and a disconnected health system. While people move and change jobs many times in a lifetime, their healthcare information is often left behind in paper records or locked away in siloed computer systems. This inability to be aware of and apply previous encounter information contributes to reordered diagnostic tests and a lack of awareness to allergies and medical history.

In early 2009, Humana entered into a pilot program with the WHIE, as part of its ongoing emergency-care initiatives. As part of the program, the insurer will provide a WHIE-administered incentive to any provider that uses the WHIE. The goal is for other insurers to understand the value of HIEs and to begin offering the same incentives.

ED Linking, the initial WHIE application, began with establishment of a contract with the Wisconsin Department of Health Services (DHS). Project scope included real-time data feeds from Milwaukee County health system participants and Medicaid pharmacy and encounter detail from WI DHS. The goal was to improve communication among emergency department clinicians and federally qualified health centers in the Milwaukee area by providing real-time access to patient historical-encounter data and establishing a foundation for expanded communication. The scope also included access for public health officials to see a de-identified set of encounter data.

WHIE sought a strong technical partner that could provide a secure hosting environment. The system needed to be responsive, supportive of a variety of interfaces, Health Level 7 and home grown, scalable enough to support various views, including those of public health, and have a secure data-export capability.

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Anonymous

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disrupting processes and normal work flow," says Pemble. "It was also a requirement that participating organizations maintain ownership over the data they contributed, enabling it to be removed from WHIE should their participation cease at a future date. The hosted Microsoft Amalga solution, providing a hybrid approach to HIE, meets these needs."

WHIE has also implemented a role-based security model for authorized users. To access a patient’s history, there needs to be an established care relationship, and for clinical access outside the emergency department, patient consent is required.

“Our work with Amalga has allowed us to grow the data available within WHIE without interruption to current operations,” Pemble says. “We have added new health-system data feeds, new hospitals within health systems and encounter claims, while continuously expanding the value of WHIE to all stakeholders. As part of final testing, prior to initial clinical use, we studied performance of the system. From admission at the hospital until patient historical data was available in WHIE for use by clinicians was three to five seconds.”

The initial data interfaces were live approximately five months from contract, and initial clinical use with user interface was four months later. The system was first in use at three pilot emergency departments, with eight hospitals providing data. The public-health functionality went live in 2008.

“The transition to Amalga was extremely smooth, and our physicians picked it up rapidly, spending maybe five minutes with the system before running with it,” says Dr. Cory Wilson, chairman, department of emergency medicine, St. Francis Hospital.

Today, WHIE receives real-time data feeds, including patient administration, chief complaint, discharge diagnosis, primary care physician, allergies, patient demographics and other encounter details from 14 hospitals (across five health systems), more than 100 hospital clinics/service areas and one federally qualified health center (FQHC).

Additionally, WHIE receives weekly Medicaid pharmacy claims data and recently went live with full Medicaid encounter details. Currently, 10 hospital emergency departments and one FQHC use this data in regular clinical practice.

“Providing emergency-room physicians and clinical staff access to patient-specific information, which was previously unavailable in a timely manner, helps them make better, more-informed decisions in time-sensitive situations,” Pemble says. “Physicians can use this information to create care plans for patients, helping them decide how much, if any, testing or treatment is necessary. Case managers also use this information to help connect patients who do not have a primary-care physician with clinics, a critical step in providing quality ongoing care for patients and better utilizing limited resources.”

“Amalga helps tie the big picture together,” says Wilson. “I recently had a patient who came in complaining of chest pain, and I discovered that he had 65 visits in the past 10 months to different health systems. This patient had undergone every known test for his chest pain, often multiple repeat tests, leading to incredibly high costs and no resolution to his problem. Seeing this information, it prompted me to think outside of the box and go in a different direction, avoiding unnecessary tests and costs and actually treating this man’s condition.”

The WHIE also has used Amalga to support public-health surveillance activities, helping public-health officials in early detection of disease trends and identifying outbreaks within the region. The WHIE has been used for more than a year to assess influenza-like illness, for example, and last spring was used by public officials for H1N1 monitoring and reporting.

From the Catalog

According to www.microsoft.com/amalga: Microsoft Amalga Unified Intelligence System (UIS) frees the data locked in disparate systems across the health enterprise to fuel discovery, change and innovation. It empowers users to drive improvements in real time, and accelerates continuous improvement over time. Amalga UIS aggregates all healthcare data into a unified data platform, from which organizations can get unbounded uses of their data from a single solution. It leverages and extends the value of existing transaction systems by freeing the data within them for rapid exploration. Amalga UIS advances the ability to obtain an integrated and holistic view of data by using standards where they are available, but is not limited or restricted by them.