

Information Technology Standards Drive Health Care Solutions

A patient relocates to Chicago and has a follow-up CT-Scan. The radiologist and primary care provider can review reports and images from previous procedures, which are still in Denver, by accessing the patient's electronic health record. It's all done electronically from the doctor's computer terminal in Chicago.

This technology, known as interoperability, only can occur with industry-wide standards in place to make the data exchange possible.

Health Level Seven (HL7) and the Integrating the Healthcare Enterprise (IHE) initiative are cooperating to make that scenario more of a reality and move the

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industry closer to the integration of information technology with a joint HL7-IHE Interoperability Demonstration at the 2004 Annual HealthCare Information and Management Systems Society (HIMSS) Annual Conference & Exhibition on Feb. 22-26, 2004 in Orlando, Fla. The demonstration is expected to draw participation from health care IT and imaging vendors, providers, government, and other professional organizations.

The HL7-IHE Interoperability Demonstration, tentatively titled Standards Drive Healthcare Solutions, "is designed to heighten awareness of the importance and use of information technology standards in health care by showcasing how they are used now and pointing to new areas of application under development," according to Wes Rishel, HL7 chair.

"The health care industry is seeking strong leadership in the area of interoperability," said Joyce Sensmeier, RN, director of professional services for

HIMSS. "The lack of integration, implementation, and use of standards are barriers to the delivery of optimal patient care. Combining the resources of two industry initiatives that promote the use of standards will go far toward establishing interoperability can be a reality."

The joint demonstration will feature health care scenarios such as:

- Identifying an adverse drug event and preventing medication errors,
- Notifying the Food & Drug Administration and sponsors of clinical trials,
- Viewing clinical reports with links to related images,
- Integrating electronic records with public health reports, and
- Driving the capture of patient charges, billing and claims attachments from clinical observations.

Both organizations will provide educational sessions in addition to the live technical demonstration.

"The exciting thing about the 2004 demonstration is that through the joint effort, we can attract and support the full spectrum of clinical applications and put into play a broad range of standards-based scenarios. The new IHE Integration Profiles, the new work within HL7, and the partnerships with government and other standards organizations move us much closer to achieving industry integration requirements for patient safety, public health, and ubiquitous access with privacy and security," says Liora Alschuler, project director for the 2004 Joint Demo and co-chair of the HL7 Structured Documents and Marketing Committees.

Since 1987, HL7 has created and published specifications used around the world to integrate health care applications using vendor-neutral exchange standards. HL7 is recognized as the leader in open standards for health care data interchange.

The HL7 demonstrations have been characterized by innovation, showing the industry the benefit of building intra- and extra-enterprise integration on the current and next generation of standards.

IHE was founded in 1998 under the leadership of HIMSS and the Radiological Society of North America. IHE does not develop standards but provides a detailed

framework for implementing the relevant standards in real-world settings so that information can be communicated consistently, greatly reducing the cost of systems integration.

"The importance of IHE," Sensmeier continued, "is the opportunity it affords for providing the data which clinicians need wherever they are, regardless of the system they're using. If each of the vendors who own a system put IHE in the systems, it would be a matter of plug and play for interoperability. Data in the different devices would be populating the electronic health records system." Information in sharply different formats — graphics, text, video — would be freely interchangeable.

"Say I went into a hospital in California," Sensmeier added, "and they recorded my patient information.

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Then I went back home to Chicago [for a medical appointment], that data would be accessible electronically and easily." The ultimate goal is a seamless system linking patient records from start to finish, from doctor's office to laboratory results to pharmacy

to hospital stays and surgical procedures to outpatient treatments.

Participants will have access to all current HL7 specifications plus the latest generation of draft specifications.

They will also implement a new set of integration profiles developed by IHE committees. These profiles, developed under the same process used to develop workflow integration in radiology, address vital IT integration challenges. For more information, visit www.himss.org. ■

What Does IHE Mean for Medical Technology Professionals?

When the Integrated Healthcare Enterprise (IHE) takes effect years from now, patients will likely have the benefit of more timely and accurate health care information processes; while doctors, nurses, and other clinicians enjoy a more efficient workplace with integrated systems.

However, it remains unclear what impact IHE will have on BMEs and clinical engineers (CEs). The IHE system will likely lead to new responsibilities during and after implementation, but it could also significantly alter or eliminate some current job functions of BMEs and CEs.

Since much of the IHE technology remains in the theoretical stage, it is difficult to determine what responsibilities will fall to BMEs and CEs, according to Joyce Sensmeier, director of professional services for the Healthcare Information and Management Systems Society (HIMSS). "The implications for that field are down the road," she said.

HIMSS and the Radiology Society of North America (RSNA) began the IHE initiative 4 years ago and are

working with vendors to develop the technology and software to move the IHE concept from theory to practice.

So far, Sensmeier said, the technical committee has succeeded in integrating devices and components that comprise the radiology workflow. Some 38 vendors now have IHE profiles in their products. Now the group is in the process of launching an information technology domain. Another forthcoming domain will be cardiology.

IHE will also be designed to integrate devices that capture clinical data, such as blood pressure machines, Sensmeier explained. Today's blood pressure equipment cannot be linked with cardiology or radiology devices.

"Our goal is that clinicians will be able to go to any work station and pull up whatever information they need on any patient," Sensmeier said. "Currently, very little cardiology information is linked with other systems in health care facilities, so a radiologist cannot access cardiac test results from his or her work station."

The difficulty in linking the various clinical data systems in a health care facility, she said, is that they produce and store test results in so many different formats, including text, pictures, 3-D images, and even moving images.

At present, she said, there is no single system that can provide access to all of these types of data. ■