

Interoperability: Finding a Home for Your Data

More than 2 years after the formation by executive order of the Office of the National Coordinator for Health Information Technology (ONCHIT), interoperability issues continue to challenge those working to make available comprehensive electronic health records (EHR*) for all American citizens. Last year, the Secretary of Health and Human Services (HHS) formed AHIC, American Health Information Community, bringing together leaders from all stakeholders, including private industry, academia, payers, consumers, and government, to achieve the president's goal of having most Americans using electronic health records within 10 years.

CCHIT Certifies EHRs

In addition to AHIC, other organizations were formed to work on the interoperability challenge. The Certification Commission for Health Information Technology (CCHIT), a private non-profit organization, develops criteria for the "efficient, credible and sustainable mechanism" for certifying healthcare information technology products. Currently CCHIT is evaluating ambulatory EHR products submitted by vendors for compliance with its established standards. In 2007, CCHIT will utilize inpatient EHR criteria, currently under development, to certify hospital products. For its criteria, CCHIT obtains input from all stakeholders while focusing on the key areas of software functionality, interoperability, and security.

With a \$3.3 million contract from HHS, the American National Standards Institute (ANSI), a non-profit organization that administers and coordinates voluntary standardization activities in the United States, convened the Health Information Technology Standards Panel (HITSP) to develop, prototype,

and evaluate a harmonization process for achieving widely acceptable health IT standards. Establishment of credible standards assists in supporting interoperability among all healthcare software applications.

HISPC Securing Privacy

In addition to HITSP, HHS awarded an \$11.5 million contract to the Health Information Security and Privacy Collaboration (HISPC), a new partnership consisting of a multi-disciplinary team of experts and the National Governor's Association. HITSP works with state and territorial governments to assess and develop plans to address variations in business policies and state laws that impact privacy and security. This work is framed to address challenges to health information interoperability.

On a regional level, regional health information organizations (RHIO) are being formed to allow the interchange of health information among all stakeholders while allowing secure access to all patients. Although RHIOs form an important foundation for the building of comprehensive EHRs, experts continue to work through the various issues of information exchange architecture, security, privacy, and funding. Currently two major models exist for the formation of RHIOs: a distributed database model—often referred to as the Federated Model—and the Centralized Model.

Distributed and Centralized Models

The Distributed Model assumes that all patient information resides in the computer systems of the provider that collected the information. In effect, each piece of data that makes up the electronic health record of each patient is stored separately. Formation of a comprehen-

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sive medical record requires access to each system where each piece of information is stored. In some variations of this model, a centralized database maintains an index of all the systems where data for a given patient resides, allowing each provider system to be polled only for existing information on a particular patient during the effort to build a complete electronic medical record. In other models, every provider is polled for information on a patient for every search utilizing a patient identifier. Availability of patient information is dependent upon the reliability of each independent provider system and its level of compliance with interoperability standards. Finally, access to patient information, including the use of polling for data, is not limited to a region but would need to occur nationally.

The Centralized Model establishes a regional, centralized database for storage of all patient information. Providers, irrespective of their location, submit patient information utilizing interoperability standards to a centralized health record bank where it is securely stored. Access to this comprehensive electronic health record by other providers, family members and others is completely and securely controlled by each patient. As patient information is submitted to the health record bank soon after each patient encounter, future polling of provider

* Including other terms such as electronic medical record, there are 27 definitions of electronic health record in the 2006 edition of the HIMSS HIT Dictionary.

systems for patient data is not necessary. Most versions of the Centralized Model use principles established by financial institutions in the formation of credit reporting agencies, where reporting of a "financial encounter" to a centralized entity eliminates the need for a response to future query requests.

eHealthTrust Offers Funding Model

One community, Louisville, Kentucky, formed the Louisville Health Information Exchange (LOUHIE) to operationalize a centralized repository RHIO model. In addition, LOUHIE embraced the eHealthTrust™ model for financing of each patient's electronic medical record. In an eHealthTrust, patients pay for the formation and maintenance of their electronic health records, while maintaining complete and ultimate control over access to their records. In addition, the funds generated by patient payments provide money for physician payments for electronic medical record data. Based upon current modeling, patient payments of \$5 per month provide enough funding for payments of \$3 per patient encounter to physicians. It is estimated that at \$3 per patient encounter, physician offices will have enough of an economic incentive to deploy electronic medical records in their offices. Enrollment of 100,000 patients generates the minimum amount of funds necessary for self-sufficiency. Startup costs to the community are estimated to be under \$1,000,000 with much of the money devoted to marketing efforts to secure adequate enrollment. Vendors are offering to provide the initial systems at no charge with the assurance that they will receive an operational contract. As benefits accrue to many stakeholders including employers, payers, consumers, and government, start-up funding may be available from these sources. LOUHIE plans to be operational by 2007.

The demand for electronic medical records coming from numerous stakeholders demonstrates the widespread belief that such patient records lead to

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increased efficiency and higher quality healthcare. Effective and easily established RHIOs are the backbone of any nationwide, universally deployed electronic health record effort. In turn, interoperability standards support the usefulness and available functionality of RHIOs. Before we see widespread use of easily accessed, secure, and complete electronic health records, additional work is needed both on technology and funding models to better understand which models offer the greatest probability of success. Thankfully, pilot initiatives, many supported by federal and state funding, are underway to provide this valuable information. **IPSQH**

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