

White Paper on Interoperability  
HIMSS EHR Vendor Association  
[www.himssehrva.org](http://www.himssehrva.org)  
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"At the very base of this, kind of like the DNA of interoperability, is the harmonization of standards," Brailer said. "Without it," he said, "the industry has no mechanism for resolving conflicts, no timetables for standards release and maintenance."

*Healthcare-IT World News* quoting David Brailer, MD, National Coordinator for Health Information Technology, April 13, 2005

## **Background**

Four years ago, in its groundbreaking report<sup>1</sup> on the state of healthcare delivery in the United States, the Institute of Medicine (IOM) established a framework for how the U.S. health system must be radically transformed to close the "quality chasm." The report identified six goals for a quality health care system. Care should be clinically effective, safe, patient-centered, timely, efficient and equitable. The report also discussed the critical role information technology (IT) could play in improving care

The Center for Information Technology Leadership reinforced these findings in its 2004 report, "The Value of Healthcare Information Exchange and Interoperability"<sup>2</sup>. CITL estimates that the nationwide implementation of technology that provides for interoperability and facilitates the exchange of healthcare information between healthcare providers could result in a net savings of \$77.8 billion annually, or about 5% of total annual US healthcare expenditures. These savings can only be achieved when disparate electronic health record (EHR) systems exchange data elements using a common "language" across multiple healthcare settings. That is, patient summary information from one vendor's EHR should be "translatable" to any other vendor's EHR system regardless of technology platforms.

Furthermore, in 2004, the Office of the National Coordinator for Health Information Technology's (ONCHIT) Strategic Framework described goals toward the rapid adoption of electronic health records (EHRs) to improve

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<sup>1</sup> Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century, Institute of Medicine, March 2001. See <http://www.iom.edu/focuson.asp?id=8089>

<sup>2</sup> See [www.citl.org/research/HIEI.htm](http://www.citl.org/research/HIEI.htm)

workflow efficiencies in clinicians' offices and deliver higher quality care for patients. One of the four goals calls for establishing the necessary standards to enable clinicians to be interconnected so that a patient's information can be made electronically accessible to those involved with providing their care across the community regardless of which EHR system is in use. Ultimately, the individual patient will not only be the beneficiary of better, more efficient, more affordable care, but also the recipient his or her own personal health records enabled by increasing levels of interoperability. (See [www.os.dhhs.gov/healthit/goals.html](http://www.os.dhhs.gov/healthit/goals.html))

A number of local projects are responding to the challenges laid out by the IOM, CITL and ONCHIT. Bridges to Excellence supports consumers of healthcare services, conducts research and is developing reimbursement models based on the delivery of safe, timely, effective, efficient, equitable and patient-centered care. Another example is the Doctors' Office Quality IT Project (DOQIT), which promotes the adoption of EHRs in small-to-medium sized physician offices with a vision of enhancing access to patient information, decision support, and reference data, as well as improving patient-clinician communications. It is clear that there is momentum and commitment to provide higher quality, lower cost, more accessible healthcare through the use of information technology.

In support of this broad call to action and in response to increasing momentum for rapid and widespread implementation of interoperable EHRs across provider organizations large and small, HIMSS Electronic Health Record Vendors Association (EHRVA) adds its voice to the growing demand for incremental interoperability approaches that provide for basic patient information sharing among care providers in the short term, while designing in advanced capabilities to share more structured, "*translatable*" content as the use of EHRs increases, and caregivers become more sophisticated users.

## ***Objectives***

The objective of this white paper is to clarify and reinforce the EHRVA position relative to interoperability and emerging standards for the exchange of patient summary information (e.g., patient demographic information, current medications, allergies, problems, chief complaint) among provider organizations – primary care physicians' offices and clinics, specialists' offices, retail pharmacies, reference labs, hospitals and other care delivery locations.

As a coalition of thirty-three (33) software companies that supply the vast majority of U.S. healthcare providers with electronic health records and other healthcare information technology (HIT), we believe that EHRVA is well positioned to provide this clarity and to facilitate convergence between potentially

competing patient summary standards. EHRVA represents the unified voice of vendors with unmatched experience in developing and supporting EHR products, including our collective involvement with standards development efforts across the broad spectrum of healthcare during the past 20+ years. Most importantly, our views reflect the needs and expectations of our customers, which include thousands of hospitals and tens of thousands of physician practices across the country -- and *their customers*, the millions of patients cared for in those settings. Our target must be improved population health supported by individualized, interactive EHRs that allow patients to move easily among healthcare providers.

### ***What is interoperability?***

There is general agreement that the overriding objective of interoperability is to support the electronic exchange of patient summary information among caregivers and other authorized parties via potentially disparate EHR systems and other systems to improve the quality, safety, efficiency, and efficacy of care delivery. For the purposes of this white paper, our focus is on two aspects of interoperability: “plug and play” and extensibility. “Plug and play” addresses the issue of making it easier and less costly for different EHR systems to exchange patient summary information. Extensibility focuses on establishing a standard that will provide near-term benefits as well as support more complex requirements for data exchange in the future.

In terms everyone understands, “plug and play” can be likened to stereo components. Our objective is to allow healthcare providers to “plug and play” a variety of vendor software packages -- “components” -- with as little cost, technical difficulty, and risk of obsolescence as possible. This will enable the sharing of medical information as easily as selecting a track from an EMI-produced CD and playing it on a Sony CD player connected to a Panasonic receiver and Bose speakers.

The history of the DVD is useful to explain extensibility. When these discs and their supporting devices first became available, they were used primarily for music or as back-up for digital data. Without introducing different formats or devices, we now use them for movies, video games, and other purposes. That is, the early standards that were agreed upon by DVD manufacturers protected consumers from the expense and waste of throwing away or converting the DVDs we bought five years ago.

The combination of “plug and play” and extensibility in a single standard means that our customers’ investments in HIT will be protected. Healthcare providers will receive immediate value with current technologies and can be assured of future value as technologies and knowledge advance.

## ***What are the objectives of interoperability standards?***

EHRVA believes the following to be the broad objectives that all stakeholders engaged in the development and discussion of interoperability standards are striving to achieve:

- Rapid implementation of interoperable EHR systems to exchange patient information required to deliver quality care as patients move from one care setting to the next.
- Standards that can be updated incrementally to minimize both rework and costs as EHRs evolve to meet changing functional and environmental requirements.

EHRVA also strongly believes that a single standard to define content templates and the electronic document “envelope” that holds the content is required to accomplish these objectives in a rapid and cost-effective manner. If multiple standards exist, vendors will be forced to support them all which will prolong the timeframe within which interoperability can be delivered and will increase the costs which will be shared by all stakeholders. Moreover, provider organizations and software companies may wait for a single standard to emerge, thus delaying broad adoption of EHRs.

Cell phones provide a simple example of how the lack of interoperability standards can impact end-users and costs. When these now ubiquitous devices first entered the market, there were a variety of communications standards for voice format and delivery – CDMA, TDMA, GSM – supported by regional carriers. The ability of callers to “interoperate” with other cell phone users depended on which “envelope” the carriers used to hold the voice data. If an individual wanted to be broadly available via cell phone, users needed to buy multiple devices or more expensive devices that supported multiple communications standards.

As EHR system developers and provider organizations are looking across the “community” – locally, regionally and nationally – to plan for EHR interoperability, we will surely face more complex issues than data and document standards for patient summary records. When given the opportunity to make clear progress toward interoperability, it is our responsibility to participate in a collaborative process that results in a single standard.

## ***Roadmap to achieve interoperability***

In its January 18, 2005 response to the ONCHIT RFI for a National Health Information Network (NHIN), EHRVA provided a detailed description of how interoperability might be achieved. (Go to

[www.himssehrva.org/ASP/initiatives.asp#ONCHIT](http://www.himssehrva.org/ASP/initiatives.asp#ONCHIT) for access to the response document.) In its RFI response, EHRVA recommends:

- Use document sharing to simplify access control and support modular definition of document content. The following steps are recommended:
  - Phase 1 – patient medical summaries to be fully specified in 2005. EHRVA supports the definition of this first level of interoperability using the Integrating the Healthcare Enterprise (IHE) process ([www.ihe.net](http://www.ihe.net)) in the context of a new IHE Patient Care Coordination domain where clinician involvement is required.
  - Phase 2 – more coded clinical content for decision support, compatible with Phase 1, in 2006-7. This mid-level strategy focuses on a more refined coding of clinical information to support the convergence of the proposed ASTM CCR standard and the existing HL7 CDA standard.
  - Additional phases to be defined as clinical practice and interoperability requirements evolve.
- Leverage existing standards (i.e., a converged CCR/CDA patient summary) to support loose cooperation between peer systems and to facilitate implementation and testing, especially among ambulatory EHRs.

Actual interoperability among EHR systems requires more than an agreed-upon format and data set for medical summaries. Vendors and providers must collaborate to ensure that standards not only meet end-user requirements in a variety of care settings today, but are also flexible enough to minimize support costs as clinical and technical requirements evolve in the future. Working closely with physicians and others involved in healthcare, we are identifying specific use cases to define the necessary information to be shared among EHRs. These efforts will very likely require refining the standards to a more useful and realistic starting point that can support incremental implementation. Integration profiles and implementation guides will also be required to support software developers and users in achieving “plug and play” and extensible interoperability.

### ***Why is EHRVA Driving the Interoperability Roadmap?***

The healthcare technology industry has a long history of establishing interoperability standards in areas outside of electronic health records. Medical imaging systems vendors established a single standard called DICOM for the exchange of patient information and images. The establishment of this standard in the early 1990’s enabled the efficient and efficacious exchange and storage of images throughout the healthcare enterprise. The value of this single standard is evidenced by a growing PACS market that has gone from practically zero in the

early 1990's, to an estimated \$1B per year in North America<sup>3</sup>. Software vendors also worked closely with the healthcare insurance industry to lead the way in establishing the ANSI X12 standard for the exchange of financial transactions (e.g., claims, eligibility). EHRVA members, many of whom were involved with both of these earlier efforts, have long been involved in developing EHRs standards, and are now working with standards development organizations (SDOs) toward convergence of multiple standards.

As a concrete example of the commitment of EHRVA members providing interoperability solutions needed to meet the goals of ONCHIT's Strategic Framework, close to 100 person-years of effort went into the IHE Interoperability Showcases at HIMSS 2005 to enable the exchange of show participants' patient summary information among the 32 participating vendors, 12 of whom were EHRVA members. The effort was a result of a set of IHE integration profiles that are now generally available in the public domain. We made this investment based on our belief in a collaborative, market-driven approach to solving the interoperability challenge. Our efforts to provide secure, cost-effective and extensible interoperability continues today through ongoing work with professional societies, other vendors, our customers and SDOs to achieve these ambitious objectives.

## **Summary**

EHRVA supports a single standard for patient summary information exchange as a critical element in achieving the key goals of ONCHIT's Strategic Framework - the rapid adoption of EHRs by primary care physicians, as well as the quality improvements called for by the IOM and the savings projected by CITL. EHRVA believes that a single standard will minimize costs to both EHR system vendors and their customers, enabling faster adoption by making EHR systems more affordable and easier to implement and maintain. Interoperability is not an end-game, but an ongoing process that requires making clear choices based on expediency, efficiency and balancing short-term and long-term goals. EHRVA believes that an incremental approach to interoperable medical summaries is necessary to quickly provide valuable healthcare information exchange with the current generation of EHR products in 2006, while ensuring that richer levels of interoperability are accommodated in the future.

Let us not lose sight of all the other challenges associated with widespread adoption of EHRs – developing a sustainable business case for their optimal use, incorporation of technology into the workflow of busy clinicians, data ownership,

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<sup>3</sup> "US Medical Imaging Industry Outlook," Frost & Sullivan, November 2004

security and governance among others. Ultimately, individual patients and consumers will demand access to their own EHRs and the EHRs of their family members as active participants in healthcare delivery and decision-making. We have important work to do to transform healthcare information management and availability as we know it today. As an industry, it is the responsibility of healthcare information technology vendors, SDOs and all stakeholders to step up to the difficult decisions at hand and make the necessary compromises for the general benefit of our customers and their patients. The HIMSS EHRVA members are ready to step up to the challenge.

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