

# Interoperability: What it Means, Why it Matters

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by Kevin Heubusch

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*Healthcare's hottest topic finally has two things it has badly needed: plain language and a sense of urgency.*

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Every health information story in 2006 will circle back to one word. In one way or another, every HIM story this year will relate to interoperability.

Healthcare's holy grail is an eight-syllable word whose meaning has always threatened to disappear into the realm of jargon. Even the head of the Office of the National Coordinator for Health Information Technology (ONC), David Brailer, MD, PhD, has referred to it as "technospeak."

However, if you forget that you work in healthcare, the basic concept of interoperability is simple, and examples in the outside world are common. In fact, we take some examples for granted.

"Phones are a triumph of interoperability," says Scott Wallace, JD, MBA. It doesn't matter what company made the phone or whether the call is placed through a wireless or a landline connection, Wallace notes, from any phone you can call any other phone.

Applied to healthcare, that same ability of machines to communicate efficiently, regardless of make or the institution where they reside, offers a vital health benefit: data become exceptionally mobile. Personal health information, entered into a system once, becomes available to patients wherever they are and whenever they need it. That, Wallace says, is the essence of interoperability.

## Straight Talk from a Commission with a Confusing Name

Wallace is president and CEO of the National Alliance for Health Information Technology (Alliance). He is also the former chair of a group with the somewhat forbidding name of the Commission on Systemic Interoperability, or CSI. The commission, created by Congress and appointed by four congressional leaders and the president, was asked to present the president and Congress with a road map for an interoperable system of health information. In late October 2005, CSI published its recommendations in a report titled "Ending the Document Game: Connecting and Transforming Your Healthcare through Information Technology."<sup>1</sup>

In addition to 14 specific recommendations, the CSI report provides something that discussions on interoperability have largely lacked to date. The commission presents actual stories of how the current fragmented system is failing patients. It gives real-life examples of how interoperable health technology has the potential to dramatically improve each of our lives and the lives of those we care for. As a result, CSI gives interoperability something it badly needs: a grounding in daily life and a sense of real urgency.

## Defining Interoperability

Perhaps it is no surprise that healthcare, which lacks agreement on any number of standards related to interoperability, lacks a standard definition of interoperability itself. However, the member organizations of the Alliance have produced a useful one, intended as a "guiding principle" rather than a technical specification. In healthcare, writes the Alliance,

interoperability is the ability of different information technology systems and software applications to communicate, to exchange data accurately, effectively, and consistently, and to use the information that has been exchanged.<sup>2</sup>

Interoperability, then, is at the very center of health IT's promises. It is fundamental to the success of EHRs. "A physician using a computer is not e-health," Brailer has emphasized—the real promise of e-health is a physician using a computer that can exchange data with others as needed and as appropriate.

For that reason, Brailer believes the industry must come to terms on interoperability before it goes too far developing, marketing, and implementing EHR systems. Rather than waiting for widespread EHR adoption to escalate the need for interoperability standards, the industry must pave the way with interoperability. By waiting, Brailer warns, we risk setting ourselves up to fail by investing in systems that do not deliver the promises of nationwide data exchange.

## Reaching the Next Level

Health information, of course, is already interoperable. Clinical data written on a piece of paper and handed from one person to another is an act of interoperability, albeit a highly constrained one. Current initiatives are really about moving interoperability to a higher, electronic state, one that enables greater quality of care and increased efficiency.

Thus there are levels of interoperability, and in discussing its definition the Alliance makes use of four categories defined by the Center for Information Technology Leadership. At the most basic level is the exchange of data in nonelectronic formats—pieces of paper and phone calls, for example. Data can also be transmitted electronically, such as via fax or e-mail. The third level represents another leap: data that machines can organize, such as labeled documents and images.

The pinnacle of interoperability—where the full benefits of health data exchange will occur—happens when machines can interpret data and perform automatic functions, such as integrating lab results from one facility into the EHR system of another facility.

Achieving machine interpretable data requires standards for the capture, storage, and transmission of data. It will involve careful attention to data integrity, privacy, and security. Interoperability is an HIM issue.

## The Problem Is Other People

Healthcare is not alone in its struggle. Interoperability is a common challenge throughout business. "One thing I think people in healthcare are unaware of is that this problem of data interoperability is a ubiquitous problem," Wallace says. "It is not a unique issue to healthcare. Business struggles with it in all manner of communication." This echoes remarks by Brailer that interoperability is best understood as a business concept, not a technical concept.

Healthcare may not be the only industry to face the problem, but it is among the last to seek a solution in industrywide standards for data management. Healthcare organizations have traditionally kept their focus within their own walls, and health information has often been a point of competition. To date, most advances in sharing electronic data have taken place within enterprises, not between them.

Thus two things stand in the way of health data interoperability, according to ONC. The first is a lack of consensus on how to transmit data. The second is a lack of a nationwide network to transmit data. ONC, charged with facilitating the adoption of health IT, is focusing the industry on four issues that will enable data to move around the country (see "ONC's Plan to Pull It All Together" on the opposite page).

There is another challenge. Delicately put, it's people. Reduced to its simplest element, interoperability is consensus, and forging the cooperation of people is harder than forging the cooperation of machines. Wallace acknowledges that there are complex technical problems to solve, but he dismisses technology as a barrier to interoperability. The trouble is rallying the industry to reach the necessary agreements.

## Breaking Down the Challenge

If it all seems impossible to resolve, the trick is to take it in pieces, says Wallace. Approaching interoperability as an all-or-nothing proposal will reward you with nothing.

“It’s an equivalent thing to saying ‘we want to have a safe healthcare system,’” Wallace says. “What does that mean, exactly? A safer healthcare system I can get to. But a perfectly safe healthcare system—if that is our only goal and we can’t do anything until we are certain that we will be at the point of perfect safety—then we defer it.”

Accordingly, CSI breaks the challenge of widespread, interoperable EHRs into three broad issues: providers and consumers must adopt the tools necessary to share health data; data must be interoperable, so that they can be meaningfully shared; and providers and consumers must be connected so that the data can flow. Entire worlds exist within each category, and admittedly the categories overlap, says Wallace, but at a high level the approach offers a way to get organized, a framework for identifying the decisions that must be made.

Wallace points to the commission’s unanimity as one of its most notable achievements. The report represents “14 recommendations unanimously supported by 11 commissioners who were appointed by a bipartisan group,” Wallace says. Perhaps only someone who has spent time in Washington really knows what this means. “To get 11 different people appointed from across healthcare—including the payer community, the employer community, technologists, and nontechnologists—to get that broad of a spectrum of people to all agree was really a pretty remarkable achievement,” he says. CSI wants to serve as a role model for healthcare.

## HHS in the Wings

Healthcare’s current fragmented state results in “injury, wasted resources, and lost lives,” write the CSI commissioners. “The problem,” they state bluntly, “is not a lack of technology, but a lack of attention and a lack of will.”<sup>3</sup>

That seems to be changing as momentum builds from work like that of the commission, ONC, industry organizations, and numerous local and regional data exchange initiatives. And as federal and consumer expectations for health IT grow, the healthcare industry is beginning to feel pressure to make progress.

Brailer has stressed from the start that his office’s strategy of encouraging the industry to design its own solutions is unique for a federal agency, and he has always been clear that this opportunity may not last. In fact, he has urged the industry in simple terms not to squander the chance. In introducing the ONC contracts, he warned that “the price of failure is turning this over to the government.”<sup>4</sup>

Indeed, the Department of Health and Human Services (HHS) appears to be gathering in the wings. Wallace points to the composition of the American Health Information Community as a clear signal that HHS believes healthcare is too insular to resolve the issues on its own. The board of the federal commission, created in late 2005 to provide HHS with recommendations on speeding EHR adoption, features numerous business executives from outside healthcare.

“The people on that board are high-level policy and business leaders who are into making decisions and not getting bogged down in endless fights about technical detail,” Wallace says. Healthcare should hear a clear message in this, he says: avoid unnecessary delays and internal disputes and begin making decisions; if not, other people will begin making decisions for you.

Congress, too, is joining the act, with a growing interest in modernizing healthcare through IT. By the end of last year, 16 bills related to health IT had been introduced in the House and Senate.

## HIM Expertise and Thinking Like Consumers

For HIM professionals, getting involved begins with seeing that the issue of interoperability is evolving and ongoing. There is, and will continue to be, a need for HIM advocacy and expertise in resolving many of the standards that will create accurate, complete, private, and secure data sharing.

Wallace advises against looking for a silver bullet. Speaking at AHIMA’s national convention in October, Wallace encouraged HIM professionals to look for the many small, achievable steps that will improve the exchange of health data now. Look for the inherited processes and technologies that hinder interoperability and change those as you can, he said.

Speaking at the same convention, Mark Frisse, MD, director of regional initiatives at the Vanderbilt Center for Better Health, encouraged HIM professionals to get involved with regional health information organizations (RHIOs). These local data

exchange networks are serving as laboratories of interoperability, working out the policies and technicalities of interoperable data exchange.

Don't be discouraged if you learn that RHIO meetings have been going on for the past year without anyone having invited you, Frisse remarked, you may have missed nothing more than some bad coffee and stale bagels. There is plenty of essential work to be done today, tomorrow, and in the years ahead, he said.

AHIMA members can contact their component state associations to learn about possible RHIO initiatives in their areas. The RHIO Community of Practice at [www.ahima.org](http://www.ahima.org) also serves as a networking resource. HIM professionals should also approach their CEOs and CIOs and inquire about interoperability issues within their organizations or communities.

There is an important shift to make in how we think and how we talk about interoperability, according to Frisse. Healthcare professionals need to think of themselves as consumers as well as professionals, he says. They should consider how the current system does not work for themselves and their families.

CSI also sought to avoid insider definitions and consider interoperability from the consumer's point of view, Wallace says. "That's why the report really focuses on this idea of connected data—that your data is connected to you and moves with you." That's the prize to keep our eyes on, Wallace says: can our organizations become points on a nationwide system that allow consumers to stay connected to their data no matter where they go?

### ONC's Plan to Pull It All Together

When ONC announced four contracts for developing a nationwide health information network in November, work began on the final of what the office considers to be the four building blocks of an interoperable network for the exchange of healthcare information.

Under the contracts, four collaborative efforts will demonstrate models for a standards-based national data exchange network in the coming year. The models will demonstrate patient identification and record location, user authentication and access controls, and the feasibility of large-scale deployment. The contracts are significant because they will result in demonstrations of nationwide interoperability, the step beyond the enterprise and regional networks currently under way.

In October ONC had awarded contracts for the three other priority areas, initiatives on IT product certification, data standards, and privacy and security. The contracts stem from ONC's request for information on the needs for nationwide data exchange, issued in summer 2005.

The first of the earlier contracts addresses the need for certified electronic health record products, establishing a set of functions and specifications that guarantee products are interoperable. That seal of approval should help spur sales by assuring providers the certified system can deliver. Certified EHRs should also help prevent failed implementations that could discourage further progress. Commercial certification on the first set of standards, for ambulatory EHR products, is expected to begin in the spring, with the first certifications appearing in the summer.

ONC is also prodding the industry to settle on standards for communicating health data. These are the wide variety of technical specifications that will allow data to follow patients from facility to facility and region to region, enabling information to be entered once and used multiple times. The contract requests a process for harmonizing the raft of standards now in existence. [Editor's note: the upcoming February issue of the journal will explore data standards harmonization in greater depth.]

Lastly, ONC issued a contract addressing privacy and security, central to interoperability and the future nationwide network for several reasons. Ensuring that data remain secure and confidential as their mobility is dramatically increased is vital in its own right, and it is vital in securing consumer confidence in data exchange. Repeatedly, privacy and security issues top the list of public concerns with a potential nationwide data network.

The ONC contract focuses on the balance of protection and access, the need to maintain privacy and security without sacrificing nationwide mobility. Given the variations in organizational business policies and state laws, there is concern that a patient could cross state lines, for example, but his or her data may be stopped at the border. Thus the ONC contract requests solutions for conflicts that may prevent the exchange of data.

## Notes

1. Commission on Systemic Interoperability (CSI). "Ending the Document Game: Connecting and Transforming Your Healthcare through Information Technology." October 2005. Available online at <http://endingthedocumentgame.gov/report.html>.
2. National Alliance for Health Information Technology. "What Is Interoperability?" 2005. Available online at [www.nahit.org](http://www.nahit.org).
3. CSI. "Ending the Document Game," 14.
4. Beaudoin, Jack. "Brailer: 'This Year Is Make or Break.'" *Healthcare IT News*, June 7, 2005.

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