

# A Connected Future?

Despite rosy predictions and repeated attempts to create a secure, comprehensive national health information network, healthcare technology remains a muddle. Can we escape from this “Tower of Babel” to a truly connected future?

## Chapter in Brief:

- ▲ *Four years ago, after setting a goal of having interoperable electronic health records (EHRs) for the majority of Americans by 2014, President Bush named the first national coordinator for health information technology.*
- ▲ *A February survey by research firm IDC-Health Industry Insights found that nearly 23 percent of chief information officers in community hospitals said that their organizations already were participating in some sort of health information exchange, up from 15 percent in 2007.*
- ▲ *The Utah Health Information Network (UHIN) has been around since 1993 and serves as a conduit for the majority of healthcare billing transactions in the state. It may be a prototype for how a national system may work.*
- ▲ *Despite the success of some health information networks, a master patient index—through which physicians can pull up all health information on a particular person in order to coordinate care more closely—remains elusive.*
- ▲ *A November 2007 Wall Street Journal Online/Harris Interactive poll found that, of the more than 2,100 people surveyed, 9 in 10 wanted access to physician-maintained electronic records of their own health.*



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The cover story of the January 18, 2008, issue of *Wired* was provocatively titled, “Why Things Suck: 33 Things That Drive Us Crazy.” One of the entries was about disorganized medical records.

“You’d think electronic records would solve the problem, but no. Because the software vendors selling electronic record-keeping systems are competing, their systems are proprietary and incompatible,” the article said. “Improving the system is possible, but it would take the cooperation of a bunch of interest groups that have no interest in working together. The Health Insurance Portability and Accountability Act, passed by the federal government in 1996, was supposed to fix things, but massive lobbying turned it into porridge.”

Even “wired” physicians find healthcare information a muddled mess. Allen R. Wenner, MD, software developer and practicing family physician, has EMRs and a digital replacement for the dreaded history-form-on-a-clipboard. His practice receives electronic explanations of benefits (EOBs) from payers. Despite these arrangements, Twelve Mile Creek Family Medicine still receives copious amounts of paper, particularly from laboratories. “We have a stack of paper always,” Dr. Wenner says.

Despite the technology he has on hand in his practice, Dr. Wenner says, “We can’t order a test electronically. We can’t schedule a test electronically. We can’t refer electronically. We can’t schedule referrals electronically.

“I can name at least seven lab systems that we regularly use, and we have an interface to one,” he comments. “It’s the Tower of Babel.”

How do we get from here to the connected future we hear so much about?

## Initial Attempts

Four years ago, after setting a goal of having interoperable EHRs for the majority of Americans by 2014, President Bush appointed David Brailer, MD, PhD, the first national coordinator for health information technology and created the Office of the National Coordinator (ONC) within the Department of Health and Human Services (HHS). Dr. Brailer subsequently issued a four-pronged framework for achieving the president’s

goal: inform practice, interconnect clinicians, personalize care, and improve population health.

A big piece of this framework was Dr. Brailer's vision of a National Health Information Network (NHIN), which he dubbed a "medical Internet." He advocated strongly for regional health information organizations, or RHIOs, in which healthcare organizations of all stripes seamlessly share data so providers have access to complete, up-to-date health records, insurance information, and formularies no matter where and when a patient needs care.

Now headed by longtime Department of Veterans Affairs medical informatics leader Robert M. Kolodner, MD, the Office of the National Coordinator continues to develop and test the NHIN through a series of contracts, pilot programs, and other guidance. September 28 is the date for a live exchange of health records among nearly two dozen federal agencies and private organizations across the nascent NHIN.

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But doubts remain in the physician community.

As the *Wired* piece noted, there are issues of trust and control holding back community-wide data exchange. One current ONC effort is the creation of a roadmap for healthcare organizations to follow in protecting the privacy and security of individual health information, in an effort to foster the trust federal officials believe is necessary to spark widespread data sharing.

Medical informatics consultant Samuel R. Bierstock, MD, a former vice president of medical affairs for Boca Raton, Fla.-based IT vendor Eclipsys, does not expect much to change as long as there are 8 to 10 major companies selling hospital systems, since the large companies like to keep their software proprietary. Dr. Bierstock says, "My own feeling is that eventually all of these systems have to be so customizable that each user sees the screen he wants to see in a way that helps him think and work." He gives the example of an oncologist with patients at three hospitals, each with its own EHR system. The physician

needs the same basic information on each person. “I don’t want to look at that one way on Cerner, and find out I can’t see it on Eclipsys,” says Dr. Bierstock. “Until these systems are such that the doctor’s got a device that displays that data the way he wants to see it, it’s nothing more than a nuisance for him.”

Ease of use may pave the way, but reimbursement issues may be what will inspire physicians to push for interoperability. “If there’s really a pay-for-performance factor, that’ll force the issue to the extent that they will look at software that they can work with that assures them of getting paid,” Dr. Bierstock says.

In fact, one of the larger pay-for-performance programs, Bridges to Excellence, has two health information exchanges (HIEs) participating: The Massachusetts eHealth Collaborative and, in New York state, the Taconic Health Information Network

## Do Personal Health Records Improve Care?

Little clinical data exists today about the efficacy of personal health records, which is why the federal Agency for Healthcare Research and Quality (AHRQ) tapped Virginia Commonwealth University (VCU) last September to develop an interactive personal health record, or IPHR, and test whether the IPHR increases the volume of preventive services delivered and improves communication between doctor and patient in primary care.

“It’s like a patient personal health record, but it takes it a step further,” explains Alex Krist, MD, an assistant professor in the Department of Family Medicine, and the recipient of a three-year, \$1.2 million AHRQ grant.

The system, called My Preventive Care, incorporates an EMR, clinical decision support, patient education, and reminder systems. The patient will log onto a Website to read data from an EMR that has been run through a logic engine to provide links to educational data.

“In our outcomes, we’re trying to see if it improves the number of preventive services,” says Dr. Krist, who works at the Fairfax (Va.) Family Practice Center, a VCU residency site near Washington, D.C. “If this is effective, we’d like to expand this and include more patients,” he says.

He will be assessing some patient knowledge of their conditions and their outcomes. “But the key is delivery of preventive services,” Dr. Krist says.

and Community, also known as THINC RHIO. All of the clinical data that crosses these networks will be used for physician assessment.

“This is an opportunity for new physicians to participate in BTE,” says Bridges to Excellence chief executive François de Brantes. “The HIEs can also give you a broader view of what’s happening to the patients,” Mr. de Brantes adds.

## Success Stories

Despite the negative news associated with many RHIOs, some health information exchanges—and that seems to have become the preferred terminology in 2008—actually have been successful, at least with administrative data.

The Utah Health Information Network (UHIN), which has been around since 1993, has long served as a conduit for the majority of healthcare billing transactions in the state, much like a public utility. “UHIN’s mission is to reduce the cost of healthcare by operating, basically, a community-owned network that exchanges standard transactions so UHIN is a value-added network,” explains CEO Janet Root, PhD.

Members—which include the four major provider organizations and numerous payers—fund the network. “We’re completely member supported, so payers pay a certain ‘click charge’—they pay 15 cents for claims, 2.5 cents for remittance advices, and nothing for anything else,” Dr. Root says. She says Utah Medicaid runs hundreds of millions of eligibility transactions each year and does not pay for a single one.

Providers pay an annual membership fee, \$120 for a solo practice, but they make that amount back many times over. “We figured out at one point that for your average provider, it cost less than .01 cents to submit a claim through our network,” Dr. Root says. With the typical clearinghouse charging 25 cents or more per transaction—and with first-class stamps now up to 42 cents—the savings are by a factor of hundreds.

But price isn’t the only difference that exists between UHIN and a clearinghouse.

“The major difference between us and a clearinghouse is we don’t open the envelope, so we don’t edit or scrub claims or run the past-payer edits,” Dr. Root says. That means that providers

have to be able to submit HIPAA-compliant claims—following the ANSI X12 837 standard—directly from their administrative systems, and payers must reply with X12 835 remittance advice. In other words, it is a condition of participation to be able to send and receive standard HIPAA transactions, so users have to make sure their software is compatible with UHIN.

“And that wasn’t a small undertaking. There was a lot of expense up front,” Dr. Root says. “Our members decided that it was cheaper in the long run ... if they each took the resources to clean up their systems at the beginning, rather than hiring a clearinghouse to clean things up over and over again.”

What the UHIN does not have is a master patient index, something that has proven exceedingly difficult in other RHIO efforts; Santa Barbara County never did develop one, and even a mature, financially solvent network like HealthBridge in the greater Cincinnati area does not have one. “You can’t go out on the system and query for all the information about a particular patient,” Dr. Root says.

In working through this dilemma, UHIN went back to the state legislature to seek authority for the Department of Health to adopt standards for clinical exchanges, similar to what happened in 1993. The bill became law last year; then the state agreed to provide UHIN with \$1 million in start-up funding.

UHIN members are proceeding cautiously because a clinical information system can be difficult to manage. “It’s just so different from administrative, in terms of the complexity,” Dr. Root says. “The difference, of course, is that if you have an electronic prescribing system and somebody hacks in and changes the dosage, you could kill somebody,” she says.

Christopher C. Crow, MD, MBA, of Village Health Partners in Plano, Tex., is not interested in an RHIO right now. But he is interested in connecting the various practices and sharing clinical information within Legacy Medical Village, the facility his practice moved into last year. The building, which houses a lab, imaging facilities, a sleep center, physical therapy, a skin center, a cardiology practice, and a pharmacy, offers patients one-stop shopping for health and wellness services. All providers have or soon will have EMRs. Clinical information-sharing would complete the picture in many ways.

In Bozeman, Mont., a coalition of physicians, IT staff, and hospital executives at Deaconess Hospital chose an enterprise model of data sharing over a federated model, with data stored in a central repository at the hospital—something that may not work so easily in a more competitive market. The NextGen ambulatory EMR that a hospital-owned physician network uses has a data filter called “My Practice” to customize views based on specialty and doctor preferences. Although the complete record is available, a click on “My Practice” will give users only the information immediately relevant to them.

“When I see the patient for a physical and send him to [another department for tests], all the information is there,” says Dr. Joseph Sofianek, a family physician. “If you can get a community to do this, you have improved healthcare for everybody,” he adds.

This year, the Healthcare Information and Management Systems Society (HIMSS) conference’s Interoperability Showcase featured for the first time direct communication between EMRs and devices such as vitals monitors, infusion pumps, ventilators, and “smart” hospital beds.

This type of cutting-edge technology improves patient care and makes the physician’s job easier. A patient may come in with a graph from a home blood-pressure monitor. The doctor scans the paper, and the information is captured into the EMR.

“To me, that comes the closest to how I would want to work,” Dr. Bierstock says.

The Certification Commission for Healthcare Information Technology (CCHIT), which has been certifying ambulatory EHRs against a checklist of functionalities since 2006, began a program for inpatient EHR systems in 2007, and this year will debut interoperability testing for network infrastructure.

The certification standards get more rigorous each year; interoperability is on the priority list. The 2008 standards, which will be launched in July, call for outpatient EHR products to be able to exchange clinical summaries. Scanning typically produces images—digital copies of paper documents—not computable data, which only makes for convenience, not interoperability. There are software tools available, however, that can reproduce paper forms as Portable Document Format (PDF) files, then

import actual data from practice management systems to populate the electronic versions.

“That is the first and probably the most important transaction that you would conduct with a health information exchange network,” says commission chairman Dr. Mark Leavitt. “When we start certifying the networks, the health information exchanges, we’ll make sure they can transmit those transactions.”

### **Consumer-driven Connections**

There are those who believe the push for interoperability will come not from within healthcare but from an external force, namely consumers.

The November 2007 *Wall Street Journal-Online* Harris Interactive poll found that 74 percent of U.S. adults believed they could receive better care if physicians and researchers were able to share information electronically, and 63 percent said electronic sharing of their records could reduce medical errors. Of the more than 2,100 people surveyed, 9 in 10 wanted access to physician-maintained electronic records of their own health.

These kinds of numbers command attention. Indeed, for the last several years, vendors have practically been tripping over themselves to bring personal health records (PHRs) to market. Some are offered through the Web portals of large health systems, where the data comes directly from EMRs. Some are from health plans, populated from claims data. Others, such as those from WebMD and Revolution Health, are marketed directly to consumers, who fill in the information themselves.

But there is one major problem with PHRs and other consumer-oriented products: very few people are using them. At February’s HIMSS conference, Dr. John Halamka, chief information officer at Harvard Medical School and the affiliated CareGroup Health System, said that 2.5 million people had viewed PHRs that CareGroup provides through its Web portal, and approximately 40,000 access the records each month. “Exactly 42 have populated [the PHRs] themselves,” reported Dr. Halamka, who is a member of the Google Health advisory council.

NextGen Chief Medical Officer Sarah Corley, MD, is optimistic that things will change. “I see this as something people will want,” Dr. Corley says.

## Attitudes Toward Electronic Medical Records

An online survey of 2,153 U.S. adults ages 18 and over, conducted by Harris Interactive between November 12 and 14, 2007, for *The Wall Street Journal Online's* Health Industry Edition, asked the following:

**“How strongly do you agree or disagree with each of the following statements?”**

	Agree Strongly/ Somewhat (NET)	Agree Strongly	Agree Somewhat	Disagree Strongly/ Somewhat (NET)	Disagree Somewhat	Disagree Strongly	Not Sure
The use of electronic medical records can significantly decrease the frequency of medical errors.							
2006 (%)	<b>57</b>	21	36	<b>21</b>	15	6	22
2007 (%)	<b>63</b>	25	38	<b>12</b>	9	4	24
The use of electronic medical records can significantly reduce healthcare costs.							
2006 (%)	<b>62</b>	27	35	<b>15</b>	11	5	23
2007 (%)	<b>55</b>	18	37	<b>15</b>	9	5	30
The use of electronic medical records makes it more difficult to ensure patients' privacy.							
2006 (%)	<b>61</b>	25	36	<b>25</b>	17	7	14
2007 (%)	<b>51</b>	20	30	<b>25</b>	18	6	25
The use of electronic medical records can improve the quality of care patients receive by reducing the number of redundant or unnecessary tests and procedures they receive.							
2006 (%)	<b>70</b>	32	38	<b>13</b>	9	4	17
2007 (%)	<b>67</b>	29	38	<b>8</b>	6	3	24
If doctors and researchers were able to share information more easily via electronic medical systems, patients could receive better care that is based on the best available scientific knowledge.							
2007 (%)	<b>74</b>	37	37	<b>6</b>	4	2	21

*Note: Percentages may not add up to exactly 100% due to rounding.*

*Source: The Wall Street Journal Online/ Harris Interactive Poll, November 2006. Harris Interactive Inc. All rights reserved.*