

# How to Surmount Health Care's Interoperability Challenge

**The lack of interoperability is a major roadblock to moving health care forward. But some hospitals are finding ways to make essential data accessible to those who need it.**

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The once arcane concept of [interoperability](#) among information technology systems has become a mainstream issue, rising from the back rooms of IT departments up to [C-suites](#) and the boardroom. Health systems nationwide have invested billions of dollars in electronic health records and IT only to realize the EHR data troves they own now also have to work with that of others.

## Framing the Issue

- Interoperability — the capacity of different information technology systems to exchange information for easy use — long has been a problem in health care.
- The explosion in electronic health records has added to the interoperability challenge.
- Value-based care and alternative payment models make sharing information more and more of a necessity.
- Interoperability isn't just a problem for IT professionals: It requires business and care strategies developed by hospital and health system leaders.

For the most part, they can't.

As long as that holds true, some of the foundational principles of value-based approaches to care — clinical integration, coordinated patient treatment plans among providers, population health management — will be difficult to realize. To deliver extraordinary quality, “you're going to have to deliver integrated care, and integrated care requires integrated information — no two ways about it,” says Randall Gaboriault, senior vice president for innovation and strategic development and chief information officer of Christiana Care Health System, Wilmington, Del.

Urgent initiatives by data standards organizations, the federal government and others seek to remedy the basic lack of interoperability stemming from uncoordinated, proprietary decisions by IT vendors about how to represent, create, send and store computerized data — a fragmented state of affairs more than 20 years in the making. The common goal is to bring data sharing closer to the definition of interoperability: the ability of two or more systems to exchange and use information without special effort on the part of the user.

In a major move to organize the health care industry around a clear set of interoperability targets, the Department of Health & Human Services has extracted pledges from the largest developers of EHRs — responsible for 90 percent of the health records used by the nation's hospitals — to

follow nationally recognized standards in their ongoing development plans and to eliminate any practices that have the effect of blocking information flow from their EHRs.

Sixteen provider systems, including the five largest, also pledged their support, and several professional organizations, including the American Hospital Association, added their backing after HHS Secretary Sylvia Burwell made the announcement Feb. 29 at the Healthcare Information and Management Systems Society's annual convention.

The timelines of most of these efforts are measured in years. But being able to take any discrete element of data in one system and pass it useably to another is an imperative when value-based contracts assigning financial risk for the overall health costs of defined populations of individuals are coming soon or already inked. True interoperability "would be ideal, and I hope we get there someday," says Jan Lee, CEO of the Delaware Health Information Network in Dover, a thriving outlet for health information exchange. "But that doesn't mean you can't do anything now."

## **What happened?**

To grasp how health IT got into its morass, we need to understand how it started out. Early IT focused on revenue-producing departments — laboratory, radiology, pharmacy — and spread to nursing floors, because revenue production required physician orders from nursing stations and results to be reported back, says Mark Braunstein, associate director for health systems at the Institute for People and Technology at Georgia Institute of Technology, Atlanta. As with most products and services, the business case called the tune.

"Most of the operations were freestanding — the hospital did its thing, physician practice did its thing ... so it wasn't really critical for the systems to talk to each other as long as the individual managers of each of those components got the information they needed," says Richard Clarke, board chairman of Christus Health, Irving, Texas, who was CEO of the Healthcare Financial Management Association for 26 years until his retirement in 2012.

The scope of information processing and retrieval was limited and entirely internal. IT vendors specialized in one or more of the departmental systems, jockeying for a reputation of "best of breed" in the industry at large. "And that began the interoperability problem," says Braunstein, who has seen it all as a veteran of the health IT profession since 1970.

Though it was difficult for those departments to communicate electronically among themselves for the benefit of patient care, health care IT professionals improved the situation. In acute care, the use of interfaces and shrewd acquisition of systems for their ability to fit together has made moving information around straightforward, says Bruce Smith, CIO of Advocate Health Care, Downers Grove, Ill.

Then, as the scope of health IT proliferated, the business case moved away from volume, and the way vendors constructed health care IT systems became just as unfavorable to business success as it had been favorable under the dial-up-the-volume model that the health care field had signaled vendors to follow.

The interoperability dilemma was compounded by incentives for physicians to join the electronic health record movement, mainly as a result of the Health Information Technology for Economic and Clinical Health Act. The law offered federal financial incentives in return for meeting milestones of meaningful use of EHRs. That led to widespread adoption of records systems, Braunstein notes, but “it also led to the deployment of literally hundreds of different systems that were all independently developed, are proprietary, have their own way of representing data and adhere to what standards there are to one degree or another and with varying degrees of success.”

## **Following the patient**

A heads-up from the Centers for Medicare & Medicaid Services a year ago alerted providers to prepare for “alternative payment models” based on meeting targets of care quality, safety and efficiency for defined populations of Medicare patients. CMS said it would tie 30 percent of Medicare fee-for-service payments to performance under these models by later this year and 50 percent by 2018. The shift places a premium on attending to early signs of medical decline to help individuals avoid becoming more seriously ill and, in the process, more expensive to treat.

Health systems such as Christus are developing networks of acute care hospitals, physician practices, ambulatory centers, skilled nursing facilities and other care venues, which all have to operate IT systems that talk to one another “because what we’re trying to do is follow the patient beyond just an individual episode [and] over a continuum of care,” Clarke says. “And that requires that we know what’s going on with that patient in the various venues.”

As Christus becomes more responsible for both quality and costs, he adds, “We’ve got to have the analytics that allow us to understand what’s going on with the patient, [both] from the care standpoint and the cost that the patient is incurring in the various locations, including the locations that are not ours.”

## **Bringing it together**

Interim data-sharing measures and longer-term standards-based solutions are knotty technological questions, but interoperability itself should not come down to technology for its own sake, says Pamela Arlotto, president and CEO of Maestro Strategies in Georgia, a health care IT redesign firm. “You have to have business and clinical value driving this thing. So the real opportunity for interoperability and HIE is to redefine it in terms of care coordination, clinical integration and truly driving reduction in cost and improvement of outcomes.”

That requires health care CEOs and boards to state and insist on a business strategy rather than an implementation strategy, says Arlotto. “As long as we let the vendors drive, we are not going to get results. We’ve got to have business leaders define what they need out of these requirements. It’s like almost every area of health IT right now: If we’re going to get value from this investment, the technologists can’t drive it.”

Despite the current level of aggravation over the lack of interoperability, clinical and information experts are breaking the problem apart into reachable objectives for the exchange and display of

data sufficient to go forward on clinical integration and care coordination. “When you bring up the word interoperability, it’s usually brought up in the negative sense, that, ‘I’m trying to do this and that, and I can’t,’ ” says Smith. “There are as many positive stories as negative ones. It just seems that whenever there’s a frustration in a particular area, ‘Well, we should have interoperability, and then we wouldn’t have this problem.’ ”

One example of widespread and targeted data sharing is the Delaware Health Information Network, a public-private partnership that collects and distributes health care data daily for clinical quality efforts, care coordination and managing risk under value-based contracts. The HIE takes in 100 percent of hospitals in the state, 100 percent of labs, 95 percent of imaging centers, 100 percent of skilled nursing facilities and 62 percent of pharmacies and is in the midst of adding practice-level data from physician groups, says Gaboriault, who chairs the DHIN board. The network also crosses the border into Maryland to connect health systems in markets that spill over state lines, he says.

The roster of data feeds is limited to lab results, imaging studies, information from admission, transfer and discharge systems, and transcribed reports such as discharge summaries, patient histories and operative notes. But, those are often all a clinician or care manager needs to get a rundown on the people for whom they’re responsible, says CEO Lee.

Users log in to their own EHR system and then access the HIE with a one-time login. The software is trained to find and display all the information available on a patient from both sources. In the case of EHRs from Cerner Corp., Kansas City, Mo., a collaboration with DHIN has forged a single sign-on capability; one click on an HIE icon brings up the HIE chart on the patient in question without the user’s ever having to leave the EHR. That same single sign-on can be offered to users of other EHR products if their vendors elect to work with DHIN, Lee adds.

The broad reach of the HIE, and its ability to deliver up-to-date information that can improve patient care and raise vigilance, yields a result that looks a lot like interoperability, she asserts. “Workflow for the user is seamless — they never get out of the EHR. And so, if you buy the definition that interoperability is the ability to view or exchange ... information from other systems without unusual effort, actually we’re there.”

## Using the system

For Christiana Care, Delaware’s largest health system, with two hospitals, a home health service, rehabilitation services and a network of primary care and other outpatient services, the use of DHIN to gain easy access to data in its own systems and others is invaluable, Gaboriault says. “The heartbeat of care is diagnostic data; that’s the entry point, clinically, to figure things out.” By first showing clinicians whether relevant diagnostic information is out there on a patient, “we’re arming people with a basic set of knowledge.”

Real-time functions help to manage value-based contracts, Gaboriault says. “Without an ecosystem of interoperability across the network, it’s a huge, heavy lift to do this.” For starters, Christiana Care Health System would have to interface every point of contact with every other

point and negotiate what form to put the data in, how to move it and where to place it in every participating health organization. Instead, the HIE does all that work, so all participants connect at only one place, one time.

## **No gloom and doom**

Large health systems such as 12-hospital Advocate have taken on the interoperability task internally, first connecting hospitals, then physician groups and, more recently, with the hospitals with physician sites and other care venues. It took more than 15 years and [legions of interfaces](#) but the result is a workable circulation system for data to serve extensive value-based contracting.

“When someone goes gloomy and doomy on the state of integration, I like to be a little bit more positive,” says John Norenberg, Advocate vice president for corporate information systems, physician services. For one thing, he’s found that clinicians don’t want, and won’t ever agree on, a long list of structured data elements in a computer system, so the interoperability challenge can be narrowed down to a handful of elements to standardize in each specialty.

A clinically customized application for Advocate practices now can search for and grab patient details while a physician is in a practice’s EHR, no matter which vendor is supplying it or which vendor system it is searching, Norenberg says. In a hospital, the application can access information from all connected ambulatory systems. In a physician office, hospital information is at a user’s fingertips with the click of a tab on a computer screen. — *John Morrissey is a freelance writer in Chicago.*