



# 'It's an existential necessity to share data'

By John Fox | August 27, 2018

John D. Halamka, M.D., chief information officer of the Beth Israel Deaconess Medical Center in Boston and dean of technology for Harvard Medical School, explains why healthcare lags behind other sectors when it comes to interoperability – and what the industry can do to catch up. For more of his conversation with athenaInsight editor in chief John Fox, listen to the Decoding Healthcare podcast.



*John D. Halamka, M.D.*

**Q** ▪ I did a Google search the other day, and it seems like everything that popped up about interoperability had something to do with healthcare. Is there a reason why?

**A** ▪ Maybe it's because healthcare doesn't have interoperability to the extent other industries do. We're really the last industry.

You may know the history of the shipping industry. It used to be longshoremen and nets and boats, and they put all the stuff on the deck. Then somebody said, "Well, this is a really inefficient thing to do. Maybe what we should do is standardize shipping containers."

Okay, that's great, but where are you going to put them on the deck with the nets? "Oh, I guess we need to rebuild the ships. Oh, I guess we need to rebuild the loading docks."

So the entire shipping industry agreed that end-to-end interoperability depended on replacing every essential

component. And now, of course, shipping is reliable and cheap, and no one would even think back to the days of longshoremen and nets. We haven't quite got there in healthcare.

**Q** : What prevents us from getting there?

**A** . I was asked the other day by a government official, "How come we don't have the interoperability we all want?"

I said, well, first, over the last decade, we actually have done some pretty remarkable things. Immunizations, portable labs, syndromic surveillance – those are actually reported with a high degree of regularity from hospitals and doctors.

But the typical use case you hear is, "Oh, I broke my leg while on vacation and the doctor couldn't get at my records." If that's your definition of interoperability, we have not done a good job.

In Massachusetts, we have a set of laws, and those laws are generally friendly to interoperability. But in New Hampshire, it's illegal for a government entity to hold your data because that's too much government in your face. What's required in one state is illegal in another state. That's problem one.

Problem two: How do I even know who you are? Maybe your name is misspelled, or maybe there are other people in the country that have your name. So if I'm sending data from place to place, how do I even make sure I commingle the right data? We don't have a nationwide patient-matching strategy.

Problem three: How does a doctor in Florida get the electronic address of doctors in Massachusetts? We don't have any kind of national directory of electronic inputs.

And then there's the biggest hurdle: economic incentive. If there is a business case to share the data, an enabling policy, and easy-to-use technology, then data usually flows. If you said, "Doctors won't be paid until their data goes to the patient or to the next provider of care," in two weeks we'd have interoperability to a much greater extent than we have now. We just don't have quite that incentive.

**Q** : Do you see us getting there?

**A** : I do. In an era of value-based purchasing, where we're paid for outcomes and quality, it's an existential necessity to share data.

Some would say that, in a fee-for-service world, people built silos and they guarded those silos, and they were really volitionally blocking the data. Well, maybe that happened in some places. But [at BIDMC], it wasn't that we were volitional; it was just that we just didn't get to it.

Today, we have every incentive to get to it, and so we do: We aggregate the clinical and financial data necessary to coordinate care from six different EHRs, and we require our contracted clinicians to send us over 100 data elements from each patient visit so that we can measure quality and enable clinicians to learn best practices from each other.

**Q** : John, you're the international healthcare innovation professor of emergency medicine at Harvard. What are you seeing internationally?

**A** : If you're in South Africa, bandwidth is expensive and robust distributed data centers are rarely available. However, patients have cell phones. What's more, lots of folks come and go across the borders, which aren't tightly controlled, between Zimbabwe and Lesotho and Botswana. So you can't really use name, gender, date of birth to identify patients. You can't really use identity cards.

So what do we use? Iris scans. We built these very simple \$100 devices you can deploy in the field that take an iris scan, and send a request over a GSM cell phone to a distributed blockchain layer to figure out where [a patient's] records are and then deliver them to a GSM cell phone printer in the field. So literally, we scan your irises and one second later here's the data about your HIV care the doctor needs to know now.

It works really well, it's really inexpensive, and it doesn't require a huge IT lift or new infrastructure.

**Q** ▪ It sounds a little 1984-ish. Do you see this happening in the U.S. any time soon?

**A** ▪ Well, we're actually not storing the iris scan itself. We're storing certain key points or features. We're verifying your identity, but we don't have the ability to "replay" your identity. This is not some sort of sci-fi film where we're going up to a scanner and faking that we're you. Even if the scan is lost or stolen, your privacy isn't really compromised because it's just a verification tool.

The culture in South Africa seems to be that this is such an important public health issue, people are okay with it. We've done lots of focus groups, and they actually think that getting safe, coordinated, low-cost care is really important.

**Q** ▪ Is part of your charge or your professional interest to take ideas that are working in these disparate locations and bring them back to the U.S. system and try to apply them in some way?

**A** ▪ Absolutely. The U.S. is lovely for so many reasons, but it's hard to take risks. There have been so many fines and loss of reputation if you accidentally lose data, people are afraid to try something new.

Whereas, in my work in China, we said, "Why don't we pilot identity cards with RFID chips for eight million people?" It's a pilot. And the town of Hangzhou said, "Sure, that's okay. We hope it works, and the government will build some protections around it." We tried it, and it's worked fabulously.

So we can take these ideas in areas that are maybe a little more tolerant of risk and ambiguity, and once we've proven they work and they're low-risk, we can bring them to the United States.

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