

NHIN Direct: ONC Keeps It Simple in Effort to Jumpstart Data Exchange

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By Chris Dimick

The federal government is creating a stripped-down version of the nationwide health information network to aid the meaningful use program. What does it mean for HIEs?

Simple is not a word typically associated with electronic health information exchange. For years, the act of sending an electronic digital copy of a patient's medical record, even across town, was envisioned as a complex network of interconnecting healthcare entities.

Federal and private organizations have spent millions of dollars and thousands of volunteer hours advancing the privacy, security, and transmission standards for such exchange. While progress has enabled a limited ability to electronically exchange patient's health information to date, many officials believe the country is still years away from the true nationwide health information network (NHIN) envisioned by the federal government.

But federal officials are now proposing a simpler way to exchange information that they hope will have providers securely exchanging patient information by early next year.

NHIN Direct aims to keep things simple and fast-track providers' ability to exchange information and join the federal "meaningful use" EHR incentive program. This stripped-down version of the NHIN would give providers a way to send basic information to other providers over the Internet, bypassing the complex, more robust NHIN system for simple, one-to-one exchange.

NHIN Lite

NHIN Direct is being put forth by the Office of the National Coordinator for Health Information Technology (ONC), the division of the Department of Health and Human Services responsible for coordinating the nation's health IT activities.

The model is intended for only the simplest health information exchange, and it will supplement-not replace-the wider reaching NHIN Exchange, which is still the envisioned model for connecting regional exchanges into a nationwide network, planners say.

NHIN Direct would enable the same sorts of information exchange currently done through fax or mail. The model would merely allow providers to exchange that information over the Internet.

It may seem like a simple application, but giving all providers this ability is a huge step forward in health information exchange, proponents say.

"We want to take the simple kinds of exchanges between referring physicians or between laboratories and doctors, and define what the services, standards, and policies are needed to be able to enable that kind of exchange," says Doug Fridsma, director of the office of interoperability and standards at ONC. Fridsma, hired in January, leads ONC's NHIN initiative.

NHIN Direct will be agnostic toward the type of information it exchanges, focusing more on the information exchange envelope wrapping that information. It aims to separate the transport layer of a message from the actual communication.

The content of the message could vary from a simple scanned medical summary to structured data from an EHR transmitted in the Continuity of Care Document format.

In the case of a primary care physician recommending a patient to a specialist across town, for example, both providers would have NHIN Direct software installed in their EHRs. The primary care physician would “push” the information via the Internet from his EHR to the specialist’s.

NHIN Direct is currently not intended to “pull” information from providers, which would involve more complicated authentication, identification, consent, and privacy and security requirements. It is intended for cases when the exchanging physicians have a trusted, established working relationship and have established patient consent for the transaction.

Complete interoperable health information exchange, with all its complexity, is outside the scope of the NHIN Direct project, according to Micky Tripathi, co-chair of ONC’s Health Information Exchange Workgroup and president/CEO of the Massachusetts eHealth Collaborative.

Tripathi is also a member of the NHIN Workgroup, a subgroup of the Health Information Technology Policy Committee that advises ONC on a nationwide health information infrastructure. The workgroup’s recommendations were the start of the NHIN Direct model.

“We are simply replacing an exchange of information that happens today in a nondigital format with an exchange in an electronic format,” says David Lansky, chair of the NHIN Workgroup and president/CEO of the Pacific Business Group on Health. “In general it is not a project that intends to tackle new privacy or security domains or introduce new policy questions into the discussion.

“I think they [ONC] are extremely aware of those issues and have purposefully scoped their approach to not trigger any new difficulties,” he adds.

More intricate cases, such as a provider who wants to “pull” a patient’s information from an unfamiliar healthcare facility, would be performed by the proposed NHIN Exchange. NHIN Direct is a variation on the NHIN Exchange, which is currently being used by several government entities to exchange information online via NHIN Connect software.

“The NHIN Connect is a very successful but complex set of software and policy tools... it is more complex than a typical small community-based user can adopt,” Lansky says. “So it made sense, for the high proportion of information traffic between existing trading partners, to look for a light approach that would be easy to adopt, not that complex, not expensive, and that most EHR application software could enable.”

The NHIN Is the Internet

ONC has been publicly pressing that the NHIN is not a separate framework of interconnected facilities but will use the Internet to exchange information. There had been some expectation that the NHIN would be some sort of hardwired network, with hospitals physically connected by fiber optic cable in a vast spider web of interconnected facilities.

“People have a perception of it being like a wired network with a bunch of exchanges and gatekeepers and switches in it,” Lansky says. But why develop a parallel infrastructure for health information exchange when the current Internet has the potential to connect providers? ONC officials say.

Instead, the NHIN is a set of resources, Lanksy says, the standards, policies, and services that are necessary to enable the secure exchange of health information using the Internet.

NHIN: A Long Time Coming

The nationwide health information network is considered the US’s leading model for large-scale health information exchange. Conceived initially as a way for federal entities such as the Social Security Administration and the Department of Defense to

exchange information, the NHIN Exchange is currently being adapted by the federal government for public use. Currently, 26 federal agencies are in various stages of involvement with NHIN Exchange.

The NHIN is not a physical network. It is a set of standards, protocols, and policies used to package and send health information privately and securely from one place to another using the Internet. The intent is for local providers to form regional health information organizations (RHIOs) or health information exchanges (HIEs). These networks would link their members together in agreements that would allow providers to privately and securely exchange health information. These regional networks would link to other regional networks using NHIN protocol into the NHIN Exchange, stretching out like an interconnecting web across the country.

But the development of this nationwide network for health information exchange is still years in the making, a fact that complicated the nation's HIE plans when Congress passed the ARRA stimulus bill in February 2009.

Four Levels of NHIN

The NHIN is not a single health information exchange model, but a combination of four different components that can be used together or separately to enable HIE activity over the Internet.

"Each of them have slightly different flavors, but they all work together to create that ecosystem that we think about with exchange," Fridsma says. "Exchange is not something that's one size fits all."

NHIN Gateway Specification: a description of the standards, services, and policies needed to exchange information over the Internet.

Federal Health Architecture Connect Software: the computer code based on the gateway specification that can be installed on provider systems and used to exchange information.

NHIN Exchange: a network of federal agencies including the Department of Defense, Social Security Administration, and Centers for Disease Control and Prevention that use Connect software to exchange health information. The entities all signed a user agreement known by its initials, DURSA, which provides a legal, privacy, and security framework for the exchange. It is the NHIN Exchange that could be expanded to healthcare facilities, creating a nationwide health information exchange.

NHIN Direct: a stripped-down version of the Connect software that will enable a simple one-to-one exchange of basic information between providers.

Meaningful Use Spurs Short-Term Solution

The American Recovery and Reinvestment Act provided billions in incentive payments for providers who implement EHR systems. Participants in the program must meet criteria to ensure the "meaningful use" of their new EHRs. One such requirement is the ability to exchange information electronically.

With the NHIN years away and the incentive program beginning late 2010, ONC envisions NHIN Direct as a short-term solution for meeting the meaningful use criteria, Lansky says.

This bridge solution is especially important for providers who do not have access to a functioning regional or state HIE. The NHIN Workgroup does not intend for NHIN Direct to "undercut" HIEs, Tripathi says, but it recognized the needs of other providers who "would literally have nothing right now."

ONC accepted the workgroup's recommendation and began the NHIN Direct project. The effort is being driven in large part by a community of about 30 healthcare companies and organizations that have pledged to develop and test the NHIN Direct specifications, Fridsma says.

NHIN Direct is a good step toward secure health information exchange, says John Moore, managing partner of health IT analyst firm Chilmark Research, who has been following the NHIN.

Moore says the step back from NHIN Exchange and its Connect protocol toward the simpler NHIN Direct will benefit the industry.

“I think it is what was necessary. They just were not going to go anywhere with the existing NHIN Connect because it was too heavy and built basically in a closed room without the involvement of a lot of other parties,” Moore says. “I just thought it was way too much, way too early. Now they are saying ‘Let’s simplify this and turn it into something that people can adopt.’”

Roles Remain for HIEs and RHIOs

The introduction of NHIN Direct has left many wondering if there is still a need for HIEs and RHIOs. Years of work have gone into their development, and in February HHS completed grants of nearly \$550 million to 50 states and some territories to develop regional HIE.

But with NHIN Direct, providers can essentially cut out the HIE middle man and exchange health information directly. With 57 HIEs currently launched and 190 HIEs expected to be running in the next few years, industry experts have asked where NHIN Direct leaves these fledgling organizations.

“Every state in the country got money from ONC to develop state-level HIEs, and all of them now are scratching their heads saying, ‘So, how does NHIN Direct work with all of this?’” Tripathi says.

HIEs that built their business model on simple health information exchange could be in trouble, Tripathi says. But HIEs still have a unique service to provide the marketplace beyond simple one-to-one exchanges. Fridsma says that there is no one-size-fits-all solution for exchange and that NHIN Direct and HIEs “can and should” coexist.

HIEs can address the complex yet common exchange situations that NHIN Direct will not, Fridsma believes. They can provide provider look-up services when providers need to access a patient’s record from an unknown provider. They can offer services related to public health reporting, data aggregation, patient consent management, identity proofing and authentication, health data analysis, and quality measure reporting.

“I imagine there are many circumstances in which those kinds of services would be valuable and that people would be willing to join with the state HIE and pay for the ability to have that kind of service,” Fridsma says.

Lanksy also sees a role for HIEs and RHIOs in information exchange where no established, trusted relationship exists between providers. This includes exchange with a hospital in a remote location, getting information to a doctor in another city, or locating the health record of a patient from out of the area.

Some have suggested that NHIN Direct undermines an HIE’s ability to attract providers to its network since it cannot monopolize direct health information exchange. But Lansky says you cannot expect people to use a more complex service when a simpler version is available.

In fact, he says, if ONC does not develop NHIN Direct, someone else will, because it is a relatively easy application to build.

Internet-based, secure transport of information has developed to the point that it is now a commodity service, Tripathi says. HIEs have an opportunity to build on top of that service to offer things NHIN Direct never will.

“If you add value, you will be successful,” Lansky says. “I don’t think it is going to be effective to try and limit the success of a less expensive, less complex service.”

Work continues on the NHIN Exchange. The Social Security Administration is conducting a pilot with Virginia-based healthcare providers to use the NHIN to exchange disability information over the Internet. By year’s end, it expects to add an additional 14 or 15 entities to the program. If successful, the pilot could provide the basis for nationwide use of the NHIN.

Even as NHIN Direct presses forward, the government still hopes to one day expand the NHIN Exchange to include state HIEs and RHIOs, Fridsma says.

“We are continuing to work with a number of states that are proceeding with their plans to use the NHIN Exchange and the Connect software to meet the needs of their states and organizations,” he says.

Pilot Planned for Fall

The clock is ticking for NHIN Direct developers because the ARRA meaningful use incentive program kicks off late this year. Accordingly, ONC has a very aggressive timeline for getting NHIN Direct up and running.

Draft specifications were expected in May, and testing will begin this fall. “By the end of the year we expect to have actually demonstrated the NHIN Direct specifications in some real-world settings,” Fridsma says.

ONC officials don’t think of NHIN Direct and NHIN Exchange as competing health information exchange models. NHIN Direct will be developed using the same software, Connect, that is used by the NHIN Exchange to swap health information. In fact, the same development team that created Connect has been called on to develop NHIN Direct’s specifications.

There is still a desire by both providers and the federal government to develop the NHIN Exchange into a nationwide network, with benefits that include lowering administrative costs and improving national public quality measures, Moore says.

“I don’t think anything has changed in terms of the desire to connect at a local level and then ramp that up onto a national level,” Moore says. “How we are going to get to there from here is still a work in progress. It is going to take a while.”

The two models are being designed to be highly compatible with each other. As the meaningful use definition changes over time-the requirements will become more complex in 2013 and again in 2015-NHIN Direct might either evolve as an HIE delivery model or default to its more complex cousin, NHIN Connect.

But for now, NHIN Direct can serve as a fast track to meaningful use, Lansky says.

“I think it is worth noting that there isn’t a master plan that is simply being unrolled over the course of several years,” Lansky says. “We are all trying to identify the requirements and issues that have to be addressed, meet those requirements, to enable meaningful users to be successful.”

NHIN Direct is far from perfect in its ability to enable meaningful health information exchange. But it is a starting point that will evolve with time, Tripathi says.

“I think it would certainly be a concern among those of us who are supportive of NHIN Direct if that became the only health information exchange we have in the country,” Tripathi says. “Then I would be strongly opposed to it because it is basically just sending this back and forth for a particular purpose, it is not getting us to any of the higher value.

“We need to have it be a platform, but also have a way to get to those higher level things that the state-level HIEs are going to perform.”

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