

Information Exchanges Let Doctors Share Patient Data Efficiently

Several new networks are being launched across the country, and while they vary in size, scope, and clientele, the goals and challenges are similar.

By [Marianne Kolbasuk McGee](#)
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As more doctors and hospitals make use of electronic health records, the next step in healthcare's transformation will be to ensure that doctors and other healthcare providers can exchange of patient data.

Multifaceted healthcare organizations are setting up internal data exchanges so their affiliated doctors, outpatient facilities, and hospitals can easily share data. But larger health information exchanges are also being launched that let unaffiliated providers within a state or region share patient information. All of these efforts potentially play a role in the federal government's vision of building a national health information network that would serve as a "network of networks."

Over the last decade, there have been dozens of efforts to create health information exchanges—even before President Bush in 2004 set the goal for most Americans to have e-medical records in ten years, and before President Obama signed the American Recovery and Reinvestment Act's \$20-billion plus stimulus program for health IT into law in February.

Some of those projects ran out of funds in part because of business models that didn't make clear who pays to keep them running. In addition, healthcare providers have raised concerns about having to support a data network in which they share patient information with competing doctors.

However, recent efforts to create health information exchanges appear more promising, taking new approaches to data sharing. Also, federal and state grants tied to the stimulus legislation are providing funding for some of these new exchanges. And "meaningful use" criteria for e-health record systems being developed by the Department of Health and Human Services will likely require healthcare providers to electronically share certain data with public health and other agencies.

Statewide Network Goes Live

Maine went live in July with HealthInfoNet, the largest statewide health information exchange in the country to date.

HealthInfoNet was launched in 2005, financed by grants and government funds. It will soon receive matching funds provided federal stimulus spending, and next year, healthcare providers who use the exchange will pay subscription fees.

The exchange has cost about \$8 million to build so far. It will cost another \$12 million to extend it to more rural providers and about \$6 million a year to operate. The state of Maine has allotted \$1.7 million for the exchange in its 2010-2011 budget to help get more healthcare providers on HealthInfoNet.

About 700 clinicians are using the network to share data on 560,000 of Maine's 1.3 million population. By next summer, it's expected that 1,200 to 1,500 clinicians will be using the network. Fifteen of the 39 hospitals in the state are connected, and one primary care organization has three locations contributing data to the Oracle (NSDQ: [ORCL](#)) data repository.

"Maine has as many people as one borough of New York City," says Devor Culver, executive director of HealthInfoNet. "Small has advantages."

Medical images aren't part of the exchange yet. Nevertheless, the data repository is expected to grow to 1 terabytes by the end of its first year of operation.

Maine is using a central data repository model, rather than the peer-to-peer, federated model used in some exchanges. In the federated model, data stays at the source, and doctors access it when needed. Physicians using those systems have raised concerns about being able to get the most up-to-date patient data, Culver said, because a clinician providing the data can block others' access to it or to the most recent versions of the data. With a centralized repository, all providers submit the same key data sets, and everyone has access to the data with faster response times, Culver said.

With federated models, "if there's a request for information, it could be blocked," preventing a doctor from accessing vital patient information from another healthcare provider," said Janie Tremlett, senior VP at Concordant, an IT services firm that supplied consulting and training for the HealthInfoNet project.

How HealthInfoNet Works

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Maine has had a decade of experience of consolidating healthcare data, because insurance claims data from healthcare providers and insurers gets submitted to a centralized repository, Culver said. HealthInfoNet is similar to that effort but focused on continuity-of-care records, including information on patients' lab and radiology results, prescription drugs, diagnoses, and allergies.

Healthcare providers access the exchange using a Web browser, making for a simpler workflow. If a doctor is looking at the EMR records of patient Jones while he's at the office, the physician can open the exchange using a browser to check that patient's other data.

Once a clinician enters data into the system, it's immediately available to other healthcare providers on the exchange. HealthInfoNet is currently getting data from about 42% of all ambulatory care visits, 50% of emergency room visits, and 52% of hospital discharges that take place in the state, Culver said.

Access to patient data via the exchange is providing clinicians with more complete information on patients to help improve decision-making and avoid unnecessary duplication of tests. One cancer center has found the exchange provides information about lab results for diagnostic tests done at other facilities that, in the past, it wouldn't have known about, Culver said.

Western Washington Network

Smaller regional networks are taking similar approaches to Maine's statewide exchange, using centralized repositories to collect key patient data.

Western Washington Rural Health Care Collaborative, a non-profit rural health network, also went live this summer with a Web-based exchange to facilitate electronic information sharing among three small, rural hospitals and HarborView Medical Center, a level I trauma center in Seattle.

The WWRHCC exchange, which is financed by government funding and grants, will be expanded to six additional rural hospitals. All facilities in the network are close to the Canadian and Oregon borders and serve a total of about 150,000 patients, said WWRHCC executive director Elizabeth Floersheim.

The exchange will initially provide the smaller hospitals, some of which have fewer than 25 beds and are located 35 or more miles from other healthcare providers, with telepharmacy services. Patient data, such as allergies, medications, lab results, and demographic information, is collected in a central repository, and pharmacists at one of the facilities can remotely provide

assistance to other hospitals.

The exchange is expected to reduce costs by eliminating duplicate lab work, as well as provide doctors with fast access to data on patients who are rushed from the regional hospitals to the trauma center. Orion Health is providing most of the technology for the exchange, including its portal, central repository, integration engine, and patient identifier system.

Big City Exchange

In places where populations are larger, federated, peer-to-peer approaches to health information exchanges are favored. In New York City, there are already four such regional health information exchanges, said Dr. Amanda Parsons, acting assistant commissioner of the NYC Primary Care Information Project.

The Primary Care Information Project is providing primary care doctors, who care for underserved patients in the south Bronx, Harlem, and south-central Brooklyn, with free eClinicalWorks e-medical record software and services. The project is separate from the city's four regional exchanges and funded with \$30 million from the city's public health department. It's aimed at providing preventative services and improving quality of care for low-income patients, especially those who have chronic illnesses such as diabetes and high blood pressure, Parsons said.

Expanding EMR Use

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So far, 1,600 physicians are live on the EMR system; the goal for 2010 is to have 2,500 doctors, serving 2 million patients, using digital records. The system provides doctors with electronic alerts when a patient's data indicates a new problem, such when a diabetic's blood pressure is gets too high. It also provides guidance about treatments and approved medication for chronically ill patients, said Parsons.

In January, the city will launch a pilot project to encourage the primary care doctors who are using eClinicalWorks EMR system to start exchanging patient data with one another and with area hospitals. Later, the data could be shared among the area's four regional health information exchanges.

The eClinicalWorks EMR system doesn't use a central repository, Parsons said, but rather data is sent to physicians or they request it. Several patient identifiers are used to ensure data being accessed is for the correct patient, she said.

Local Focus

Some health information exchanges are launched locally, focusing on getting a hospital group and its affiliated doctors exchanging information. This is often the first step toward a wider data exchange network.

Caritas Christi, which operates six community hospitals serving about 1 million patients in Massachusetts and Rhode Island, is launching an internal health information exchange using Microsoft (NSDQ: [MSFT](#)) Amalga and HealthVault technologies so its network of doctors can connect to Caritas Christi systems. The hospital system expects to broaden the exchange in the future.

"We've been assured that we can hook up with state health information exchanges" and the national health information network in the future, said Caritas Christi CIO Todd Rothenhaus.

Whether a health information exchange is large or small, rural or urban, using a central repository or a peer-to-peer federated model or some other method of sharing data, they all have the same goal: To securely and efficiently share patient data so that providers can deliver quality, cost-effective care. And if the exchanges being developed now can sustain themselves in the long terms, hopefully, they'll be able eventually to connect into the expanding national health information highway.

Blue Cross of Northeast Pennsylvania, the University of Louisville School of Medicine, and a range of large and small healthcare providers are using mobile apps to improve care and help patients manage their health. Find out how. [Download the report here](#) (registration required).