

## Newsletters

### Building Health Networks From the Ground Up

#### *Flexible Technology and Business Plans Aid Data Sharing*

By Robert L. Scheier, senior editor, Triangle Publishing Services Co. Inc., November 2006

In the world of regional health information organizations (RHIOs), MedVirginia is a pioneer: It is actually distributing medical information, and claims to have a proven business model that will allow it to stay in business.

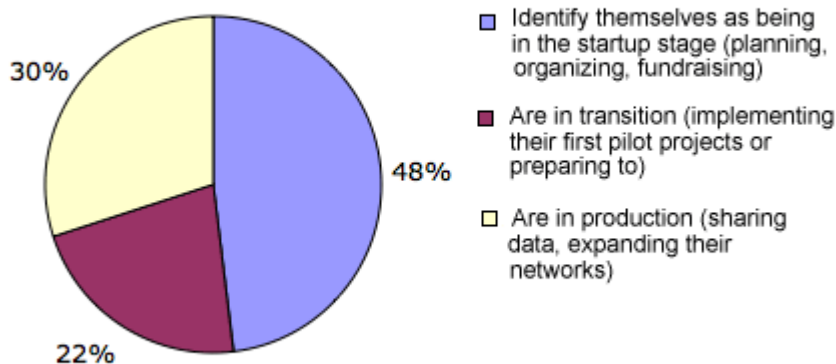
Founded in 2000, it maintains records for more than 405,000 patients served by 48 physician practices. While today MedVirginia only carries about 30 percent of the clinical information in its central Virginia service area, CEO Michael Matthews says its goal "is to get to 100 percent" and that it is adding more doctors to its network every month.

Med Virginia's progress holds many clues for other RHIOs struggling to deliver on the promise of lower-cost, higher-quality health care through the digital sharing of patient information. These goals include building networks from the bottom up and delivering immediate benefits to convince doctors to join them, rather than waiting for "top down" initiatives such as federal or regional health networks.

#### RHIOs Defined

RHIOs (regional health information networks) are partnerships of health care providers, insurers, information technology companies and other players to develop ways to exchange health information. Similar organizations called HIEs, or health information exchanges, and HINs, or health information networks, pursue many of the same goals.

### RHIOs: A Work in Progress



Source: Healthcare IT Transition Group Survey



Those goals include reducing the cost and improving the quality of health care by giving providers the information they need to properly treat each patient. In a study of more than 1,600 patient visits, the Journal of the American Medical Association found that lab tests, medical histories or other information were missing in close to 14 percent of visits. In 44 percent of the cases, doctors felt the missing information could possibly harm the patient.

The RHIO movement is fueled in part by President Bush's drive to provide most Americans with electronic health records by 2014. Of about 165 RHIOs, only a few dozen are "actually sharing records between multiple network members," says Michael Christopher, chief technology officer of the Healthcare IT Transition Group, with the rest in the organizational or funding stages.

### **Who Pays?**

A 2005 article in the Annals of Internal Medicine estimated it would cost \$156 billion and five years to create a National Health Information Network (NHIN) and another \$48 billion a year to run it. While many experts agree this would reduce the cost and improve the quality of health care, many RHIOs are stymied by a lack of up-front funding and a clear business model.

Currently, insurers (including major government health care payers such as Medicare and Medicaid) receive the most benefit from RHIOs through lower administrative costs and the ability to monitor the quality of care and doctor's performance, says Christopher. Yet only 20-30 percent of RHIOs list an insurer or health payer as among their top funders, he says. Relatively few physicians have implemented even standalone EMR systems which could feed information to a RHIO, he says, even though his own studies have shown such standalone systems can cut transcription costs and let doctors see more patients with fewer administrative staff.

As a result, "for the foreseeable future, most RHIOs will rely on some amount of ongoing public or private funding" says Christopher.

### **Technical Challenges**

With the adoption of standards for formatting medical data, and for linking networks, technology is becoming less and less of a barrier to the formation of RHIOs.

However, RHIOs must find a way to resolve discrepancies and eliminate redundancies among multiple data sources. The North Carolina Healthcare Information and Communications Alliance, Inc. learned that in 1998, when it began gathering immunization records for two million children from two major health plans and public health agencies across the state. Many children had multiple records from vaccinations at different locations, resulting in the same child's name being recorded in slightly different ways or with different addresses in multiple databases, says Executive Director W. Holt Anderson.

Help came from a software vendor that was a member of NCHICA and used probability matching to narrow all the possible matches to the five most likely, at which point a physician could verify the child's identity with a parent, says Anderson.

Network convergence is helping health care providers, payers and other RHIO members to share information more easily, quickly and securely. Convergence enables the sharing of medical information RHIOs in four key areas.

- By integrating mobile and fixed access, convergence allows wireless, broadband and other access options to deliver health information anywhere from a patient's hospital room to a nursing station, a doctor's office or the patient's home.
- The use of converged Internet Protocol networks based on MPLS (Multiprotocol Label Switching) allows multiple medical applications to share the same secure network, far more efficiently and flexibly than is possible over older dedicated circuits.
- Optimizing the application infrastructure means managing business and clinical

applications, and the infrastructure on which they run, together to meet common performance objectives.

- Utilizing IP-based services allows RHIOs to economically deploy many communication services over the same network, including Voice over Internet Protocol, IP television, conferencing and network-based security.

## **Business Models**

Some RHIOs, HIEs and HINs actually store and process clinical information. Others just provide the networks needed to carry that information, while others only coordinate and manage RHIO work done by others.

NCHICA's Anderson, for example, says that running a network or maintaining databases "tends to take us away from being a neutral facilitator and organizer." However, it has spearheaded projects that have taken on a life of their own. One database of statewide immunization records was designed to last only 18 months, says Anderson, but cut so much paperwork and saved so much time for doctors it was kept in operation until 2005, when it was replaced by a state-run and state-funded system that also automatically tracks vaccine stocks and reorders them for doctors when needed.

### **RHIO Business Models**

- 1) "Honest Broker": Identifies needs; contacts stakeholders; helps find funding, coordinates and manages projects.
- 2) "Network Provider": Provides the network infrastructure and other support for exchanging data, but does not host data itself.
- 3) "Data Host": Provides and manages technical infrastructure and processes for managing, hosting and sharing data.

Similarly, a 1999 project designed to capture daily health data from emergency rooms across the state has evolved into NC DETECT, (the North Carolina Disease Event Tracking and Epidemiologic Collection Tool). Designed to quickly detect natural or man-made disease outbreaks, it is funded by federal bioterrorism grants and operated by the University of North Carolina-Chapel Hill Department of Emergency Medicine under contract with the state Division of Public Health.

Med Virginia, by contrast, accepts, processes and securely stores clinical information, charging hospitals, laboratories and other "data suppliers" to host their information. Founded with investments from CenVaNet, a hospital and physician owned network, and MedAtlantic, an affiliate of the Virginia Urology Center, it began by offering physicians a group purchase program for supplies and training on security compliance, says Matthews. Those offerings "helped get the organization positioned as being of support to the physicians, and getting us into the space of understanding technology and needs of the practitioners," he says.

It wasn't until January of 2006 that it launched its online system for sharing clinical data, including lab and radiological reports as well as hospital admission, discharge and transfer notes. In return for their fees to MedVirginia, the "data suppliers" reduce their own costs to store and distribute data, and can give physicians access to their data without going to the expense of linking their own systems to the doctors'. Physicians can access patient data for free, and for another \$25 per physician per month can buy optional services such as linking patient data with their own schedules so the patient's records automatically appear on the doctor's computer at the proper time. MedVirginia is now adding the ability to store and provide medical images and to allow doctors to electronically sign hospital reports.

### **Just Begin**

For doctors wanting to get the benefits of networked data, Christopher recommends automating their own practices so they will have data to share. For RHIO organizers, Matthews recommends delivering basic functionality and real business benefits and

physicians, and building membership from there.

"One of the things we've experienced is just the power of having a working system, even if it's scaled down" says Matthews. "Just get into the game. Some RHIO efforts have such large stakeholders involved in the process, that I think it's going to be difficult to sustain momentum and interest.

Anderson also recommends starting at the grass roots level, because RHIOs will "be built around a community model upward," only gradually growing into a national system. And, he says, stay flexible. There won't be a "standardized template" for how RHIOs are funded, he says. "Each one is going to grow up differently."

*Robert L. Scheier is a senior editor for Triangle Publishing Services Co. Inc. of Newton, MA. He has more than 20 years of experience writing about information technology and its use in business. For more information about the article, Mr. Scheier or Triangle, please send us an [e-mail](#).*

(c) 2006, Triangle Publishing Services Co. Inc. All Rights Reserved.

## Online Resources

Home page of [Agency for Healthcare Research and Quality](#), with links to studies, reports and other resources on managing and sharing information technology

[Transforming Health Care](#): The President's Health Information Technology Plan

Home page of the [California Regional Health Information Organization](#)

[Survey of status of RHIOs](#), Healthcare IT Transition Group

The [North Carolina Disease Event Tracking and Epidemiologic Collection Tool](#) (NC DETECT)

[top](#) [webmaster@triangle-publishing.com](mailto:webmaster@triangle-publishing.com)

[home](#) | [map](#) | [employees](#) | [privacy](#)



---

Copyright (c) 2006, Triangle Publishing Services Co. Inc.