

Regional Health Information Networks and the Emerging Organizational Structures

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A regional health information organization (RHIO) can be defined as “a network of stakeholders within a defined region who are committed to improving the quality, safety access and efficiency of healthcare through the use of HIT [health information technology]” (Thielst and Jones 2007, 1). An RHIO usually forms as a community collaborative first and then transforms to a more formal structure as the number of its partners increases, as technology and clinical plans are brought into focus, and as the collaborative looks toward providing oversight and guiding implementation.

The process of pulling community-wide collaborations together and creating a sustainable organizational structure is complicated. Partners in the collaborative cannot take this process lightly, because it usually involves bringing competitors together to establish a shared vision and common goals. The 2006 survey by the Healthcare Information Management Systems Society found that the biggest barrier to implementing an RHIO was the cost of development (at 46 percent), followed by lack of organizational leadership (at 25 percent); see Figure 1. As many in the healthcare industry often point out, the technology is the easy part.

The most successful RHIOs focus on delivering the following:

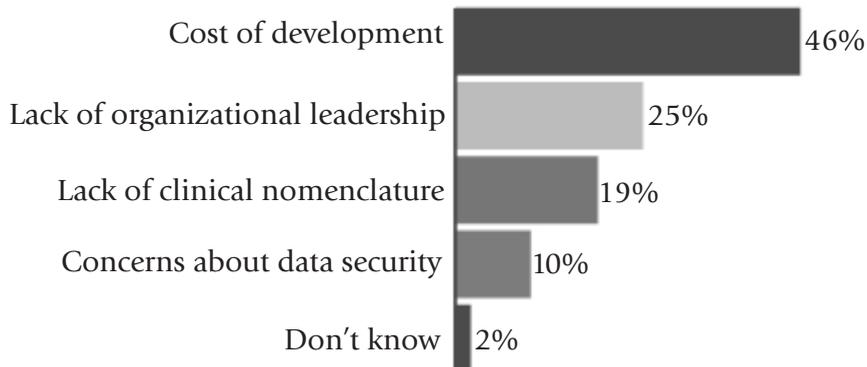
- relevant information to clinicians at the point and time of care and treatment; and
- clinical decision support, which helps clinicians process vast amount of data and support standardization of care/benchmarking to save time and eliminate redundant procedures that add up costs.

IMPACT OF HIPAA ON INFORMATION NETWORKS

More and more, HIPAA (Health Insurance Portability and Accountability Act) is actually viewed as an enabler of RHIOs. The reason for this viewpoint is that HIPAA's privacy and security regulations provide a baseline of standards that permit the diffusion of electronic health record (EHR) capabilities and that encourage the appropriate exchange of information.

The goal here is for connected communities to adopt and implement standards-based solutions that eventually will link into the envisioned National Health Information Network—a network of networks or RHIOs. The progress being made

FIGURE 1
Barriers to RHIO Implementation



Source: *Vantage Point*. 2006. [Online information; retrieved 3/8/06.] www.himss.org/content/files/vantagepoint/vantagepoint_200604b.htm. Chicago: Healthcare Information and Management Systems Society. Used with permission.

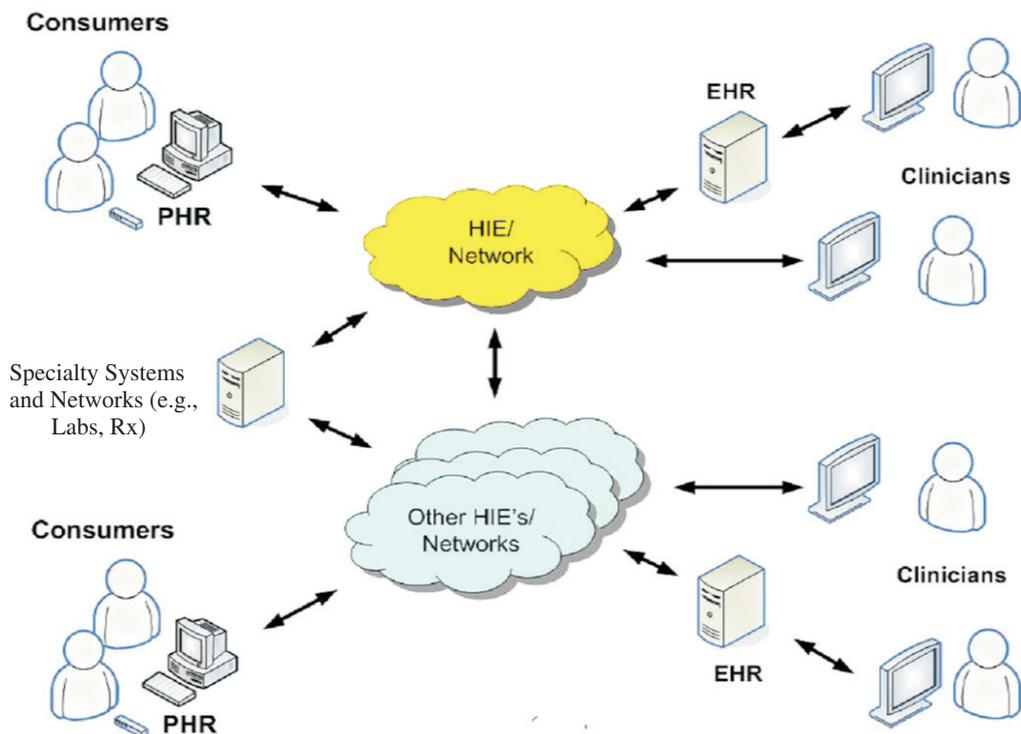
toward identifying and developing an information architecture and its characteristics was recently highlighted at a Nationwide Health Information Network Forum (Office of the National Coordinator for Health Information Technology 2007). Plans discussed at the forum include connecting providers' EHRs and consumers' personal health records (PHRs) and interconnecting state, regional, and nongeographic health information exchanges (i.e., RHIOs) and networks oriented to specific functions (e.g., labs, pharmacy benefit managers, disease registries); see Figure 2.

RHIO STRUCTURES

Across the nation, networks and RHIOs are forming and adopting formal, independent organizational and governance structures, with systems that ensure accountability and sustainability for the benefit of all stakeholders. The three existing models for these connected communities are federation, co-op, and hybrid:

1. *Federation* is made up of multiple independent/strong enterprises in the same region that are self-sufficient but that create an enterprise agreement to network and share and to allow access to information maintained on a peer-to-peer basis. Federation RHIOs may develop a system of indexing and/or locating data (e.g., statewide or regionwide master patient indexing).

FIGURE 2
Network of Networks



Source: Office of the National Coordinator for Health Information Technology, U.S. Department of Health and Human Services. 2007. [Online PowerPoint presentation; retrieved 3/8/07.] www.hhs.gov/healthit/healthnetwork/forum_jan2007.html.

2. *Co-op* comprises multiple enterprises that agree to share resources and create a central utility. Co-op RHIOs usually represent smaller enterprises that pool resources; build a combined, common data repository; and share technology and administrative overhead.
3. *Hybrid* is a region containing both federation and co-op networks/organizations that agree to network, share, and allow access to information they maintain on a peer-to-peer basis. The hybrid model allows aggregation within and across healthcare organizations in large regional areas, such as statewide initiatives or multistate regions.

These RHIO structures are designed to move healthcare information efficiently and at a cost that is a small fraction of the money that having such a system can generate in savings. These infrastructures currently function in two ways: utility and neutral/convener/facilitator.

- *Utility* works as a centralized database and serves as a patient information exchange, clearinghouse, and/or patient-information locator service. With the utility function, the RHIO serves the community as an operator of the database, information exchange, or locator service. This model is quicker to implement, focuses early on technology selection, and usually includes fewer initial participants and allows involvement to be built overtime.
- *Neutral/convener/facilitator* builds consensus on policies, brings together competitive enterprises, bridges multiple RHIOs in a geographic location, and seeks an open-standards approach. RHIOs in this role are nonvendor specific. As a result, they are slower to implement because building consensus is difficult and may frustrate participants who want to get started right away. The open-standards approach leaves opportunities for more organization and vendors to participate, and perhaps this is the only way to bridge multiple efforts.

RHIO CHALLENGES

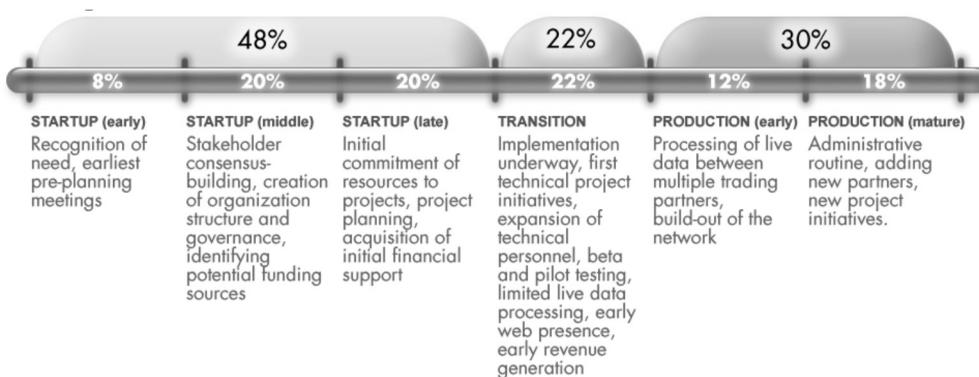
The primary challenges to broader exchange of information include competition; internal policies; consumer privacy concerns; uncertainties regarding liability; and difficulty in reaching multienterprise agreement on exchanging information, economic factors, and incentives. The technical/security issues include interoperability among multiple parties, security testing, authentication, and auditability. Figure 3 illustrates the findings of a 2006 survey of RHIOs, indicating that 48 percent were in the start-up phase and only 30 percent had actually shared data with their partners (Healthcare IT Transition Group 2006).

Although many RHIOs have formed as nonprofit organizations, some have adopted a for-profit business model. Thus, they are affected by recent Centers for Medicare and Medicaid Services changes to ease anti-kickback restrictions and the Office of Inspector General's safe harbors for arrangements involving the donation of technology for e-prescribing and EHRs. These changes allow hospitals, or RHIOs, to give providers access to hardware, software, and related training to support interoperability.

CONCLUSION

Going forward, patient care and the privacy and security of patients' health information must remain at the forefront. Thomas Friedman (2005, 447) concludes his book, *The World Is Flat*, with a discussion on advances in technology and the need to identify, expose, and capture those who misuse it: "But in the end, technology alone cannot keep us safe. We really do have to find ways to affect the imagination of those who would use the tools of collaboration to destroy the world that has invented those tools." As healthcare leaders, we must heed this advice and find ways to influence the imagination of those who might consider using information technology to destroy the trust of healthcare consumers.

FIGURE 3
Life Cycle of RHIOs



Source: Healthcare IT Transition Group. Used with permission.

References

Friedman, T. L. 2005. *The World Is Flat: A Brief History of the Twenty-First Century*. New York: Farrar, Straus and Giroux.

Healthcare IT Transition Group. 2006. [Online summary of the report, "Funding RHIO Startup and Financing for Life: The Survey of Regional Health Information Organization Finance 2006, Findings"; retrieved 3/8/07.] www.hittransition.com/RHIO_Survey_2006/.

Office of the National Coordinator for Health Information Technology. 2007. "3rd Nationwide Health Information Network Forum: Prototype Demonstrations and Business Models." [Online information; retrieved 3/8/07.] www.hhs.gov/healthit/healthnetwork/forum_jan2007.html.

Thielst, C. B., and L. E. Jones. 2007. *Guide to Establishing a Regional Health Information Organization*. Chicago: HIMSS.

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