



# White Paper

## **A Practical Approach to RHIO Formation** *How an early understanding of technology can assist and accelerate the process*

January 2006

## 1. Introduction

The last 18 months will likely be remembered as the turning point in which Regional Health Information Organizations (RHIOs) gained widespread consensus. Today, few would argue that Health Information Networks (HINs), and especially RHIOs, lie at the top of the healthcare agenda in the United States. With the possibility to dramatically increase the quality of healthcare, all stakeholders – including patients, providers and hospitals – are set to benefit from the establishment of RHIOs.

Expectations are high. But as more and more initiatives for RHIO formation surface, the challenges that accompany these ambitious projects are becoming painfully apparent. By nature, RHIOs draw together separate organizations – *living, changing* organizations, with different cultures and interests, which use a variety of systems and approaches to clinical information. There is no single implementation or business model to copy. As a result, for the vast majority of organizations, forming a RHIO means stepping into uncharted territory.

The challenges facing a RHIO are reflected across ranges of expertise, including financing, development of a sustainable business model, public opinion, technology, operations and governance. Without underestimating the significance of the other areas of influence, the technological aspects of creating a RHIO can both help and hinder the efforts for RHIO formation. True, technology on its own does not overcome the challenges faced by RHIOs in formation. However, understanding the technological possibilities and limitations early during the process increases a RHIO's chance for success. The key lies in maintaining maximum flexibility by working with a technology partner early in the formation phase. This practical approach enables RHIOs to make more informed decisions achieving rapid and stable implementation. Taking a practical approach also enables RHIOs to quickly begin the implementation phase. By proving the RHIO's viability early in the process, organizations can re-evaluate needs, gain wider support and resources for the following stages.

dbMotion has many years of proven experience in federated HIN formation, implementation and maintenance as a partner of Clalit Healthcare Services, one of the largest healthcare organizations in the world. In addition, dbMotion is an active partner in a number of RHIOs forming across the US. Through this partnership, RHIOs are able to overcome many of their most pressing challenges, laying a solid foundation that provides maximum flexibility and operability.

This paper outlines the main lessons learned as a result of these experiences. It examines the most critical issues of RHIO formation and raises problems not commonly cited, including the main technological challenges faced during implementation. It also explains how using a federated, flexible solution can help overcome, or even avoid, these problems.

## 2. Challenges in RHIO Formation – What Stakeholders Must Be Prepared to Face

Establishing a RHIO relies on the interaction of numerous elements in the areas of governance, operations, finance, public opinion and technology.

One of the best ways emerging RHIOs can significantly reduce costs and successfully implement a solution is by anticipating and dealing with these challenges early-on. It is vital for RHIOs to work with a partner that understands these obstacles and can provide the best solution for their unique requirements.

### A. Governance

At every level, from federal (NHIN) to state and regional, HINs must comply with a set of laws and regulations (such as HIPAA), and at the same time, address the specific needs of the partners in the organization.

Each member organization joins the initiative with its own views, goals, strategies and management styles. RHIOs must find a common organizational language to reach their joint objectives, and balance the interests of each participant versus the benefits of the system as a whole.

RHIOs should choose the most appropriate legal structure for the organization and consider its future implications. In regards to the solution, requirements for full auditing that enable operational transparency, should be taken into account.

## **B. Operational**

Each kind of organization and type of medical information brings an added level of complexity to the RHIO's operational abilities. This creates the need for a specialized approach and tools that allow flexibility while maintaining the member organizations' interests.

Critical operational issues include meeting the needs of a RHIO's changing requirements and growth, while allowing maximum adaptability; e.g. choosing a solution that can be implemented and scaled to meet each organization's timeline. RHIOs should consider how the solution will affect current workflow, user requirements, information control and privileges management throughout the various organizations.

Finally, RHIOs need to assess how technical or policy changes made by one of the members can affect the rest, and how this degree of variation is supported among member organizations. After the initial implementation, how will the system accommodate change?

## **C. Public Opinion**

Few topics today are more sensitive to public opinion than the handling of medical information. On one hand, there are complex issues that heighten the public's concern: from patient privacy and exposure of medical information to information ownership and the potential misuse of medical records. On the other hand, there are the time, cost and reliability benefits derived from the establishment of such an information network, and the promise of significantly improving the continuum of care. Striking a balance between both is crucial, as is being able to communicate it to the public.

RHIOs should consider the different patient opt-in and opt-out approaches and their consequences, the ability to change these approaches and the solution's capacity to support this. It is important for RHIOs to address the way their internal and external customers view the project as a whole, and the public's concerns about privacy and security, while being able to communicate the project's advantages.

## **D. Financial**

Although the benefits of sharing medical information are undisputable, they are difficult to measure using traditional means. Given the fact that it is difficult to find and manage funding, all issues regarding the organization's finances deserve special consideration.

Putting the solution into practice will require both start-up costs (e.g. early implementation, preliminary training, necessary hardware and software, etc.), and long-term operational costs (e.g. maintenance, upgrades, expansions, etc.). RHIO's need to include in their financial planning these costs and those of future adaptations. Above all, RHIOs must ensure that their investment provides the best return in the long run.

## **E. Technological**

Due to the diversity within the healthcare profession, different departments and specializations select diverse best-of-breed information systems to address their particular needs. By definition, there are inherent challenges in allowing these systems to communicate and transfer information between them.

To this one must add another layer of complexity: a RHIO initiative requires the transfer of medical records between organizations where there is increased variance in the types of systems. And it is unlikely that a sole IT administrator or department is able to deal with this challenge. Furthermore, the coding vocabulary, lexicons, patient identifiers and data structures are prone to be neither uniform nor standardized.

The issues below represent some of the technological challenges that RHIOs must consider when choosing a solution:

- **Information Ownership:** How does the solution deal with information ownership issues and related challenges, such as privacy?

- **Integration:**
  - How is the medical information integrated? Is the caregiver provided with a consistent patient record or a collection of documents, references and other pieces of information stored in different systems?
  - How does it handle duplicates and other data inconsistencies? How will the system interface with existing solutions, and does it offer a comprehensive solution or a collection of technologies that must be assembled specifically for this RHIO?
  - Does the system approach data representation issues according to standard formats and data models? Are these needs likely to change in the future?
  - Can the system integrate the information throughout the continuum of care or is a case-by-case approach necessary?
- **Patient Identification:** Can the system deal with Master Patient Indices (MPIs) and solve challenges related to patient identification? Will the system require the use of a centralized or Enterprise MPI (EMPI) for the entire organization, or can it use existing MPIs and work with them in an integrated manner?
- **Security and Reliability:** How will security affect each of the users in the organization? What security features does the system support? What is required to make the solution reliable? How likely is the solution to fail, and what would be the consequences of such failure?
- **Performance:** How long are users required to wait before receiving a medical record? What performance levels are acceptable in a real-world scenario? Can the system accommodate the vast amounts of information in existence as well as the quantities of data that are bound to be generated in the process? And how resilient will the system be?
- **Scalability:** How scalable is the system? How complex is the addition of new members to the network, and how can new data domains be added across the system? Does it offer a natural path for the addition of new services?

Can your technology partner provide satisfactory answers to these issues in a manner that addresses your RHIO's specific needs?

### 3. The dbMotion Approach

dbMotion provides a medical information sharing structure that enables the design, implementation, operation, and management of a web-based, federated health information exchange (HIE). dbMotion enables online, on-demand aggregation and integration of clinical information from disparate, distributed sources and their transfer to authorized users, according to various usage profiles and security policies.

The core ability of the dbMotion™ Solution lies in creating a single, unified patient record based on data from different information systems, formats, organizations and locations – without affecting systems in which information is stored, and without centralizing data.

#### Virtual Patient Records

The immediate and most basic benefit of the dbMotion Solution is providing medical professionals with a Virtual Patient Record – a real-time, up-to-date, comprehensive medical picture of the patient.

- Virtual Patient Records enable caregivers to receive a unified, comprehensive view of medical information taken from data coming from disparate sources, in different formats, and from various locations.
- The process is transparent to caregivers; they receive a single medical record appearing to be from a single "regional EHR."
- Through Virtual Patient Records RHIOs can provide public health monitoring, patient-centric medical consultation, and advanced alerts.

#### Security and Auditing

- Since data is not centralized, and all information stays in the organization that created it, complex issues of information management and ownership are alleviated.
- Each user receives permissions according to security profiles that are adaptable to the structure and needs of the different organizations in the RHIO.
- The system keeps audit trails of user actions, which can be recreated even after changes in roles, profiles, data or views are made.
- dbMotion supports a wide range of external security frameworks (such as biometric and Smartcard identification.) Emergency system overrides can be added to enable caregivers to "break the glass" in case of a medical emergency.

### **Information "Ownership"**

Because the Virtual Patient Record is created at the point of care and is typically configured to dissipate after use, policy changes can be implemented easily and quickly. For example, if a RHIO decides to stop sharing a specific type of patient information, with a simple change in definitions, this data is no longer transferred.

- There is no need to delete the data from various databases - it is simply not stored anywhere other than in its original location.
- Security remains at maximum levels; each member organization remains responsible for its own data. This limits risk and provides flexibility.

### **Flexibility and Scalability**

RHIOs should keep their options open regarding the scale and scope of the early implementation process. Often, they choose to begin implementing the solution in a gradual, controlled basis, providing them with hands-on experience in a more manageable environment. This also grants them the opportunity to achieve an "early win"; a successful test case will encourage support and build credibility in the eyes of users and the general public.

- With the dbMotion Solution, RHIOs can start implementation immediately. They can begin by either joining a limited number of organizations – or even specific functions within the member organizations, e.g. emergency rooms – or they can start by sharing only certain types of data (clinical domains), such as Labs or Medications, across the full range of institutions.
- Growing from a limited implementation is transparent and straightforward, and does not require the re-design of the entire solution.
- RHIOs can decide which implementation model best suits them, and begin seeing the benefits almost immediately.

### **Performance**

System usability and robustness must be considered at all times; there should not be a trade-off between the ability to receive a complete record and the time it takes to obtain it.

- The dbMotion Solution displays a comprehensive record in a matter of seconds - anything beyond that risks the loss of physicians' buy-in to the technology.
- The use of a federated model in a solution that has been proven in real-world environments enables RHIOs to meet their performance requirements, and proves that performance can go hand-in-hand with thoroughness of information.

### **Patient Identification**

When accessing multiple medical systems, the reliability of the solution depends on the correct identification of the patient. The process must be tightly integrated with a patient identification application (EMPI) that ensures the correct data is compiled and provides the caregiver information on data sources.

However, this does not necessarily entail the need for a centralized EMPI; the dbMotion approach enables RHIOs to either work with a centralized EMPI, or work with multiple local E/MPIs throughout the continuum of care.

### **A Proven Architecture**

dbMotion's proven solution is comprised of the following services:

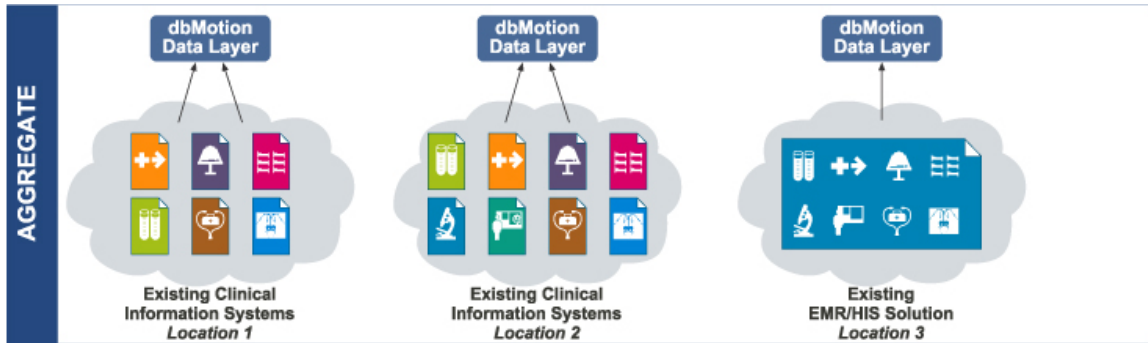
- **Aggregation** – The system's base function, responsible for retrieving information from systems in which information is stored.
- **Integration** – After information is aggregated, it is transformed - using the dbMotion™ Unified Medical Schema™ - into a unified structure that is integrated and forms the Virtual Patient Record.
- **Analysis** – dbMotion's own distributed rules engine and other medical decision support systems can be added to the system to provide advanced analysis, if such functionality is required.
- **Delivery** – Information is presented to the caregiver through a viewer such as dbMotion™ Clinical Views™ or using a third-party application such as an electronic medical record (EMR). Additionally, it can be used for one of dbMotion's advanced applications: dbMotion™ PPT™ and dbMotion™ Care Messages™.

Following is a more detailed description of these four core services:

**Aggregation** – Upon receipt of a request for the relevant clinical data, the pertinent information systems that belong to the network are accessed and searched for information.

The basic component in the network is the dbMotion Node that consists of a dbMotion server or servers at a specific location. Situated throughout the network, each Node is responsible for a group of underlying systems or an entire site.

Each Node holds an internal catalog of the information contained in these systems. Upon receipt of a request, the Node quickly accesses a local Clinical Data Repository (CDR) and retrieves the required data. The underlying clinical systems can run on a variety of operating systems and databases in which medical information is contained in different data structures, coding systems and data dictionaries and which can use various messaging standards, ranging from HL7 and XML to delimited ASCII files.

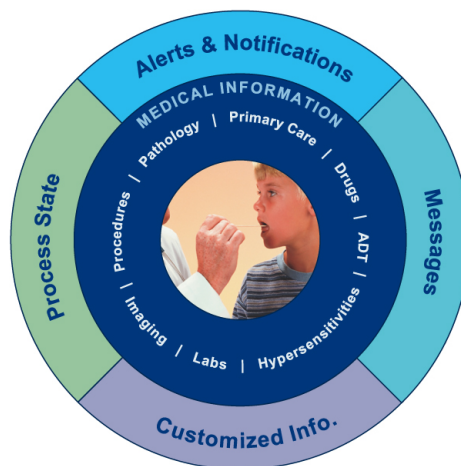


*dbMotion interfaces with existing information systems, eliminating the need for data centralization and keeping the HIT infrastructure unchanged*

**Integration** – Information from different systems requires integration into one record. This process is based on the Unified Medical Schema, a medical information model developed by dbMotion based on standards such as HL7 v.3, openEHR, CEN, ASTM CCR, and others.

In the integration process, information from different systems is transformed and logically joined into a cohesive record. Throughout this process, information conflicts and inconsistencies across systems are accounted for and dealt with.

At the end of this process, a Virtual Patient Object (VPO) is created that contains the integrated medical information accessible through the RHIO's network (subject to privacy regulations). It “represents” the patient with all his/her relevant medical information attached. All subsequent actions related to the specific patient’s data are done using the VPO.



*Virtual Patient Object (VPO)*

**Analysis** – This optional service entails the processing of the VPO to draw conclusions and initiate actions according to the needs defined by the participants of the RHIO network. By using an action-based, pattern-matching engine, the dbMotion Solution is able to analyze the VPO either as a single record or by reviewing a collection of VPOs to recognize larger trends based on rules defined by the client, including epidemic outbreaks or bio-terrorism. Examples of such rules are:

1. Notify the caregiver when encountering a male over 50 who has never undergone a colonoscopy.
2. When identifying a patient over 65 suffering from congestive heart failure and recently exhibiting sodium levels lower than 130 – immediately send a text message to the patient's caregiver.
3. Alert if five patients from same zip code group are suspected of suffering from bacterial meningitis within the last week.

**Delivery** – After their creation, VPOs can serve a variety of applications, including the following:

- **dbMotion Clinical Views:** This is a thin, web-based, customizable GUI designed to accommodate each health information network's unique needs and requirements.
  - The design of this viewer draws from years of experience with medical professionals and their requirements for an intuitive, easy-to-use interface. There is a minimal learning curve for new users and it can be quickly deployed.
  - Being web-based, caregivers can access Clinical Views regardless of their location, as long as suitable security permissions are verified.
  - Because of the integration process and Unified Medical Schema, the delivered medical records appear to originate from a single source; all information is presented in a similar format and duplications are eliminated.
  - dbMotion Clinical Views allows for a vertical and horizontal drill-down of the medical record that enables the caregiver to make a well-informed diagnosis.
- **Third-party applications:** The VPO can also be presented to the caregiver through a third-party application, such as an external EMR, in which case dbMotion provides the EMR with an XML document that it can process and display to the user.
- **dbMotion Care Messages:** Any caregiver can attach a note to the VPO and define the profile of who can see it. This can be anyone attending to the patient and/or specific caregivers/specialists only. For example, in the case of a patient who recently underwent brain surgery, the neurosurgeon can send a message to the patient's family physician advising him/her to closely monitor the patient's blood pressure in the first postoperative week – this can be done without knowing the identity of the family physician. Privacy is ensured since information is only viewed by the next attendant caregiver.
- **Patient Process Tracking (dbMotion PPT):** Healthcare provision does not often start and finish in one place. Patients tend to go through a set of "stations" or processes in the continuum of care. This creates administrative challenges of ensuring a patient's arrival at the right places, in proper order, and with the correct information. The PPT module leverages the VPO to streamline, accelerate and optimize the flow of patients and their medical data through defined clinical and business processes. This dramatically shortens care cycles, and enables organizations to increase the yield of their existing processes.

For example, a patient examined by his primary care physician due to a recent convulsive episode is referred to an EEG study and CT imaging of the head. Thereafter, he is scheduled to see a neurosurgeon, and it is critical that the neurosurgeon receives the results of both studies upon examination. Using PPT, case managers can ensure proper scheduling of these events. Having reviewed the results of all studies performed (being an integral part of the VPO), proper synchronization is guaranteed.

- **Export function** The VPO can also be exported to relevant users in external systems, such as public health authorities and Medical Decision Support Systems (MDSS).

## 4. Case Study - Israel's Cross-enterprise Health Information Network

### Background – Israel's healthcare market

The Israeli healthcare provider market is composed of healthcare organizations that operate hospitals, laboratories, imaging centers, and community clinics; alongside State- and privately-owned hospitals and medical centers, which provide services both to healthcare organizations and directly to the public.

### Members of Israel's Cross-Enterprise HIN

*Clalit Health Services* - Israel's largest healthcare organization and one of the largest healthcare organizations in the world provides healthcare services to over 3.8 million Israelis, through its network of 14 independent hospitals (5500 beds, 600 departments), 1250 clinics, 400 pharmacies and more than 80 labs and imaging centers.

*Sheba Medical Center* – The largest medical center in Israel with 1700 beds, 120 departments and clinics serving more than 1,120,000 outpatients, 173,000 emergency visits and 110,000 inpatients annually. It serves a large general population and various healthcare organizations by performing tests and procedures for patients from Israel's central region.

*Rambam Medical Center* - Located in Haifa, this 900-bed government medical center provides medical services to the majority of northern Israel's population (over 1.5 million residents) as well as to the US Navy's 6<sup>th</sup> fleet in the Mediterranean.

### The Challenge

In 1999, Clalit Health Services faced the problem of collecting medical data in an automatic, on-line manner from all its data sources. At that time, approximately 25 health information systems were used in different parts and departments inside Clalit, which were operated as isolated information repositories. The data from these systems required collection and compilation in a reliable form and availability to all caregivers in the organization.

The solution needed to use existing infrastructures for communication and data transfer and a web-based viewer, without impacting Clalit's existing health information systems and the way they were used. It also required that different hospitals retain their independence in managing their information infrastructure. Besides these requirements, complex privacy and security needs arose because of the inherent sensitivity of medical information. In a second stage, the need developed to exchange health information between Clalit and the Rambam and Sheba Medical Centers, due to the considerable overlap between the populations receiving care in Clalit and these medical centers.

### The Solution

In early 2000, a pilot project began in Soroka hospital – Clalit's largest tertiary hospital. Soroka faced similar internal problems to the ones faced by Clalit as a whole, and the pilot attempted to address these challenges. The first generation of dbMotion's technology was designed and implemented as a solution for this problem in the form of a Local Data Repository that aggregated data from all existing information systems in the hospital and delivered it directly to caregivers.

- **A Federated Approach**

Given the overwhelming success of the pilot program, the following year Clalit decided to use the infrastructure created for Soroka as the basis for a solution that would meet the needs of the entire Clalit HMO. This marked the conception of dbMotion's federated system.

It was clear that replicating the Soroka solution for the entire Clalit system would be problematic – a central data repository of such scale would be very difficult to maintain and would create considerable security, ownership and privacy issues. The chosen approach involved creating Local Data Repositories in different parts of Clalit that, on demand, integrated information to create a Virtual Patient Record. The choice of a federated approach enabled compliance with all requirements set forth by Clalit, including support of robust security and privacy models.

- **Implementing a Scalable Solution**

After the implementation in Clalit, the expansion of Clalit's dbMotion network to include the Sheba and Rambam Medical Centers was straightforward.

- The situation in Sheba was similar to that of Clalit with a large variety of information systems in use, and the existence of information silos. dbMotion was initially implemented to create an integrated



patient record within the medical center. Once done, introducing Sheba into the Clalit network required minimal effort.

- At the Rambam Medical Center, a different approach towards IT was taken by the center's management: a single electronic medical record system was already in use throughout the medical center. Within a matter of months, Rambam was connected to the network and became an integral part of the system.

## The Results

- The dbMotion Solution required minimal investment in training, implementation, and maintenance, and yet largely contributed to the efficiency of processes and the improvement in quality and availability of medical information for a majority of Israel's population.
- dbMotion has reduced general concern regarding medical errors due to lack of available information. It has also proven to be a major saving by preventing "duplicate-testing" that occurred in the past due to the lack of cross-site, real-time information.
- Adoption of the system has been extremely easy, and consequently the number of users has rapidly grown from several dozen to many thousands.
- Today, dbMotion is installed in all of Clalit Health Services' hospitals, in the majority of physician's offices and labs, as well as in two of Israel's largest medical centers, providing real-time information at the point-of-care. The dbMotion network in Israel currently supports over 8500 users nationwide and provides caregivers with comprehensive patient records on-demand and within seconds.

## 5. Summary

The establishment of RHIOs and their promise of a comprehensive approach that dramatically increases the quality of healthcare benefits all stakeholders in the continuum of care, from patients to service providers to medical care centers. The inherent complexity of creating such a vast network and the need to meet the specific requirements of each RHIO initiative is loaded with numerous financial, legal, technical, operational and governance challenges.

A RHIO working with a technology partner early during the formation phase will enable it to fully leverage the possibilities that technology solutions offer. It is crucial to count on a reliable partner - one that will help RHIOs foresee problems and provide maximum flexibility to meet these challenges. dbMotion's proven, long-term experience in federated HIN formation, implementation and maintenance makes it highly qualified as a partner in this process.

Among the unique benefits of the dbMotion Solution:

- **Significant Experience In the formation of RHIO's** dbMotion was instrumental in the formation of one of the largest RHIOs in the world and is involved in the formation of several RHIOs in Europe and the United States.
- **Comprehensive and practical solution:** The dbMotion Solution is especially designed to address technical, privacy and business problems that arise from the sharing of medical information. Due to its decentralized, federated architecture, it allows for patient privacy to be maintained and enables a flexible approach from the start. Implementation can begin on a point-basis and grow with the organization. This results in a fast, focused implementation in a controlled environment and rapid rendering of concrete results.
- **Performance:** dbMotion provides access to medical information originated across a variety of sources and locations, integrating all patient information into a single record. Within seconds, this virtual patient record can be used to display medical history to caregivers enabling them to make decisions more efficiently and effectively.
- **Proven and easy deployment:** Deployment times for the dbMotion Solution are short, adoption is quick, and there is no need to change the existing information systems. This maximizes the return on past investments in information technologies.

In the preceding months, a consensus has formed on the tremendous potential of RHIOs to advance the healthcare profession. At dbMotion we are committed to ensuring that the coming months and years make this vision a successful reality through a strong partnership that helps RHIOs leverage technology - whatever stage they are at.

To learn more about the dbMotion Solution, please visit [www.dbmotion.com](http://www.dbmotion.com) or contact us at [info@dbmotion.com](mailto:info@dbmotion.com)

## 6. Further Reading

Summary of Nationwide Health Information Network (NHIN) Request for Information (RFI) Responses – Office of the National Coordinator for Healthcare IT, June 2005.  
<http://hhs.gov/healthit/rfisummaryreport.pdf>

Ending the Document Game – This documents explores different aspects in the establishment of an Interoperable Healthcare System – the Commission on Systematic Interoperability, October 2005  
<http://endingthedocumentgame.gov/report.html>

A Road Map for Establishing Your Health Information Organization – a document addressing legal and tax issues relating to the establishment of RHIOs, Davis Wright Tremaine LLP, February 2005.  
[http://www.dwt.com/practc/HIT/bulletins/02-05\\_RHIOGovernance\(print\).htm](http://www.dwt.com/practc/HIT/bulletins/02-05_RHIOGovernance(print).htm)

Building Regional Health Information Networks –Forrester Research, February 2005.  
<http://www.forrester.com/Events/Content/0,5180,-1038,00.ppt>

Emerging Trends and Issues in Health Information Exchange – a detailed survey of existing HIE efforts across the United States, the eHealth Initiative, September 2005 (Requires registration).  
[http://ccbh.ehealthinitiative.org/communities/register\\_download.msp](http://ccbh.ehealthinitiative.org/communities/register_download.msp)

Tools for Health Information Exchange Networks - A useful resource which is being populated with documentation to help in the first stages of the formation of a RHIO, published by Connecting for Health.  
<http://www.connectingforhealth.org/resources/guidance.html>

HIT Legal Issues: HIPAA Implications to a Regional Health Information Organization, Davis Wright Tremaine LLP, October 2004.  
[www.ehcca.com/presentations/hitsummit1/williams.ppt](http://www.ehcca.com/presentations/hitsummit1/williams.ppt)

Organizational and Legal Issues - Developing organization and governance models for HIE – presentation given during the CCBH 2nd Annual Learning Forum and Exhibition, May 2005.  
[www.ahqa.org/pub/uploads/Day\\_2\\_Track\\_5\\_Suarez\\_1.ppt](http://www.ahqa.org/pub/uploads/Day_2_Track_5_Suarez_1.ppt)

Regional Health Information Organizations Financing Concepts - Connecting Communities for Better Health Program, December 2004  
[www.ehealthinitiative.org/assets/documents/cc\\_dec15\\_2004/Tab4RoseFinancingStructures.ppt](http://www.ehealthinitiative.org/assets/documents/cc_dec15_2004/Tab4RoseFinancingStructures.ppt)

Attitudes of Americans Regarding Personal Health Records and Nationwide Electronic Health Information Exchange – A document demonstrating the public's support for medical information sharing, the Markle Foundation, October 2005.  
[http://www.phrconference.org/assets/research\\_release\\_101105.pdf](http://www.phrconference.org/assets/research_release_101105.pdf)

eHealth Initiative The eHealth Initiative is a non-profit affiliated organization which offers a variety of tools for communities taking their first steps in establishing RHIOs.  
[www.ehealthinitiative.org](http://www.ehealthinitiative.org)

Office of the National Coordinator for Health Information Technology (ONC)  
<http://www.hhs.gov/healthit>