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Case Studies in Interoperability and Integration

# Jersey Health Connect

## A Collaborative Framework of Community Stakeholders

By Linda Reed, RN, MBA; Judy Comitto; and Craig Edwards

**T**HE TRUE POWER of health IT lies in its potential to mobilize data securely and privately—and health information exchange (HIE) is the key to unlocking that potential.

According to a report from the Commission on U.S. Federal Leadership in Health and Medicine, health IT expansion could save the United States as much as \$261 billion over the next 10 years.<sup>1</sup> Annual savings from HIE could range from \$81 billion to \$162 billion.<sup>2</sup>

However, ARRA with its incentives and disincentives for meaningful use of electronic health records (EHR) promises

to accelerate both HIE deployments and realization of those savings. There are 73 operational HIEs transmitting data—28 percent more than in 2009.<sup>3</sup>

Of the \$2 billion in discretionary funding allocated to the Office of the National Coordinator for Health Information Technology (ONC), \$100 million will be allocated to the states for HIEs. Another \$564 million will fund the State Health Information Exchange Cooperative Agreement Program, an initiative designed to help states and other entities establish HIE capacity among hospitals and healthcare professionals.

One of the earliest recipients of this fund-

ing is The Northern and Central New Jersey Health Information Exchange Collaborative, which was officially incorporated Feb. 1, 2010, under the name Jersey Health Connect (JHC).

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JHC comprises 25 healthcare facilities and two large physician practice groups. Primary participants include:

- Atlantic Health.
- Summit Medical Group.
- Trinitas Regional Medical Center.
- Hackensack University Medical Center.
- Hunterdon Healthcare (20 facilities).
- Newton Memorial Hospital.

### **ABSTRACT**

As the number of HIEs grows nationwide, economic stimulus opportunities will drive cooperation between providers. However, forging multi-stakeholder consensus to achieve true continuity of care demands a revolution. To ensure success, providers must embrace the belief that HIE is a public good and that coming together will result in better community care. This action compels a dramatic departure from the traditional business model of competition to a model of collaboration in which all members accede to transparency and put the patient first.

Provider participants in the Northern and Central New Jersey Health Information Exchange (HIE) Collaborative (JHC) are executing their vision to be an independent public-private partnership. More than 25 healthcare facilities, two large practice groups and 700 physicians recognize that patients benefit most from a multidisciplinary collaborative approach in which electronic access to aggregated health information

is available when and where it is needed at the point of care. Within the JHC framework, they can maintain individual HIE initiatives within their community while using recently awarded stimulus grant funds to reduce expenses and to support stakeholder expansion regionally and statewide.

The article presents JHC's formation, buy-in and alignment steps and strategic roadmap outlining: timeline, governance, financing, legal and policy procedures, business operation criteria, and its selected connectivity network to view synchronized data including medications, diagnoses, procedures and other patient-physician interactions. The HIE setup process has kicked off with the first round of shared test results among multiple providers to validate the technical infrastructure.

### **KEYWORDS**

HIE, health information exchange, economic stimulus, ARRA, electronic health records.

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- Robert Wood Johnson Health System (three facilities).
- Saint Barnabas Health Care System (seven facilities).
- Saint Clare's Health Services (four facilities).
- Saint Peter's Healthcare System.
- Solaris Health System (two facilities).
- Somerset Medical Center.
- VISTA Health System, IPA.

More than 385,000 patient records are exchanged and more than 35,000 local residents communicate actively with 740 connected physicians. Participating pharmacies and laboratories transmit and exchange more than 10,000 electronic prescriptions and 45,000 clinical documents and lab test results each month.

### THINK NATIONALLY, EXCHANGE LOCALLY

Health information exchange is not new. The Community Health Information Networks (CHIN) of the 1980s were the earliest HIE efforts. Most CHINs eventually failed because of problems in developing sustainable business models, despite having the same goals—reducing cost, improving quality of care by exchanging information about it—as Regional Health Information Organizations (RHIO), which evolved in the 1990s.

As one of New Jersey's first and most successful RHIOs, JHC is a leader in the evolving state-level HIE effort and is well-positioned to be an early participant in the National Health Information Network (NHIN).

However, large-scale interconnectivity will not begin at the national level. Data sharing will begin in local networks, which will then connect at RHIO—and state-level hubs to create larger networks. The reason: Because the impetus—and incentive—for data sharing is among local physicians, hospitals and other service providers to create a seamless view of the patient experience.

In late 2007, this need to connect at a local level led Atlantic Health, a founding member of JHC, to implement RelayHealth, a software-as-a-service-based (SaaS) connectivity platform.

One of the largest non-profit healthcare systems in New Jersey, Atlantic Health includes Overlook Hospital in Summit and Morristown Memorial Hospital. Together, the two hospitals have 1,197 licensed beds and more than 2,500 affiliated physicians providing a wide array of healthcare services to more than 5 million residents in northern and central New Jersey counties. Atlantic Health is the primary academic and clinical affiliate in New Jersey of Mount Sinai School of Medicine and The Mount Sinai Hospital.

With only 10 percent of its physician community—mostly specialty or multi-specialty group practices—using EHR solutions, Atlantic Health's initial goal was to offer an automation option for its physician practices not ready to commit to the complexity and chaos of a full EHR deployment.

The organization's solution was to implement a results-management service. This allowed the small group of physician practices with EHRs to populate their systems with data directly from the healthcare enterprise, and the 90 percent without to EHRs to collaborate on hospital-based laboratory and radiology results, cardiac diagnostic testing and consult notes/discharge summaries in near real-time. Additionally, the solution's e-prescribing application allowed physicians to take advantage of the federal e-prescribing incentive, which included an extra 2 percent in Medicare reimbursement.

Today, nearly 500 enrolled physicians, half of whom practice at Atlantic Health's Morristown Memorial Hospital and Overlook Hospital, can use colleague-to-colleague messaging, doctor-patient messaging, appointment requests and e-prescribing to communicate online with more than 10,000 patients. Between Jan. 1, 2010, and Aug. 31, 2010, Atlantic Health's HIE activity comprised:

- 462 physicians and seven EHRs connected.
- 84,403 transactions, including 16,705 secure messages, 115,914 e-prescriptions and 432,970 lab results.
- 473,348 patients enrolled, 31,769 of them actively engaged with their physicians via messaging.

- 441,579 PHRs created automatically.
- 19,591 pharmacy renewals.

Atlantic Health also wanted to widen the network to include non-affiliated physicians. Summit Medical Group (SMG) is a 200-physician practice in Berkeley Heights, NJ, comprising 60 percent specialty care and 40 percent primary care. Although it operates independent of Atlantic Health, SMG admits all of its inpatients to the large hospital network and was a founding member of JHC.

For five years, SMG had collaborated with the health enterprise to exchange electronic results. So, in early 2009, Atlantic Health again activated a results management service, this time to transmit clinical data to SMG's affiliated physician offices, populating the EHR directly with data on patients admitted to Atlantic Health.

When a hospitalist dictates a discharge summary, it reaches the physician's EHR within minutes. Subsequently, when the physician sees the patient, his/her data is viewable in the EHR. The physician can observe previously rendered care, and make informed decisions for continuing care without logging into another system.

Today, more than 44,000 transactions occur monthly between SMG and Atlantic Health. More than 60 different document types are exchanged. Between Jan. 1, 2010, and Aug. 31, 2010, SMG's HIE activity comprised:

- 121 physicians and seven EHRs connected.
  - 2,769 transactions.
  - 2,028 patients enrolled and actively engaged with their physicians via messaging.
  - 3,297 pharmacy renewals.
- August 2010, specific transmissions included:
- Transcription (MEDQ): 1,259 documents.
  - Radiology and cardiology (PROGRIS): 1,351 documents.
  - Results (SCC): 7,285 results.

SMG also sends specimens to Atlantic Health's laboratory services for third-party processing. Results are processed and returned immediately. Use cases for the discrete data range from trending cholesterol

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results to ensure the patient is following care plan guidelines to monitoring blood glucose during pregnancy to avert gestational diabetes.

The clinical data information exchange also streamlined and reduced the cost of the previously complex and costly computing environment by eliminating the need for multiple file extracts or custom interfaces to ambulatory practices. This is a critical advantage, given the growing multiplicity of EHR offerings. A recent survey of 1,300 primary care physicians showed that among those using EHRs, there were 264 different software vendors used, none of which could share information with any of the others.<sup>4</sup>

Next steps for Atlantic Health and SMG include:

- Establishing a two-way connection: Currently, SMG can only receive data from Atlantic Health. In the future, SMG would like to send data back, closing the data loop, improving continuity of care and providing a complete patient story.
- Increasing physician participation through patient engagement: As more patients embrace HIE, they increasingly will demand that their physicians provide it.

In the process of eliminating data barriers, transitioning from secure messaging to secure transmission of hospital data to physician EHRs, Atlantic Health had moved far beyond an interim EHR. When the organization then moved outside its walls to connect to SMG, the two organizations realized they had actually created a mini-RHIO. This realization was the beginning of JHC.

### MAKING THE RHIO A REALITY

Evidence of HIE's benefits for patients and providers was mounting. Recognizing the inevitability of data sharing, its fundamental importance to such emerging care delivery models as the medical home and escalating federal mandates for it, several CIO members of the New Jersey Hospital Association (NJHA) began discussing data exchange and the possibility of establishing a state-level HIE.

Two years later, as RHIOs proliferated in other states but stalled in New Jersey, a sub-

set of the larger NJHA CIO group started discussing data connectivity on a regional level. Atlantic Health suggested its solution as a potential technology foundation and it became the backbone of JHC.

### THE CHALLENGES OF HIE

While much has changed since the era of CHINs, this decade's first generation HIEs, such as JHC, face many of the same issues their predecessors did, including:

- Embracing a collaborative model.
- Choosing and deploying a technology platform.
- Ensuring privacy and security.
- Establishing effective governance.
- Ensuring sustainability.

### EMBRACING A COLLABORATIVE MODEL

As the number of HIEs grows nationwide, economic stimulus opportunities—and mandates—will drive cooperation among providers. However, forging multi-stakeholder consensus to achieve true continuity of care demands a revolution. To ensure success, providers must embrace the belief that HIE is a public good and that coming together will result in better community care. This action compels a dramatic departure from the traditional business model of competition to a model of collaboration in which all members accede to transparency and putting the patient first.

For JHC, this meant putting aside competitive business differences to come together for the betterment of community care—philosophically and actually—to accomplish one of the HIE's first tasks: submitting a grant proposal in response New Jersey's request for ARRA funding.

Building upon its existing connectivity in the region, JHC outlined the following goals:

**Goal 1:** Accelerate members' current HIE activity and ensure health information is available at the point of care.

**Goal 2:** Improve care coordination, access, outcomes and efficiencies through the use of technologies that facilitate real-time clinical data exchange to reduce medical errors and duplicative procedures.

**Goal 3:** Build upon an already stable model to further the adoption of health IT

and the meaningful use of electronic medical records.

**Goal 4:** Empower consumers with their health information to encourage active and informed participation, while ensuring confidentiality, privacy and security of personal health information.

**Goal 5:** Ensure ongoing compliance with emerging national standards and establish a technology foundation that can connect to other regional, state or national HIEs.

The result: JHC was one of four HIEs in the state awarded economic stimulus grant funds from the \$11.4 million New Jersey Health Care Facilities Financing Authority received from the Department of Health & Human Services.

The funds will help further the collaboration of competing providers—hospital systems and physician organizations serving more than 6 million people in 10 counties—to support rapid stakeholder expansion and adoption of current data exchange efforts regionally and statewide.

Members will leverage their combined expertise to improve care coordination, access, outcomes and efficiencies with technologies that facilitate real-time clinical data exchange. They recognize patients benefit most from a multidisciplinary approach in which electronic access to aggregated health information is available when and where it is needed on a local, regional, and, ultimately, national level. To this end, the foundation and framework of JHC's collaborative model, however, is technology.

### CHOOSING AND DEPLOYING A TECHNOLOGY PLATFORM

HIEs fall into two basic categories, each with its own advantages and management requirements (see Table 1). In a HIMSS survey of 21 HIEs in 16 states, more than half reported using a federated model, while a third use a centralized architecture.<sup>5</sup>

JHC grounded its HIE efforts on a platform and strategy committed to helping each member meet and exceed its individual goals and objectives in its respective community, while at the same time supporting the secure exchange of health information among key stake-



**FOCUS: JERSEY HEALTH CONNECT****Table 1: HIE Models**

HIE Model	Description	How it works	Advantages
<b>Federated (Peer-to-peer)</b>	Real-time data request/delivery over the Internet.	Master patient index (MPI) maintained by one entity regionally or nationally.	Participants retain data ownership and control.
	Clinical data push over the Internet.	participating providers send clinical data messages to HIE-owned MPI, which routes them to designated participating providers.	
	No real-time clinical data sharing.	A national or regional entity maintains a master patient index (typically an RLS) for the HIE. Participants request clinical data/medical records from other participating providers via a separate request for information.	
	Shared repositories connected through the Internet.	Regional repositories interconnected via a centralized MPI or Record Locator Service (RLS).	Frees participants from data management of patient identification, storage, system management, security, and privacy.
<b>Centralized</b>	Single, shared repository.	Participating providers query the centralized repository to obtain patient's clinical results and other information. May store key patient identifying information including name, date of birth, gender, SSN, and other demographic data such as address and telephone number. Also may store all lab results, radiology results, allergy information, medications, patient problem lists, and past medical/surgical history or insurance and other benefit information.	Economies of scale for the technical infrastructure and enhanced data security; least administrative work.

holders. To this end, it opted for a hybrid, logically federated, physically centralized HIE model.

JHC's model is "federated" in that a participant's data is accessible only by that participant until linked to other participants' data. Participants' data are linked under tightly controlled workflows on a patient-by-patient basis, as data such as referral messages or results flow between HIE participants. Participants' data also may be linked by an online patient request for relationships with multiple physicians, or via the record locator service. Even when patient records are linked, notification and consent features control access to this aggregated data. A patient-provider relationship can be designated as private, in which case no data of any kind from that provider relationship is accessible by other participants. JHC serves a centralized data repository (CDR).

Physically, JHC is "centralized" at a national level, creating an HIE model with significant total cost of ownership, operational and functional advantages.

JHC's delivery model comprises four foundational elements:

**Platform.** Many of the collaborative stakeholders have chosen to pursue a connectivity strategy based upon a suite of core HIE services, delivered via a secure SaaS exchange platform.

This architecture supports rapid implementation of connectivity without the burden of costly and complex infrastructure. Vendor independent, it allows JHC to link each hospital and physician practice throughout the region, integrate with HIS- and practice-based solutions and provide applications and support to the physicians and staff as part of a broader connectivity strategy.

JHC participants do not purchase or install the technology because it resides in the "cloud," which, according to healthcare observers, is fast becoming a viable option for platform deployment, especially in larger initiatives like regional and state-wide efforts.<sup>6</sup>

For the JHC, not having to build or finance infrastructure meant getting up

and running quickly. Network planning committees moved past technology, directly into developing clinical use cases. Ultimately, the SaaS deployment model factored into New Jersey's selection of JHC as one of its four funded initiatives.

**Applications.** As part of its role in supporting JHC, the network is providing three key foundational elements to each participant of the HIE:

- Record locator service (RLS) for clinicians to locate and review a patient record within the community.
- Personal health record for patients to connect online to their health record and to serve as repository of aggregated data from connected participating stakeholders.
- Colleague messaging for clinicians to exchange secure messages.

In addition, many of the participating institutions are implementing additional network-provided modules, including: delivery of clinical documents and lab test results (including discharge summaries and transcriptions of radiology reports), as well as referrals, e-prescribing and secure

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patient messaging. Some are implementing connected orders, patient pre-registration and integration with multiple ambulatory EHRs. An economic structure and financial incentives to accommodate active participation of each stakeholder at the appropriate time will be established.

**Connectivity Solutions.** JHC hospitals and practices share clinical data without having to maintain separate connection points to community, regional or national network. Instead, they connect once to the platform. JHC's connectivity solutions provider works directly with the HIE to create complete solutions for all participants.

Practices and hospitals that wish to connect to another HIE infrastructure or to connect an EHR or practice management system to the JHC can procure an ambulatory interoperability toolkit, which provides access to all connectivity application programming interfaces (API) for a specified system and the following functionality:

- **Automated patient upload.** An abstract data type (ADT) feed between a physician PMS or EHR and the HIE automatically maintains a copy of the practice's patients. If an e-mail address is included in this ADT feed, patients will be invited to join the service automatically. This ADT feed includes patient demographic information on the patient and can include such clinical information as allergies or conditions to pre-populate the patient's health record. The ADT feed also contains the practice's identity for the patient, which can be used in subsequent interoperability scenarios (such as health summary exchange).

- **Health summary exchange.** An EHR can be configured to exchange continuity of care documents with the HIE to automate integration of health summary information (primarily medications, allergies and problems).

- **Workflow integration.** APIs provide workflow integration between ambulatory applications and the network, including one-click, single-sign-in access that maintains the ambulatory application's patient context, an incremental precursor to full data level integration.

**Services.** Users receive 24/7/365 support

through a standard support line; help and training features are built into the product. Datacenter operations, servers and networks organizations access, as well as application maintenance (i.e., regular service upgrades) also are included.

In addition, to the aforementioned baseline applications, the HIE will provide the following capabilities:

- **Provider account provisioning.** Available through a browser to all members of the region, this process establishes branding for the provider, at HIE, health system and/or physician group levels as determined by the HIE. Though capabilities of these accounts will be limited to RLS and colleague messaging, they can be expanded to include such applications as electronic prescribing, results distribution and clinical orders, and patient pre-registration.

- **Jersey Health Connect affiliation.** All provider and staff accounts will be associated with the JHC HIE. This affiliation serves as the backbone for health collaboration within the region, allowing patient health information to be shared and patient accounts to be linked across these various provider stakeholders.

- **Online patient connection.** Patients will be able to establish accounts at a portal determined by the HIE and/or each institution. Patients will connect to their providers, or a provider will establish patients' accounts and invite them to join via an e-mail invitation.

### **ESTABLISHING EFFECTIVE GOVERNANCE**

The difference between HIE success and failure is good governance. HIE is more about governance and people than technology. In eHealth Initiative's 2010 survey, nearly 20 percent of state-designated entities (SDE) respondents cited lack of board knowledge among their greatest challenges.<sup>7</sup> And this already difficult effort is getting more so—66 percent of respondents (56 percent of all active HIEs in the country) cited addressing government policy mandates as a major challenge. JHC is facing a great deal of legal review and coordination, which take a great deal of time.

### **ENSURING SUSTAINABILITY**

Proving the value, or return on investment, of health information exchange to potential participants is the key to long-term stability.

The SaaS approach allows organizations to purchase modular subscriptions for services that address their specific business needs, without investing in infrastructure and managing costly installation and upgrades. Furthermore, by leveraging those investments to connect to other organizations in the community, region or across the country, they are not required to fund specific HIE infrastructure efforts to provide the effective connectivity required for meaningful use. This approach will become very important when stimulus funding ends.

It also will allow JHC to maximize its current funding. Not having to expedite capital from grants in order to fund infrastructure, allows JHC to manage funding, turn its focus and apply its resources to creating value for participants which, in turn, further ensures its own sustainability.

Ironically, physician alignment is not a given. Traditionally, giving physicians technology to simplify ordering binds them to a single organization. In an exchange, technology connects them to all the organizations in the HIE, effectively opening the door to the possibility to multiple alignments. Sharing data means sharing risk; HIE levels the competitive playing field. The true winner is the patient, who benefits from better, more informed care. But by reducing costs from such things as duplicative testing, individual organizations also benefit in this new model of competition. Improved care and reduced cost are the true value propositions; true sustainability comes from improving profitability by eliminating waste and redundancy.

### **LESSONS LEARNED AND ADVICE TO OTHER HIES**

1. Establish buy-in from the beginning. Building consensus and achieving full stakeholder buy-in at the beginning of an HIE project is critical to its development and to maintaining trust as the project

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moves forward. Broad and sustained collaboration coupled with clear, structured communication among stakeholders at all levels is vital.

**2.** Define HIE. Does a viewer constitute data exchange? Participants should be clear about what health data exchange will look like between members, and ultimately, between HIEs. Disclosure and consent across member hospitals are important.

**3.** Determine how much to buy, how much to build. How hands-on should you be? How much infrastructure do you want to build? And what is the resource availability?

**4.** Agree on use cases. Decide where to start.

**5.** Determine funding sources and member contributions.

**6.** Assess members' current technology and level of adoption. What is the nature of participating physicians' technology? How will you connect it? How will you normalize disparate data?

**7.** Account for security and auditing.

**NEXT STEPS**

Ongoing commitment to rapid expansion and adoption of the HIE will spotlight the growing success many participants are experiencing. The NJ State HIT Commission has indicated early demonstrable success is vital to a broader vision of connected care for the state—and organizations that show the greatest progress and value will play an increasing role in solidifying the state strategy. As the state's largest group of stakeholders with the most momentum, JHC has the greatest opportunity to establish a regional agenda while maintaining its highly visible and prominent position in the market.

Next steps include:

**1.** Developing and instituting a progress measurement system: To report back to the state, JHC will evaluate its progress against its stated objectives by collecting necessary data and applying specific analytic assessment criteria to that data to demonstrate positive growth and results. A regional communication plan report appropriate information to community stakeholders.

The initial focus on provider adoption/attitude, patient knowledge/attitude and hospital system stakeholder measures will change to focus on workflow impact, clinical outcomes, clinical process and financial impact. The HIE will measure progress against established baselines for selected criteria.

**2.** Developing a strategic growth plan: JHC will conduct technology and strategy assessments of participants to develop two- or three-phased implementation plans of how to link to the HIE, each other and the community of patients and physicians it serves. The plans will be driven by each organization's strategic initiatives and technical ability to integrate with the HIE platform.

**3.** Establishing and prioritizing new clinical-use cases: Currently, JHC is examining such items as minimum data sets for standardized patient forms and ER-specific clinical views.

**4.** Increase participant usage: Presently, ARRA, HITECH and meaningful use requirements hinder participation. For example, Trinitas Regional Medical Center (TRMC), a Catholic teaching medical center sponsored by the Sisters of Charity of Saint Elizabeth in partnership with Elizabethtown Healthcare Foundation, recently commenced testing of laboratory, radiology and allergy report exchange with JHC. However, some of its facilities face a dilemma: Begin testing now with HL7-based exchanges or wait until their EMR vendors incorporate XML-based Continuity of Care Document (CCD) specifications. As TRMC and other organizations resolve such dilemmas, JHC anticipates a significant jump in participation.

**CONCLUSION**

Data exchange has evolved from nice-to-have to must-have. Government mandates in the form of incentives and disincentives are driving the growth of HIE and the proliferation of structures to support it, but HIE for the sake of HIE is not what matters.

The key to better, more cost-effective care? Data transparency. The key to data

transparency? HIE. Ultimately, HIE's value lies in its ability to eliminate redundancy, which will drive down the cost of healthcare, while enabling the continuity of care necessary for consistently positive outcomes. **JHIM**

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**REFERENCES**

- Center for the Study of the Presidency and Congress (2010). A 21st Century Roadmap for Advancing America's Health: The Path from Peril to Progress. Washington, D.C. Accessed Sept. 21, 2010. Available at [www.thepresidency.org/storage/documents/18651\\_textproof.pdf](http://www.thepresidency.org/storage/documents/18651_textproof.pdf).
- Taylor R, Bower A, Girosi F, Bigelow J, Fonkych K, Hillestad R (September 14, 2005) "Promoting health information technology: is there a case for more-aggressive government action?" *Health Aff.*: 24(5):1234-1245. Accessed July 15, 2009. Available at <http://content.healthaffairs.org/cgi/content/full/24/5/1234>.
- eHealth Initiative (2010) The State of Health Information Exchange in 2010: Connecting the Nation to Achieve Meaningful Use. Accessed Sept. 22, 2010. Available at [www.ehealthinitiative.org/uploads/file/Final%20Report.pdf](http://www.ehealthinitiative.org/uploads/file/Final%20Report.pdf).
- Kibbe DC, Phillips RL, Jr., Green LA. The continuity of care record. *Am Fam Physician*. Oct 1 2004;70(7):1220, 1222-1223.
- HIMSS (2009) Health Information Exchanges: Similarities and Differences: HIE Common Practices Survey Results White Paper. Accessed Sept. 21, 2010. Available at [www.himss.org/content/files/RHIO/HIE\\_CommonPracticesWhitePaper20090330.pdf](http://www.himss.org/content/files/RHIO/HIE_CommonPracticesWhitePaper20090330.pdf).
- Dunbrack LA (2010) Vendor Assessment: Health Information Exchange Technologies. IDC Health Insights webinar. Delivered May 25, 2010. Published June 2010. Document #HI224045.
- eHealth Initiative. (2010) The State of Health Information Exchange in 2010: Connecting the Nation to Achieve Meaningful Use. Accessed Sept. 27, 2010. Available at [www.ehealthinitiative.org/uploads/file/Final%20Report.pdf](http://www.ehealthinitiative.org/uploads/file/Final%20Report.pdf).