

INGENIX[®]

Defining the New World of Health Information

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Executive Summary

Organizations need to find better ways to exchange health information. As every American knows, there is too much inefficiency and insecurity in our health care system, and too much room for errors, fraud, and abuse. State and federal governments, industry groups, academic institutions, IT vendors, health care plans, and providers are all doing their part, taking small steps that in time may lead to the creation of a national Health Information Exchange (HIE), which can provide a seamless flow of data across a multitude of networks, applications, and interfaces. In effect, it would be a secure, highly automated health Internet around which the entire health care industry could coalesce. But we're a long way from realizing that goal. Open, secure standards of all kinds must be developed and agreed upon. For many practices and institutions, the costs associated with developing interconnections and tapping into a Health Information Exchange must come down. And some attitudes must change. Through HIPAA and several other initiatives, the federal government has forced universal adoption of some standards related to electronic transactions, code sets, identifiers, and other administrative data, as well as benefit plans, member enrollment, security, and patient privacy. But we still have a long way to go.

HIE is attractive because it has the potential to solve many of the problems associated with the current health care system. HIE will afford opportunities for improving patient care, reducing administrative costs for all health care stakeholders, empowering consumers and clinicians, and minimizing menial and redundant paperwork. In a best-case HIE scenario, all physicians would have timely and complete access to their patients' medical records, and their practice staffs and hospitals could access patient health plan eligibility and benefits in real time and get the claims adjudicated in seconds. The potential is sweeping—and mind-boggling.

Ingenix is committed to realizing the vision of an open, standards-based, fully interoperable HIE. However, like the Interstate highway system, the Internet, or any large-scale infrastructure, a mature HIE can only come about incrementally. Thus, step by step, Ingenix is working with the tools, resources, and expertise the company already has in place—creating Health Information Exchange solutions that are available today.

The Ingenix approach is unique in that, rather than building a top-down architecture that gathers and transmits clinical health information, then works backward to include administrative data, Ingenix starts with electronic data interchange (EDI) for claims processing, eligibility, remittance, and related clinical information attachments, the Internet, web services—and the company's existing technologies and data resources. Next, Ingenix aims to add capacity and functionality in order to accommodate complex, bandwidth-intensive clinical information and connectivity, interoperability, and security mechanisms.

HIE is in fact a superset of what Ingenix has already accomplished. Of course, full-scale HIE creation, implementation, and adoption will require partnerships with stakeholders of all kinds. But Ingenix is already making great strides. This paper provides a brief overview of what HIE is and can be, as well as what Ingenix offers today and envisions for tomorrow.

What Is Health Information Exchange?

HIE is a vision of technology characterized by networks, applications, interfaces, and data formats that together form an interoperable electronic infrastructure for the exchange of health information between all health care stakeholders.

There are aspects of this vision that are already in place today. EDI, for example, which has existed since the 1980s, is an administrative subset of health care information in which data is exchanged electronically between providers and payers. However, the current Clearinghouse EDI model, while a sustainable business model, has a scope that is far too narrow. The HIE of the future will transmit administrative and financial data like today's Clearinghouse EDI model, but will also transmit clinical data of all kinds.

Another aspect of the HIE vision that is up and running today is the Regional Health Information Organization (RHIO). Several RHIOs are currently exchanging clinical information. The earliest RHIOs began operating in isolated settings and were limited to delivering "silos" of information to a select group—clinicians within a single medical center and its satellite clinics, for example. But transmission of all types of information and interconnecting of clinicians and

other health professionals in a wider geographical region is becoming a priority. A small number of communities have made progress in developing the infrastructure to support electronic exchange of clinical data among all providers in their regional markets. However, developing sustainable business models has been one of the major challenges for RHIOs, many of which have relied on start-up grants and government funding.

The greater HIE vision—the “big picture”—is probably more than a decade from becoming a reality. However, Ingenix isn’t waiting for the finished product. In fact, with our large-scale infrastructure, intellectual properties, and electronic relationships with thousands of health plans and providers, we hope to be instrumental in bringing about the HIE, thus transforming the industry. Ingenix is working to build an HIE that merges administrative and clinical data transmission and provides a sustainable business model for the exchange of all health information. Moreover, Ingenix is committed to connecting our HIE to the emerging regional and local networks in order to provide an interoperability backbone.

The Ingenix HIE vision calls for an open architecture that is not limited by proprietary considerations. Access will not be constrained by geography, affiliations, or organization size. Third-party providers will be invited to participate and to help convert a wealth of electronic data into usable information to improve health care and health in the United States. And, of course, data won’t disappear into black holes, or be constrained in silos as commonly happens today.

Ingenix has made a sizable investment in EDI in order to start building the infrastructure for the HIE. In fact, Ingenix is one of the leading experts in converting data to information and is in a unique position to do so.

The Current Situation

Progress is being made. Most stakeholders are planning to deploy HIE technologies, many are participating in pilot programs, and several have implemented HIE technologies of varying degrees of sophistication. However, the picture is fragmented. In many cases, there is a disconnect between the groups working on administrative data (e.g., EDI for HIPAA transactions) and those involved in developing

standards for clinical messaging, such as HL7 for medical records. Unfortunately, there does not seem to be a consensus as to how to leverage the existing administrative infrastructure for exchanges of clinical information.

Barriers to an open, fully operational HIE

- **Financial** – the ROI of purely clinical data exchange is uncertain, and yet to be proved in many cases. In general the RHIOs are operating with grants and government funding and lack a sustainable financing model.
- **Technical** – lack of prevailing implementation of the many available standards, which results in interoperability problems. The industry needs flexibility but not chaos.
- **Cultural** – people are naturally averse to change and averse to share information they consider proprietary and sensitive; health information is special: consumers are justifiably guarded about the privacy of health information.

The health care industry is behind the times compared to other industries such as financial services, transportation, and retail. The deployment of information technology in health care has not kept up because of the unique, highly personal, and multi-faceted nature of health information. Competition is an impediment to the free exchange of information, as well. After all, it is difficult for companies that have been battling for local market share for years to suddenly start treating each other like long-lost kin. There are financial and institutional disincentives to collaborating and sharing precious assets: patients and their data. Even when committed, long-term partners such as local health plans and providers work together to build HIE infrastructure, their efforts can fizzle due to differing opinions about who bears the cost and who controls the data.¹

Inertia is also a challenge in health care. Once systems are in place and working, people are resistant to make changes. Disrupting the flow of administrative information could cause delays in payments or denials. Moreover, disrupting the flow of clinical information could have dire consequences not

measurable in financial terms. And, of course, reluctance to change is reinforced by constant reminders of the privacy breaches of data over the Internet. Just one recent example is the massive security breach that took place within the TJX Companies, parent company of T.J. Maxx, Marshalls, and other popular retail outlets. Data from at least 45 million credit and debit cards were compromised. This and other incidents continue to cast doubt on the security of electronic exchange of information—health-related or otherwise.

To be sure, progress is being made despite the obstacles.

- Computerized Physician Order Entry (CPOE) is being used by more and more clinicians to capture prescriptions and other medication information directly in computer systems.
- Clinical Decision Support (CDS) systems provide clinicians, staff, patients, and other concerned individuals with knowledge and person-specific information, intelligently filtered or presented at appropriate times, to enhance health and health care.² Used in conjunction with CPOE, CDS has the potential to reduce medication errors and adverse drug events dramatically.
- Community-wide data-sharing projects are up and running in many cities, exchanging clinical and administrative data while addressing financial and technological issues.
- Health insurance status-checking is improving. As of April 2007, health care providers and hospitals can verify patient eligibility and benefits information in seconds thanks to new standard business rules developed by the CAQH Committee on Operating Rules for Information Exchange (CORE). The CORE rules build on the HIPAA eligibility (X12 270/271) transaction and have the potential to make electronic administrative data communications fast, seamless, streamlined, and predictable. Ingenix and nearly 20 other leading health organizations are voluntarily exchanging patient administrative data in accordance with the CORE rules.
- The American National Standards Institute's Healthcare Information Technology Standards Panel (ANSI HITSP) provides an open, public forum for the voluntary coordination of health care informatics standards among all relevant standards bodies, as well as an inventory of existing health care informatics standards appropriate for the administrative simplification requirements of HIPAA.

An Electronic Commerce Coalition: The Utah Health Information Network

The Utah Health Information Network (UHIN) was started as a public initiative in 1993 in order to provide a network that would support administrative transactions among Utah's providers and payers. UHIN's mission is to provide the consumer of health care services with reduced costs, improved health care quality and access, and to facilitate research. To accomplish this, members are committed to creating and managing an electronic, value-added network that links Utah health care community participants and allows for the exchange of important financial and clinical information. Exchange at this level requires standardizing health care transactions and health care reporting using EDI standardized formats and codes, extensive electronic interface development, and communications services. UHIN members are also committed to gathering and providing data to a statewide data repository.

Two years ago, UHIN started working on leveraging the existing EDI infrastructure in order to deliver high-value clinical transactions such as laboratory reports and medication histories. Today, more than 90 percent of Utah's physicians are connected to UHIN. All of the state's hospitals and most payers that operate in the state of Utah are connected as well. In addition, UHIN provides a gateway for out-of-state payers, so the providers can send all of their claims to UHIN and UHIN will route them appropriately.

All of UHIN's electronic interchange work is done in compliance with national data standards, specifically the HIPAA administrative simplification standards and HL7. The entire effort is focused on increased efficiencies and reduction of administrative costs so the entire Utah health care community, including the consumers, may benefit.

- According to a recent Community Tracking Study (CTS) sponsored by the Robert Wood Johnson Foundation, hospitals across the nation are actively engaged in developing physician portals to share data with affiliated physicians. These proprietary portals give admitting physicians remote access to critical clinical data such as lab and radiology reports and discharge summaries from their patients' hospital records. Hospitals appear motivated for competitive reasons to develop portals to tie physicians more closely to their organization.

Aside from the collective efforts of hospitals and providers, standards bodies, and industry consortia, individual companies are also making progress by building innovations into new products and services. For information on what Ingenix is accomplishing in this regard, see "How Ingenix Is Working to Realize the HIE Vision" on page 6.

What's the Vision?

It's simple. The primary goals are connectivity, interoperability, and security

- for the provider
- for the payer
- for the consumer
- for the financial institution

HIE Building Blocks

An HIE that is inclusive of many disparate parties must have its foundation in open, standards-based technologies—the only kind of technologies that lead to barrier-free interoperability. Of course, this requires that standards be established as part of the process, whether related to technology, data formats, data contents, identifiers, and coding. A standard terminology is critically important too. Consider the term "principal diagnosis." How does it differ from "primary diagnosis" or "admitting diagnosis" or

"discharge diagnosis?" When should one be used and not the other? And how can the HIE automatically differentiate between multiple choices? Clearly, the HIE must make semantic and lexical connections that exist within similar terms, but the closer we can get to standardizing those terms, the better off we will be.

Secure connectivity is also an important foundational criterion. An HIE must enable secure connections, whether access is from the Internet or via cell phone or wireless PDA. Security levels must be capable of safeguarding the most sensitive of all protected health information. And, of course, they must comply with HIPAA guidelines.

The Health Level 7 (HL7) Reference Information Model (RIM) v.3 is currently the closest thing to a framework and associated standards that the health industry has for the interfacing of clinical data in most institutions. HL7 standards, which support clinical practice and the management, delivery, and evaluation of health services, are the most commonly used in the world.

As institutions build interfaces and set up information exchanges, they are saving time and money thanks to standards that were developed to create the HL7 RIM. According to David Marotta, co-chair of the HL7 Education and Implementation Subcommittee, custom-built interfaces cost between \$50,000 and \$250,000 prior to the introduction of the HL7 standard. As of the year 2000, however, the expense of an HL7 interface with similar functionality ranged between \$2,000 and \$10,000. Installation times are dramatically reduced, too.³

Ingenix recently created its own foundational platform for HIE by merging the expertise of two industry-leading businesses: Claredi®, an innovative leader in EDI software applications, and ENS® Health, a full-service, customer-oriented clearinghouse. Synergies between these two companies, combined with many of Ingenix's products and services—and frameworks such as the HL7 RIM—form the basic building blocks for the next generation of health care information interoperability.

How Ingenix Is Working to Realize the HIE Vision

Ingenix is exploiting existing Ingenix technologies and resources, and moving forward with myriad Health Information Exchange Solutions that can be implemented today. Ingenix is leveraging synergies with the existing systems, applications, and operations in order to provide a sustainable business model for a comprehensive HIE.

- Integrating our EDI Clearinghouse with practice management systems
- Working with payers to move processes from the back-end to the pre-payment world
- Improving the flow, building interfaces, connecting vendors

And, as you would expect, Ingenix is bringing together the brightest minds in order to solve technological problems and bring stakeholders together.

Next Steps

The status quo in health information systems has to change. It's a hindrance not only to the practice of medicine, but also to the informational and business realities that support that practice. Interoperability must replace fragmentation and isolation. The HIE of the future will deliver measurable savings through accelerated revenue cycles, reduced administrative costs and errors, simplified connectivity with trading partners, optimized administrative and clinical transaction management, and compliance assurance. Not coincidentally, you can start to realize those same benefits from today's Ingenix Health Information Exchange Solutions. These solutions range from basic paper claims conversion, direct data entry, and standard transaction validation services to the exchange of clinical messaging, EHRs, and PHRs. Automated connectivity between two trading partners or among thousands of trading partners is also possible through a secure, broad-based virtual health care network designed, developed, and deployed with assistance from Ingenix.

Ingenix Neutrality Works to Everyone's Advantage

Everyone has to be able to plug in—payers, providers, labs, banks, employers, supply chain vendors, and consumers. Ingenix works to benefit all of these groups, and to provide an architecture that enables all to pursue better health care—and better health—without barriers.

One client at a time, Ingenix is working to build HIE capabilities and interoperability into a national, interoperable, stable, secure, and effective Health Information Exchange. Ingenix Health Information Exchange Solutions are interoperable with multiple technology platforms and can accommodate the wide diversity of communications protocols and security trust models in use today.

At the present time, Ingenix has made connections from our EDI clearinghouse to more than 1,500 payers. Data sent via these transactions today is largely administrative data, but clinical attachments are being transmitted and received as well. Ingenix also offers connectivity with approximately 160 practice management systems; nearly 50 are fully integrated with our system. And health care information technology vendors including clearinghouses, practice management, and hospital information systems developers, all have an opportunity to participate in Ingenix HIE technology development and deployment.

Ingenix HIE Solutions Portfolio Today

Ingenix Transaction Exchange
Ingenix Transaction Manager
Ingenix Connectivity Director

Ingenix Transaction Director
Ingenix Network Director
Transaction gateways and portals

Claredi testing and certification services
HIPAA Security Solutions

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For Information: 800.765.6696 | insight@ingenix.com
Ingenix, Inc. | 12125 Technology Dr. | Eden Prairie, MN 55344
www.ingenix.com

In the not-too distant future, there will be a comprehensive, open, and fully interoperable Health Information Exchange. In the meantime, Ingenix offers the bridge between today's impressive technologies and the innovations and interoperability that tomorrow will surely bring.

¹"Hospital-Physician Portals: The Role of Competition in Driving Clinical Data Exchange," November/December 2006, *Health Affairs*, Vol. 25, No. 6; Grossman, Bodenheimer, McKenzie; <http://content.healthaffairs.org/>

²Adapted from *Improving Outcomes with Clinical Decision Support: An Implementer's Guide*, HIMSS, Osheroff et al., 2005. See Appendix B for snapshots illustrating sample CDS interventions.

³"HL7 in the 21st Century," April 2000, *Healthcare Informatics*

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From North America, call: 1-800-765-6034 • ingenuity@ingenix.com
For a list of Ingenix global office locations, please refer to our web site www.ingenix.com.

Corporate Headquarters | 12125 Technology Drive, Eden Prairie, MN 55344
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