

Laying a Foundation for True Patient Intelligence

Healthcare delivery systems do not lack data. What they lack is patient and provider intelligence.

The Power of Connection	2
Competition is Growing.....	3
Increasing Optimization	3
Interoperable Healthcare in Action	4
A Global Demand for Better Care	4
Developing Nationwide Networks.....	5
Interoperability is a Journey; Choose Technology to Grow With You	5
Dawn of a New Age.....	6

Public and private healthcare systems typically have numerous bits and bytes of critical patient data that remain locked in databases and applications throughout their sprawling ecosystems.

What they typically do not have is the capability to connect disparate data to use it as valuable information. Without this foundational capability, facets of their technology architecture are not tied together, and healthcare systems cannot transform their business processes or bring the right information to bear at the point of service delivery.

The data remains just that – data – and is not converted to intelligence, i.e., a comprehensive collection of patient and provider data organized and presented in a way that enables clinicians and others to make accurate, effective decisions in a timely fashion.

The lack of actionable patient and provider intelligence sets off a cascade of miscommunication between clinicians, patients, administrative staff and other stakeholders. The result of such inefficiencies: preventable medical errors and billions of dollars a year wasted on duplicate tests and unnecessary treatments.

The lack of patient and provider intelligence not only hurts healthcare systems internally, but hinders their relationships with their patients and business partners. It introduces unnecessary complexity to strategic initiatives such as clinical information sharing, provider management, claims processing, fraud reduction, tracking beneficiary identification, analyzing business contract information, and ensuring compliance with regulatory requirements.

Increasing intelligence has moved to the forefront of information technology priorities because of intense pressure from governments, employers and patients to increase the quality and accountability of care services. Modern healthcare systems realize that they need a broader perspective; they need interoperable data to transform business processes and achieve patient and provider intelligence.

A major driver of this movement is a concerted effort to reduce the number of lives lost due to preventable errors and to manage chronic disease populations – the root cause of a burgeoning healthcare crisis in a growing number of countries with costs growing at an unsustainable rate.

The Power of Connection

Interoperable health requires building an agnostic foundation to not only connect data between silos but to make data interoperable. Interoperable health means sharing data from legacy systems, as well as newly deployed applications to enable organizations to interoperate with new sources of healthcare data with minimal disruption. Patient and provider intelligence relies on the ability to locate and relate information across boundaries – departmental or geographical.

Associating patients and providers who are recognized in many different ways throughout the ecosystem and providing sophisticated relationship management services enabling organizations to link data domains to identify known or less obvious relationships are important capabilities for achieving interoperability goals. In fact, relationship management is essential for analyzing patient populations and performing other intelligence activities to allow healthcare systems to have a clear picture of what types of services their patients need now and in the future. Additionally, relationship management is vital to effectively managing and enforcing patient privacy preferences for a data exchange.

Interoperable health lets health systems optimize the impact of clinical systems. The goal of interoperability is connecting applications so data can be shared seamlessly across the healthcare ecosystem and delivered to caregivers whenever and wherever they need it.

Competition is Growing

Effective access to comprehensive patient and provider information helps a healthcare system protect market share and grow its business by:

- ▶ Increasing physician retention – making it simple for physicians to do business with a healthcare system, incenting those physicians to continue to serve patients via that system
- ▶ Recruiting physicians and all clinical staff – reducing the time to get access to information makes it easier for nurses and other staff to do their jobs and can be an extremely powerful recruitment tool
- ▶ Providing clinical leaders who are competing for capital funding the data needed to justify the return on investment of clinical IT projects such as electronic health records, physician order entry systems and clinical portals
- ▶ Improving the patient experience and establishing patient loyalty – Patients increasingly “shop” for healthcare services, and organizations that provide the best experience have a distinct market advantage
- ▶ Providing “patient-centric services,” such as providing patients with online access to their treatment history or those of family members (such as a child’s immunization record) as well as other customized services
- ▶ Tracking the loyalty of VIPs to ensure the organization is providing a seamless transition to these customers as both patients and donors
- ▶ Providing organizations with improved capabilities to manage governance access across organizational and legal boundaries

Increasing Optimization

These benefits are achieved through interoperable health. Healthcare enterprises are able to consistently and continuously optimize the value of data and applications. Interoperable Health increases the returns on expensive clinical software by increased penetration and adoption, making the applications implemented to date more valuable and accessible to clinical staffs. Optimized data sets the stage for large-scale implementation of EMRs and EHRs, which have become high-priority projects for many public and private health systems.

In a healthcare environment that increasingly calls for sophisticated data management and data sharing, data interoperability provides the ability to aggregate and analyze large amounts of health information to power strategic efforts like those associated with chronic disease populations, physician performance, adherence to treatment protocols and the financial efficiency of clinical service lines.

Additionally, there is value in having the correct credentialing information, nonfiction information and notification preferences for physicians. Resolution and tracking of physician data, i.e., billing information, fax number, address, valid, up-to-date medical licenses, is critical to your continued success.

The ability to extend patient and provider information beyond an organization in today’s market is critical as the healthcare industry is pressured to provide more information to consumers.

Interoperable Healthcare in Action

Some technological pioneers already are benefiting from a commitment to find, link together and use information assets to provide patient intelligence. One delivery system in the eastern United States, which operates more than 100 care-giving sites and annually serves more than 2 million patients, is steadily building on its interoperable health platform because of the marked clinical and financial improvements it has delivered.

The integrated delivery network (IDN) laid the foundation with an enterprise master person index (EMPI) that enabled it to link its 3 million patient records and set the stage for inpatient and outpatient electronic health record systems. Looking across its six hospitals and reference labs, they determined that 18 percent of the cross-system patient records were duplicates. Using the EMPI and its robust search capabilities, they reduced the duplication rate to 2 percent after it was integrated with the hospital registration system shared by its facilities.

The IDN then embarked on a strategy to use the EMPI as the backbone of a “universal” platform to increase patient intelligence. The EMPI was integrated to the practice management system used by its outpatient facilities. The link enabled physicians to conduct real-time searches for patient records within the IDN’s facilities.

The next step in platform development was to use the EMPI to provide consistent and accurate access to patient data across the multiple electronic health record systems deployed by the IDN. The EMPI evolved into an interoperable platform on which all clinical systems were linked to an EHR portal. The platform also enabled the IDN to provide access to the EHR to non-affiliated health facilities of the U.S. Department of Veterans Affairs. The connection not only enhanced care coordination but expanded the referral business between the IDN and the VA.

With the interoperable health platform firmly established across the enterprise, the integrated delivery system now is linking multiple radiology information systems used by various facilities to enable passive, cross-facility access to patients’ relevant prior studies, regardless of where the studies were performed or patient registration took place.

A Global Demand for Better Care

Healthcare systems developing interoperable networks are the grassroots of a global movement to rapidly improve clinical data sharing among patients and providers. Every continent and country is grappling with the increased demand for healthcare services and struggling to change the ineffective and inefficient manner in which those services are being provided. The inefficiencies, coupled with a changing economic climate, are driving healthcare organizations to take action.

A common trait among the world’s healthcare programs is that clinical and administrative inefficiencies hamper the efforts of caregivers to prevent harm. The vast majority of preventable errors are not due to caregiver negligence but systemic process breakdowns that result when critical patient data is not available to caregivers at the point of decision. That lack of information often starts a cascade of treatment errors – the wrong medication, the wrong dose, avoidable radiation, a test not given, a procedure not conducted – that can lead to serious harm, even death to patients.

A 2000 report from the Institute of Medicine, titled “To Err is Human: Building a Safer Health System,” estimated up to 98,000 patients at U.S. facilities are killed each year by preventable medical errors. Preventable medical errors, however, are a global issue. Health authorities in Britain have estimated that 40,000 hospitalized patients die annually as a result of preventable errors.

An international study conducted by the New York-based Commonwealth Fund found that the number of patient complaints about medical errors in Germany, Australia, the United States, Britain, Canada and New Zealand were similarly, and distressingly, high. Between 23 percent and 34 percent of recently ill patients surveyed in those five countries said they had suffered from a medical or medication error in the past two years.¹

Managing chronic disease populations such as cardiovascular diseases, diabetes, chronic respiratory diseases and cancer requires careful coordination spanning care facilities, employers and health insurance organizations. It's difficult to estimate the global price tag for treating chronic conditions. But a 2007 report from the U.S. Centers for Disease Control and Prevention (CDC), titled "An Unhealthy America: The Economic Burden of Chronic Disease," estimated the financial impact to the United States for treating the seven most common chronic diseases as \$1 trillion annually. The report also estimated that 80 percent of U.S. citizens aged 65 years or older suffer from at least one chronic condition.

Managing these conditions represents an enormous challenge to caregivers and other stakeholders. Caregivers need a consistent flow of information – from their own facilities as well as other caregivers – to make the right treatment choices and monitor the health status of chronic condition patients on a frequent basis. The failure to do so has significant clinical and financial implications. Not only do patients suffer if caregivers do not have the right data, but the cost is exponentially higher for treating patients who have chronic conditions and cannot manage their diseases.

Developing Nationwide Networks

To increase the flow of critical health information, a number of countries already have made substantial progress toward nationwide, interoperable health networks. Canada Health Infoway Inc., a not-for-profit organization whose members comprise the country's 14 federal, provincial and territorial Deputy Ministers of Health, has worked with the government to implement and "reuse" health information systems to create a more efficient clinical environment.

A key facet of a national healthcare network blueprint is creating localized provider-based client registries (i.e. patient identification and relationship resolution) to ensure that data is instantly and effectively linked across disparate systems and applications. Creating local common registries enables care providers to link the registries of provider organizations with full patient information and then link into a larger countrywide registry so that patient healthcare information can be accessed across the larger geography.

The movement toward interoperable health seemingly is inexorable and many countries including Canada, France and Germany have made significant progress toward establishing national interoperable health networks. The reason that these and other efforts are gaining momentum is that each step toward nationwide interoperability provides numerous benefits that justify the proof-of-concept of identity resolution and relationship management solutions.

Interoperability is a Journey; Choose Technology to Grow With You

The data collected across healthcare systems has grown exponentially due to the increased use of clinical software, more complex regulatory reporting requirements and the increased size of health systems as more facilities – and clinical business lines – are consolidated into single corporate entities.

1.
Taking the Pulse of Health Care Systems: Experiences of Patients with Health Problems in Six Countries
Cathy Schoen, M.S.
Robin Osborn, M.B.A.
Phuong Trang Huynh, Ph.D.
Michelle Doty, Ph.D.
Kinga Zapert, Ph.D.
Jordon Peugh, M.A.
Karen Davis, Ph.D.
Health Affairs Web Exclusive
November 3, 2005

Clinical and financial decision-makers struggle to corral the myriad of data silos created by these trends. The inability to connect these silos has created a frustrating environment for caregivers who know that critical, actionable data exists, but cannot be used quickly and effectively so they can make intelligent decisions about patient care, develop new services and eliminate numerous inefficiencies that negatively impact care quality and create a serious drag on their bottom line.

Both public and private healthcare systems that have embarked on achieving interoperability have learned that investing in reusable and extensible technology is critical as their businesses – and data – evolve to meet emerging market trends. This technology enables interoperable data – optimizing and connecting data across organizational boundaries – to transform processes and enable strategic initiatives like clinical information sharing.

Healthcare systems have realized that the move toward patient and provider intelligence typically starts small – linking specific data for a specific business need – and gains speed over time as clinical and business leaders leverage that investment and tie additional data assets and applications together to create these patient and provider-centric infrastructures.

The ability to grow with an organization as their interoperability efforts evolve, or extensibility, enables the law of unintended consequences to work in favor of healthcare systems. Clinical system optimization initiatives, for example, are focused on getting actionable data into the hands of caregiver to better the patient experience, improve quality and optimize investments.

Choosing extensibility enables healthcare systems to focus on their own business needs while ensuring those efforts progress in harmony with larger or national efforts to create information exchanges. Healthcare systems need to “plug in” to these networks without replicating data or duplicating the work they’ve done to build their patient-centric infrastructures.

Dawn of a New Age

The healthcare industry is entering an Age of Interoperability, so to speak, and organizations that do not strategically plan to provide the level of data sharing required will find themselves at a severe disadvantage in the marketplace. The rapid innovation in the healthcare information technology market in the past few years has provided healthcare systems with a wide array of choices for enterprise and niche applications. The foremost challenge for clinical and I.T. leaders is to optimize their future and past technology investments to ensure the patient information collected and stored in those systems can be used quickly and intelligently by all stakeholders.

This requires an approach that focuses on building a strong interoperable health foundation to share data and ensure it is optimized for patient and provider intelligence. Interoperability is no longer a technological option – it’s a fundamental requirement to deliver effective care and ensure the health and well-being of millions of patients worldwide.

United States - Corporate Headquarters
+1 312 759 5030

Initiate Systems Government Operations
+1 703 904 4344

Asia Pacific - Australia
+61 (0) 2 8061 3800

Canada
+1 416 213 8999

Europe, Middle East and Africa - UK
+44 (0) 118 925 3322

Initiate, Initiate Master Data Service and the Initiate logo are registered trademarks in the United States and certain foreign jurisdictions. Initiate Inspector is a trademark of Initiate Systems.

© 2009 Initiate Systems, Inc.