Business White Paper

Seizing the Big Data Opportunity in Healthcare

Prerequisites for success

ClearDATA
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In the past decade, the proliferation of electronic health records (EHRs) and data generated from sources such as insurance claims and personal medical devices have made it easier for doctors to make clinical decisions and for healthcare researchers in pharmaceuticals, public health and other sectors to work on a much larger scale. The federal government and other public entities have also made a plethora of data available for analysis and action.

The resulting "big data" in healthcare holds the promise of helping the industry move to a value-based model, address quality inconsistencies, accelerate time-to-market for effective new products and drive down skyrocketing costs. When researchers can mine data from a variety of sources to see which treatments are most effective, identify patterns in hospital readmissions or gain other insights, the industry will be better equipped to improve the health of the population and control spending.

The Big Data Market Opportunity

Several forces are stimulating demand for big data, particularly escalating costs and the consequent shifts in provider reimbursement trends, as well as shifts in the clinical landscape[1]. In harnessing big data, life sciences/pharmaceuticals and healthcare are the industries that stand to benefit most.

Life sciences and pharmaceuticals

The life sciences and pharmaceutical industry has been overwhelmed with a tidal wave of data as information has migrated to electronic formats and collaboration among research organizations has risen. Big data has the potential to transform the industry, from discovery through delivery, but only if companies can translate information into actionable business intelligence.

Insights derived from fast-moving data sets can help inform strategic decisions, spur innovation, inspire new products, accelerate time to

market, enhance customer relationships and streamline operations. Big data also provides valuable insight into how patients are using products. This information can help pharmaceutical and life sciences companies give payers the real-world evidence they demand to prove the efficacy and value of new drugs and devices. Effective use of big data can reduce the number of days needed to acquire, normalize and flow clinical trial data used to improve problem resolution, resulting in accelerated time to market.

Taking full advantage of big data can result in additional benefits for life sciences and pharmaceutical companies. These can include:

- Faster time to market for new products

- Larger, quicker clinical trials

- Improved insight into consumers and their buying patterns

- Better access to healthcare information for research

Healthcare providers

Healthcare organizations collect a ton of data. This deluge of information, when providers apply analytics, improves chronic disease management, tracks at-risk patient populations and improves operational efficiency. Providers that can better foresee and manage issues that result in emergency department visits, lengthy hospital stays and readmissions will flourish during the transformation from fee-based, reactive care to a value-based, proactive model.

The Health Information Technology for Economic and Clinical Health Act's subsidies for the implementation and meaningful use of EHRs provide an important impetus for robust population health management initiatives. The development of Accountable Care Organizations offers further financial incentives to incorporate big data into population health management as a part of a health system's mission.

With reimbursement levels now tied to outcomes, comprehensive population health management is virtually the only viable strategy to identify patients at risk for readmission, multiple emergency department visits, chronic diseases or worsening conditions – all of

which can affect an organization's fiscal health and the quality of life of its patients.

Any comprehensive population health management initiative requires several core capabilities, including:

- **Interoperability and openness:** Creating secure and free-flowing information between providers and other stakeholders to ensure that consistent, high-quality care is available to patients regardless of their location.

- **Actionable data:** Generating accurate data and valuable insights, with discrete elements that providers can mine easily for trends will be critical in helping clinicians make better informed decisions at the point of care.

- **Patient engagement:** Encouraging patients to take a proactive role in not only exchanging information about their health, but also using that information to engage actively with their care team and adopt healthier habits through wellness programs[2].

Solving Data Management and Integration Challenges

Big data is renowned for its sheer size, complexity, diversity and immediacy. Source files and transaction sets are immense, and they often are scattered among providers and facilities or even siloed within groups or departments with varying databases, file formats and message formats. This makes it exponentially more difficult to consolidate, standardize and sift through.

Big data solutions and services also exhibit several characteristics that place high demands on any technology infrastructure. There is typically high variation across use cases and data storage models. Capacity needs tend to be irregular, requiring bursts in computing power and resources. Many analytics processes take a long time to run, and require always-on availability to avoid interruption. All of these factors point to the need for healthcare organizations to tap into a robust technology infrastructure and a team with a high level of industry knowledge and expertise.

2   H&HN Daily, "Big Data, Genomics and Managing Population Health," May 13, 2014

Adding to the challenge, sharing health information among organizations can seem risky due to privacy concerns. Working with data in healthcare comes with weighty compliance requirements surrounding HIPAA and other regulations. Stakeholders across the industry must protect patient privacy and safeguard their own organizations from the risks of using data inappropriately as more information becomes public.

A Growing Array of Options

Seeing escalating demand for better data, many companies in healthcare information technology—both new entrants and established players—recognize that big data represents a substantial and growing market opportunity. They are coming forward with a variety of tools designed to help everyone from patients to physicians and researchers identify insights and derive value from big data.

Many of these IT providers tout innovative approaches to helping healthcare organizations realize the potential advantages of big data; however, their offerings fail to take a holistic, scalable and compliance-centric approach. Few are comprehensive and compliant enough to handle the big data challenge and capitalize on its opportunities. A full understanding of what is required and a roadmap to get there is helpful for any healthcare organization wanting to use big data to make a difference in research and development, patient outcomes and fiscal health.

An End-to-End, Cloud-Based, Compliant Solution

Among the chief decisions when embarking on any big data initiative is the choice of building an in-house infrastructure or hosting the program in the cloud. Integrating different systems and harmonizing data for use by multiple sources can require significant financial and staffing resources, but data-aware, cloud-based solutions enable communication between disparate systems with far less investment of time and cost as compared

with in-house infrastructures. Data aggregation also occurs more quickly, increasing the flow of data and facilitating faster access to information.

Use of cloud-based platforms for applications such as clinical trials or population health management can eliminate a potentially costly investment in staff resources. Access to the expertise of third-party staff who address integration, data normalization and security issues on a daily basis is especially important for hospitals and health systems that need technical experience setting up Accountable Care Organizations and other data-sharing initiatives.

The ClearDATA and Liaison Technologies Solution

To empower healthcare organizations to capitalize on the big data opportunity, ClearDATA and Liaison Technologies have formed a partnership that addresses the market's demand for a highly secure, healthcare dedicated, big data solution. Leveraging a HITRUST-certified cloud data management foundation with a proven cloud-based integration and data harmonization solution, it can be customized to meet each client's unique needs.

Together, ClearDATA and Liaison Technologies provide a customizable, HIPAA-compliant offering that addresses the need for a flexible, cloud-based big data solution. ClearDATA and Liaison provide healthcare organizations with access to an integrated set of IT solutions that can be customized to their unique requirements.

ClearDATA provides a secure cloud, managed services and a big-data tool suite. This foundation provides the traditional benefits of the cloud while overcoming the compliance barriers that prevent some health organizations from broad cloud adoption. Liaison provides healthcare applications that enable data integration and management. It handles the complexities of integrating disparate data from different sources and harmonizing data to create actionable information. Together, ClearDATA and Liaison offer a compliant and customizable solution.

Healthcare IT leaders team up

ClearDATA is the nation's fastest growing healthcare cloud computing company. More than 300,000 healthcare professionals rely on ClearDATA's HITRUST-certified cloud computing and health data management infrastructure to protect their patient data and critical applications. ClearDATA provides a robust, fully compliant data center infrastructure capable of handling rapid-fire and fluctuating bursts in demand for computing resources.
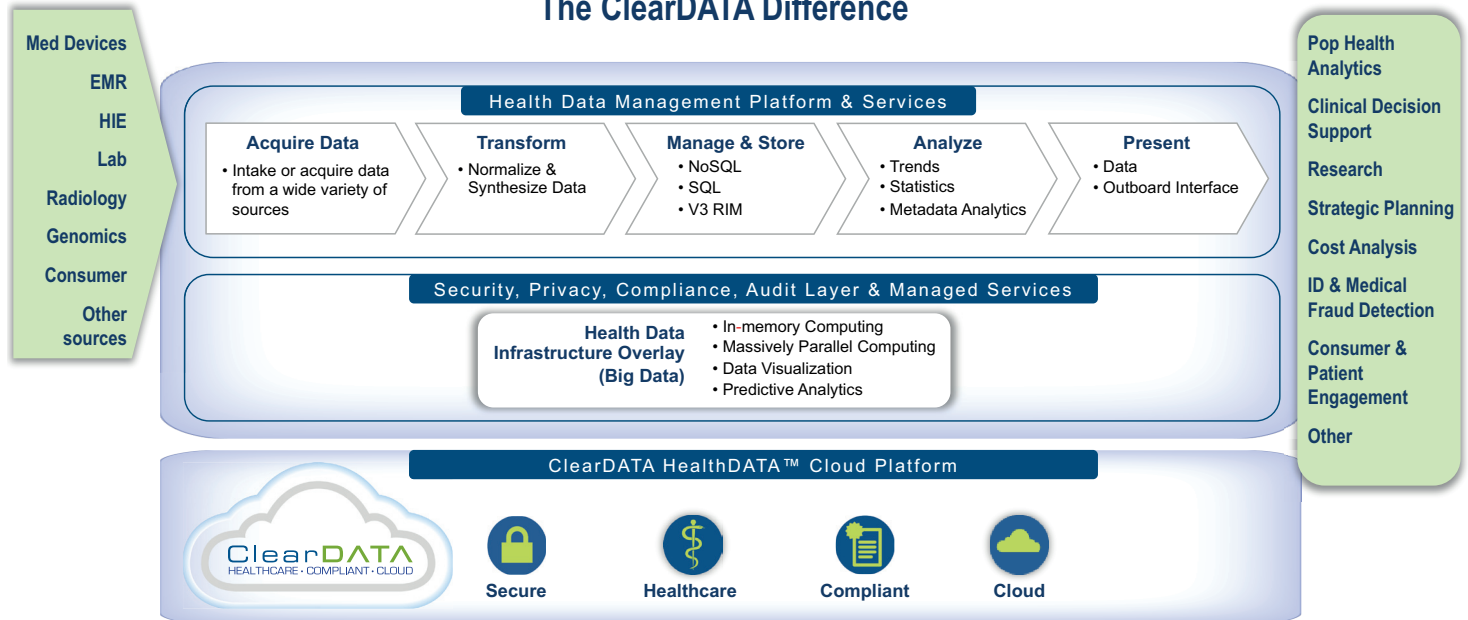
Liaison Technologies is a global data management, data harmonization and data integration company serving more than 1,150 healthcare customers.

Healthcare Data Management Overlay Technology and Services
The ClearDATA Difference

Already in use at several top medical organizations, Liaison Technologies and ClearDATA solutions are making a genuine difference in a wide variety of healthcare and pharmaceutical/life sciences businesses.

Large pharmaceutical

One large pharmaceutical organization tracks web analytics data globally for all of its brands across a variety of digital properties such as web sites, advertising and social media. The company needed a solution to provide a central unified view of its data to allow for insight into brand performance for decision-making.

The data comes from Google Analytics, Facebook Insights, Facebook Atlas, YouTube, and Google AdWords. Liaison created a solution that integrates information from all these providers, extracts and harmonizes the data, and presents a user interface dashboard with robust reporting.

A key benefit is rapid data visibility to determine if a particular regional market has the capacity and the sales opportunity to add new products to the existing inventory. In addition to better visibility, the company determined how and where their marketing dollars were being spent and if the investments were generating revenue.

Georgia Health Connect

Georgia Health Connect (GaHC), a health information network that provides integrative technology and clinical support services to smaller practices, hospitals and health systems throughout the state, will launch in December 2014 and connect to the Georgia Health Information Network (GaHIN). GaHIN is the statewide health information exchange network that electronically connects and enables Georgia hospitals, physicians and clinicians to safely and securely exchange patient health information throughout Georgia and the nation. GaHC's connectivity to GaHIN will greatly expand the potential for statewide provider communication and collaboration to help improve patient care, reduce potential medication and medical errors, streamline workflow and cut administrative costs, as well as enable physicians to spend more one-on-one time with patients, instead of tracking down records.

Backed by both Liaison and ClearDATA technologies, GaHC will support smaller providers, hospitals and health systems that operate in rural and underserved areas. But they will have the same level of technology and support as their larger counterparts, offering them a more equitable and user-friendly technological support solution to help their practices become more competitive in today's evolving marketplace.

Conclusion

With financial success now linked to patient outcomes, healthcare organizations of many kinds are realizing that they must harness big data in order to remain competitive. A highly available, compliant infrastructure, robust data integration and analytics, and focused healthcare industry expertise are the core building blocks necessary to gain critical business insights. Healthcare institutions and pharmaceutical and life sciences companies that adopt these fundamental elements as well-orchestrated, customized solutions will not only survive, but also thrive in today's rapidly changing healthcare landscape.

About Us

ClearDATA is the nation's fastest growing healthcare cloud computing company. More than 310,000 healthcare professionals rely on ClearDATA's HIPAA compliant cloud computing HealthDATA platform and infrastructure to store, manage, protect and share their patient data and critical applications.

For more information

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