ANALYST CONNECTION

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Multidomain Master Data Management: Accelerating Speed to Value

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The U.S. healthcare system is in the midst of a momentous transformation as it shifts toward new care delivery and reimbursement models to meet health reform objectives of controlling healthcare costs while improving the quality of care, patient outcomes, and the patient experience. Thus, the business of healthcare is becoming increasingly data driven in the post-reform era that emphasizes value-based reimbursements. It will be critical for provider organizations to have a clear picture of their financial, operational, and clinical performance if they are to survive under the new paradigm. Healthcare organizations that are more adept at deriving value from data and can use data effectively to differentiate their services, costs, and quality will be more successful.

The following questions were posed by Informatica to Lynne A. Dunbrack, program director of Connected Health IT Strategies at IDC Health Insights, on behalf of Informatica's customers.

Q.   What are the major opportunities for using data to drive substantive change in healthcare?

A.   Healthcare data is by its very nature complex, and this complexity is made that much more challenging by healthcare data being fragmented across multiple, disparate applications in numerous structured and unstructured formats. The adoption of software as a service (SaaS) and infrastructure as a service (IaaS) only serves to compound the situation and make it difficult for provider organizations to access reliable and accurate enterprise-level data. Provider IT organizations will need to aggregate, cleanse, and normalize data from these disparate sources to create a unified, holistic view of the enterprise's administrative, financial, and clinical performance. This unique perspective into the organization's performance will enable provider organizations to make the fundamental changes necessary to achieve the objectives of health reform — improved quality, enhanced patient experience, and reduced costs. These changes include:

- Making more accurate and timely data available at the point of decision making through embedded decision support and dashboards that provide visual insights into key performance metrics.

- Driving operational efficiencies by streamlining and automating workflow process. Data integration will help make transitions between workflows seamless to the end user and reduce the number of applications that need to be accessed to look for information or complete a task.

- Being agile to comply with constantly evolving regulatory mandates, including meaningful use under the American Recovery and Reinvestment Act of 2009 (ARRA) and ICD-10 and 5010 requirements.

- Improving the patient experience through better care coordination.

To effect these changes, healthcare provider organizations will need ready access to reliable, trustworthy data to perform both analysis and real-time decision support.

As a result of ARRA and the drive toward the meaningful use of electronic health records (EHRs), provider organizations are beginning to have unprecedented access to electronic health information, which will enable them to use data from improved decision making and operational and clinical transformation. Data-driven healthcare will enable the care provider to make better decisions; patients to be more informed, active participants in their care; payers and providers to implement new models of care; and comparative effectiveness research that identifies best practices.

Q. **How can multidomain master data management (MDM) enable providers to implement new business models and care delivery approaches?**

A. MDM plays an important role in today's heterogeneous healthcare IT environment, which is often exacerbated by mergers and acquisitions and the need to rationalize redundant transactional applications and databases. At its core, MDM resolves multiple data formats, duplicate entries, and discrepancies to provide an accurate and consistent view of mission-critical data.

However, MDM is more than just an infrastructure technology. Advanced MDM platforms are multidomain, supporting not only resolving patients to be unique, or providers to be unique, or service locations to be unique but also managing the relationships between each of these as master data as well. Examples include relationships between family members, providers and their patient panels, referral networks, and members of care teams. Establishing and maintaining these relationships produces a valuable set of master data unto itself. Furthermore, understanding these relationships is essential to addressing critical business questions such as the following: Who are our customers (patients)? Who refers them to our institution? What are our major sources of revenue, profitable or not?

As providers begin to explore new business models and more collaborative care delivery approaches, having the answers to such questions will be imperative for future success. This is especially critical for providers negotiating risk-based contracts for the first time and embracing the concepts of coordinating care across the extended enterprise. Without a clear understanding of the patients, physicians, and other providers and stakeholders that make up the local healthcare ecosystem, and more importantly the relationship between all of them, providers will find pursuing accountable or collaborative care strategies challenging and could risk an uncertain financial future.

Q. **How should providers handle the explosion of healthcare data after deploying EHRs and other applications to qualify for meaningful use incentive payments?**

A. The drive by providers to meet meaningful use requirements and qualify for incentive payments has resulted in increasing investment in clinical information systems, EHRs, computerized provider order entry (CPOE), and health information exchanges (HIEs). This proliferation of point-of-care computing has resulted in more digitized health information available for clinical decision support and analysis than ever before.

To derive maximum value from their data, forward-thinking providers recognize that they will need to invest in more robust master data management and analytics capabilities to acquire a more accurate and comprehensive view of their enterprise data to achieve the objectives of meaningful use, as well as improve care and reduce healthcare costs. Analytics will move from being department focused to looking across the enterprise to drive clinical, operational, and financial performance improvements.

As the volume of clinical data created, stored, and exchanged by certified applications increases, provider organizations will need to take an information life-cycle management approach to managing data if they are to derive the value from the data needed by the business as well as keep operational costs from spiraling out of control. Leading provider organizations will invest in database archiving, legacy application retirement, data management, archiving, and retrieval to improve access to information and control storage costs. These capabilities will be especially critical when new EHRs and other clinical information systems must be implemented to meet meaningful use requirements or other regulatory mandates.

Q. **What can healthcare organizations do today to maximize the opportunities for data-driven healthcare and prepare for the future?**

A. The first step for many provider organizations deploying information management technology is to develop an all-inclusive data model for the enterprise. Provider organizations are advised to resist the temptation to design the data model in too much detail. Otherwise, they run the risk that once the data model is completed, it will be obsolete because the enterprise's business model, or even the healthcare industry, will have changed to meet new technical, business, or regulatory requirements.

A better approach is to start by defining the essential relationships that exist today (e.g., patients, their families, their physicians and care teams) to incrementally build out the MDM data models. A hybrid approach that combines data governance and working with the MDM platform to better understand its technical capabilities will ultimately provide the best speed to value to the provider organization. Importantly, simply resolving patients to be unique using a traditional enterprise master patient index (EMPI) approach is too little, too late in today's healthcare environment. At a minimum, healthcare organizations should start by defining two domains, patient-provider plus relationships and patient-employee plus relationships, and then add a third domain such as organizational hierarchy or physical location.

Rationalizing data using a master data management platform is an essential step toward creating a solid foundation for building out an analytics strategy. As previously noted, linking and managing the relationships between patient and provider as master data is powerful and enables far more interesting applications of analytics technology based upon reliable and trustworthy data.

It should be noted that while this Analyst Connection is provider focused, payers face many of the same data management issues and challenges and would similarly benefit from deploying a master data management platform.

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