

Healthcare Data Management

Expanding Insight, Increasing Efficiency, Improving Care



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Table of Contents

Executive Summary	2
Common Data Challenges for Healthcare Providers	4
Inaccurate Reporting for Quality Improvement	4
Difficulty Supporting Patient Growth Strategies	4
Lagging Organizational Response	4
Barriers to Change	5
Inconsistent, Inaccurate, Fragmented Data	5
Complex, Resource-Intensive Requests for Data	6
Unpredictable Future Requirements	6
The Informatica Healthcare Data Management Solution	6
Improving Quality of Care and Service	6
Supporting Patient Growth	7
Enhancing Business Agility	8
Meeting Healthcare Providers' Data Requirements	8
Adapting to Data, Projects, and the Business	9
Conclusion	9

Executive Summary

The United States healthcare industry is changing dramatically. From the Patient Protection and Affordable Care Act (PPACA), new Medicare and Medicaid penalties, and shifting consumer buying behavior to the continued threat of international economic uncertainty—all of these factors have an impact on healthcare providers. Figure 1 illustrates rising costs and falling revenues.

External Pressures Affecting Healthcare

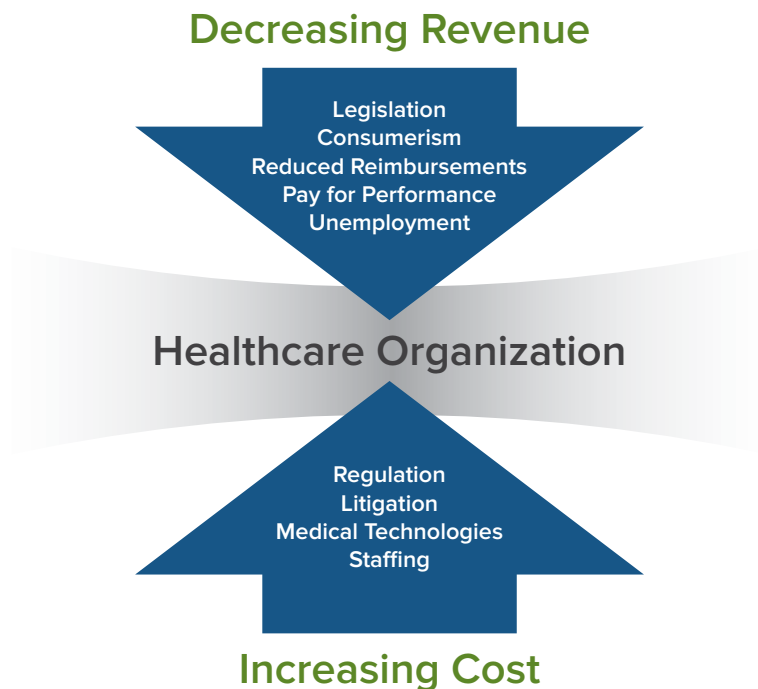


Figure 1: External factors are driving down revenues, while driving up costs and forcing healthcare organizations to become more data driven.

Many healthcare providers are turning to their data—and a deeper understanding of their businesses—as a way to cope with these profound industry changes. Clinical leaders are seeking insight into patients, care teams, and services to uncover opportunities to improve care quality and leverage demonstrated best practices. Health system executives are seeking to reduce referral leakage and increase market share by better understanding physician preferences, locations, patient encounters, and the relationships among them.

The increased demand for and use of data has highlighted its questionable quality. Data errors and inconsistencies are common. Data quality issues are particularly pervasive in what's known as master data—that is, business-critical data used in processes and applications across the enterprise. Master data in a healthcare setting includes identifying data about patients, physicians, providers, locations, employees, and procedures. Healthcare providers need trustworthy, authoritative master data to gain reliable insights into their businesses.

Informatica® helps healthcare providers gain control of core business information or master data. Informatica offers a healthcare data management solution that combines Informatica MDM, robust master data management software, industry-specific data management templates, and business intelligence tools of choice. With this solution, healthcare organizations can create a reliable view of master data and data relationships to:

- Improve quality of care coordination and services
- Power enhanced strategic analysis across the enterprise
- Reveal opportunities to increase efficiency via evidence-based best practices
- Create a competitive advantage for increased market share and reduced referral leakage
- Adapt to the demands of the Affordable Care Act (ACA) by eliminating data inconsistencies across systems

This white paper discusses the topic of healthcare data management and the ways in which it enables healthcare organizations to transform core clinical and business data into greater insight for increased strategic agility. It discusses how the Informatica solution supports healthcare data management and makes information easier to manage, analyze, and put to use in a healthcare setting. Most importantly, it illustrates how the Informatica solution delivers actionable business insight so healthcare organizations can drive value for patients, cultivate network relationships, and build a data foundation to support evolving industry requirements.

Common Data Challenges for Healthcare Providers

When data about patients, physicians, employees, services, and locations is incomplete and fragmented across multiple applications, it is virtually impossible to manage the relationships among these entities and derive insight from their interactions.

A common information-based challenge for healthcare providers is the lack of complete, consistent master data. The lack of trusted master data leads to these key operational problems:

- Inaccurate reporting for quality improvement
- Difficulty supporting patient growth strategies
- Lagging organizational response

Inaccurate Reporting for Quality Improvement

Patient, provider, and facility data needs to be aggregated and analyzed in order to improve service, application reliability, and quality of care. Patient and provider identifiers, and even facility names, can be inconsistent. Data that varies from source to source introduces duplication, inaccuracies, and inconsistencies that fundamentally undermine the integrity of business analysis—and the success of initiatives based on this analysis. In effect, Chief Quality Officers, clinicians, and other executives often have poor, if not misleading, information on which to base decisions affecting patient outcomes and strategic direction.

Difficulty Supporting Patient Growth Strategies

Understanding patient origins (and by extension, the associated revenues) and the relationships among patients, physicians, and other key participants is critical if a healthcare organization is to allocate the appropriate resources to meet growth objectives. Without this insight, leaders struggle to determine the relative value of various referral sources and the relationships among them, identify geographic and other gaps in service areas, and establish the most efficient use of marketing budgets.

Lagging Organizational Response

Healthcare organizations need to respond nimbly to the fast pace of change in the industry. Healthcare providers need to differentiate themselves in an increasingly complex market, avoid the risks of regulatory non-compliance, and keep pace with new payment models. IT infrastructures must be able to access authoritative data quickly so that users can apply it for strategic benefit.

Barriers to Change

Many healthcare providers have made sizable investments in electronic health record/electronic medical record (EHR/EMR) applications that meet “meaningful use” guidelines, enterprise data warehouses, business intelligence, and other efforts that include ad hoc data quality efforts. However, truly trustworthy and authoritative information that is available enterprise-wide remains elusive for several reasons:

- Data is inconsistent, inaccurate, and fragmented
- Business and clinical requests are complex, dynamic, and resource-intensive
- Future requirements are unpredictable

Inconsistent, Inaccurate, Fragmented Data

Far from integrating vital information from legacy systems, many enterprise EHR/EMR applications simply increase data fragmentation across departments or provider locations, as shown in Figure 2.

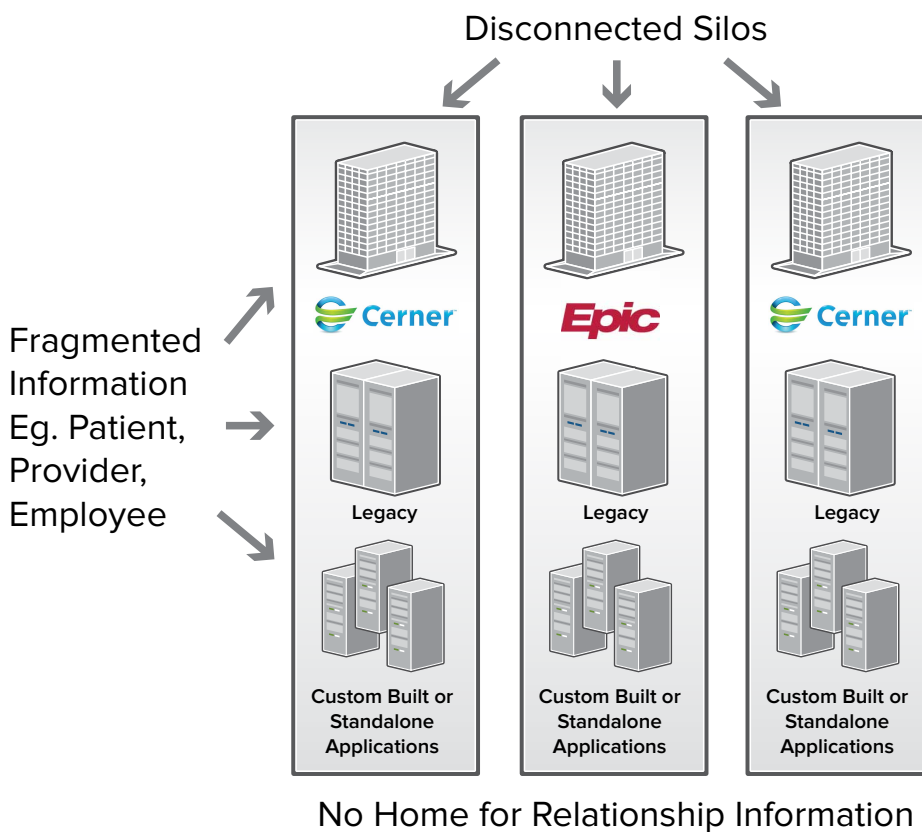


Figure 2: Trustworthy, authoritative information about patients, services, locations, referral networks, and relationships among entities remains elusive, due to technology silos.

Even when EHR/EMR solutions integrate successfully with legacy systems, important master data often remains outside the EMR/EHR. Although it is common for disparate applications to interface through HL7 messaging to share transaction data, it is rare (if ever) that these same applications coordinate master data. For example, the data warehouse may retain its own set of master data which, for reporting purposes, is disconnected from more timely production data. Standalone departmental applications supporting in-patient admissions or infection control may have another set of master information. Yet none of these systems is capable of managing all the master data required across the enterprise, nor do any of them manage the relevant relationships among this master data.

Complex, Resource-Intensive Requests for Data

Clinicians and business analysts need more data than ever before, for more reasons than ever before, and their changing, unanticipated needs are giving rise to isolated and uncoordinated data consolidation and data quality efforts. Users may start by asking IT to establish a holistic view of the patient, requiring cleanup and consolidation of patient information, that may morph into a request from Marketing to delineate relationships among patients, other household members, and their primary care physicians. Without a consistent, flexible process for handling these requests, IT departments have little ability to reuse past investments in data consolidation, cleansing, and reporting for new requests. This places an extra burden on IT organizations and their budgets—and delays them in delivering results in a timely fashion.

Unpredictable Future Requirements

Financial uncertainty, new regulations, interoperability issues, and changing payment models create ongoing stress on IT teams. Without the proper infrastructure in place to manage master data, each impromptu solution cobbled together to meet the latest business demand threatens to make the IT infrastructure more brittle and less able to respond flexibly to future needs.

The Informatica Healthcare Data Management Solution

Master data is core information used repeatedly across applications, as well as clinical and business processes. In the context of the healthcare industry, common master data includes information about patients, providers, employees, services, locations, other related entities, and the relationships among them. Centralizing this data creates a single version of the truth on which a healthcare organization can base its analysis and planning.

Informatica offers a healthcare data management solution based upon Informatica MDM. This solution includes industry-specific templates enabling healthcare providers to visualize trusted master data, infer relationships among these important entities (Figure 3), and deliver rapid, reliable insight for data-driven decision making.

Informatica MDM is industry-leading master data management software. Based on a flexible framework, the Informatica Healthcare Data Management solution can be combined with the customer's choice of business intelligence technology to meet current needs while creating a foundation for future change.

Improving Quality of Care and Service

The Informatica Healthcare Data Management solution delivers **consistency in patient, provider, procedure, and facility information**. Using this data both specifically and in aggregate, healthcare organizations can achieve a deeper understanding of patient populations and pinpoint procedures and facilities ripe for quality improvement. Informatica **centralizes information about specialty provider relationships**, making it easier to compare provider performance as well as to identify and replicate care team best practices.

Supporting Patient Growth

The Informatica Healthcare Data Management solution reveals data and relationships previously concealed by multiple systems and processes, giving clinical and business users fast, reliable answers to queries that uncover overlooked growth and revenue opportunities. This solution helps **reduce out-of-network referrals** by showing relationships among patients, physicians, and physician referral patterns. It also **improves marketing accuracy** by delivering trusted facility and patient information to help analysts forecast future needs and relevant services. In addition, the solution **identifies key provider relationships**—in particular, comparing the geographic distributions of providers and their patient populations—to identify opportunities for organic growth or practice acquisition.

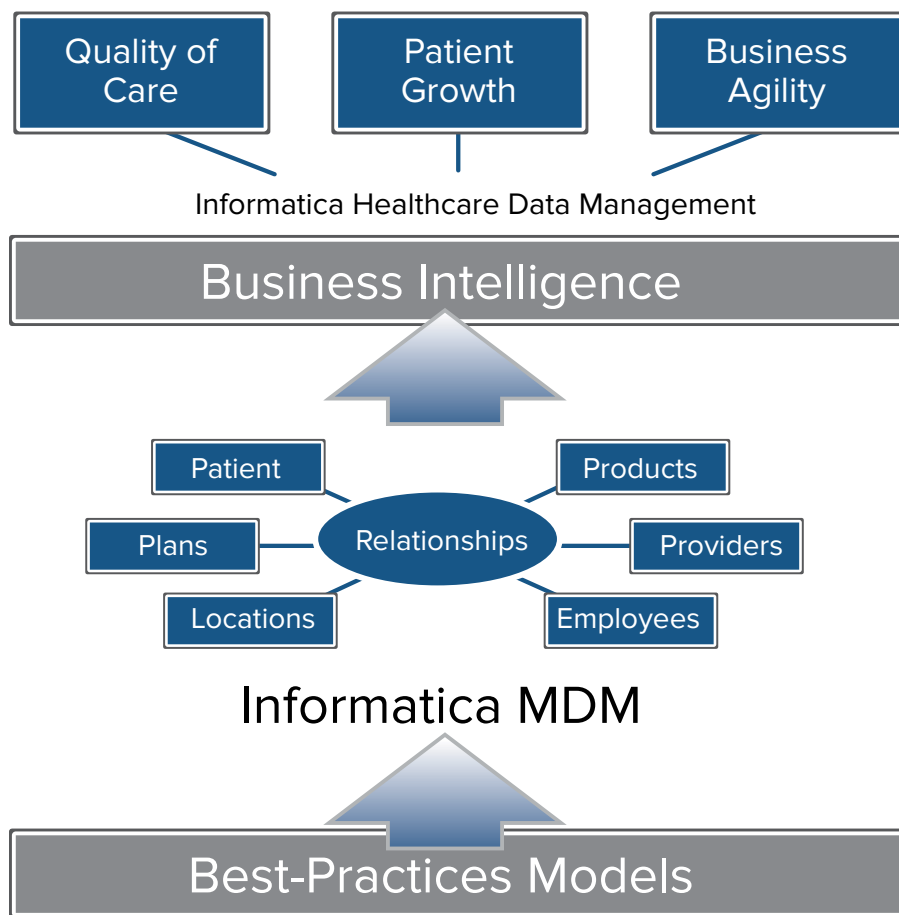


Figure 3: Combined with any business intelligence technology, the Informatica Healthcare Data Management solution reveals relationships among multiple entities to improve quality of care, facilitate patient population growth, and create a foundation for agility.

Enhancing Business Agility

The Informatica Healthcare Data Management solution increases an organization's **responsiveness to external pressures**, both now and in the future. This single solution supports a wide range of data types and is easily extensible to others, enabling healthcare providers to keep pace with changing business requirements instead of investing in new solutions to meet new needs. The Informatica Healthcare Data Management solution supports a variety of strategic initiatives, such as:

- Facilitating the integration of new patient, provider, and location information from merger and acquisition activity
- Providing a common master data repository to support business analysis
- Identifying the need for new procedures and services and accelerating their introduction
- Improving overall strategic decision making as well as the quality of operational information

Meeting Healthcare Providers' Data Requirements

The Informatica Healthcare Data Management solution provides comprehensive, trustworthy data to the organization's choice of business intelligence technology. As shown in Figure 4, this approach meets healthcare providers' operational and analytical information requirements. Industry-specific MDM facilitates data-driven decision making.

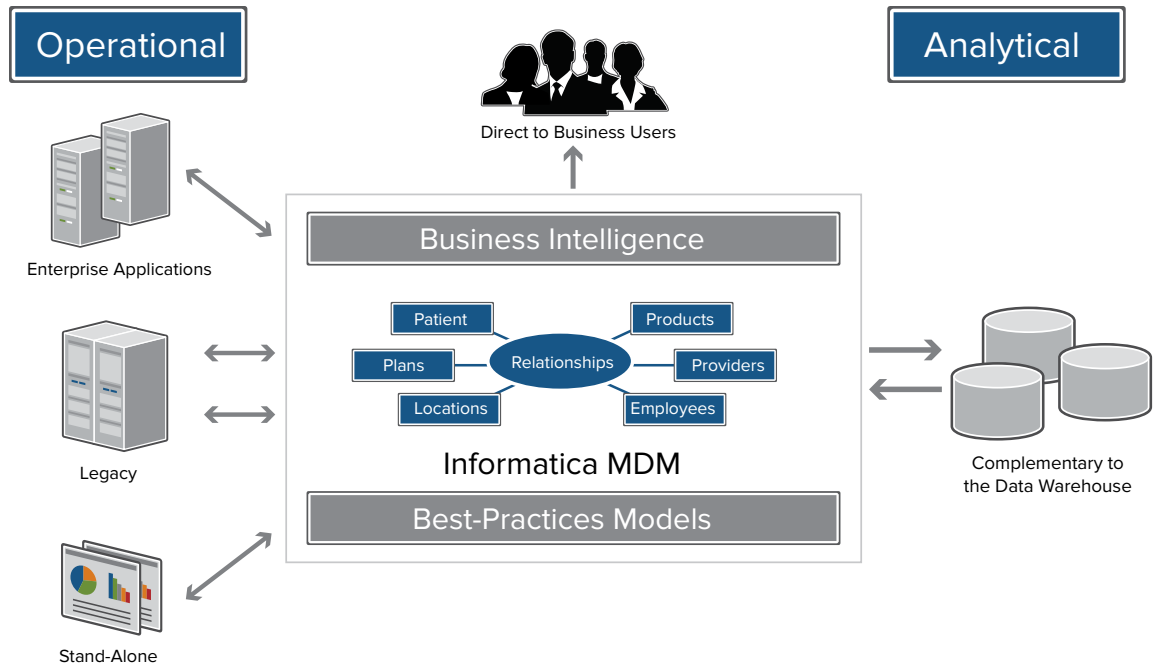


Figure 4: Informatica MDM meets information requirements for healthcare operations and analysis.

Adapting to Data, Projects, and the Business

The Informatica Healthcare Data Management solution **adapts to data**. The solution includes industry-specific templates that are based on best practices and facilitate management of master data important to healthcare organizations. These templates can be used as-is or rapidly modified and expanded to meet unique organizational requirements. Healthcare organizations can start with patient, provider, or employee data domains and then extend to accommodate health plans, locations, or any other master data entities as needed. This solution also facilitates the management of complex relationships within this master data. For example, healthcare organizations can obtain a single authoritative record of a primary care physician's (PCP) connections to patients, procedures, and referring specialists.

The Informatica Healthcare Data Management solution **adapts to projects**. The solution is optimized to deliver master information to a business intelligence layer. Including the necessary tools for operational deployments, the solution extends beyond analytical use.

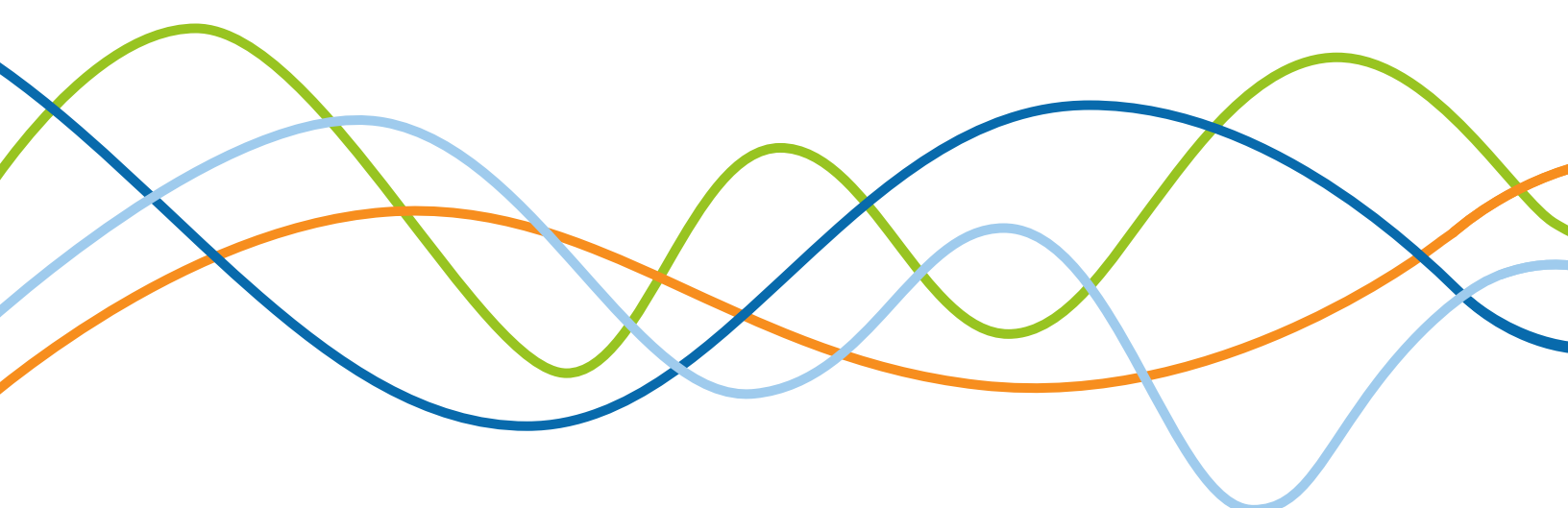
The Informatica Healthcare Data Management solution **adapts to the business**. The solution integrates with a wide variety of systems and offers a complete set of tools necessary to extract, cleanse, and maintain master data residing in applications and systems throughout the enterprise. It removes information duplication and inconsistency and prevents the proliferation of poor quality data. Designed to serve strategic and operational purposes, the Informatica Healthcare Data Management solution leverages existing IT investments and lowers total cost of ownership (TCO).

Conclusion

External consumer, financial, and regulatory pressures will place increasing demands on American healthcare providers' available resources. Whether a healthcare organization seeks to enhance quality of care, tap unmet market needs, improve provider relationships, or ensure regulatory compliance—or all of these—the Informatica Healthcare Data Management solution supports healthcare data management for providers, leveraging existing data for the kind of deeper insight and understanding that leads to greater value and increased efficiency.

ABOUT INFORMATICA

Informatica Corporation (NASDAQ: INFA) is the world's number one independent provider of data integration software. Organizations around the world rely on Informatica for maximizing return on data to drive their top business imperatives. Worldwide, over 4,630 enterprises depend on Informatica to fully leverage their information assets residing on-premise, in the Cloud and across social networks.



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