dbMotion and IBM: realizing the vision of connected healthcare

Improving operational efficiency and outcomes through integrated patient records

Highlights:

- Provide clinicians access to a complete patient history in their preferred workflow and EHR
- Deliver a single clinical view, clarifying disparate codes and vocabularies used inside each EHR.
- Connect clinicians with information where and when they need it
- Gain insight through analytics of enterprise-wide trends and outcomes

The dbMotion solution transforms healthcare through a secure, realtime integrated patient record that logically connects information in existing systems. It connects care settings and bridges gaps that often exist between inpatient care, acute care and community care. Implementing IBM InfoSphere® Clinical Analytics with dbMotion enables an information-rich, healthcare-aware analytics environment, integrating and aggregating clinical information from multiple sources. Supporting both inpatient and outpatient data, it provides the technological and organizational framework for patient records, giving clinicians and researchers a 360-degree view of a patient's clinical treatment patterns and outcomes.

Solution overview

While healthcare organizations are amassing vast amounts of data, multiple versions of the truth lead to errors in processes and patient care. Physicians have been on information overload for decades, contributing to the estimated 15 percent of diagnoses that are inaccurate or incomplete.

The healthcare industry continues to grapple with the challenges created by patient mobility. As patients throughout their lives receive tests, diagnoses and treatments from an increasing number of physicians and facilities, caregivers are unable to access a comprehensive patient history. Increasingly advanced systems, data complexity and multiple formats add to the problems of decentralized clinical data.

To improve patient safety, mitigate risk and minimize costs, it is imperative that healthcare organizations achieve a single source of truth, providing caregivers with their patient's medical history—including medications, test results and other critical information—bridging information gaps often encountered between physician groups, hospitals and independent providers who treat the same patients. With access to a comprehensive medical record, providers can more easily collaborate for a team approach to patient care, regardless of where they are located or which clinical technologies they use. Unnecessary tests and medications are eliminated, reducing costs for both patient and provider, while improving patient satisfaction and overall quality of care.

Forward-thinking organizations are connecting their healthcare data, systems and processes to facilitate secure communications and information sharing. Taking this step can help establish the foundation for smarter healthcare systems that seamlessly deliver integrated care centered on the patient.

Delivering quality through integrated patient records

To help healthcare providers realize the vision of connected healthcare, dbMotion solution provides an integrated patient record through a clinical data repository that populates an electronic medical record (EMR) with data in the exact format in which it was received. An enterprise master patient index (EMPI) from IBM allows the system to identify patients within the hospital EMR — a vital component that ensures a clinician has a complete, patient-centric view of the EMR rather than a solely document-centric view.

dbMotion enables organizations to easily provide realtime access to legacy databases and applications that house the volumes of critical patient data throughout the healthcare ecosystem. Available on-demand at the point-of-care, dbMotion locates and aggregates information from any clinical repository, regardless of platform, format, location or context, facilitating improved clinical and business outcomes for efficient, effective and quality healthcare.

Once dbMotion has harmonized the data, IBM Initiate® Patient accurately matches and links patient identities to create the EMPI to achieve several goals:

- Recognize the patient at all points of service
- Improve quality of care by accurately locating and linking demographic information
- Reduce costs with data quality resolution tools for reconciliation of patient and provider identities
- Improve clinician satisfaction by providing more trusted and accurate patient identification at the point of service
- Govern information-sharing policies and patient privacy preferences
- Accelerate time to value by implementing a proven EMPI with demonstrated integration capabilities
- Create a foundation for growth with a scalable master data management solution

This integrated patient record helps protect the patient's interests, while saving time and money for both the patient and the healthcare organization. With dbMotion, physician workflow is streamlined and accelerated, helping ensure that physician tasks are focused on patient benefit. It also improves business outcomes by reducing redundant and unnecessary testing, increasing ease in meeting quality measures and reimbursement guidelines and increasing physician and patient satisfaction.

The dbMotion system provides an advanced semantic "engine" that aggregates and normalizes all clinical content into a single clinical view. This allows clinicians to quickly understand the true clinical meaning of data from many disparate systems. It also helps organizations to adopt data in the medical vocabulary they use natively in their EMR, resulting in each respective EMR becoming richer with medical context from other EMRs.

Seeing the big picture through IBM analytics

When IBM InfoSphere Clinical Analytics is implemented with dbMotion Solution, it provides an integrated data warehouse platform that provides a single source of trusted administrative, clinical and research information across the healthcare enterprise to help improve operational efficiency and outcomes. Organizations gain critical insight into patterns and trends across their enterprise as it:

- Helps to identify and measure best practices, outcomes and treatments
- Enables the capture and profiling of chronic diseases to ensure successful care with cost-efficient treatments
- Helps to reduce risks through better diagnosis and prognosis
- Helps to identify the sources of preventable errors, injuries and infections
- Enables research and education
- Enables better surgical planning, epidemiological studies, patient restratification, diagnostic support and quality assessment

dbMotion and IBM – a closer look

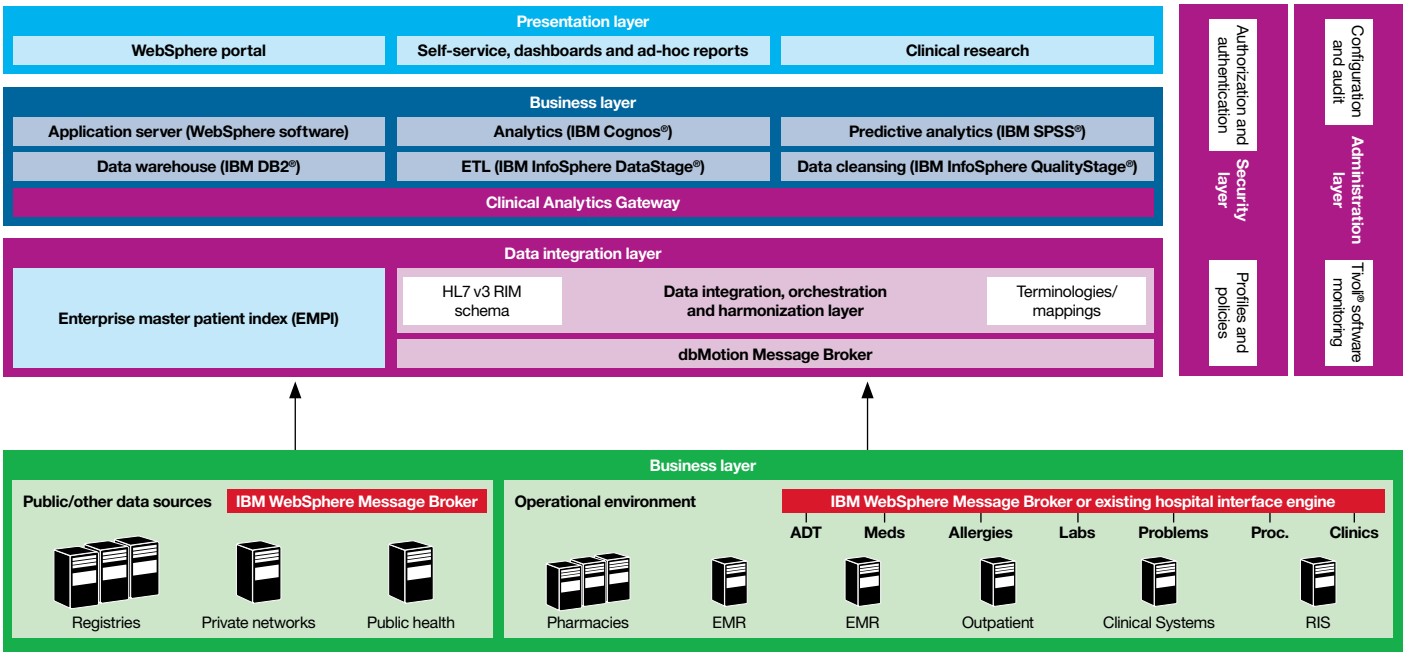
The dbMotion platform is based on an advanced Service-Oriented Architecture (SOA). This provides a framework to address a variety of healthcare workflows, such as population health and proactive medicine. The multi-tiered architecture is flexible and scalable to adapt easily to the changing demands of any size of health delivery network and diverse IT environment, on a local, regional, or national level. The architecture's inherent modularity allows for flexible deployment approaches for managing and sharing medical information—centralized, federated or hybrid configurations. This flexibility is critical to implement Accountable Care Organization (ACO), Patient-Centered Medical Home (PCMH) and other emerging health models.

dbMotion Solution uses IBM WebSphere® Message Broker or existing hospital interface engines to aggregate data from public and private data sources, such as pharmacies, clinics, public health systems, registries and labs. This data feeds the EMPI created by IBM Initiate Patient Index, and dbMotion's data integration, orchestration and harmonization.

Key to the partnership between IBM and dbMotion is the integration, orchestration and harmonization of data. In order to provide critical analytics needed by healthcare organizations, IBM InfoSphere Clinical Analytics needs access to clean, uniform data. The dbMotion solution provides that view. By pulling data from the various disparate sources of information, then using IBM InfoSphere DataStage for extract, transform and load (ETL), and IBM InfoSphere QualityStage for data cleansing, dbMotion creates an IBM DB2 data warehouse containing the needed format of harmonized data. In short, dbMotion sees numerous sources and formats of data, aggregates them, then presents a single source of data to the IBM analytic system.

The dbMotion system relies on trusted IBM solutions to execute critical data cleansing and harmonization. IBM InfoSphere DataStage integrates data on demand across many systems via a high performance parallel framework, extended metadata management, and enterprise connectivity. It supports the collection, integration and transformation of large volumes of data, with data structures ranging from simple to highly complex, while providing complete connectivity between any data source and any application.

dbMotion and IBM solution architecture



As the industry's leading matching engine, IBM InfoSphere QualityStage ensures systems deliver accurate, complete information to users across the enterprise. It processes global data on a massively scalable parallel platform for optimal performance in the most demanding environments. IBM InfoSphere QualityStage makes creation and maintenance of high-quality master data a reality to drive benefits across a variety of critical enterprise initiatives.

IBM and dbMotion: proven experience

dbMotion

Industry leader—successfully implemented at one of the world's largest HMOs, as well as other major healthcare delivery networks in North America and Europe

Deep experience—combines technology know-how with robust entrepreneurial and corporate expertise in medical informatics, enterprise applications, and data and storage management

IBM

Global scope—provides comprehensive and integrated industry solutions addressing business needs across the global healthcare ecosystem

Trusted solutions—proven software foundation and healthcare industry-specific extensions for robust, reliable solutions

For more information

To learn more about IBM in healthcare, contact your IBM sales rep or visit: **ibm.com**/industries/healthcare

To learn more about dbMotion, please visit: dbMotion.com

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