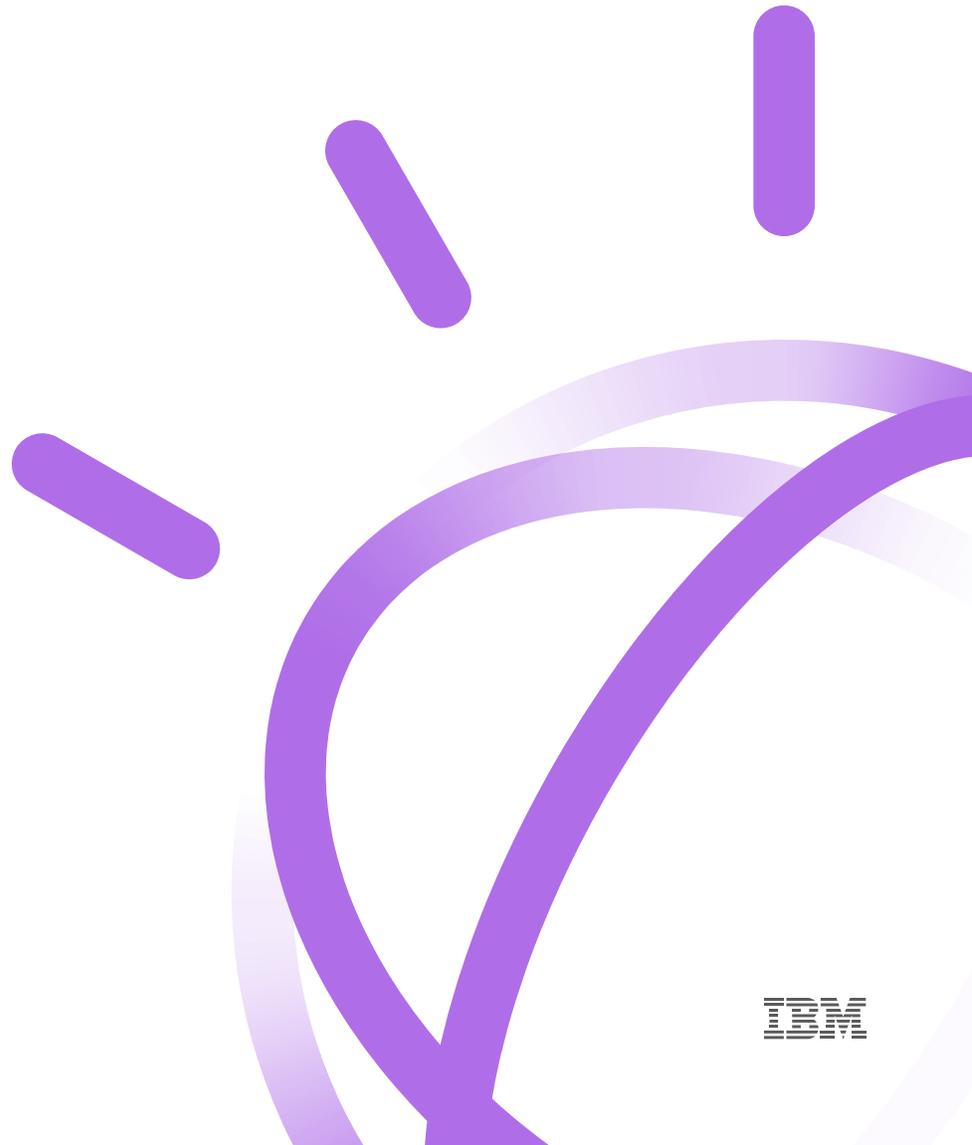# The IBM Explorys Platform

Liberate your healthcare data

Watson Health™

IBM

- A data management superstructure designed to provide speed, scalability, and security, plus a series of healthcare-specific source connectors and engines that produce action-driven information from big data
- A series of ready-to-use apps that can be run stand-alone or within existing health IT systems such as electronic health record systems
- A library of ready-to-use content and programs including risk models, contract analytics, population assessments, standardized pay-for-performance measures, registries, engagement templates, and reports

Unify the myriad of data related to the delivery and cost of healthcare

The IBM® Explorys Platform enables healthcare systems to collect, link, and combine data from hundreds of disparate sources across their enterprise and clinically integrated networks. These data span the major types including clinical, claims, billing, accounting, device, community, and patient derived. Watson Health™ calls this the Healthcare "Interprise" because it represents the convergence and standardization of big data that resides inside and outside of your organization that is necessary to analyze and manage quality, cost, risk, and outcomes across partners delivering healthcare. This is enabled through the IBM Explorys Platform, an intelligently integrated set of components that together help solve the big data challenges of healthcare.

The IBM Explorys Network

The IBM Explorys Network consists of 26 leading healthcare networks comprising over 400 billion data elements, 64 million unique cared-for-lives, 360 hospitals, and over 920,000 providers. This expansive network enables collaboration and collective intelligence that drives discovery into newer and improved models for care delivery and quality.

Data management for healthcare's big data

Traditional approaches to data management require that you know a lot about your data before you place it into discrete and inflexible schemas. This can make acquiring and accessing new data a slow and expensive process.

Watson Health took a different approach. Watson Health pioneered the use of big data technology in healthcare, like Hadoop, to ingest data into a flexible data lake model rather than the rigid traditional approach.

The IBM® Explorys Data Lake is a staging and storage repository that holds a vast amount of raw data in its native format until it is needed. Each data element is assigned a unique identifier and tagged with a set of metadata tags. When a clinical or business question arises, the IBM Explorys Data Lake can be queried for relevant data that can be later added to combined data sets.

Figure 1: The healthcare interprise

An open approach to managing your data

Recognizing the need for flexibility, Watson Health took an open approach to managing data through editable configuration files. IBM® Explorys xDL is a simple XML-based scripting language for configuring and programming the IBM Explorys data management engines using various off-the-shelf text editors.

UNIQUE LIVES	U.S. POPULATION	HEALTHCARE NETWORKS
64 million	15%	26
PROVIDERS	**HOSPITALS**	**LONGITUDINAL DATA POINTS**
920 thousand	360 hospitals	400 billion
LIVE CONNECTORS	**COMBINED CUSTOMER NPR**	**PRE-BUILT ANALYTICS**
2,000+	$69 billion	1,000+

Figure 2: The depth of the IBM Explorys Network

Rich clinical integration

The typical high-risk patient visits many care settings, including ambulatory, acute, long term care, rehabilitation, home, and specialty care. Watson Health applies a broad approach to data collection within these venues while supporting a wide range of data sources.

The IBM® Explorys Governance Engine

The IBM Explorys Governance Engine provides rules-based access to data based upon policies and conditions such as organizational role, patient attribution, and contract rights between entities. By working with organizations to develop a governance strategy, Watson Health reduces the need for providers, affiliates, and payers to manually curate, obfuscate, and send sensitive data to each other. This enables patient data to be made available in appropriate ways consistent with agreed upon business rules and regulatory policies.

The IBM® Explorys Attribution Engine

The IBM Explorys Patient Attribution Engine provides extensive support for a myriad of attribution models at the panel, registry, and measure set levels.

The IBM® Explorys Patient Matching Engine

Accurately matching patients to their health records is absolutely critical for effective population management, reporting, and analytics. When achieved with high levels of accuracy, patient matching facilitates the ability to aggregate data across multiple systems and sources.

The IBM® Explorys Curation Engine

Data standardization is critical to the success of a population or performance management program, particularly when operating in diverse environments. Having already processed, mapped, and classified hundreds of billions of clinical, operational, and financial data elements across Watson Health customer deployments, the IBM® Explorys Data Curation Engine provides one of the industry's most robust and extensive platforms for mapping clinical data into common standards and units of measure such as ICD, SNOMED, LOINC, and RxNorm.

The IBM® Explorys Calculation Engine

The IBM Explorys Calculation Engine provides high-scale computing of measures, registries, attributions, and other imputed values on an ongoing basis to help ensure timely access to information. Already supporting more than a thousand measures and registries today, the IBM Explorys Calculation Engine is designed to meet the evolving needs of organizations that require timely access to computed data.

The IBM® Explorys Risk and Prediction Engine

The IBM Explorys Risk and Prediction Engine provides support for risk-adjustment and grouping. The Watson Health metric risk adjustment helps level the playing field for the reporting of patient outcomes, providers and hospitals adjusting for the differences in severity of illness among patients.

The IBM® Explorys Analytics Engine

The IBM Explorys Analytics Engine provides high-speed search, as well as analytics, reports, and consolidated views of data for use by senior leadership, providers, care coordinators, data scientists, business intelligence analysts, or IT teams.

The IBM® Explorys SuperMart

SuperMart includes a set of pre-built tables and schemas designed to meet the demands of value-based care and analytics. It is used to support existing business intelligence (BI) tools and frameworks, as well as applications that can benefit from curated data contained within it.

About IBM Watson Health

In April 2015, IBM launched IBM Watson Health and the Watson Health Cloud platform. The new unit will work with doctors, researchers and insurers to help them innovate by surfacing insights from the massive amount of personal health data being created and shared daily. The Watson Health Cloud can mask patient identities and allow for information to be shared and combined with a dynamic and constantly growing aggregated view of clinical, research and social health data.

For more information on IBM Watson Health, visit: ibm.com/watsonhealth.

Watson Health™