IBM Health Analytics Solutions

Turn Data into Insights
With all the different types of data that apply to patient wellness, managing the complexity and sheer volume of information that applies to a singular patient, much less thousands and tens of thousands of patients can be overwhelming. Electronic medical records, insurance information, physical charts, physician notes, quality and cost reports, research documents, operations reports and accounting records are often stored in incompatible formats in many different systems, rendering data access a multistep process and comparative analysis a manual effort. How can a healthcare organization aggregate and analyze information from disparate systems to improve clinical, financial, and administrative outcomes? How can a healthcare organization transform data-rich environments into intelligent, high-value information—to help optimize medical research, diagnosis and treatment best practices—to both improve care and reduce costs?

IBM Health Analytics solutions help healthcare organizations answer these questions through a foundation of proven software solutions, based on the IBM Information Agenda approach and built on the IBM Health Integration Framework. An Information Agenda helps healthcare organizations leverage information as a strategic asset and achieve personalized and evidence-based healthcare. IBM Health Analytics solutions aggregate, analyze and report on claims, financial and clinical data across the healthcare organization for performance improvement and cost reduction, while transforming data and content-rich environments into intelligent, high-value information for critical decision making. With these robust solutions, healthcare organizations can turn reams of data into insights that drive business decisions and deliver improved quality of care and operational efficiency, while helping to lower costs.

IBM Health Analytics solutions:
- Aggregate, analyze and present actionable insight into clinical, claims and financial information across the organization
- Unlock the value of unstructured data to analyze essential information from chart notes, consult notes, lab results, and more
- Integrate diverse and disparate data for a single and holistic view of the patient
Information is everywhere:
Not only is healthcare information-intensive, that critical information is stored in multiple places and in multiple formats. A result is a fragmented view of the patient and the population served, in turn creating gaps in the ability to make critical clinical decisions.

IBM Health Analytics solutions are designed to aggregate disparate data—providing providers and payers across the care continuum the right information at the right time. Real-time retrospective and predictive analytics can save time, reduce costs, and save lives.

Globally, healthcare organizations wrestle with common challenges:

- Improving patient care, outcomes and services while also being cost effective
- Reducing the risk and impact of chronic diseases
- Creating incentives for wellness
- Developing and maintaining efficient operational processes
- Gaining insight into correlations among cost, quality and safety
- Responding to increasing regulatory demands

IBM Health Analytics solutions can help healthcare organizations meet these challenges by integrating and optimizing the hidden value inherent in the vast array of information, across all care settings throughout communities and surrounding regions.

Making better use of clinical, research and treatment data:
Healthcare organizations can use IBM Health Analytics solutions to analyze historical data, patients and trends in order to react quickly to situations. With such analytics, healthcare organizations can determine successful treatments based on prior outcomes. Healthcare analytics can provide a detailed view of individual patient data as well as a larger view of data pertaining to demographic trends of conditions and cases. As a result, more personalized treatment can be administered quickly, accurately, and effectively based on pertinent, accessible, and integrated information. With a complete, accurate view incorporating structured and unstructured data, better and repeatable outcomes can be achieved with greater efficiency.

Improving outcomes, quality of care, and cost efficiency requires a deeper understanding to support key processes:

- Improving data analytics, including text analytics of medical records
  Healthcare providers and payers need to better use clinical, research and treatment data for evidence-based, personalized medical care. This requires integration of structured and unstructured data for a single view of a patient. Achieving a single view results in reduced medical errors and improves quality of care, lowers costs, and boosts operational efficiency.

- Quality measurements for care improvement
  Healthcare providers and payers want to better understand how to apply knowledge based on data across patient populations to keep people healthier and improve treatment effectiveness. Health analytics solutions can provide comparative benchmarks and patient improvement survey scores. As a result, more accurate and faster diagnoses and treatment plans can be made—which translates into improved outcomes.

- Performance measurement for cost management
  Healthcare organizations are looking for incentive-based performance and reimbursement solutions that can improve productivity and profitability. IBM Health Analytics solutions increase visibility into performance metrics and benchmarks, which yields insights in contract negotiations and can help reduce costs.

- Disease profiling for improved outcomes
  Healthcare organizations need to be able to identify population-based events and public health risks quickly from clinical, research and geographic information. Health analytics solutions can help an organization achieve such goals through patient segmentation and prognosis simulation. This reduces risk factors through faster access to better data for more informed clinical decisions.

To derive maximum value out of health analytics, healthcare organizations need to assess their analytics capabilities, objectives, and current posture. IBM can help organizations optimize value by assessing their position on the path of a Health Analytics Maturity Model, shown in the figure on the next page, and suggesting steps to continue progress to even higher levels of performance.
IBM Health Analytics success stories:

Geisinger:
Geisinger, a global physician-led health care system serving over 2.6 million people worldwide had a business need to improve its EHR systems by organizing information as well as integrating real-time clinical data with patient medical history. They were looking for integrated clinical insight to help identify trends and best practices, ultimately resulting in improved patient care, and looked to IBM for a solution.

IBM implemented a Clinical Decision Support System that would allow Geisinger to leverage the wealth of clinical data gathered from its 10-year use of one of the industry’s most advanced EHR systems. These solutions resulted in consolidated information about injuries, illnesses and finance for comprehensive patient views that included medical history. A massive storehouse of clinical information, procedure and research was newly available enabling rapid analysis and reporting for best-practice care. IBM Health Analytics enabled extensive, diverse medical information to be used as the basis for Geisinger’s medical research, treatments and life-saving breakthroughs.

University of North Carolina Health Care:
UNC Health Care, a large not-for-profit integrated health care system, was challenged with the sheer quantity, complexity and diversity of operational information that ranged from patient admissions data to lab results to radiology images, and wanted to use information across all of its operations. UNC needed to first synchronize these disparate data sources into a “single version of the truth” in the form of a data warehouse that could be relied on for consistency and accuracy. Also, UNC needed to make sure the solution would conform to requirements for data integrity and patient confidentiality.

Leveraging IBM’s governance methodology, a tiered governance framework consisting of executive leaders, committees, and ad hoc workgroups was implemented. The Carolina Data Warehouse for Health (CDWH) implementation leveraged IBM’s Health Integration Framework consisting of DB2®, InfoSphere™ Information Server, and DataStage®. The CDWH tied payments more closely to demonstrated quality of care resulting in increased reimbursement.

With IBM Health Analytics solutions in place, UNC Health Care saw improved efficiency, pay-for-performance and quality of care. The solution facilitated smart queries against the CDWH and enabled ten times faster recruitment of research cohorts. They realized a single, comprehensive view of information that became key to UNC Health Care’s reimbursement negotiating power. They were also able to combine clinical research with patient treatment and medical information. With powerful, reliable health analytics, UNC Health Care was able to receive a $64M grant from NIH for medical school research.

IBM and Premier
IBM and the Premier healthcare alliance are teaming up to connect healthcare data throughout the U.S. by integrating information from hospitals and other healthcare sites. Using an industry-first data sharing model, providers can improve performance to more easily coordinate accountable care. IBM and Premier’s technology platform offers hospitals, doctors and other care providers the opportunity to:

- Reduce waste and the overuse of procedures, readmissions, unnecessary emergency department visits and hospital-acquired medical conditions
- Improve patient safety, clinical outcomes and the health of the population

Health Analytics Maturity Model

- Prescriptive care-management for improved outcomes & preventive wellness
- Evidence-based performance measurement, reimbursement & compliance
- Predictive disease management
- Real-time on-demand evidence-based conditions management & personalized treatment protocols
- Integrated and applied text analytics
- Actionable insight into care delivery quality metrics, evidence-based best practices, & patient satisfaction
- Improve collaboration for improved care quality, safety, efficiency and patient/physician satisfaction
- Easily access a single view of integrated, structured data and unstructured text information
- Implementing EMR's
- Aggregating clinical, research, administrative, patient data, financial, and other data from multiple source for multiple views

- Easily access a single view of integrated, structured data and unstructured text information
• Gain new insights and measure performance
• Prepare for new methods of delivering care required by health reform

Premier maintains the nation’s largest repository of clinical, financial and outcomes information, used by its member providers to develop and define measures of care, and to compare best practices to enhance care at the point of delivery. Providers also benefit from Premier’s unique ability to combine and analyze clinical and supply chain data to produce actionable information and drive performance improvements.

“For the first time, all members in the healthcare system will be able to easily access data that is consistent and unified to help reduce preventable harm and waste,” said Susan DeVore, president and CEO of Premier. “This has been the missing link in helping move the mark on evidence-based medicine by using new insight to transform the quality and cost-effectiveness of care. It’s a win-win-win for providers, patients and payers: Care is more effective, people are happier and spend less time in care settings, and excess costs are reduced.”

Why IBM
IBM’s commitment to healthcare organizations is evidenced by more than 60 years of experience in the industry. IBM continues to actively support the development of Smarter Healthcare around the world by working with policy makers, building consensus, driving standards, creating unique, innovative solutions that deliver measurable business value, and helping to shape the future of the industry. The IBM Information Agenda helps healthcare organizations leverage their wealth of information as a strategic asset. IBM Health Analytics solutions help maximize the value of healthcare data within and across healthcare organizations—now and in the future.

To learn more about how IBM can help achieve the maximum value of your healthcare information, visit:

ibm.com/software/data/information-agenda/healthcare-providers.html
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