

Get a 360° View of Your Patients

Improve Population Health. Healthcare is on a mission to be more proactive than reactive to improve health. Predictive analytics, which is the practice of extracting information from data sets in order to recognize patterns and predict future outcomes, has become standard practice in the life sciences. For instance, when detected early, colon cancer has a 91% five-year survival rate versus an 11% survival rate when caught at later stages. However, making predictive analytics actionable is still very challenging.

Real-time forecasting leads to improved patient outcomes and more saved lives versus mere reporting, by pinpointing the most effective treatments and procedures with precision.

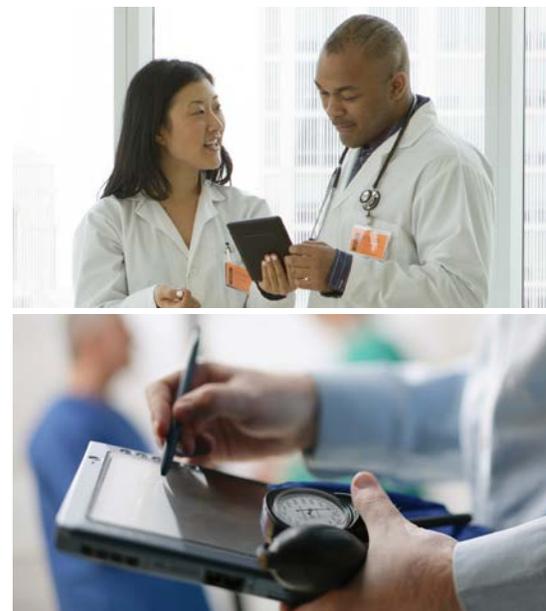
Data Explosion. Delivering precision medicine is not a new concept, but it has become a lot harder to execute due to the explosion of data from health records, test results, insurance claims, and payments, among others. Healthcare organizations must be able to ingest massive data volumes from a dizzying array of sources to put together the pieces of each patient’s puzzle to identify the perfect treatment at the perfect time.

How can an organization pull together all of this vital information to provide better care while minimizing risks and costs? Enter the Unified Health Record.

What is a Unified Health Record?

Platform for 360° Patient View. A Unified Health Record (UHR) is a key platform in healthcare that aggregates real-time data to create a 360° view of the patient. This critical resource brings together not only electronic medical records, but also data from all different touchpoints (online and offline), including:

- Patient background: contact information, family history, allergies, conditions, prescriptions
- Genomic data: biomarkers, drug interactions, cohort comparisons
- Treatment: doctor visits, medications, immunizations, hospitalizations
- Device data: metrics from vital sign monitors, radiological machines, pacemakers, telemedicine technologies, etc.
- Financial information: copays, insurance claims, debt repayments



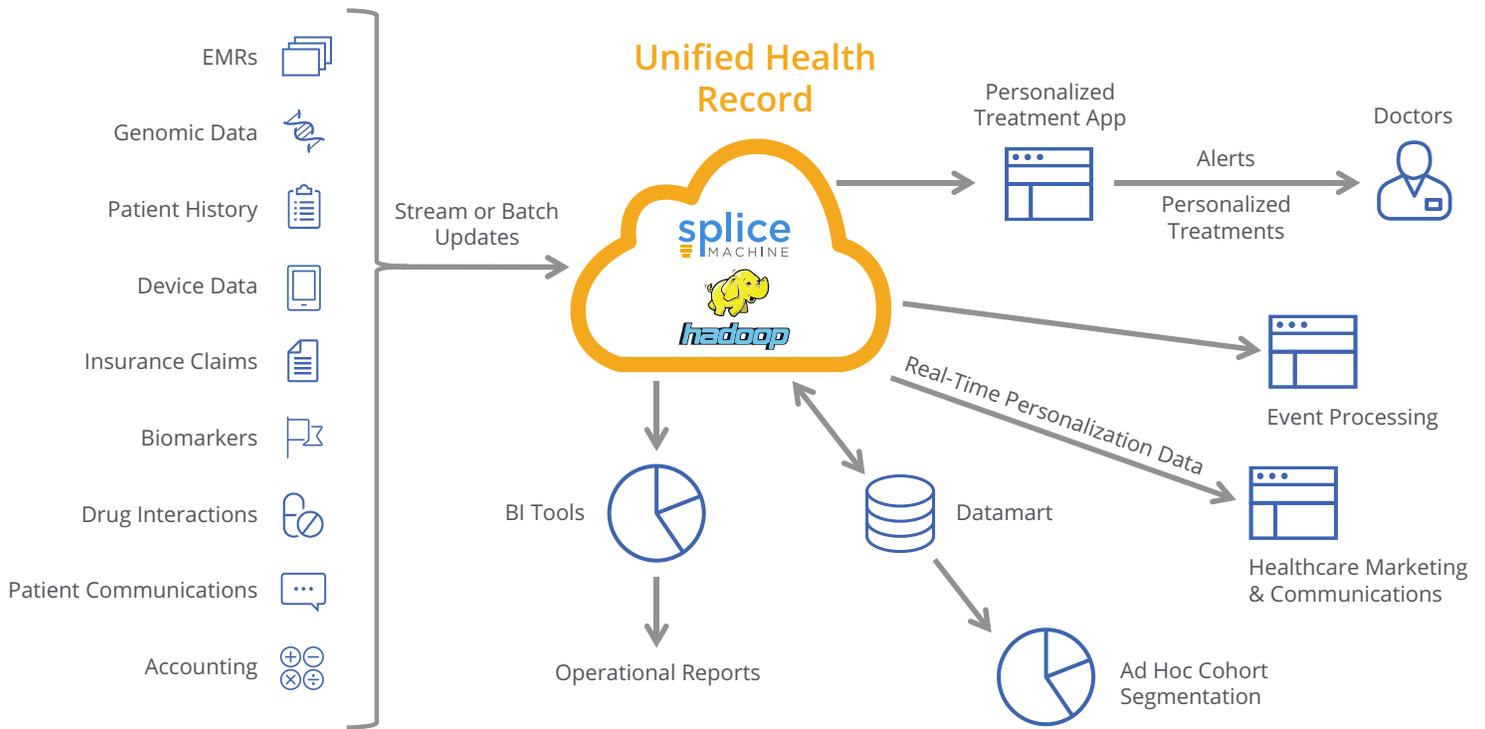
UNIFY ALL YOUR DATA

- EMRs
- Genomic data
- Patient history
- Device data
- Insurance claims
- Drug interactions
- Patient communications

HOW CAN YOUR BUSINESS PROFIT FROM A UHR?

- Improved patient outcomes
- Maximized efficiency
- Minimized cost

¹Early Detection Facts and Figures. N.p.: n.p., n.d. Canary Foundation. Web. 4 Dec. 2014.



A UHR enables healthcare organizations to provide better care by becoming proactive rather than reactive: coordinating care across multiple specialists for high-risk patients, and reacting to their needs in real time.

Hospitals spent **\$41.3 billion** over 11 months to treat patients readmitted within **30 days of discharge**.

—Agency for Healthcare Research and Quality (AHRQ)

Key Benefits of a Unified Health Record

Make Real-Time Predictive Analytics Actionable. Analyzing data in real time allows organizations to determine best practices, whether related to the most effective treatments or the ideal staffing schedule. By integrating all clinical data across systems, a UHR enables real-time predictive analytics needed to:

- Intervene earlier by monitoring patient vital signs
- Eliminate unnecessary testing and procedures
- Optimize hospital accounting and budgeting

Improve Patient Outcomes. Recent legislation has incentivized more thorough care by valuing outcome-based reimbursements, which means that accountable care organizations (ACOs) are searching for better ways to treat patients to prevent future hospital visits. A UHR provides a precision medicine model by personalizing treatments based on genomic information and other essential data.

Maximize Efficiency. Big Data is only getting bigger, and with a UHR, healthcare organizations can do more than keep up—they can achieve meaningful use objectives by standardizing and automating their systems to create instant communication between agencies, hospitals, and patients.

Leveraging affordable scale-out technology means:

- Streamlined event processing in real time
- Transparency and accessibility among all applications
- Improved analysis, best practices, and resource utilization
- Dramatically increased ROI

Minimize Cost. Increased governmental regulations, rising healthcare costs, and the strain on IT budgets have pushed organizations to seek additional methods of minimizing costs. By utilizing affordable infrastructure, a UHR lowers the total cost of ownership while complying with HIPAA privacy standards.

Also, since hospitals net only a fraction of the charges that they bill, creating a 360° view of all financial information enables more audits to be completed and more instances of fraud to be detected in less time, thereby allowing organizations to save significantly more money and focus on their primary priority of providing the best care to their patients.

The Technology Behind the Treatment

Technical Challenge. The Unified Health Record is fundamentally a large, integrated database for all patient and provider interactions, and until now technology has been a huge barrier to making UHRs a reality.

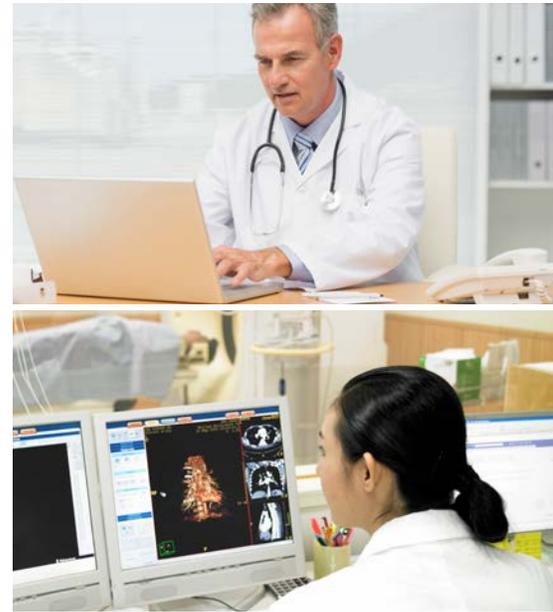
The technical challenge of creating a UHR is optimizing IT infrastructure for real-time response. Technology must be capable of handling massive data volumes forever with rapid velocity—and without requiring entire system refreshes or significant application rewrites.

Scale-Out Solutions. Scalability is the ability of a system to accommodate a growing amount of data and/or workload.

There are generally two ways to scale:

1. Scaling up by adding more resources to a single server
2. Scaling out by adding more servers to the system that simultaneously cooperate

The high cost of scaling up databases has driven many businesses to replace expensive scale-up systems with modern scale-out architectures that use commodity hardware to dramatically improve price/performance.



WHY CHOOSE SPICE MACHINE TO POWER YOUR UNIFIED HEALTH RECORD?

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However, the overwhelming number of scale-out technologies can make it difficult to determine the right technology for a business and its applications. NoSQL solutions force major application rewrites, and SQL-on-Hadoop solutions are unable to support real-time operational applications.

Thus, for organizations that are looking to scale affordably with a proven scale-out technology but still maintain full SQL support and RDBMS functionality, a Hadoop RDBMS is the answer.

The Hadoop RDBMS Answer

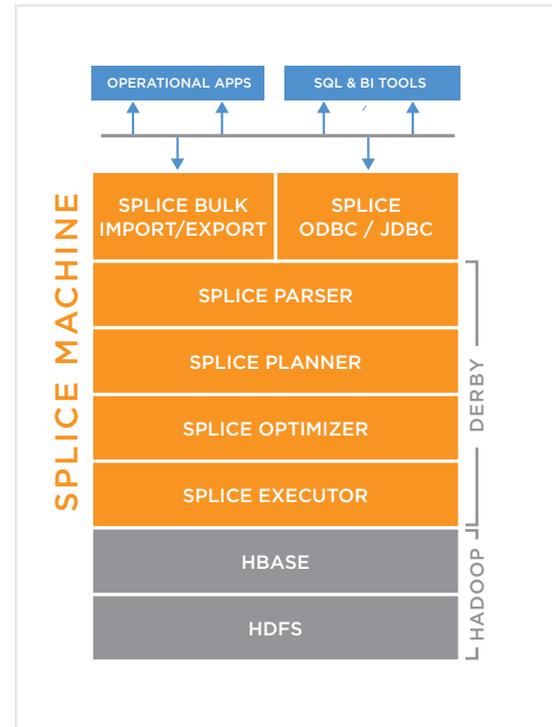
Scalability Without Sacrifice. A Hadoop RDBMS is a general purpose, operational database capable of handling mixed workloads in real time. By combining full ANSI SQL support with the Hadoop ecosystem, healthcare organizations can scale-out to petabytes without application rewrites or IT retraining.

Risk-Free Transition. Splice Machine is the only Hadoop RDBMS that is designed to scale applications and tools without expensive proprietary hardware—or requiring massive application rewrites like NoSQL solutions do.

At a fraction of the cost of traditional databases, Splice Machine can tackle:

- Large database workloads (OLTP and OLAP) with high concurrency
- Operational applications, reporting, and analytics
- Integration with a variety of tools for business intelligence and data visualization
- Real-time ETL pipelines at scale

By replacing costly RDBMSs with Splice Machine, organizations have reduced costs by 75% while increasing performance by 5x-10x. Contact Splice Machine to learn more today.



About Splice Machine

Splice Machine's Hadoop RDBMS enables companies to scale real-time applications using commodity hardware without application rewrites. The Splice Machine database is a modern, scale-out alternative to traditional RDBMSs, such as Oracle®, MySQL™, IBM DB2® and Microsoft SQL Server®, that can perform significantly faster than traditional databases on a much less expensive hardware platform. As a full-featured Hadoop RDBMS with ACID transactions, the Splice Machine database helps customers power real-time applications and operational analytics, as they approach Big Data scale.