Precision Medicine Transformation

Precision medicine, which seeks to take each patient’s variability in genes, environment, and lifestyle into account in the prevention, diagnosis, and treatment of disease, is fast becoming a reality in distinct disciplines in healthcare, most notably in oncology and in treating certain chronic conditions. Breakthroughs in matching individual genes and biomarkers with specific disease states are leading to not only positive responses to treatment, but in some cases, cures. The promise and potential impacts of precision medicine are reasons why Dell EMC is playing an integral part in helping to put precision medicine into everyday practice. Dell EMC big data analytics technologies developed in partnership with leading healthcare providers and independent software vendors (ISVs) help to create actionable insights from genomics, population health, and behavioral health data.

Drivers and Familiar Roadblocks

- **The costs of imprecision:** Physicians have long noticed that patients who seem to have the same disease often respond very differently to the same treatment, making the traditional one-size-fits-all approach to medicine ill-fit and largely ineffectual. An efficacy study of the top ten revenue-generating drugs revealed that millions of people are taking medications every day that fail to improve their condition. For some drugs, such as statins, as few as 1 in 50 patients may benefit.2

- **Incredible data growth:** Data is reaching the zettabyte and even yottabyte scale—the sheer gravity, volume, variety, and velocity of data being produced in healthcare is overwhelming. The ability to apply big data analytics techniques across EMRs, data warehouses, research, case studies and patient data is key to allowing organizations to seize insight on massive volumes of data that already exist. Enabling clinicians, researchers, employers, payers, and patients to collaborate and maximize their opportunity for better healthcare outcomes requires industry interconnects between systems and adherence to regulatory patient protection practices found in HIPAA and other privacy laws around the world.

- **Barriers to adoption:** The promise of precision medicine and personalized treatments is clear, however, there is a perception that cost, integration, scalability, security, privacy issues, and lack of predictable reimbursement exists. A more simplified, secure, and scalable approach that reduces IT department burden is needed.

A Unified Approach to Precision Medicine

With Dell EMC, you can connect the disparate pieces needed for your precision medicine roadmap using a unified approach. From the point of care to the data center to the cloud, Dell EMC enables researchers and healthcare systems to ingest and analyze data in real time, provide meaningful, actionable insights, retain data for deeper analysis, and further share data with collaborators, patients, payers and partner healthcare organizations in order to improve outcomes.

Three Steps to Implementing a Comprehensive Solution

1. **ACQUIRE:** Capture critical data across the healthcare facility with Dell EMC Big Data and Analytics solutions. To move your analytics strategy forward, Dell EMC has developed a fully-engineered, enterprise-grade data lake paired with professional services to help healthcare organizations make more timely and informed data-driven business and clinical decisions. Scale as you grow with flexible all-flash storage and converged and hyper-converged infrastructure running in a multi-cloud environment. Rely on a single storage backbone for multiple workloads—a perfect complement to managing your ecosystem of clinical, financial, and operational applications.

2. **ANALYZE:** With Dell EMC clinical genomic and high performance computing (HPC) solutions, you can achieve high-throughput and fast turnaround of healthcare and life sciences workflows, including drug design, cancer research, and real-time clinical interventions. These solutions have been validated and tested with a robust healthcare-centric partner ecosystem to offer reliability, security and granular scaling to enable you to grow at your own pace.

3. **ACT:** Simplify IT infrastructure, reduce costs and build capacity for innovation while tightening security and availability of patient information with Dell EMC machine learning, research and integration solutions. Capitalize on predictive analytics for clinical, financial and operational improvement within the organization while also accelerating integration and collaboration across the care continuum—positioning your organization as a leader in the area of precision medicine.

Making Precision Medicine a Reality

Dell EMC helps healthcare organizations realize the promise of precision medicine and advance in the digital era, transforming the way they work so that they can transform the lives of the people they serve. We uniquely power this digital transformation by delivering best-in-class technology for applications, data, infrastructure, and security—from the point of care to the data center to the cloud.

DELL EMC HEALTHCARE ELASTIC DATA PLATFORM

Dell EMC Healthcare Elastic Data Platform includes a single, scalable repository for constantly ingesting, aggregating, managing, filtering, analyzing, and interpreting vast volumes of data from both internal and external data sources across multiple clouds. Data is served up within user-defined analytic sandboxes for individual projects or tasks without compromising the integrity of the data in the elastic data platform.

Learn more about Dell EMC solutions for healthcare

Contact a Dell EMC healthcare expert

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