

A close-up photograph of a doctor's hands, wearing a white lab coat, gently holding a patient's hand. The patient's hand is visible on the right, with a denim cuff at the top. The doctor's hands are large and have some hair on the wrists.

**ENHANCING THE
PATIENT CARE
JOURNEY**
with innovative
digital solutions



Navigating economic headwinds and evolving patient expectations

The pandemic was a challenging time for care providers, but it provided opportunities to innovate at an unprecedented pace. As healthcare organizations focus on the road ahead post-pandemic, they must pivot quickly to overcome new clinical and business challenges. Decreased volumes and rising expenses mount with economic uncertainties. Reimbursement remains flat as the market adjusts to rising inflation. Hospitals are being asked to juggle more expensive staffing, fragile supply chains, and the growing shortage of clinicians. These new challenges exist alongside changing patient care expectations and the need to bring back non-urgent clinical service volumes.

30%

of the world's data volume
is generated by healthcare¹

36%

CAGR is projected
for health data by 2025¹

All of these factors are challenging care providers to rethink their strategies, touch more patient lives outside their hospital walls, address staff shortages, and improve processes. Tighter budgets demand a smarter and more focused approach aimed at cutting expenses and improving returns on investments. To advance their digital transformation journeys, healthcare leaders are looking to new technologies and novel approaches to improve efficiencies and engineer cost out of their systems.

Every year, there is exponentially more healthcare data than the year before. As a result, approximately 30 percent of all the world's data volume is now being generated by the healthcare industry, according to RBC Capital Markets, and by 2025 the compound annual growth rate (CAGR) for health data will be 36 percent.¹ Health IT teams must make wise investments that build agility and accelerate digital transformation to compensate for the volatile economy while introducing new clinical workflows. Timely, on-demand, and transparent technology needs to run seamlessly in the background and flex to meet increasingly dynamic patient needs. With a digital focus and a strong ally for support, healthcare organizations can not only adapt to this new economic environment but also thrive in it as they push to the frontiers of what is possible.

¹ rbccm.com/en/gib/healthcare/episode/the_healthcare_data_explosion

Dell Technologies: an experienced ally

Dell Technologies has a strong healthcare practice with more than 30 years of building solutions around the globe with our clinical independent software vendor (ISV) partners and providing essential technology infrastructure to hospitals of all sizes, and our expertise continues to grow. We are thankful for all our healthcare customers who trust in our know-how and world-class technologies, resulting in Dell Technologies being in the #1 position in many product categories: storage; PCs, laptops, and thin clients; infrastructure hardware; and data archiving/ backup/ recovery and DR.² We also have a deep bench of healthcare subject matter experts—including CTOs, CIOs, chief innovation officers, field directors, and solution architects—along with healthcare pre-sales teams and lab capabilities that will allow you to address the realities of today and embark on delivering on the promises of digital care in the future. With this heritage, we can help healthcare organizations accelerate their digital transformation based on business initiatives and budget, no matter where they are in their journeys.

>30 yrs

of enabling healthcare organizations to accelerate digital transformation

#1

in healthcare for multiple product categories²



² Definitive Healthcare – 09/2022



The multi-cloud ecosystem



Connected workforce



Healthcare edge



Personalized health



Secure care

Reimagining patient care with Dell's digital solutions

Data is the lifeblood of every business, allowing organizations to innovate in ways never thought possible. For example, telesurgery will remove barriers to vital healthcare, and extended reality solutions will streamline clinician training and education. By harnessing the transformative power of technology, businesses can build the secure digital foundation needed to be ready for what's next: 5G, digital twin, cognitive AI, and quantum computing—all of which will accelerate the digitalization of healthcare. As we come alongside our customers to deliver on the promise of these emerging technologies, our healthcare technology experts work with our customers to transform their people, processes, and culture with today's digital solutions.

With a patient-first, data-anywhere focus enabled by our multi-cloud ecosystem, our team is reimagining patient care delivery with secure, modern health technology solutions. These solutions provide a more connected healthcare workforce to deliver personalized care to patients wherever they might be, while improving efficiencies and returns on investments.

With this in mind, we focus on the following healthcare technology workloads:

- The multi-cloud ecosystem
- Connected workforce
- Healthcare edge
- Personalized health

Due to the critical importance of cybersecurity in healthcare, all of these workloads are underpinned by Secure Care solutions. When reviewing the latest global ransomware attack trends, it's clear that bad actors are increasingly targeting the healthcare system. Even though ransomware attacks overall fell 23 percent in the first half of 2022, the healthcare industry saw a 328 percent increase in attacks during the same time.³ As a result, a large number of healthcare providers were forced to cancel surgeries, radiology exams, and other services because their systems, software, and/or networks had been disabled. Both outdated legacy systems (e.g., end of service life and a lack of security patches) and a shortfall in cybersecurity spending compound this constant threat of cyberattacks. These challenges have resulted in changes in accounting and auditing regulations, insurance and actuarial risk models, and law enforcement efforts.

³ Ransomware attacks drop by 23% globally but increase by 328% in healthcare (HIPAA Journal). hipaajournal.com/ransomware-attacks-drop-by-23-globally-but-increase-by-328-in-healthcare/



Going forward, there will be more scrutiny on healthcare boardrooms, including proof of robust cybersecurity and resiliency measures and demonstrable pressure-test outcomes showing that their strategies and tactics will work as intended. Dell Technologies enables organizations to gain peace of mind against cyberattacks by increasing cyber resilience with a holistic cyber recovery program that brings together technology, processes, and people to form a last line of defense for the business. Organizations can rely on our professional services team for cyber recovery to provide the guidance they need to protect and recover from security breaches so that healthcare providers can focus on serving their patients.

Healthcare technology decision makers look to make the most of limited budgets—requiring more than just one way to purchase and consume IT infrastructure and services. While most IT organizations were introduced to subscription-based pricing models through the public cloud, the ability to get access to technology using a pay-as-you-go model is not new for Dell Technologies. Dell Technologies APEX is our breakthrough portfolio of as-a-service offerings that increase IT agility and control while simplifying acquisition and management. APEX makes it easier than ever to leverage Dell Technologies innovation when and where you want it, while easing or eliminating infrastructure management. Applicable across nearly all of Dell's portfolio of solutions, APEX provides cloud-like experiences and can be delivered as a service across multi-cloud, multi-edge, public, and cloud-adjacent architectures.

APEX provides easy to order and deploy datacenter technologies in the facility of your choice: on premises, in colocation facilities, or in hyperscale clouds. In addition, it offers traditional and software-as-a-service-based (SaaS-based) backup solutions and cyber recovery capabilities to protect healthcare data from unanticipated events and cyber threats. APEX can also accommodate more specific healthcare technology needs, like providing validated electronic medical record infrastructures in an as-a-service (aaS) fashion, and supporting and managing the clinical and back-office end user computing environment life cycle. Dell APEX medical imaging aaS provides a fully managed platform to run medical imaging applications in a cost-per-exam model so that it closely aligns with provider revenue streams. APEX gives organizations maximum flexibility to run healthcare workloads in locations aligned with the business needs—achieving multi-cloud by design and not by default.

Modernize
care delivery

Simplify deployment
and management

Secure
patient data

Accelerate digital
transformation



THE MULTI-CLOUD ECOSYSTEM SOLUTIONS



The multi-cloud ecosystem

We have become the healthcare technology infrastructure organization of choice through a deep understanding of industry needs and requirements. Our substantial investments in our multi-cloud solutions and our partnerships with key ISVs enhance high-value clinical workloads—including electronic medical records and medical imaging—and allow us to deliver them as services. We help healthcare organizations place clinical workloads where they belong—through intelligent storage on premises, in public clouds, as cloud adjacent, or in colocation centers. Here are our key solutions:

- **Dell Alliances Healthcare Cloud:** Establish a consistent operating experience as well as the flexibility and autonomy to strategically host workloads and applications in the locations that match their business needs.
- **Clinical workloads as a service:** Get the power, scalability, reliability and security of Dell Technologies products through a managed service for agile delivery of clinical workloads such as electronic medical records (EMR) and medical imaging.
- **Healthcare technology:** Empower the modern care provider with highly scalable IT infrastructure that supports the business and clinical needs of today and tomorrow.



CONNECTED WORKFORCE SOLUTIONS

In the new normal of remote and hybrid work environments, having a connected workforce is more important than ever. From delivering Healthcare Digital Workspaces to using unified endpoint data management for improved security, we work with healthcare organizations to enable on premises and remote collaboration based on the demands of the various healthcare personas. The pandemic also exposed some of the underlying global supply chain risks. Dell Technologies takes a holistic and multifaceted approach to protect its supply chain. Key solutions that enable clinical and business staff to work anywhere at any time include:

- **Digital healthcare workspace:** A persona-centric approach to standardize, deploy, and manage devices and deliver applications through a single platform, eliminating the need for multiple management tools and processes.
- **End-user trusted devices, access, and data:** With unified endpoint data management and data security, simplified health technology management and rapid deployment are ensured.
- **Connected diagnosis and imaging:** Implement flexible, cost-effective, and secure technology networks that enhance the customer experience while improving operational efficiency and employee productivity.



Connected workforce



HEALTHCARE EDGE SOLUTIONS



Healthcare edge

Most care providers today are experiencing significant staffing shortages and burnout. From remote patient care to tele-ICUs and AI-assisted patient monitoring, healthcare organizations can augment patient care through connected technologies at the edge that deliver immediate access to real-time patient insight and support advanced data analytics and AI. The key focus areas for Dell Technologies in this fast-growing segment of healthcare include:

- **Care in the multiverse:** Care is now without boundaries and walls. Enable virtual, physical, and hybrid patient interactions to create unique opportunities to collect and utilize data and usher in tomorrow's breakthroughs.
- **Operational optimization:** Improve care delivery through digital supply chains, automation, and next-generation interoperability by streamlining operations management and optimizing back-office tasks.
- **Wellness at the edge:** Provide better patient outcomes with connected healthcare systems that deliver immediate access to continuous real-time patient insight delivered through advanced data analytics and AI.



PERSONALIZED HEALTH SOLUTIONS

Whether through individualized diagnostic information or by using digital twin data to establish linkages between a person's DNA data and therapies, personalized healthcare (also known as precision medicine) can transform patients' lives by delivering care tailored to the individual. With every advance in technology, we can make this care even more individualized by accelerating time-to-insights to identify new ways to treat patients and manage diseases. Solution areas for personalized health include:

- **Next-generation sequencing:** High-performance compute (HPC) allows for the correlation between genomic data points and potential new ways to treat patients and diseases.
- **Digital pathology:** By digitizing pathology workflows, healthcare and life sciences organizations can unlock the value of imaging data and leverage research findings to advance clinical care.
- **HPC and research as a service:** By utilizing decentralized clinical trials and HPC resources on demand, clinicians can shorten the time to market of therapeutics—enhancing the development process while generating cost savings.



Personalized health



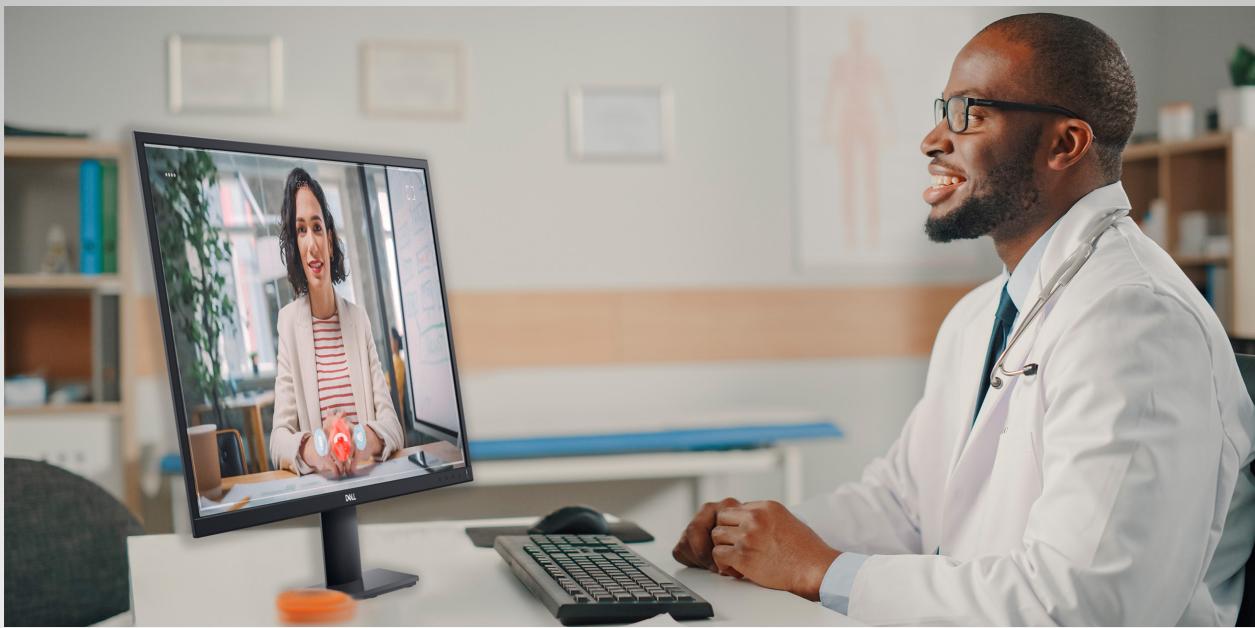
SECURE CARE SOLUTIONS



Secure care

In order to progress along their digital transformation journeys, healthcare organizations need end-to-end cybersecurity solutions. Cyberattacks never sleep, especially in healthcare, but with Dell Technologies you can have peace of mind knowing that patient and business data are secure, protected, and available. We stop at nothing to help thwart cyber threats with intrinsically secure infrastructure and devices for staff, network, endpoints, data, and recovery. In addition, the Dell Incident Management Retainer (IMR), powered by Secureworks, provides a range of proactive cybersecurity consulting services and priority incident-response support. We can also partner with organizations as an extension to their incident response teams. Here are a few examples of how we protect healthcare data:

- **Data and threat protection:** We develop intrinsically secure infrastructure platforms and devices that enable care providers to generate and process vast amounts of data while making sure technology assets are secure, protected, and available.
- **Cyber resiliency:** Dell Technologies leverages the breadth and depth of our end-to-end IT ecosystem to develop security solutions that are equipped to deal with the increasing sophistication and volume of threats targeting healthcare organizations.
- **Managed detection and response:** We help secure healthcare environments across endpoints, network, and cloud by using our open cloud-native platform to unify detection and response by combining the power of human intellect with insights from security analytics.



Advance patient care with Dell Technologies

Care providers have been hard hit over the last few years through cyberattacks, the pandemic, economic instability, and the speed of change in the market. In order to serve patients better against this backdrop, the need to innovate is more pronounced than ever before. Dell Technologies can help you address all of these issues with a focused, deliberate approach.

With the avalanche of healthcare data needing to be turned into actionable intelligence, a trusted partner like Dell Technologies can help turn virtualized data sets into useful knowledge that can be disseminated to all stakeholders. Care providers in this data-driven post-pandemic era need real-time information to provide the agility to support this latest pivot. Through creative investments in scalable, future-ready digital solutions, health technology leaders can support modern and emerging healthcare workloads while simultaneously lowering the cost of patient care.

Working with our partner ecosystem, we come alongside healthcare and life sciences organizations to help them navigate the evolving patient care continuum and the current market volatility. Dell Technologies provides a comprehensive portfolio of solutions, products, and services to help address the cost burden through automation and standardization and prepare healthcare organizations to deliver the promise of a healthier future through modernized health technologies.

[Learn more about our solutions for healthcare.](#)

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