

Innovation delivers amazing healthcare results

North Tees and Hartlepool NHS Foundation Trust rebuilds its infrastructure on Dell EMC PowerScale to enable clinicians to review and collaborate on digital pathology images and patient records.



Business needs

North Tees and Hartlepool, one of the most innovative and digitally mature healthcare organisations within the National Health Service (NHS) in England, aims to use technology to create the best possible care outcomes for patients and deliver services to its population.

Business results

- Enables immediate collaboration on digital pathology images and patient records.
- Supports delivery of digitally enabled care to a larger population.
- Scales to accommodate steadily growing data masses.
- Simplifies IT administration by requiring a smaller team.
- Empowers and helps grow the organisation's workforce.

Customer profile

NHS
North Tees and Hartlepool
NHS Foundation Trust
Healthcare | United Kingdom



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Michael Fox

Head of Information and Communication Technology, North Tees and Hartlepool NHS Foundation Trust

Solutions at a glance

- [Dell EMC PowerScale](#)
- [Dell EMC PowerScale OneFS](#)
- [Dell EMC PowerStore](#)
- [Dell EMC PowerProtect DD Series Appliances](#)
- [Dell EMC CloudIQ](#)
- [VMware Horizon](#)

North Tees and Hartlepool NHS Foundation Trust is a publicly funded, integrated hospital and community services healthcare organisation that serves close to 400,000 people in Hartlepool, Stockton and parts of County Durham in North East England.

North Tees and Hartlepool supports a population that still experiences the health and social impacts of the region's industrial history. Traditional businesses like coal mining, heavy industrial manufacturing and shipbuilding companies no longer provide the high rates of employment they once did. At the same time, people now live longer and require more care, and the pandemic has greatly increased the workloads and complexity of delivering healthcare.

A digital approach to optimising healthcare

North Tees and Hartlepool has long relied on technology to deliver the best possible patient outcomes while also meeting the government's efficiency mandates. Professor Graham Evans, chief information and technology officer and senior information risk owner at North Tees and Hartlepool NHS Foundation Trust says, "We aim to change the conversation about technology and see it as a strategic investment, not just a cost of doing business. We therefore use technology not just to do the same things better, but to do better things".

This approach is garnering visibility and acclaim. "We're an extremely agile organisation and have been recognised by the Care Quality Commission, our national quality regulator, as a 'good' care provider", Evans explains. "Several independent assessments also classify North Tees and Hartlepool as a highly digitally mature organisation".

Transforming pathology by enabling collaborations on digital files

In the U.K. and many other countries, digital pathology is rapidly moving from the experimental and testing stages to approvals by regulators and adoption by care providers. Pathology involving digitised images is more than an incremental improvement — it's a groundbreaking advancement that opens opportunities for clinician collaboration, rapid and accurate image analytics and extremely efficient workflows in healthcare organisations. North Tees and Hartlepool is adopting digital imagery throughout its pathology department, prompted by pathologists who seek to serve patients better.



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Allows caregivers and specialists to **work together** from **anywhere**.

Digitisation allows instant and secure sharing of medical images and patient data among collaborating healthcare providers. Instead of shipping physical slides to each other, pathologists can access digital files, analyse them and discuss their findings to achieve the best patient outcomes sooner. North Tees and Hartlepool also gains greater agility in helping patients by enabling internal care providers and outside experts to collaborate as they interpret images and patient data. “We improve what we do by using technology to make better, more timely decisions, with the right people connecting through a digital network”, Evans says.

The right technology partner to see digital initiatives through

Choosing an experienced partner can make a big difference in translating technology into the best possible patient outcomes. That’s one reason North Tees and Hartlepool collaborates with Dell Technologies, drawing on a wealth of industry and technical expertise and solutions to further its mission.

“We’ve had many years of working with Dell Technologies as a great strategic technology partner”, Evans notes. “A collaboration with the right partner can even allow cross-fertilisation of best practices from other industries”.

Powerful storage at the heart of data centre infrastructure

It takes a resilient, scalable, reliable and secure infrastructure to drive the kind of care transformation that North Tees and Hartlepool pursues. For one thing, increased digitisation of and collaboration around large digital image files — a single pathology slide can represent over 2GB of data — mean that data volumes grow quickly. Currently, the organisation stores close to 650TB of data, and storage can easily exceed 100TB per year.

Dell EMC PowerScale is critical for storing and managing pathology data and images at North Tees and Hartlepool. The organisation has so far deployed 4.5PB of PowerScale capacity, which leaves room to scale. As a backup, primary storage is replicated across two data centre sites. Clinicians throughout the North Tees and Hartlepool network and their expert collaborators rely on this infrastructure to access images and data. Michael Fox, head of information and communication technology at North Tees and Hartlepool NHS Foundation Trust, explains, “We create, store and share the big image files we use in cell pathology, hematology and radiology on Dell EMC PowerScale. Care providers and specialists collaboratively review digital slides without worrying about file sizes or storage performance”.

To simplify and sync care planning and delivery, North Tees and Hartlepool combines data and digital images in electronic patient records that also reside on PowerScale. Evans says, “As we design the best treatment for patients, we bring radiologists, urologists, cardiologists and other experts together and allow them to work from integrated patient records that holistically present the entire clinical journey”. The organisation expects to adopt artificial intelligence to analyse patient data and enable genomic sequencing to refine treatments.

Improving care outcomes with a smaller IT organisation

North Tees and Hartlepool always looks to become more efficient and control costs while improving IT services. Its lean IT team manages a complex environment that sprawls over many locations and, in addition to data storage, comprises 185 clinical systems, 420 servers and 3,700 desktop and laptop PCs. After modernising the technology and using virtualisation and the Dell EMC PowerScale OneFS operating system to manage it efficiently, the North Tees and Hartlepool IT team can focus more on improving care outcomes and empowering clinicians.



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North Tees and Hartlepool already uses Dell EMC PowerProtect DD as backup storage. It is also deploying Dell EMC PowerStore, which supports high-performance input/output operations per second (IOPS) for workloads such as Electronic Health Records. “IOPS performance is a key reason we’re moving to Dell EMC PowerStore”, Fox notes. “We cannot tolerate any latency”. The organisation is also implementing Dell EMC CloudIQ to enable monitoring of the PowerStore arrays augmented by predictive analytics.

Connecting patients and care providers anywhere

In addition to creating a world-class infrastructure, North Tees and Hartlepool elevates end-user computing. It leverages Dell laptops in a virtual desktop infrastructure (VDI) managed with VMware Horizon software to support new working models, including its need for a scalable and agile infrastructure as its service models evolve. During the pandemic, the organisation used the same technology to allow patients and care providers to have remote consultations and to enable hospitalised COVID-19 patients to see their loved ones.

While patients and care providers benefit the most from this technology adoption, it also helps the organisation develop its workforce. “We must keep pace with technical innovation to recruit bright people to join us”, Evans says. “Dell Technologies is a key element in making this possible”.

Extending state-of-the-art care to a larger population

Based on its experience with the performance and reliability of its Dell Technologies solutions, North Tees and Hartlepool has the confidence to bring seven other healthcare organisations in its region onto the same technology infrastructure. They, too, will be able to take advantage of digitised imaging, electronic patient records and seamless care provider collaborations.

Dell Technologies will remain an important partner as North Tees and Hartlepool continues to innovate care delivery. Evans comments, “In a strategic alliance like ours with Dell Technologies, we can source the right solutions to support transformational use cases. Our ambition is to extend the boundaries of healthcare and give patients self-management capabilities for maintaining their health at home”.

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