GE HealthCare

Digital pathology in the UK: connecting people, data and decisions

Digital pathology is moving from aspiration to reality. Across the UK, trusts, networks and private providers are modernising diagnostics, supported by national investment, growing digital maturity and increasing clinical buy-in. To understand how this transformation is unfolding, GE Healthcare held a national roundtable that brought together consultant pathologists, service managers, digital leaders and IT specialists. Their discussions revealed the progress being made across the system – from improved collaboration and remote reporting to the early adoption of AI – as well as the practical challenges that still need to be addressed to unlock the full benefits.

These insights were complemented by the **'Future of pathology'** webinar, where NHS leaders described the strategic direction for digital diagnostics across England. The message was clear: digital pathology has become an essential component of a modern, connected healthcare system.

> "Connecting healthcare services along the clinical pathway is essential, and it needs to include pathology."
>
> Suchita Joshi, National Head of Pathology, NHS England

They emphasised that it is no longer a long-term ambition but a present-day requirement, driven by the need for seamless integration, strong clinical leadership and cloud-enabled, scalable infrastructure. Together, the roundtables and webinar paint a picture of a system that is progressing rapidly – and one that is poised to go even further with the right focus and investment.

Join the conversation

GE Healthcare will continue working with teams in the UK and internationally to support this shift – convening conversations, sharing lessons and collaborating on what comes next. **We invite organisations everywhere to exchange their experiences, compare approaches and work together to help shape better connected, timely and patient-centred diagnostics for the future.**

Key takeaways at a glance

Three shared priorities are already shaping the evolution of digital pathology across the NHS. Collectively, they highlight the progress made so far and the opportunities to go further.

Build interoperability across networks

- Shared LIS/IMS platforms or strong middleware are key to unlocking seamless case sharing.
- Networks with interoperable systems already report smoother workflows and more efficient collaboration.
- National governance and unified data-sharing frameworks would accelerate progress and reduce reliance on external outsourcing.

Deploy AI safely, ethically and with clear clinical leadership

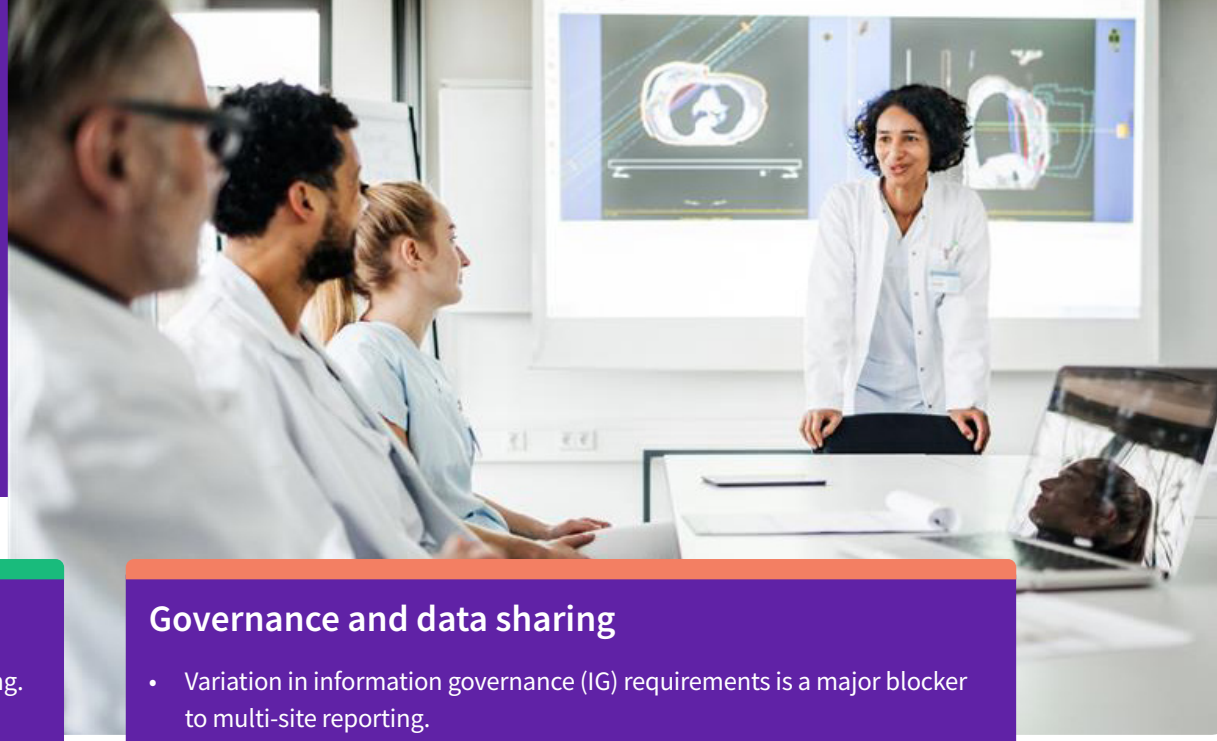
- AI is widely seen as a supportive tool, strengthening triage, quantification and workflow efficiency.
- Clinical leadership and robust validation remain essential to ensure safe adoption.
- Integration into everyday workflows delivers more value than standalone tools or isolated pilots.

Create scalable, sustainable storage strategies

- Storage costs are rising rapidly and current guidance lacks clarity.
- The cloud is increasingly seen as the most scalable and sustainable long-term option, provided trusts have predictable cost models and strong governance.
- Storage must be embedded into procurement, not added as an afterthought.

Enhancing network communication and collaboration

Effective communication and collaboration are essential for delivering consistent, high-quality pathology services across the NHS, particularly as networks move towards shared operating models and connected digital workflows. Achieving this depends on systems, processes and teams working in unison to enable shared reporting, timely second opinions and flexible use of capacity across sites.



Interoperability as the foundation

- Shared LIS/IMS platforms or strong middleware enable smooth cross-site reporting.
- Fragmented systems create delays, workarounds and reliance on physical slide transfer.
- Procurement must prioritise interoperable, future-proof and AI-ready architectures.

Governance and data sharing

- Variation in information governance (IG) requirements is a major blocker to multi-site reporting.
- Duplication and slow approvals hinder cross-network case sharing.
- Nationally aligned data-sharing frameworks would remove delays and support smoother collaboration.

> “We needed to tackle things like interoperability…having multiple different systems communicating and exchanging data in a meaningful way, moving away from those individual silos.”

Robert Dale, Senior Programme Manager, Digital Diagnostics and AI, NHS England

> “For many years, pathology services have operated in a fragmented way. What the digitisation programme has done is allowed us to connect those dots and move from siloed services to an integrated system that is more resilient and more responsive to changing patient needs.”

Suchita Joshi, National Head of Pathology, NHS England

Culture, change and workforce engagement

- Adoption improves when clinicians feel supported, informed and involved.
- Clear communication, one-to-one support and structured engagement accelerate uptake.
- Protected time for training and dual-running builds confidence.
- Scepticism fades as clinicians experience digital benefits first hand.

“There was a lot of scepticism that this is just doing something digitally that we already have a perfectly good microscope for. That has gradually melted away.”

David Hughes, Consultant Histopathologist, South Yorkshire and Bassetlaw Pathology Service

From local collaboration to a national network

- A digital-first model enables rapid redistribution of work across the NHS.
- Digital case sharing reduces turnaround times and reliance on outsourced reporting.
- National access ensures patients benefit from the right expertise wherever it sits.
- Clear national standards and shared workflows are essential for cross-network collaboration.

“By consolidating our services into networks, we enable much greater collaboration and consistency, and create a platform for innovation and long-term sustainability.”

Suchita Joshi, National Head of Pathology, NHS England

Looking ahead

Interoperable systems, consistent governance, engaged clinicians and national-scale digital sharing will form the backbone of a connected pathology network. The foundations are being laid, and scaling these successes across all networks will be essential to realise the full promise of digital pathology.

“What we’re aiming to get to is a unified patient record. If a clinician is logging on to see their patient record, you’d expect that they’d be able to see their imaging report, their pathology report, the genomics report… and then be able to come to a conclusion as to what that personalised offer is going to be.”

Suchita Joshi, National Head of Pathology, NHS England

Is AI a friend or foe in pathology?

AI is widely recognised as having the potential to be a powerful enabler in pathology, supporting diagnostic accuracy, improving efficiency and easing pressure on a stretched workforce. Optimism about its value is balanced by a clear understanding of the governance, validation and workflow integration needed to introduce it safely and effectively.

AI as an essential support, not a replacement

- AI enhances decision making by speeding triage and highlighting subtle features for review.
- It can improve reporting consistency, including biomarker scoring and QC processes.
- AI helps manage rising workloads across pathology services.
- The role of AI is assistive – clinical accountability stays with pathologists.

Safe, evidence-based introduction

- Robust governance and validation are essential for safe AI adoption.
- Validation must keep pace with rapidly evolving models.
- Tools must be proven safe across diverse tissue types and populations.
- Clinically-led, controlled deployment ensures safe and trusted use.

“The number of new pathologists is not going to keep track with the increasing complexity of the work we do. So it’s absolutely essential, we have to use these tools.”

David Hughes, Consultant Histopathologist, South Yorkshire and Bassetlaw Pathology Service

“There is a clear expectation that these technologies are only going to be introduced in a way that’s clinically safe and evidence backed.”

Robert Dale, Senior Programme Manager, Digital Diagnostics and AI, NHS England

Workflow integration over standalone tools

- AI delivers value only when embedded within existing reporting workflows.
- Standalone tools outside LIS/IMS increase workload and slow reporting.
- Seamless integration enables consistency, efficiency and trust.

Building an AI-ready workforce

- AI adoption depends on a confident, digitally-literate workforce.
- Pathologists and scientists need time and support to develop AI skills.
- AI literacy will become a core requirement across the diagnostic pathway.
- Cultural readiness is essential – clinicians must trust and understand the tools.

Looking ahead

AI is a powerful enabler when introduced safely, ethically and with strong clinical leadership. Its potential spans triage, consistency, workflow optimisation and workforce sustainability, but realising that value will require thoughtful integration, robust governance and a confident, AI-ready workforce.

“I use AI daily for faster and deeper literature searches. Generative AI can also write reports for you and trigger searches.”

David Hughes, Consultant Histopathologist, South Yorkshire and Bassetlaw Pathology Service

“There is going to be a time when people have to be AI literate; aware of what these technologies are and what they can do.”

Robert Dale, Senior Programme Manager, Digital Diagnostics and AI, NHS England

“There’s AI that sits along the entire length of the pathway. We need to be embracing all of it; there are some big quick wins sitting there for us to take.”

Suchita Joshi, National Head of Pathology, NHS England

Optimising image storage strategies

Digital pathology generates some of the largest and fastest-growing data volumes in the NHS, making secure, scalable and accessible storage a critical foundation for modern diagnostic services. As whole-slide imaging becomes routine, many organisations are finding that existing infrastructure, retention practices and budgets cannot keep pace with demand. Storage is no longer a technical afterthought but a strategic enabler of digital workflows, case sharing and future AI capability.

Rising data volumes and mounting pressure

- Continuous scanning growth is outpacing the capacity of local servers.
- High-resolution whole-slide images create a significant storage burden.
- Unclear retention requirements make long-term planning difficult.

The cloud is the only scalable long-term model

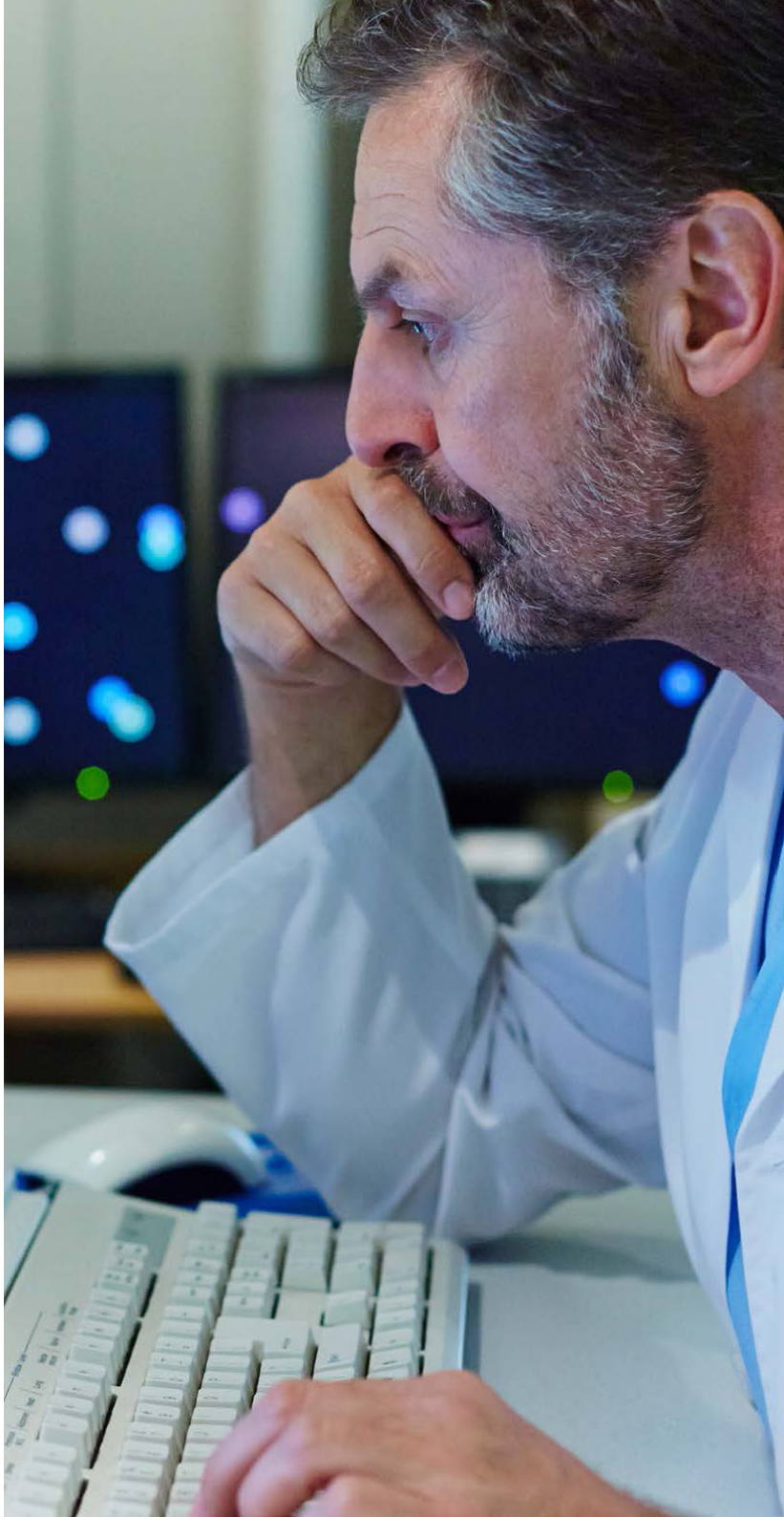
- Cloud platforms provide scalable, elastic storage that grows with demand.
- Cloud-first approaches align with current government policy.
- Clear guidance is needed to ensure security, affordability and compliance.

> “We’ve got enormous digital image sizes, and that creates challenges in the system – how we manage them, how we flow data across the country, if that’s the ambition.”

Suchita Joshi, National Head of Pathology, NHS England

> “Government policy is cloud first when you are looking at new systems. The cloud, and the capabilities it provides for scaling and performance, are fundamental.”

Robert Dale, Senior Programme Manager, Digital Diagnostics and AI, NHS England



National strategy and economies of scale

- Disjointed local procurement limits efficiency and value for money.
- National consolidation could significantly reduce costs.
- A central strategy would ensure consistent access and support interoperability.

“There are opportunities to leverage the size and scale of the NHS, but that can only come when you’ve got a strategy and a joined-up approach.”

Robert Dale, Senior Programme Manager, Digital Diagnostics and AI, NHS England

Resilience, access and future-readiness

- Resilient, mirrored systems are essential for maintaining service continuity.
- National access to stored images enables rapid second opinions and case sharing.
- Storage must be designed to support future AI and advanced analytics.

“If an image is captured in one service it should be available anywhere in the country. We should have an end to sending a slide in the post.”

Robert Dale, Senior Programme Manager, Digital Diagnostics and AI, NHS England

Looking ahead

Storage is not a back-end technical issue but a strategic foundation for digital pathology. Scalable cloud infrastructure, national coordination and resilient access models will be essential to support growing volumes, enable cross-network collaboration and unlock future innovation, including AI. The work is underway, and getting storage right will be critical to sustaining progress across the digital pathology journey.

“We’re at the phase of the journey where the question is: what’s next? And how do we take advantage of all the investment we have put in to date?”

Suchita Joshi, National Head of Pathology, NHS England