

NHS Digital Pathology in Transformation: STPs in focus



Opinion Paper by Andy Atkins – Healthcare Sector Specialist

Digital Pathology in Transformation: STPs in focus

As key contributors to acute care, pathology service providers have long been under pressure to deliver more for less. Adopting Digital Pathology can play a valuable role in addressing this challenge - but careful planning and forethought is needed. Now with the advent of Sustainability and Transformation Plans (STPs), pathology service providers are facing the further challenge of rapidly having to make lasting decisions about the consolidation of services across STP footprints. In this opinion paper we examine the background to, and consequences of the advent of STPs, and evaluate common scenarios and questions.

The Introduction of Sustainability and Transformation Plans



NHS England announced the introduction of Sustainability and Transformation Plans (STPs) in December 2015. The STP structure divides the country up into 44 'footprints' of varying size. In contrast to the Health & Social Care Act of 2012 that sought to strengthen competition, NHS service providers within each footprint are now asked to collaborate to close the three gaps identified in the Five Year Forward View: health and wellbeing, care and quality, and finance and efficiency.

The development of STP plans has since progressed at a rapid pace, driven by NHS England and NHS Improvement, with each STP being required to submit its plans by October 2016. While all three gaps in the Five Year View were identified as goals, it has been widely observed that much of the emphasis within the planning process has been placed on the finance and efficiency gap. Within this, an early initiative that STPs must pursue is the consolidation of back-office and pathology services across the STP footprint. The requirement was for STP management teams to submit a preliminary business case by October 2016. STP plans which have been published to date indicate that the rollout of Digital Pathology is likely to play a significant role in delivering the goals for pathology consolidation across many STP footprints.

The underlying challenges when adopting Digital Pathology

When considering the introduction of Digital Pathology, focus understandably tends to centre upon the immediate-term choice of front-end pathology systems and equipment. However, the timescales associated with the legal and regulatory responsibilities for records retention, from 10 to 30 years or more, go far beyond the lifetime of any individual system or item of lab equipment.

Providers must demonstrably maintain ownership and control of patient data throughout this period regardless of shorter-term changes in service and technology.

It is essential then that pathology service providers reach a clear understanding of how they will be managing their data over the long term from the outset of the project if they are to be confident in meeting key objectives such as targets for cost-savings. In other words, pathology service providers must be able to describe with confidence their long-term information lifecycle management strategy while simultaneously making their near-term pathology technology choices.

The consolidation of pathology services across an STP footprint almost certainly means the sharing of data between multiple service providers. STP footprints vary in population from 300,000 to 2.8m and from 1 CCG up to 12, but typically beyond any one single acute trust and almost certainly involving multiple pathology providers. Furthermore, STPs have no legal basis - they are effectively the sum of their constituent members. For pathology service providers this creates a tension between fulfilling a collaborative role within the STP footprint and continuing to meet their records retention responsibilities over the long-term. Information Sharing Agreements help by enshrining the principles involved, but the real challenge rests in operationalising these principles, and in rolling out the infrastructure and methodology across an STP footprint that reconciles the issues and constituents.

All of the above must of course be achieved whilst delivering material cost savings. Those who do not take into account the long-term management of their data are risking significant financial penalties. Providers should stress-test their approach by asking themselves some key fundamental questions:

What are my data growth rates likely to be and what happens if I get it wrong?

The explosion in data growth rates across the NHS are well-documented and pathology is no exception. The rapidly-increasing sophistication and affordability of lab equipment along with the imminent arrival of genomic sequencing within mainstream diagnostics means that data growth rates are likely accelerate further over the next 2-3 years. Providers should carefully consider what their data growth rates are likely to be over at least the next 5 years. Of equal importance, given the pace of change and difficulty in accurately estimating future capacities, is that providers should also ask themselves what is the likely cost impact of either under- or over-estimating growth rates.

Does my solution best reflect my data retention and access needs over the long-term?

The episodic nature of patient diagnostic data naturally lends itself to a hierarchical storage management approach involving some form of archival storage. However, when introducing digital pathology this important consideration is often overlooked by simply accepting the default choice of storage from systems providers. Typical solutions may involve an over-reliance on disk-based storage, perhaps along with a traditional backup regime. As storage capacities grow over the long-term, backups become progressively more costly and complex, with backup windows extending further and demanding more resources. Moreover, when compared to a one-time high-integrity archive ingest, traditional backup regimes are not designed to support the search functions, retention policies and audit trails that are critical for regulatory compliance.

What happens when something changes?

When considering data storage over the long-term it is inevitable that conditions will change. Whilst it is not possible to forecast all such instances, providers should nonetheless ensure they clearly understand the predictability and transparency of the costs involved for storage of their data over the long term. For example, an underlying requirement will almost certainly exist to retrieve aged records from time to time for either clinical or legal / regulatory reasons. This may involve the search and retrieval of individual patient records or larger datasets over a period of time. In such instances it is vital to be aware at the outset of the costs for the data egress involved. More seriously, it should be apparent at the beginning of the procurement process what the cost impact of significant change would be, either in migration of a front-end system, or where the provider may wish to terminate the contract for whatever reason and requires return of all datasets. In other words: what is the exit cost?

Digital Embassies: The new paradigm for data sovereignty

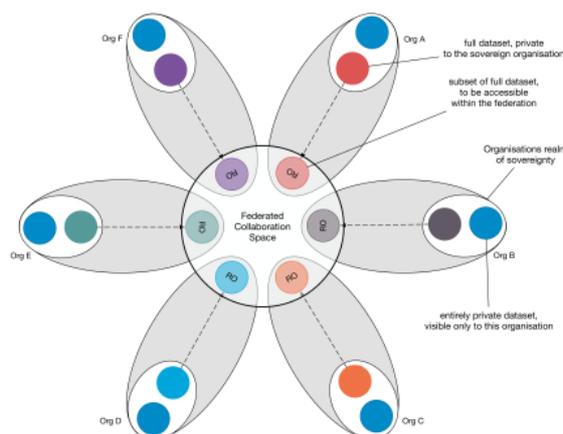
Traditionally, access to a pathology data archive is managed by the host Trust and / or pathology service provider as the prime data owner. As identified above however, consolidation of pathology services across STP footprints means that the data will need to be shared securely between multiple organisations.

Operations like these are complex and fraught with risk. Data security and sovereignty have become paramount concerns amid the emergence of new models for data retention, such as cloud and hybrid storage strategies, and the need to provide controls over multi-stakeholder access to the archived data.

The digital embassy model has emerged as a new way of defining these requirements and creating an appropriate technical architecture and methodology to satisfy them. In the same way that the embassies of nations provide a physical location in which sovereignty is demarcated and controlled, the purpose of digital embassies is to provide a demarcated data safeguarding area under the full sovereignty of the data owner.

The patient or donor needs to trust that their data is safeguarded, and available only to the appropriate parties. Privacy, security, data protection and data integrity are central to this: data integrity must be assured for long-term retention and future access, while digital continuity is ensured through a robust disaster recovery and business continuity planning approach.

In the digital embassy, data access by third parties is negotiated within controlled conditions, access policies and protocols in order to ensure compliance with the relevant privacy, clinical access or data governance guidelines. Due to legal and clinical best practice guidelines, it is important that the prime data owner is always in control of the data and has confidence that the data is preserved and protected with chain of custody processes to prove that the record of what has taken place is accurate.



Data Embassies allow for the safe sharing of patient data across an STP footprint

Arkivum is working with NHS service providers and the digital pathology systems community to meet the challenges posed by consolidation of pathology services by providing certainty of future compliance around data sovereignty, security and retention. Part of this approach is to consider the digital embassy model as the way to provide a flexible, exploitable safeguarding architecture, whether it be on-premise, offsite, in the cloud, or a combination of these simultaneously.

About Arkivum

Arkivum provides specialised best-of-breed long-term data safeguarding and archiving solutions, designed to respond to today's Compliance and Governance requirements. Arkivum works with institutions across multiple verticals, all of which generate high amounts of mission-critical data that needs to be preserved for many years to come.

In particular, Arkivum has worked within the healthcare sector for many years, managing both clinical and research-based data projects.

Arkivum's solutions simplify the process of assuring the authenticity and availability of data regardless of scale or when it needs to be accessed. This helps organisations to mitigate or transfer risk, while achieving compliance with regulations or long-term data lifecycle management requirements.

Arkivum's active data lifecycle management and ISO 27001-certified methodology provides low-latency access to archived data while delivering a chain of custody and an indemnified 100% data integrity guarantee. Arkivum works with partners to deliver integrated, scalable and flexible solutions for data discovery and sharing, publishing, file format preservation, and information portals.

Website - www.arkivum.com

Resources

- [ACB News – October 2016](#)
- [Brent CCG Information Sharing Agreement – September 2014](#)
- [National Pathology Programme – Digital First: Clinical Transformation through Pathology Innovation](#)
- [NHS Information Sharing Policy 2016](#)
- [Nottingham University Hospital Data Protection Confidentiality & Disclosure Policy](#)
- [Nuffield Trust – June 2016 – The Future of Pathology Services](#)
- [The Kings Fund – Sustainability and Transformation Plans in the NHS](#)