



What is the value of digital pathology for your department and patients?



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The value of digital pathology is widely recognised, but quantifying the benefits so far has been challenging. Now, Source LDPPath has introduced a new tool to model the impact on digital pathology services on a specific hospital or department. This Health Economic Model serves to estimate the value of implementing a digital pathology workflow.

Although hidden from public and patient view, pathology services are the cornerstone of the healthcare system, with pathology diagnostic assessments playing a substantial role in more than 80% of all patient care pathways.¹ In recent years, the demand for these services has surged to exceptional levels; and with the arrival of genomic testing and personalised medicine, that demand is expected to expand further.

According to research conducted by Keele University, there is a 4.5% annual demand growth for pathology services nationwide,² rendering the existing structure untenable for future service provision. As the population ages and the workforce continues to suffer from a national shortage of pathologists,³ it is imperative to reconsider the conventional operational model employed by the healthcare system for pathology diagnostic testing.

In line with the goals set out in the NHS *Long Term Plan*, a key initiative states that 95% of patients needing a diagnostic test will receive their results within six weeks by 2025.⁴ For the collective healthcare system to reach this target, pathology departments will need to oversee a comprehensive and far-reaching digital transformation of their existing workflows and the technological infrastructure that underpins them. This transformation will supply the foundational framework for augmenting diagnostic capabilities within existing budget constraints, meaning

more patients will receive a diagnosis within clinically actionable timelines.

Evaluating the impact of digital pathology

While the value of digital pathology is widely recognised, quantifying the benefits on a department-by-department basis has been unattainable until this point. Source LDPPath (SLDP) has introduced a health economic assessment tool, designed to model the economic implications of digital pathology services. This Health Economic Model (HEM) serves to estimate the value

of implementing a digital pathology workflow, considering the effects on four core quantifiable factors: waiting times, backlogs, costs and patient life-years.⁵ The model's findings reveal the anticipated effects of digitising this diagnostic pathway, customised to the unique conditions of the department.

Health Economic Model

The tool's effectiveness was demonstrated through practical testing at East Kent Hospitals University Foundation Trust (EKHUFT). Following this, the model was validated by other NHS partners, as



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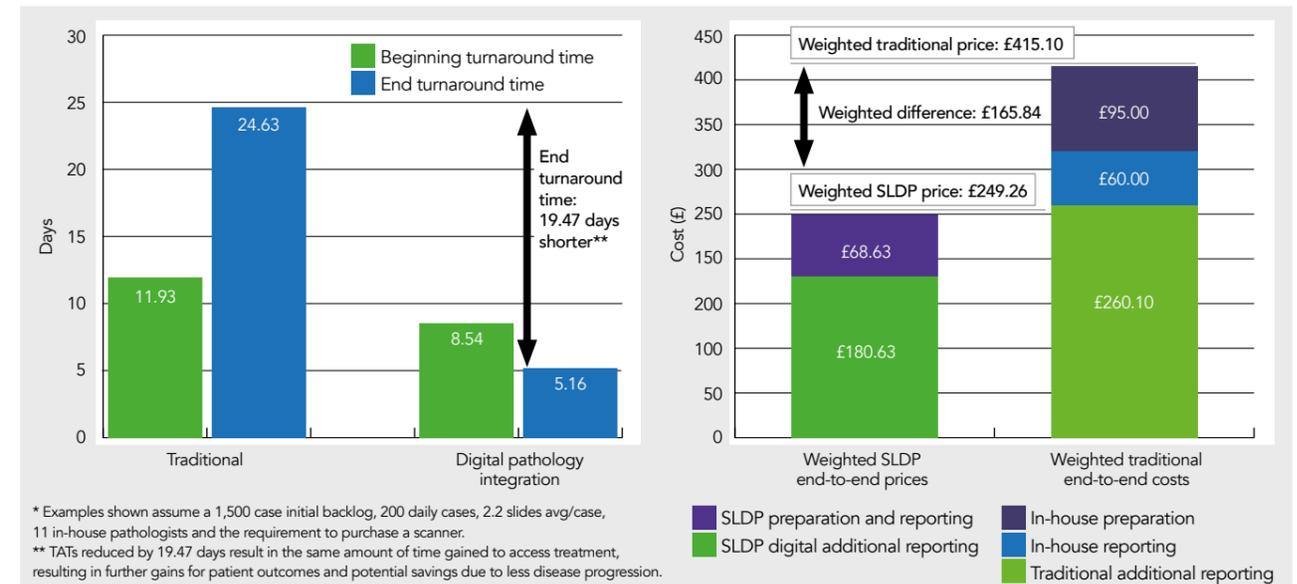


Table 1. A comparison of pathology case turnaround in a traditional workflow against a digital pathology workflow with SLDP integration.

Table 2. A comparison of end-to-end cost of a singular, weighted (by complexity) case between sample processing and reporting in a traditional workflow and a digital pathology workflow with SLDP.

well as correlated with the National NHS Schedule of Costs 2022-2023.⁵

Digital pathology enables the rapid digitisation of specimen slides, allowing pathologists to access them from anywhere in the world, in real-time. A primary source of savings depicted from the model is in turnaround times of diagnostic reporting. Based on EKHUFT data, the HEM indicated that adoption of a digital workflow led to an average reduction of two days in turnaround times, which included cases from the pre-existing backlog. This example is illustrated in Table 1. Promoting a new era of efficient collaboration, digital pathology provides an advanced working model for healthcare professionals, whereby multi-disciplinary meetings and second opinions on complex cases can be carried out remotely – alleviating backlog pressures and drastically reducing the time taken for a patient to receive a diagnosis.

The HEM predicted that over a span of five years, the integration of a digital workflow would facilitate savings at EKHUFT equivalent to over 8,000 patient life-years when compared to the previous traditional pathology workflow.⁵ Savings made in patient life-years is attributable to various factors associated with integrating digital pathology into routine practice. Expediting diagnoses, enabling remote collaboration, enhancing data management and improved accuracy with optional AI integration, all contribute to speeding up delivery of patients' diagnoses and therefore access to downstream treatment plans.

The initial investment into digital

pathology is dominated by the acquisition of a digital slide scanner. While this figure may appear high, the long-term savings ensure the value of implementing a digital workflow and sanction this shift in diagnostic operations as a leap forward in accelerating patient care. Table 2 shows the difference in end-to-end costs for a single weighted case between a traditional pathology workflow and a digitised workflow, based on SLDP digital pricing structures. The compounded savings from each case – given thousands of cases are processed per year in any given department – lead to a significant reduction in annual departmental cost, meaning more cases can be processed with the same budget. When considering these monetary savings for a specific hospital or department, these can be extrapolated from the HEM launched by Source LDPPath.

Hopes for the future

Source LDPPath charts a vision for pathology departments across the UK to integrate a digital pathology workflow into their existing processing and reporting operations. This mission is sustained by a profound commitment to transforming the way healthcare professionals operate, collaborate and provide patient care. For digital infrastructure to become an integral part of the healthcare landscape, its value must be evidenced on a case-by-case basis and the expertise must be available to support its adoption.

The HEM launched by Source LDPPath serves as tangible evidence of the potential of digital pathology in alleviating

pressures currently experienced by NHS pathology departments, and will play a pivotal role in guiding informed decisions for implementing a digital workflow, depending on the individual circumstances of the department or hospital.

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Source LDPPath
 0115 973 9012
 enquiries@sourcebioscience.com
 www.sourcebioscience.com