

Revolutionising Lab Diagnostics with Sustainable Electronic Solutions



Scan here
to view our
data.

Introduction

In an era where sustainability and digital transformation are increasingly central to healthcare, diagnostic laboratories must adopt smarter, more environmentally conscious practices. This project proposes the integration of electronic devices like Kindles to replace traditional paper-based systems. By transitioning to digital formats, we aim to reduce paper waste, improve workflow efficiency and enhance real-time data accessibility. This initiative aligns with the **NHS sustainability goals** and the evolving demands of modern diagnostics through supporting greener and more adaptable laboratory operations.



Scan here to view
references.

Background

The introduction of electronic devices in NHS laboratories presents a significant **opportunity for long-term cost savings**, particularly by reducing reliance on paper-based procedures. By shifting to digital platforms, labs can eliminate recurring expenditure.

Scan the QR in the top left to view our data and collection method.

Materials and Methods

Surveys were distributed electronically to staff across **six NWLP laboratories**, which are located at **three sites**. Each survey solicited participants' level of interest in the proposed project as well as their perceptions of its practical applicability within their respective workflows. Responses were collected over a four-week period and subsequently aggregated. Quantitative data on overall interest were visualized in *figure 1 as a pie chart*, illustrating the proportion of respondents who rated their enthusiasm as high, moderate, or low. Qualitative and quantitative feedback regarding applicability were synthesized and displayed in *figure 2*, where staff members' views on feasibility, potential barriers, and anticipated benefits are charted to inform subsequent project planning.

Financial Sustainability

The six NWLP labs involved in the study currently spend approximately **£4,200 annually** on paper-based processes. By transitioning to electronic systems, we could save over **60 trees** and generate approximately **60 million liters of oxygen over 10 years** - supporting the NHS's green initiatives. Additionally, reducing paper costs would free up over **£40,000 in a decade**, funds that could be redirected to patient care or other critical NHS services.

(*Data based on approximated paper usage of the 6 departments involved in the study)
1,125 sheets/week x 520 weeks = **585,000 sheets**, 585,000 sheets ÷ 10,000 sheets/tree = **58.5 trees**. A single tree can produce **1,000,000 liters of oxygen over a 10-years**.²

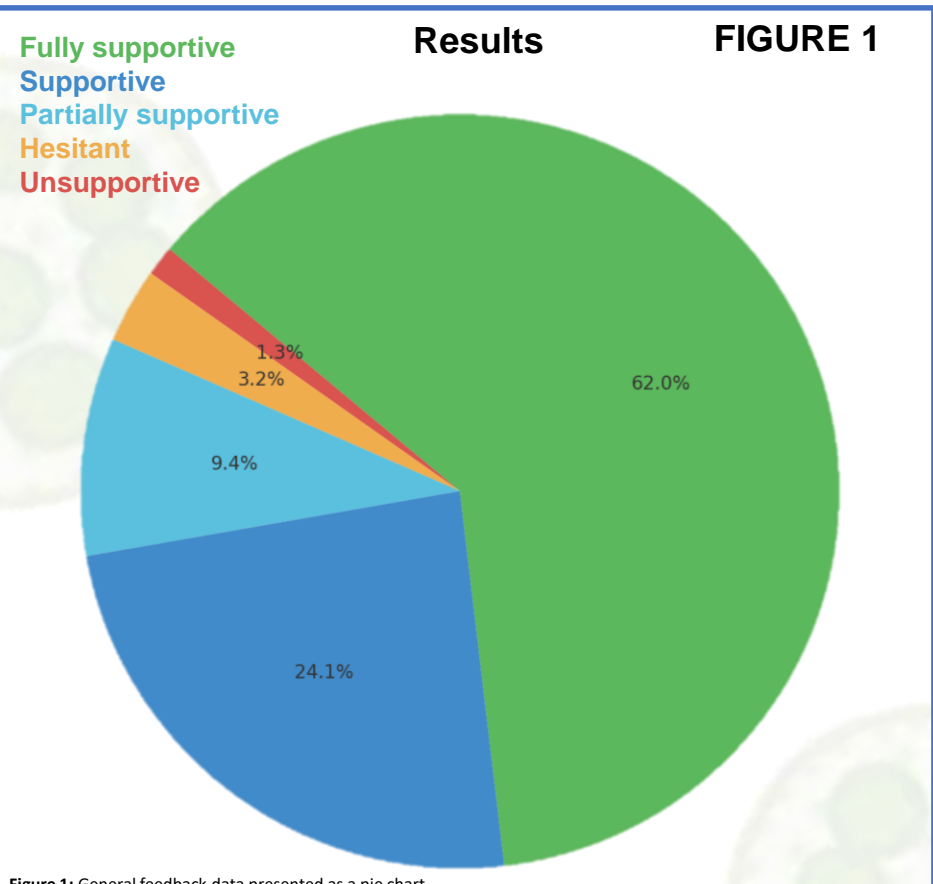


Figure 1: General feedback data presented as a pie chart.

Figure 1 reflects staff attitudes toward transitioning from paper-based to electronic systems within diagnostic laboratories. **>90% of staff** are **supportive** in adopting digital tools to replace paper-based processes. **<10%** expressed some hesitation**, indicating potential concerns or a need for further support and training.

**Data was collected through surveys distributed across three different NWLP sites [CXH, HH and WMH], encompassing a total of six departments [microbiology, infection & immunity, histopathology, hematology, clinical biochemistry and histocompatibility & immunogenetics].
Data was collected between 13/04/2025 - 14/05/2025.
Individual department responses are available for viewing via scanning the QR code. {top left}

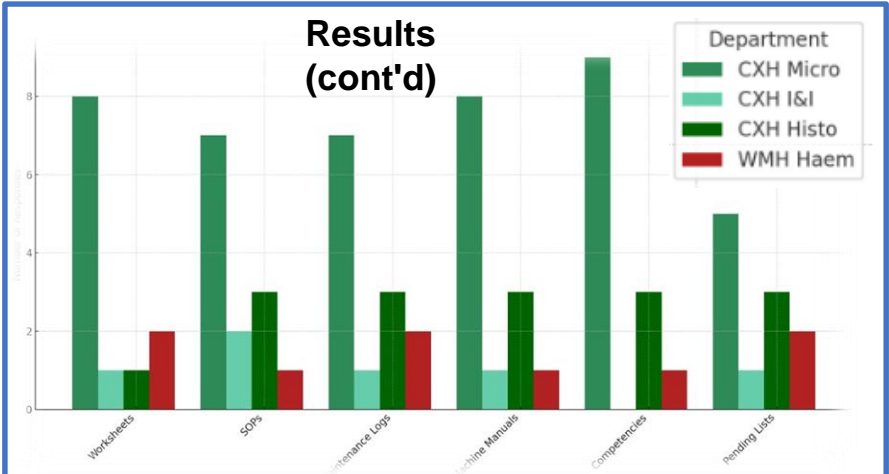


Figure 2: Electronic document preference data presented in a bar chart.

Discussion

Providing dedicated training sessions for staff on the use of QPulse online facilitates the seamless implementation of QPulse access across electronic devices within laboratory settings. This initiative empowers staff to engage confidently with the platform, enhancing compliance and streamlining documentation processes. The data presented in **figure 2** illustrates the overall level of interest and support for transitioning to a more sustainable, technology-driven workflow. The responses gathered reflect a **broad endorsement of digital innovation** across a variety of clinical departments, **highlighting the collective readiness to adopt environmentally conscious and efficient practices**.

Take home message

While the initial cost of adopting electronic devices such as tablets may appear high, this investment is quickly balanced by the elimination of ongoing paper expenses and repetitive printing tasks. Utilizing QR codes instead of paper handouts streamlines communication, reduces clutter, and enhances accessibility. In the long run, this shift not only proves to be more cost-effective but also supports sustainability by **significantly reducing paper waste**.