The Royal College of Pathologists
Pathology: the science behind the cure

The Royal College of Pathologists' response to the NHS Productivity Commission: Call for evidence

December 2025

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Introduction

The Health Foundation has established the NHS Productivity Commission. It aims to provide evidence and solutions to boost NHS productivity over the next decade and enhance people's quality of life.

The Royal College of Pathologists (RCPath) welcomed the opportunity to respond to the Productivity Commission call for evidence, which is seeking up to 4 reforms to improve productivity in the NHS in England – with a focus on ideas that:

- have the potential to improve productivity both now and in the future, provided 'quick wins' do not affect long-term productivity growth
- would enable the NHS as a whole to improve productivity
- identify the national policy levers (e.g. incentives, targets, regulations or guidance) needed so that the system can seize opportunities to improve productivity
- are ambitious but realistic, i.e. where you can see a path through implementation, even if this requires substantial change.

Insights derived from local examples and case studies from other countries and sectors where these are relevant to the NHS were welcomed. Comments were sought on what problem the reform seeks to address; what actions would need to be taken to deliver the reform; and who would be responsible for implementing it. There was oppportunity to link the proposed reforms to one of the 4 drivers:

- **workforce**: the people who support care delivery
- **capital:** the buildings, equipment and digital infrastructure
- **technology and innovation:** the adoption, implementation and spread of technologies
- **transformation**: the things that enable the system to work better, including leadership and management, coordination and governance.

Views on NHS productivity

Please share any general comments you have relating to productivity in the NHS in England (max 2,000 characters).

Pathology underpins almost every aspect of patient care. Pathology teams include medically trained pathologists, clinical scientists, biomedical scientists and support staff who provide vital services to the entire health system by examining tissues, cells and other bodily fluids to ensure effective diagnoses, treatment plans and disease prevention.

Modernising pathology offers significant potential to boost NHS productivity – defined as the health value delivered per pound invested – through infrastructure upgrades, digital technologies, workforce expansion, system design strategy and demand management that is focused on patient needs. Strategic investment in automation, IT infrastructure and AI can streamline workflows, cut turnaround times and enable remote collaboration, allowing services to scale without proportional increases in staffing. These gains depend on interoperable IT systems to improve efficiency, diagnostic accuracy, and allow integration with emerging genomic and precision medicine advances.

Currently, inefficient system processes, and outdated estates and IT systems create unnecessary delays. Upgrading Laboratory Information Management Systems (LIMS) for interoperability with electronic patient records and prescribing platforms reduces duplication and improves clinical decision-making. There is potential for digital pathology and automation, supported by standardised governance, to increase throughput, enable remote reporting and reduce costs per test while maintaining quality. If resourced properly, these changes can translate into faster diagnoses, better outcomes and long-term savings.

Diagnostic stewardship must also be prioritised to manage demand and ensure sustainability. Significant investment in pathology now will deliver future productivity gains. Beyond improving care pathways, modern systems will reduce workload, enhance staff wellbeing and support retention – critical for a resilient health system.

Proposed reform 1: National digital pathology strategy with central funding

Please describe your proposed reform for improving NHS productivity (max 1,500 characters).

Digital pathology converts glass slides to high-resolution digital images for secure viewing, enabling remote reporting, reducing physical handling and supporting collaboration. It improves efficiency, diagnostic accuracy, speed of diagnoses and access to specialist expertise.

Despite evidence of productivity benefits, adoption remains fragmented across 27 pathology networks. This limits standardisation, interoperability and equitable access. Legacy IT systems, workforce shortages and lack of time and resources hinder integration. There is no national strategy.

A coordinated digital pathology strategy is essential to address diagnostic bottlenecks, strengthen the workforce and unlock productivity gains. National capital funding should allow for equitable local adoption, tailored to regional needs across specialties. Key actions needed include:

- capital investment across pathology networks for IT infrastructure, e.g. scanners, image management systems and upgrades
- interoperability with LIMS, electronic patient records and genomic pathways
- regulatory standards for digital workflows/AI validation
- training/governance and funding to embed digital skills/safe use
- centres of excellence to share expertise/build workforce capability.

The government should lead on strategy, funding and equitable rollout with scope for trusts and integrated care systems to implement interoperable systems and workforce requirements to suit local needs. RCPath can assist by setting standards, advising on governance and embedding digital training.

How would this reform improve productivity? (max 500 characters)

Digital pathology improves productivity by enabling faster remote diagnosis, reducing slide transport risks and supporting timely specialist input. It streamlines workflows, increases capacity across networks, allows flexible remote reporting, cuts logistics costs, and delivers long-term financial savings benefiting both patients and staff.[1–3]

What is stopping this reform from being implemented now? (max 500 characters)

Implementation is limited by high upfront cost, infrastructure and space needed to equip pathology networks. Funding for centres of excellence, e.g. National Pathology Imaging Co-operative (NPIC) and PathLAKE shows the scale of investment required. With few resources for essential services, there is reluctance to invest now to secure long-term gains. Coordinated investment, governance and alignment across networks can deliver long-term cost savings and highly productive, efficient diagnostic services across England.

If your proposal is supported by any evidence and/or real-world examples, please share details here (max 1,500 characters).

NPIC is bringing together NHS infrastructure, academia and industry to support digital pathology. PathLAKE is one of five UK Centres of Excellence. Both have been funded with a £50m investment, highlighting the benefits of investment. Paediatric pathology is benefitting from NPIC via a national paediatric tumour network.[4] However, some trusts do not have LIMS to enable digital pathology.

University College London Hospitals NHS Foundation Trust went live with digital pathology in August 2025 and, in weeks, pathologists reported nearly 70% of histopathology cases using digital images – illustrating rapid adoption and immediate workflow benefits.[5]

Nottingham University Hospitals NHS Trust reported that after scanning 355,000 slides per year, the service saw a shortened turnaround time for urgent cases, smoother histology workflows, improved ability for teaching/training/remote work and better communication.[6] Oxford's cellular pathology department became one of the first departments to digitise 100% of slides enabling greater collaboration.[7]

Which of our following drivers does this proposal primarily relate to?

☑ Capital

Proposed reform 2: Interoperability of Laboratory Information Management Systems (LIMS)

Please describe your proposed reform for improving NHS productivity (max 1,500 characters).

A Laboratory Information Management System (LIMS) is a software solution that helps laboratories manage samples, data, workflows and compliance, enhancing overall efficiency and productivity by delivering faster, more accurate data sharing between laboratories and clinical teams.

Interoperable LIMS is critical to enhancing NHS productivity. Currently, fragmented and non-standardised systems create delays, duplication and increased resource burden. Lack of integration – particularly in test codes, nomenclature and units – combined with trust firewalls impedes data sharing and slows care. Some trusts lack modern LIMS entirely – many are using obsolete systems installed decades ago. Upgrades take years, creating regional disparities. Failure to transfer data to new systems poses risks by creating legacy systems that are costly and risk patient safety as they are often the only remaining record of pathology data. Poor interoperability also compromises resilience and contingency planning, as highlighted by the June 2024 cyber-attack in southeast London that led to severe service disruption. Action is needed to:

- upgrade IT and lab infrastructure to support interoperability
- standardise test codes and data formats across networks
- ensure LIMS integration with electronic patient records, prescribing platforms and patient-facing systems.

The government should lead on strategy, funding and standardisation, and support local trusts and integrated care systems in implementing interoperable systems and workforce adoption.

How would this reform improve productivity? (max 500 characters)

Connectivity ensures pathology results are instantly accessible across care settings, improving continuity and reducing repeat testing. Interoperable systems enable digital pathology and AI adoption, supporting automation and remote collaboration. By

eliminating inefficiencies and integrating care pathways, interoperability drives cost-effectiveness, reduces diagnostic bottlenecks, and maximises workforce and technology impact – delivering better health outcomes per pound spent.

What is stopping this reform from being implemented now (e.g. the challenges and barriers)? (max 500 characters)

Interoperable LIMS depends on modernising IT and lab infrastructure to enable seamless data exchange. Outdated, fragmented systems remain a major barrier to productivity. Financial constraints and lack of understanding of the dependence of 21st century patient care on timely access to laboratory data – which underpins this lack of investment – are primary obstacles. Prioritising investment in IT now is essential to unlock future benefits, improve diagnostics and optimise workforce capacity.

If your proposal is supported by any evidence and/or real-world examples, please share details here (max 1,500 characters).

A recent systematic review on the role of LIMS in improving the delivery of laboratory services found that laboratory information systems may eliminate diagnostic errors in the preanalytical, analytical and postanalytical phases. In addition, they can incorporate genomic data at the analytical stage to generate useful reports for providers and patients.[8]

Which of our following drivers does this proposal primarily relate to?

☑ Technology and innovation

Proposed reform 3: Diagnostic stewardship

Please describe your proposed reform for improving NHS productivity (max 1,500 characters).

Rising pathology demand and expansion of community diagnostics – including point-of-care and direct-to-consumer (DTC) testing – are driving increased testing, costs and unnecessary follow-up. The role of pathology services is to ensure that the right tests are available at the right time to the right patient. Indiscriminate blood testing adds workload and delays decision-making. Workforce shortages further limit pathologists' ability to guide appropriate testing. Lack of system-wide stewardship results in low-value tests that strain resources and reduce productivity. Antimicrobial resistance (AMR) further underscores the need for robust stewardship to ensure test selection and interpretation that does not lead to inappropriate use of antimicrobials, worsening AMR risks. Action is needed to:

- embed diagnostic stewardship as a core NHS pathology function
- resource pathologist-led oversight to ensure tests are clinically justified and interpreted in context
- improve collaboration between clinicians and pathology services to reduce avoidable referrals
- integrate stewardship into digital systems to support prioritisation and demand management
- ensure interoperable IT systems and governance for point-of-care testing and AI-driven tools.

Action on diagnostic stewardship is essential to manage pathology demand while the benefits of investment in workforce and innovation are realised.

The government should lead on policy and funding to embed stewardship nationally with resourcing for local innovation.

How would this reform improve productivity? (max 500 characters)

Diagnostic stewardship reduces low-value testing, optimises workflows and improves turnaround times. By prioritising clinically justified tests and supporting pathologist-led stewardship, delays and inappropriate requests or testing are minimised. This increases

efficiency and frees up workforce capacity, enabling faster and more effective clinical decision-making at scale across NHS pathology services.

What is stopping this reform from being implemented now? (max 500 characters)

Diagnostic stewardship is challenged by the lack of pathology IT systems that have functionality, standardisation and interoperability, as well as constrained pathologist time due to workforce shortages across services.

Expanding commercial DTC testing risks unnecessary tests, increasing workload amid limited standards and governance. Safeguards on quality and appropriateness are vital. Regulation and professional oversight must ensure safety, especially with unregulated home test kits.

If your proposal is supported by any evidence and/or real-world examples, please share details here (max 1,500 characters).

Scotland's commitment to *Realistic Medicine* – a model of personalised, equitable care – demonstrates how shared decision-making between patients and clinicians can improve resource use and outcomes.[9] When patients understand the rationale behind testing and treatment, they engage more rationally with services. Adopting similar principles in England could enhance workforce efficiency and reduce unnecessary testing.

The Eastern Pathology Alliance reviewed pathology turnaround times, identifying delays caused by overuse of urgent requests, communication gaps and workflow inefficiencies. The project highlighted the need for prioritisation, streamlined systems, and better coordination between laboratories and clinical teams.[10] Lessons from this initiative provide a practical model for improving diagnostic stewardship and service efficiency across NHS pathology networks.

Further evidence is available in literature exploring reasons for testing and reducing inappropriate testing.[11,12] Recent evidence further highlights issues with home testing kits that need to be addressed.[13]

Which of our following drivers does this proposal primarily relate to?

☑ Transformation

Proposed reform 4: Dedicated workforce planning for pathology

Please describe your proposed reform for improving NHS productivity (max 1,500 characters).

Workforce planning for pathology is fragmented and reactive, relying on inconsistent and incomplete data. No UK government has assesssed whether the current number of pathologists across the 17 specialties is sufficient to deliver resilient services. Laboratories perform over 2 billion tests annually − around 80% of all diagnostic interactions − yet national datasets exclude pathology. Reporting systems cannot capture all diagnostic areas, emerging areas such as genomics or link workload to workforce metrics. Inconsistent headcount reporting further undermines planning.

Workforce planning is crucial to align staffing with demand in a system that accounts for the complexity of 17 pathology specialties across regions. Accurate capture of diagnostic volumes, case complexity, current establishments, vacancies, retirements, attrition rates and less-than-full-time working trends would enable truly evidence-based workforce planning. By ensuring sufficient pathology capacity, bottlenecks are reduced, turnaround times improved and unnecessary testing and delays are minimised – enhancing productivity.

The pathology workforce is essential to delivering the 3 shifts in the 10 Year Health Plan, but there is concern that England will struggle to meet the scale and ambition of its agenda without invement in the pathology workforce. Government-led pathology workforce planning coordinated across regions and specialties is essential to ensuring the right workforce is in place to deliver proposed innovation.

How would this reform improve productivity? (max 500 characters)

Strategic workforce planning ensures there is a sufficient pathology workforce to continue to underpin 95% of patient pathways and support the ambitions of the NHS 10 Year Health Plan, enabling efficient use of resources and improved patient outcomes. Evidence of global shortages in pathology and how workforce planning could improve productivity and patient outcomes are well documented.[14,15]

What is stopping this reform from being implemented now? (max 500 characters)

Barriers include fragmented, inconsistent workforce data, limited national pathology workload capture and siloed local reporting. Existing LIMS and pathology messaging (e.g. PMIP EDIFACT) systems cannot fully track complex, emerging or specialised workloads. Without investment in interoperable IT, robust data collection and dedicated workforce planning, pathology services cannot reliably match supply to growing demand or improve productivity in the face of adversity.

If your proposal is supported by any evidence and/or real-world examples, please share details here (max 1,500 characters).

NHS workforce data is inconsistently reported. For example, NHS Digital lists only 1 whole-time equivalent (WTE) paediatric and perinatal pathologist in England, while the actual figure is 43 consultants (38.65 WTEs).[16] Misclassification creates major barriers to effective workforce planning. Smaller specialties – such as neuropathology and immunology – are often aggregated under "other", obscuring both workload volume and complexity.

Genomics is central to the NHS 10 Year Health Plan, enabling earlier diagnosis, personalised treatment and preventative care. However, despite national commitments, genomic testing is not fully captured in current reporting. Siloed delivery models and fragmented data systems obscure true demand, leaving workforce planning blind to rapidly growing workloads. Planned reporting improvements will help, but full implementation is long-term.

Many laboratories lack modern LIMS, making workload data extraction difficult and limiting visability. Cellular pathology services face mounting pressure to deliver cancer genomic tests within rapid turnaround times yet funding and workforce capacity have not kept pace. Inadequate workforce and service planning is already impacting patient care. Meanwhile pathologists with the Certificate of Completion of Training have been unable to find substantive posts because of freezes on recruitment. Workforce planning to clearly identify workforce needs is critical to avoid bottlenecks.

Which of our following drivers does this proposal primarily relate to?

☑ Workforce

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Contact details

This response was collated by the Workforce and Engagement team within the Professional Practice Directorate of the College, informed by feedback from Specialty Advisory Committees.

Please contact the College if you have any questions: workforceplanning@rcpath.org.

About the Royal College of Pathologists

The Royal College of Pathologists is a professional membership organisation with more than 11,000 fellows, affiliates and trainees, of which 23% are based outside of the UK. We are committed to setting and maintaining professional standards and promoting excellence in the teaching and practice of pathology, for the benefit of patients.

Our members include medically, dentally and veterinary qualified pathologists and clinical scientists in 17 different specialties, including cellular pathology, haematology, clinical biochemistry, medical microbiology and veterinary pathology.

The College works with pathologists at every stage of their career. We set curricula, organise training and run exams, publish clinical guidelines and best practice recommendations, and provide continuing professional development. We engage a wide range of stakeholders to improve awareness and understanding of pathology and the vital role it plays in everybody's healthcare. Working with members, we run programmes to inspire the next generation to study science and join the profession.