NHS Productivity Consultation – IPEM Response

Please provide further details about the nature of this organisation's work/activities.

IPEM is the professional body for Medical Physicists, Clinical Engineers and Clinical Technologists working across healthcare, academia and industry. We are a charity with a mission of Improving Health through Physics and Engineering in Medicine.

Please share any general comments you have relating to productivity in the NHS in England.

For Medical Physicists and Clinical Engineers, national expansion of AI in imaging and radiotherapy offers a major opportunity to embed scientific leadership at the heart of NHS digital transformation. A coordinated, end-to-end national pipeline for evaluation, procurement and lifecycle monitoring would allow these professions to apply their strengths in assurance, safety, workflow design and technical integration more consistently. Standardised national architecture, shared tools and common testing frameworks would create a more reliable and efficient system for deploying AI at scale delivering significant productivity gains. The creation of multi-professional AI deployment teams, at both Trust and regional level, is a key opportunity. Current dependence on overstretched clinicians leads to delays, inconsistent governance and unclear regulatory ownership. In contrast, teams that bring together physicists, clinical engineers, radiologists, IT and safety specialists can deliver the breadth of expertise required for safe integration of AI into clinical pathways. Early regional examples show that these models accelerate adoption, strengthen governance and support pathway redesign. For IPEM members, this represents a chance to shape system-wide standards and act as accountable technical leaders for safe AI use.

However, significant challenges must be addressed. Workforce capacity is the most pressing. Scientific, radiology and radiotherapy teams lack time to take on AI deployment. Skills gaps, especially in data engineering and integration, limit many Trusts' ability to move beyond pilots. National training is fragmented, with no unified curriculum and limited access to funded development. Role ambiguity means AI work is often added informally to existing duties, contributing to inconsistency and burnout.

Without recognised roles such as AI Clinical Scientist or AI Lead Physicist, scientific leadership remains undervalued. Overall, while the opportunities for Medical Physicists and Clinical Engineers are substantial, realising them requires national coordination, investment in workforce development, and formal recognition of scientific leadership.

Please propose reforms to improve productivity in the NHS in England.

We are seeking 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 (eg incentives, targets, regulations or guidance) needed so that the system can seize opportunities to improve productivity

•	are ambitious but realistic, ie where you can see a path through implementation, even if this requires substantial change.
We welcome insights derived from local examples and case studies from other countries and sectors where these are relevant to the NHS.

You will have the chance to link your proposed reforms to one of our four 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.

Reform 1
Create a national end-to-end pipeline for evaluation, procurement and lifecycle monitoring of AI in imaging and radiotherapy.

Develop a national approach to AI deployment to best harness the potential productivity gains this technology offers across the NHS. This should include:

- establishment of multi-professional teams, embedding both scientific and clinical skills;
- Development of standardised architecture, guidance and tools to support deployment and ongoing testing at a national level.
- Develop a national training programme to ensure the existing healthcare science workforce are equipped with the particular skills needed to optimise the safe use of this emerging technology.

Currently, most Trusts rely heavily on AI-informed clinicians to lead AI work, even though they are already overstretched. This creates delays, inconsistent assurance, and an uneven understanding of regulatory responsibilities and integration processes.

A better model would be to establish multi-professional AI deployment teams across Trusts and networks, bringing together medical physicists, clinical scientists, radiologists, IT specialists, clinical safety officers, and information governance staff.

How would this reform improve productivity (ie the route to impact and potential scale of impact)?

These teams can collectively take responsibility for procurement, evaluation, workflow design, safety cases, and ongoing monitoring. This would free clinicians to focus on clinical work and helps ensure that AI implementations are safe, evidence-based, and deliver real benefits.

What is stopping this reform from being implemented now (eg the challenges and barriers)?

Capability varies considerably between Trusts. Dedicated multi-disciplinary Clinical Radiology AI teams across an ICS or Region, would provide thought leadership, a joined-up governance and best practice in safe and effective deployment and monitoring of clinical AI systems.

What is needed: Funded Trust-level multi-professional AI deployment teams with protected time, supported by funded regional AI teams, to ensure safe and effective deployment that focuses on addressing local challenges.

If your proposal is supported by any evidence and/or real-world examples, please share details here.

Emerging evaluations from the NHS England AI Diagnostic Fund show that strong multi-professional project teams and network-level collaboration are key enablers of AI deployment, supporting faster procurement and more consistent implementation across trusts. Similar aims are reflected in the Diagnostics Digital Capability programme, which invests in regional diagnostic networks and shared digital infrastructure to improve consistency and productivity in imaging and pathology services.

A multi-professional Clinical Radiology AI group has been successfully implemented in Kent and Medway, comprising radiologists, medical physicists, clinical engineers, radiography managers, digital professionals, ICB and NHS England regional colleagues. The group optimises the opportunity to communicate asynchronously via a digital collaboration and communication platform. This is supplemented by multi-disciplinary meetings, which showcase state-of-the-art solutions from industry and external health and care providers, and provides opportunities to deep dive into clinical pathway redesign opportunities. The group provided the bedrock of the recent multi-million pound DDC bids for AI solutions in Clinical Radiology for Kent and Medway for the forthcoming 4-year period.

Proposed reform 2

Fund Trust-level multi-professional AI deployment teams with protected time, supported by funded ICS/regional AI teams, to ensure safe and effective deployment that focuses on addressing local challenges.

How would this reform improve productivity (ie the route to impact and potential scale of impact)?

Create funded AI implementation teams (e.g. clinical lead, medical physicist/clinical scientist, radiographer/RTT, data engineer/analyst, digital lead) with protected time. These teams would be responsible for:

- Re-designing workflows so that AI outputs genuinely reduce workload.
- training, SOPs, audit, safety cases, IR(ME)R alignment, patient information.
- Running productivity audits and stop or scale tools based on measured impact.

What is stopping this reform being implemented?

- Workforce capacity: radiology and radiotherapy departments are already under staffed; they cannot absorb extra project work without backfill. (PMC)
- Limited ability to collaborate with translational partners due to lack of clear pathways, resource-sharing frameworks, or support for cross-organisational projects.
- Responsibility for AI often sits between IT, clinical services, and "innovation" teams.
- Skills gap: many Trusts lack local data engineering skills to safely integrate AI.

If your proposal is supported by any evidence and/or real-world examples, please share details here.

- NHS AI Lab's evaluation guidance and AI Award projects consistently identify implementation capacity, integration and change management as critical bottlenecks, not the algorithms themselves. (NHS England)

- HEIW's *AI Education and Skills within NHS Wales* review explicitly warns that without proper integration and training, the NHS will miss potential productivity gains and increase risks. (HEIW)

- The Society of Radiographers' AI guidance emphasises that AI's productivity benefits depend on redesigned workflows and appropriate staffing and training. (SoR)

- IPEM's *Artificial Intelligence in Radiation Therapy* book underlines the importance of medical physicists in safely integrating AI into imaging and RT workflows. However, this contribution is currently no accounted for in workforce resources. (IPEM)

Proposed reform 3

Establish a national AI education, accreditation and role framework for imaging, radiotherapy and clinical engineering.

How this improves productivity.

A national programme, co-designed with IPEM, RCR, SoR and others, would:
- Define core AI competencies for staff.
- Create accredited training that Trusts can adopt.
- Recognise formal roles such as "AI Clinical Scientist" or "AI Lead Physicist" with time in job plans, responsible for safe deployment and ongoing optimisation.
- Properly trained staff are able to select high-value tools, avoid duplication, use AI to full capacity, and prevent downtime and safety events.

What's stopping this happening now?

- No unified AI curriculum in the NHS: AI training is ad-hoc, often limited to early adopters or isolated CPD events.
- Time: over-stretched staff have no protected time to undertake training or reflective practice on AI deployment.
- Role ambiguity: AI work is added to existing roles rather than recognised, leading to burnout and inconsistent practice.
- Equity: smaller Trusts risk falling further behind if education and roles are not standardised nationally.

Evidence

- HEIW's AI landscape review emphasises the risks of not training staff to use AI, including missed productivity, patient safety issues and operational inefficiencies. (HEIW)

- Society of Radiographers' AI guidance and the summarised AI guidance for clinical imaging/therapeutic radiography workforce professionals directly call out the need for education, role development and governance around AI tools. (SoR)

- IPEM's AI publications stress workforce education and the unique role of medical physicists in validating, commissioning and monitoring AI in radiotherapy and imaging. (IPEM)