**Institute of Physics and Engineering in Medicine Response to the Education Select Committee Inquiry into Further Education and Skills**

1. The Institute of Physics and Engineering in Medicine (IPEM) is a charity and professional body with a mission to improve health through Physics and Engineering in Medicine. Our vision is one in which professionalism drives improvements in diagnosis, treatment and care, transforming the lives of patients. Our members, the professional community of Medical Physicists, Biomedical Engineers and Clinical Technologists working in hospitals, academia and industry around the world are the people who deliver this for the NHS and more widely. They undertake statutory duties in cancer and diagnostic pathways.
2. Medical Physicists specialise in the application of physics to medicine. Their work includes:

* Radiation Therapy: Planning and ensuring the safe and effective delivery of radiation treatments for cancer patients.
* Diagnostic Imaging: Ensuring the accuracy and safety of imaging techniques like MRI, CT scans, and X-rays.
* Quality Assurance: Regularly testing and calibrating medical equipment to ensure it meets safety standards.
* Regulatory compliance: Qualified expert physicists work with the NHS and private employers to ensure clinical services deliver high staff and patient safety
* Research and Development: Innovating and improving medical technologies and treatment methods.

1. Whereas Clinical Engineers focus on the application of engineering principles to healthcare. Their responsibilities include:

* Assessment of clinical needs and the prescription, design, manufacture and issue of engineering solutions to meet those needs, in particular, to support patient rehabilitation and care of those with long term conditions.
* Medical Device Management: Overseeing the maintenance, calibration, and safety of medical devices.
* Technology Integration: Implementing and integrating new technologies into clinical practice.
* Regulatory Compliance: Ensuring that medical devices and technologies comply with regulatory standards.
* Support and Training: Providing technical support and training to healthcare staff on the use of medical equipment
* Research and Development: Innovating and improving medical technologies and treatment methods.

1. Both professions are essential for advancing medical technology and ensuring that patients receive the highest quality of care.
2. IPEM works in partnership with a wide range of other organisations in the fields of healthcare, science, technology and engineering.
3. IPEM is the main professional body representing the specific group of healthcare scientists working in Medical Physics and Clinical Engineering (MPCE), who represent around 1% of NHS staff but directly contribute to nearly half of all diagnoses and treatments.
4. IPEM would like to respond specifically to the Committee’s Inquiry in relation to:

* Current challenges for apprenticeships, including employer engagement, funding issues and apprentice pay.

IPEM’s Response to the Committee’s Call for Evidence

1. IPEM is aware that apprenticeships operate differently across the four nations of the UK. Our response refers to the position in England.
2. We would like to draw the Committee’s attention to the fact that there was no specific mention of the Medical Physics and Clinical Engineering (MPCE) workforce in the NHS Long Term Workforce Plan, other than a pledge to increase training places for all Healthcare Scientists by 13% in five years’ time ([Healthcare scientist](https://www.nhsemployers.org/articles/healthcare-science) is the generic job title that covers more than 50 different specialisms across the NHS of which MPCE are just one group).
3. The reality though, is this equates to only around 15 additional places a year for MPCE by 2025 and an additional 33 per year from 2028, woefully far short of the 450 MPCE staff posts currently sitting vacant, and those vacancies will likely have increased further by 2028.
4. More specifically, Medical Physicists and Clinical Engineers help to ensure that patients are correctly diagnosed and safely treated for illnesses in NHS priority areas such as cancer and stroke through their work in radiotherapy and imaging to name just two examples.
5. The research and innovation carried out by those in the profession leads to new technologies and [methods that improve](https://www.ipem.ac.uk/media/ogtprsia/12965_ipem_science_strategy_a4_portrait_v12_accessible.pdf#IPEM%20) on existing medical treatments or increase efficiency e.g. AI . In addition, they maintain and manage all medical equipment used in a NHS trust hospital, such as CT MRI and ultrasound scanners, X-ray machines, drug delivery systems and patient monitors. Although a relatively small workforce, they are involved in nearly half of all diagnostic and treatment procedures in the NHS.
6. Data collected by IPEM shows that there is an average 10% vacancy rate across Medical Physics and Clinical Engineering, in addition to the workforce needing to expand by around 900 just to meet current patient demand. With nearly a quarter of the current workforce approaching retirement age, we need an urgent expansion of training places and substantive roles to address the situation. This lack of scientists could prevent the adoption of new innovations and even threaten some services with closure.
7. The good news though, is that apprenticeships could be one tool used to address this shortfall. As MPCE is a relatively small, if essential, professional group, many Trusts find it difficult to create supernumerary roles, given the salary component that the employer is required to pay. Whilst some larger centres (for example, The Leeds Teaching Hospitals NHS Trust) have used apprenticeships successfully to recruit new Medical Physicists and Clinical Engineers, these examples are few.
8. However, the apprenticeship landscape for this professional group is complex and currently faces a number of barriers to adoption. We feel that promotion and investment from central government needs to be put in place to both encourage NHS trust hospitals to create these training places and to highlight this as a viable solution to lack of staff in this profession.
9. Another factor leading to this lack of supply for MPCE apprenticeships is the various requirements around providing them, such as securing registration with Ofsted. Whilst maintaining standards is essential, especially in healthcare, we believe that there are ways to expand apprenticeships involving less bureaucracy, by following a model similar to the ‘equivalence route’ that IPEM promotes, whereby learners train on the job using externally validated education and training frameworks.
10. Funding is inevitably a challenge as it costs Trusts to pay and train apprentices. Further support for these costs from Government would help the NHS to recruit more MPCE apprentices.
11. This lack of places provides little choice for applicants, who are further discouraged from applying for placements as they are required to apply to each provider individually, rather than there being a centralised system, such as that used to place doctors in training, for instance. This has led to some concerns about the quality of some apprenticeships.
12. Flexibility in recruitment dates would be helpful in supporting apprenticeships in MPCE, especially in smaller departments. Departments need to recruit staff all year round, so it would be helpful if apprentices could start in work at any point during the year and then begin their academic education at the start of the academic year in September.
13. IPEM would like to see an increase in the number of apprenticeships in healthcare, particularly in healthcare science and specifically within Medical Physics and Clinical Engineering.

IPEM would be happy to answer any questions that the Committee might have or provide further information in writing or at an oral evidence session.