

Parliamentary and Scientific Committee

‘Building a Healthcare Science Workforce Equipped to Face the Grand Challenges’

A meeting held in partnership with the Institute of Physics and Engineering in Medicine

Healthcare scientists play a crucial role, not only in the NHS, but in research and development in universities and industry; looking towards the future, the meeting heard how the sector can play its part in tackling some of the major challenges that society faces.

Visitors, including some new members, were welcomed by George Freeman MP, Chair of the P&SC. As a former health minister, he reflected on the challenges within the NHS; the workforce in the health and care sectors should be valued and paid more. Advances in medical science and technology were excellent, but his constituents still worried most about getting GP appointments.

Current President of IPEM, Dr Anna Barnes, also Director of the King’s Technology Evaluation Centre (KiTEC), gave us an overview of the organisation, which represents physicists, engineers and technologists working in healthcare, academia, and industry. With 3m patients treated annually at Guy’s and St Thomas’ NHS Foundation Trust she gave examples of their work including radiotherapy, brachytherapy, diabetes, and cardiovascular disease. Patient care provided is complex and multi-disciplinary, involving teams of specialists. Even a small increase in staff would make a huge difference, but with 10% vacancies, more spending is needed for training at various levels from apprenticeships to senior scientists. New technologies need support, and the workforce be championed to lead on AI tools for diagnosis and treatment.

‘A clinical engineering focus’ was discussed by Dr Victoria Kidgell, Lead Clinical Scientist within Clinical Engineering, Sheffield Teaching Hospitals NHS Foundation Trust, and Chair of the IPEM Clinical Engineering Special Interest Group. ‘Grand challenges’ include workforce, climate change, clinical safety, and our ageing population; emerging trends are collaboration, smart digitisation, and personalised health. Healthcare scientists improve patient care, ensure safety, drive innovation, and contribute to sustainability. Developments include advanced diagnostics, personalised treatment, remote monitoring, virtual wards, AI and regenerative medicine. Sustainability advances have reduced hospital carbon footprints, and waste, promoting green healthcare.

On the horizon are wearable and portable devices, AI-driven solutions, predictive models, surgical robotics, precision therapy planning, sustainability-focused technologies, and biodegradable materials. AI in the NHS can aid diagnosis but a workforce with new digital and data skills is needed to interpret these systems; AI is not empathetic. The skills gap is a challenge; we need to train the next generation, encourage interdisciplinary collaboration, and embrace new ways of working. Healthcare scientists can apply scientific and engineering principles, and utilise their research skills putting the patient at the centre of everything. Better recognition could be aided by professional registration.

Professor Dame Sue Hill, Chief Scientific Officer for England at NHS, gave us a comprehensive overview of the NHS healthcare science workforce, a diverse community, covering multiple specialties, from blood sciences to clinical bioinformatics. Their work underpins 80% of diagnoses, and she provided statistics showing their contribution. The NHS 10-year plan and HCS leadership structure in the new NHS operating model, were outlined. Current key areas include medical imaging, radiation science, medical devices, rehabilitation, and patient safety. Robotics, connectivity, AI, diagnostics and imaging, and genomics are likely to feature in the future. A highly skilled healthcare science workforce will be more patient focused, with research opportunities, alignment with academia, community of practice, and support for clinical entrepreneurs.

The Q&A mainly addressed why it is so difficult to recruit medical scientists. We really need more home-grown staff, and it is proving harder to recruit from overseas. STEM subjects are still not attractive in schools, and with undergraduates. Scientific jobs in the NHS do not have a high profile, and there should be more awareness of their important contribution, possibly with professional qualifications. Academia and the NHS should communicate better to remove roadblocks between sectors, and there should be more funding for training.

*Sue Wharton
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