

Evidence from Institute of Physics and Engineering in Medicine – MT 19

**IPEM submission to the Welsh Government Health and Social Care Committee
inquiry into 'Access to medical technologies in Wales'
October 2013**

1. Background

Physicists, engineers and technologists play vital roles in delivering our healthcare. The Institute of Physics and Engineering in Medicine (IPEM) is the professional organisation that represents this workforce. We are a charity with over 4,000 members from healthcare, academia and industry.

Our members help to ensure that patients are correctly diagnosed and safely treated for illnesses such as cancer and stroke. They also maintain and manage medical equipment such as MRI and ultrasound scanners, X-ray machines, drug delivery systems and patient monitors.

Their research and innovation leads to new technologies and methods that improve on existing medical treatments. They provide new solutions that enable older people and patients with injuries or long-term conditions to complete everyday tasks.

IPEM's objectives are to:

- Ensure and improve the quality, safety and effectiveness of science and technology in healthcare.
- Maintain high standards of professional development for healthcare scientists, engineers and technicians.
- Ensure that the right medical physics and biomedical engineering workforce is in place and provide our members with the support that they need.
- Encourage research and development and increase the uptake of new knowledge and innovations by the medical physics and biomedical engineering sectors.
- Raise the profile of medical physics and biomedical engineering.
- Build two-way engagement with patients and public.
- Ensure and improve the quality, safety and effectiveness of science and technology in healthcare.

2. IPEM response to the Committee's request for views on the scope of the inquiry

In October 2012, IPEM suggested that the Committee may wish to consider including within the scope of its enquiry the extent to which existing and emerging medical technologies can contribute to more holistic and to more personalised health and social care. For example, by supporting 'self-care' that may include 'care closer to

home' (as an alternative to having to stay in hospital) thus enabling individuals to share in decision making that relates to their own care planning.

IPEM further suggested that, in relation to medical technologies appraisals and evaluations which consider both clinical and economic evidence, the Committee may wish to consider whether or not this evidence base is sufficiently broad to inform the decision-making process on funding those medical technologies that may contribute to more holistic and to more personalised health and social care.

3. IPEM's contribution to the inquiry

As the professional organisation representing those applying physics and engineering to medicine, IPEM should very much welcome the opportunity to contribute to the inquiry drawing upon the expertise of our members many of whom are embedded within existing clinical services and pathways. In particular, we should wish to input in relation to two of the four terms of reference, namely:

- To examine how the NHS assesses the potential benefits of new or alternative medical technologies;
- To examine the financial barriers that may prevent the timely adoption of effective new medical technologies, and innovative mechanisms by which these might be overcome.

3.1 Assessing potential benefits and overcoming barriers to timely adoption

Even when there is good evidence available nationally to suggest that the adoption of new or alternative medical technologies may prove beneficial, local circumstances may frustrate or even prevent take up within specific organisations, services or pathways. The reasons for this are often unclear and may only become apparent as a result of detailed examination of those local circumstances which, in turn, may prove to be highly complex.

Healthcare science professionals have a fundamental role to play in ensuring that the right medical technology is used with the right patient, in the right way, at the right time in order to get the right outcome. Many engineers, physicists and technologists undertake this role in relation to specific patients as part of day to day service delivery but equally have the expertise and hands on experience to design and deliver systematic change fine tuned to local circumstances. Often service pressures are such that time spent on the latter is insufficient to effect widespread change although healthcare science led adoption of new and alternative medical technologies undoubtedly occurs.

In order to address this issue and bring about a 'virtuous cycle' of service improvement and cost reduction fuelled by innovative change, IPEM has been working with the medical royal colleges to develop Higher Specialist Scientific Training (HSST) as part of the Modernising Scientific Careers initiative. Both the Medical Physics (MP) and the Clinical Biomedical Engineering (CBE) HSST very specifically include driving technological change in relation to medical technologies. For example, the CBE HSST envisages clinical scientists whose essential focus will be to ensure that patient pathways are optimised via the optimal use of technologies.

The curriculum vision statement goes on to say that this will be achieved by (those who have completed the training) supporting clinical service provision, in particular, working closely with and within multi-disciplinary teams who provide clinical services. Additionally, they will be capable of analysing and transforming healthcare service delivery through health economic appraisal and a systems approach; undertaking health technology assessments, analysing and optimising health system delivery. Such a methodology will include an identification of the problem, developing an appreciation of stakeholder's views, leading to the creation of system models, finally resulting in practical solutions.

As the vision statement also identifies, it will become increasingly important for objective decisions to be made on what techniques and technologies should be adopted as well as those that should not. Those who have completed the training will be well placed to advise and assist in such decisions; supporting the introduction of new techniques and technologies, including those which span across healthcare disciplines and organisations. They will build bridges between patients and clinical communities, ensuring the effective use of healthcare technologies, for optimal patient outcomes.

It is proposed to begin the delivery of HSST in 2014. As it is a five year programme of training, it will be towards the end of the decade before the first cohort will have completed their training. However, integral to the training is a doctoral level award that will require the trainees to demonstrably deliver innovative changes. As a result, health organisations hosting HSST trainees are likely to find them powerful drivers for the adoption of new and alternative medical technologies because, in order to successfully complete their training, they will have had to identify specific local benefits and overcome specific local barriers.

3.2 Oral evidence

The detailed contents of the HSST curricula together with the documented reasoning underpinning their development are substantial. IPEM would be willing to provide oral evidence in this regard if called upon to do so.

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