Global Clinical Engineering (GCE) Summit

UK Response

1. **State of Clinical Engineering (CE) - Health Technology Management (HTM) – Body of Practice.**

Clinical Engineering is a mature profession within the UK having been represented through professional body organisations since 1960. The name of the society has changed a few times over the years (is now the Institute of Physics and Engineering in Medicine – IPEM) but engineers have had a national profile in the UH healthcare system for over half a century. The most significant recent change with the UK was the reforms made under ‘Modernising Scientific Careers (MSC)’ as part of the overarching changes to Healthcare Science. This has led to Clinical Engineering being recognised as a Specialism with a common career pathway and banding structure along with other specialisms such as Medical Physics. This has led to the regulation and standards of education and training, and programmes to deliver on this. There are two main scientific career pathways Practitioner Training Programme (PTP) & Scientist Training Programme (STP) ultimately leading to the potential as a consultant healthcare scientist. HTM is part of one of the modules of the “Device Risk Management and Governance” that scientists are trained in as part of the Scientist Training Programme (STP) and can adopt as a their final specialism along with Rehabilitation, Innovation & Development, and Clinical Measurement & ICT. Following this training and a period of work to develop the higher level skills a scientist can apply for statutory registration as a Clinical Scientist in Clinical Engineering through the national Healthcare Professions Council (HCPC). There are parallel pathways that enable engineers to gain recognition through equivalence.

Having said all this, the practice has not been fully adopted by all employers especially at the practitioner level as many engineering technologists are not always developed through training programmes and are managed by their hospital services such as Estates or non-engineering units that do not have the scope to deliver on the full range of clinical engineering activities.

2. **How would you suggest to show the Value of and from having CE-HTM program**

In the UK, the main healthcare inspectorate - the Care Quality Commission (CQC) - assess healthcare providers across all their services, both clinical and non-clinical. This body has the ultimate authority to stop a healthcare provider (e.g. an acute hospital) from offering services to the public. We are slowly moving to a position where the CQC consider HTM as part of this assessment. Therefore, we are slowly moving to a position where CE-HTM becomes one element of a healthcare provider’s assessment to be allowed to offer clinical services. We’ve still got a long way to go but things are moving in the right direction.

Other aspects to consider when showing the value of CE-HTM will include: patient safety; security of supply (availability of technology); costs (both direct of supplying services and indirect through the loss of clinical services caused by poorly supported or unavailable technology); patient experience (through have the right equipment available to allow smooth clinical services) and innovation (through
having clinical engineers working with academic and industrial partners to develop new healthcare technology).

3. **Example of success stories where CE supported patient outcomes**

There are numerous examples across the profession in the UK, but we definitely need to get better at identify and promoting these. Some examples are published in our quarterly professional magazine (Scope) but we need to do more.

4. **CE Education program available (levels and content) – Body of Knowledge (BOK)**

As covered in 1 above there are recognised training providers i.e. training centres for Technologists and Scientists that deliver on the workplace training in collaboration with their recognised academic partners, and there are learning guides and endpoint assessment to support this, primarily for STP. The big change is now the adoption of apprenticeship training, primarily for technologists but IPEM are considering one for clinical scientists. The reason; the funded STP programme will not fully deliver on the numbers needed to meet our future workforce planning needs across medical physics and clinical engineering, plus the government have also introduced the apprenticeship levy to incentivise employers to deliver on their own training through approved standards. IPEM are involved in establishing those standards but the bottom line is that this is a challenging environment to access sufficient funding and opportunities to deliver the right number of appropriately trained technologists and engineers.

5. **CE Association/Society and Credentialing/Certification program if available**

The UK is well advanced in progressing on certifying individual competency and service quality. As mentioned in 1 above Clinical Scientists in Clinical Engineering are peer assessed in order to gain statutory registration as a clinical scientist and can be audited during their employment by the HCPC to check that they are meeting expected CPD attainment. IPEM manage the voluntary register for clinical technologists and provide a clinical technologist training scheme that leads to registration onto the register and professional engineering registration at EngTech. IPEM also carry-out audits for professional clinical engineering registration (IEng / CEng) under licence from the Engineering Council. Further, IPEM led on the development of an accredited service standard, now developed as BS 70000:2017 and are supporting the roll out of the MPACE accreditation scheme by UKAS for medical physics and clinical engineering service delivery. Accreditation is perhaps the highest level of demonstrating service quality and individual competency through ongoing peer assessment.

6. **CE major challenges (think of 3 subjects).**

- **Profile**
  - Despite the long and rich history of Clinical Engineering in the UK, the profession still struggles to get and maintain the recognition it deserves. This leads to being overlooked in research, service development and funding for training and skills. This also leads to healthcare providers believing they can get ‘servicing’ done on the cheap
and looking to outsource to less qualified engineering providers. This in turn leads to a further down grading of the value provided by CE services, difficulty in investing in training, research and service development.

- Skills Shortage
  - Both at graduate level (engineers) and technologist level, there is an increasing skills shortage in the UK. Despite the apparent attractive nature of working in healthcare technology, many graduates have too low or too broad skill base and NHS-based training is small and funding reducing. At technologist level, historically strong engineering industrial sector led to lots of high quality electrical and mechanical technician training. The reducing industry in the UK has led to a reduction in high-calibre technical candidates. The current workforce is aging and there is a significant requirement for new intake of technicians and engineers.

- Innovation
  - Partly as a result of both the profile and skill shortage issues, clinical engineers are increasingly marginalised from the new technicality research and developments. With some notable exceptions, CE-HTM services take what new technology is presented to them rather than being actively involved in its development.

7. What is the most important action you will support to increase CE recognition

The achievement of having a Clinical Engineering lead at senior management level in every Trust is the most important action which will help raise the profile, be a driver for better skills training and ensure appropriate involvement in research and innovation. To achieve this we must have recognised Clinical Engineering Experts developed as part of the Accredited Scientific Practice route within the modernising scientific career pathway. This action is currently being taken forward by a UK CE working party. We need action at government level to increase CE recognition by employers.

The impact of Brexit is unknown (even now) but expected to be negative within the UK-based clinical engineering profession. We are likely that to have less influence at European level so UK CE needs to work hard at maintaining and grow its international roles.