South Africa

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

**CE/HTM structures** in the public and private sectors differ fundamentally:
- The major private sector hospital groups all have a distributed structure with a national head office; hospitals generally have an on-site technical services department covering both clinical- and hospital engineering, and systems and processes are highly standardised with integrated management and governance. Many CE practitioners are employed by the medical device industry in a sales and/or service/support role.
- Clinical engineering services in the public sector are less standardised, partly due to healthcare service delivery being a provincial rather than a national competency. The large academic (central) hospitals have their own CE workshops while regional and district hospitals and primary healthcare facilities rely on a central provincial workshop that may have satellite workshops. Provinces differ in their maintenance strategy, with some seeing the benefit of capacitated in-house services while others have outsourced all or most of their maintenance workload. All provinces have a Directorate of Health Technology (HTM) funded by the NDoH’s Health Facilities Revitalisation Grant.

**Body of Practice:**
- This generally covers the management of medical equipment life-cycles, including maintenance.

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

- The fact that many if not most CE/HTM managers and senior personnel in both public and private sectors have been through one or both of the above-mentioned programs.

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

- The *Look-See-Do* remote maintenance support app has enabled complex medical imaging systems to be restored to functional status much earlier than previously possible, allowing for earlier diagnosis and commencement of treatment.

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

**HTM/CE Programmes:**
- The Tshwane University of Technology (TUT) offers qualifications from national diploma to BTech (Bachelor of Technology) and postgraduate degrees (MTech, DTech). The study program in CE falls under Electrical Engineering and has been the major provider of CE practitioners in the country.
• The University of Cape Town’s flagship program is the Postgraduate Diploma in HTM with content covering both healthcare infrastructure and technology and related topics. The program is complemented by Masters and PhD programs in biomedical engineering (UCT’s BME Department recently celebrated its 50th Anniversary) and an MPhil in Health Innovation.

• The University of South Africa (UNISA) offers a 3-year diploma on a distance learning basis, leading to a formal qualification in CE (as for TUT, this is a specialization within Electrical Engineering); 1 year is spent in the health-care industry in a monitored learnership.

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

The Clinical Engineering Association of South Africa (CEASA) has some 600 members nationally and active branches convening regular meetings, often held jointly with the SAFHE (SA Federation for Hospital Engineering). The 2-yearly joint CEASA/SAFHE Congress has been complemented in recent years by conferences with CE/HTM themes - co-hosted by CEASA and IFMBE’s CED - at the annual Africa Health Exhibition.

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

• Lack of understanding and recognition of the profession, with many stakeholders seeing CE practitioners simply as maintainers of medical equipment.

• Lack of policies and regulations supporting good-practice CE/HTM (including standardised measures and KPIs) and associated resources and processes.

• Many unfunded and/or vacant CE posts and lack of an integrated asset management and maintenance system (public sector).

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

• Pro-active engagement with NDoH and other stakeholders - emphasizing the importance of CE/HTM in enabling improved healthcare delivery as evidenced by success stories from around the world - as South Africa moves towards a re-engineered health system under a National Health Insurance.

• Exploring the use of certification as the qualifying criterion for professional registration, supported by the current interest in global CE certification and the related initiative of the IFMBE’s Clinical Engineering Division (CED).