Uganda

To: Global Clinical Engineering Community Stakeholders  
From: Sam Byamukama (Honorary Secretary, Uganda National Association for Medical and Hospital Engineering – UNAMHE)  
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Reference: CE Summit Agenda and Read-Ahead materials

Introduction

In East and Central Africa, just like in some other parts of the world as well, the phrases Clinical Engineering (CE), Biomedical Engineering (BME), Biomed and Healthcare Technology Management (HTM) are commonly used interchangeably. On a global scale though, what is included in the field of biomedical engineering is arguably much more comprehensive. Biomedical engineers apply electrical, chemical, optical, mechanical, and other engineering principles to understand, modify, or control biological (i.e., human and animal) systems. When a biomedical engineer works within a hospital or clinic, he or she is more properly called a clinical engineer [1]. However, this distinction is not always observed in practice. For instance where as many countries, Uganda inclusive, professionals engineers working in hospitals are called biomedical engineers, on the contrary in the U.S. or South African hospitals they are usually called clinical engineers their technician workmates continue to be called biomedical equipment technicians (BMETs).

In Uganda, the main tendency use the name biomedical engineering when referring to what elsewhere is basically called clinical engineering. Being a fairly new career that is still developing and has not matured yet, hopefully with time the Body of Knowledge (BOK) will become more and more harmonised the world-over. Nonetheless, with regard to the a profession responsible for planning and managing the selection, maintenance, and safe and effective use of medical equipment and systems, it has been observed that the phrase healthcare technology management is gaining usage [2], as it helps by having a more unifying name for this multi-disciplinary field.

1. State of Clinical Engineering / Health Technology Management in Uganda

The practice of biomedical engineering in Uganda derives from what in the early days used to be called Health Care Technical Services (HCTS). At the 44th session of the World Health Organisation (WHO) Regional Committee for Africa which convened in September 1994, Member States adopted a package of resolutions entitled “Selection and Development of Health Technologies at District Level” deriving from the conviction that proper assessment, introduction, management, maintenance and use of health technologies were essential for efficiency, effectiveness and quality of the entire health system. There was also the concern about widespread under-utilisation and misuse of health technologies in Member States,
which resulted in decreased quality of care and high wastage of scarce resources. The then lack of attention to this subject led the countries to several resolutions, among them a couple of examples below [3]:

- To develop a comprehensive health technology policy as an integral part of their overall national health policies and development plans.
- To include concepts and practices in health technology management in the education and training of health professionals.

The subject has since continued to be a matter of concern, as evidenced for instance later on in the resolutions of the 60th World Health Assembly (WHA) held in 2007 entitled “Health technologies” where Member States resolved [4]:

- to collect and exchange information on health technologies in particular medical devices as an aid to their prioritization of needs and allocation of resources…;
- to formulate national strategies and plans for the establishment of systems for the assessment, planning, procurement and management of health technologies in particular medical devices…;
- to draw up national or regional guidelines for good manufacturing and regulatory practices…;
- to establish where necessary regional and national institutions of health technology, and to collaborate and build partnerships with health-care providers, industry, patients’ associations and professional, scientific and technical organizations;

Resulting from the above-mentioned developments, below is a brief outline of selected achievements that have been realised regarding CE/HTM in Uganda since the mid-nineties.

1) The Ministry of Health had already a fully-fledged Department of Engineering responsible for civil and electromechanical works. It was expanded and Medical Equipment Maintenance Workshops were established at majority of the Regional Hospitals, which extend their coverage to District Hospitals and Lower Level Health Facilities in the area.

2) The 1st edition of the National Medical Equipment Policy was formulated in 1999 complete with the recommended Standard List of Medical Equipment for different levels of hospitals. It was revised and updated to 2nd edition in 2009 including also technical specifications for the listed equipment.

3) The National Drug Authority exercises the mandate of regulating the importation and supply of medical devices.

4) Professional technicians and engineers working in hospitals are unified through (voluntary) membership of the Uganda National Association for Medical and Hospital Engineering (UNAMHE) which was established in the year 1993. They also enjoy cordial relations with colleagues in the neighbouring countries. Under the umbrella of the Federation of East African Healthcare Engineering Associations
(FEAHEA) is held the biennial East Africa Regional Conference and Exhibition (EARC) since the year 2008, which is hosted by member states on the East African Community on a rotational basis.

5) The biennial Uganda National Biomedical Engineering Workshop was launched in 2017.

6) In 2007 the first formal education program (diploma) opened at ECUREI-Mengo Hospital under a private-owned institution. Since then four Government-owned institutions have since launched degree and diplomas in biomedical engineering. So far the graduated of all these institutions together are currently estimated at 122 degrees holders and 258 diploma holders.

7) The local institutions are now actively carrying out research activities both on their own and with international collaborations as well. This is now helping to generate findings that can help to inform policy-makers and other forms of decision-making.

8) Through joint efforts of the Uganda Industrial Research Institute. Local and international universities, the country has also started embarking on design and manufacturing of medical devices.

2. CE/HTM Major Challenges in Uganda

- The formal education sector has picked up rapidly over the last 10 years or so and there will be few employment opportunities for the big numbers that are going to start entering the market in a few years’ time. Moreover the degree courses far outnumber the diploma course implying the country will have far more engineers than technicians – a sort of inverted pyramid for human resource. Also, the Universities currently do not yet have a commensurate number of professors, doctoral and post-doctoral educators despite offering degree programs. What is encouraging though is that the country has a considerable number already pursuing postgraduate studies abroad.

- There is a widespread lack of enthusiasm in membership and participation in the national association which has made it to remain weak due to lack of a critical mass to give it a strong voice as well as making it under-resourced financially.

- Professional certification of the discipline is non-existent and this makes it difficult to enforce matters of safety, quality assurance, professional ethics, and other matters of professional oversight.
References


