USA

1) State of Clinical Engineering (CE) - Health Technology Management (HTM)

Virtually all 5,000 U.S. hospitals have access to medical technology support services of varying scope and quality from in-house staff and outside contractors (e.g., independent service organizations). The figure below illustrates the broad range of services that are available to varying degrees. Most healthcare delivery organizations avail themselves of a much more limited number of services typically focusing on medical equipment maintenance.

2) How would you suggest to show the value of and from having CE/HTM program?

New generations of healthcare technology offer the potential of facilitating broad access to high quality care at reasonable costs. However broad access, high quality and reasonable cost will not be achieved without applying CE/HTM expertise to ensuring the judicious selection, application and effective support of these healthcare technologies. CE/HTM can best show its value by demonstrating how it can critical a role it can play in this selection, application and support of these technologies.

3) Example of success stories where CE supported patient outcomes

In the 50 years since CE/HTM programs were introduced into the U.S, these programs have substantially contributed to the safety and availability of healthcare technology used on patients. In the U.S. today, medical devices are substantially safer, more effective and have higher uptimes than early generations largely because of CE/HTM vigilance.

www.ced.ifmbe.org
4) CE Education program available (levels and content) – Body of Knowledge (BOK)

CE/HTM education in the U.S. includes:

- Clinical engineers generally acquire 4-year baccalaureate biomedical engineering degrees offered by many universities with a few of these programs offering some specific clinical engineering courses. Most clinical engineers will subsequently acquire 2-year postgraduate (masters) biomedical engineering with some clinical engineering specialization or alternatively some will obtain their masters degree in business administration. A relatively small percentage of clinical engineers (often those in research or education) go on to obtain a doctor of philosophy (PhD), doctor of science (ScD), or doctor of education (EdD).

- Biomedical engineering technicians generally acquire 2-year associate degrees in biomedical technology or engineering technology. Some may go on to be biomedical engineering technologists by obtaining baccalaureate a biomedical engineering technology or engineering technology ... or may obtain an engineering degree or business degree.

5) CE Association/Society and Credentialing/Certification program

- The Healthcare Technology Certification Commission (HTCC) currently manages clinical engineering (CE) certification for the U.S. and Canada. Certification requires an engineering degree and four years of experience.

- The AAMI Credentialing Institute (ACI) currently manages certification programs for biomedical engineering technicians (CBET) and healthcare technology managers (CHTM).

6) CE major challenges

- There is a lack of adequate supply of properly trained CE/HTM professionals to meet the U.S. healthcare industry’s needs. Many of the most experienced CE/HTM professionals are retiring when the need for qualified CE/HTM appears to be growing substantially.

- There is a need to refocus CE/HTM activities from support needs of old technologies (e.g., electrical safety, preventive maintenance) to the support needs of new technologies (e.g., strategic acquisition planning, cybersecurity management, risk management, capacity management, etc.)

- There is generally inadequate continuing education of CE/HTM professionals (as new generations of healthcare technologies are introduced).

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

Ensure CE/HTM is relevant and focused on providing the support services the industry needs and that ensure quality, safe and effective patient care.

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