Canada

Monique Frize, Bill Gentles, Kim Greenwood, and Marie-Ange Janvier
Survey on CE in CANADA for Global Summit 2019 (Rome)

In 1988, Frize wrote a paper titled: Clinical Engineering: A member of the Health Care Team (HCT)? This was to point out that CEs were not seen, generally, as a member of the HCT. This was followed by a survey of 115 CE departments (Frize 1990, and 1991) where it was reported that less than 50 % of departments felt that they were recognized for their contributions. There followed a paper (and thesis) by Glouhova, 2000 which showed that not much had changed in her survey results.

In our view, in Canada, the most important challenge to take on in the next 5 years would be to develop a communication plan that describes roles, contributions, stories of successes, etc. addressed to the administrators of health care facilities, the Hospital Associations in the country or region, the Accreditation bodies, and the media. We have been discussing this for 30 years now and so new strategies are needed.

In CANADA, here are some of the responses to the questions posed for the Global CE Summit in Rome:

1. State of CE and HTM --body of practice (Canada)
   - See “Clinical Engineering Standards of Practice for Canada” at: https://www.cmbes.ca/clinical-biomedical-engineering/peer-review/clinical-engineering-standards-of-practice

2. How would you suggest to show the value of CE and HTM programs?
   - Cost savings of in-house service compared to service contracts
   - Fast response time to equipment problems
   - In-house expertise on and knowledge of new technologies to assist in decisions to procure new technologies.
   - Show to Hospital Executives the value of CE Departments. Healthcare technology is fast evolving and you need personnel that combine engineering and management skills. You need people who can combine these skills to make decisions that are effective for a healthcare where budgets are limited
   - Develop metrics that shows you the value (e.g. Cost/Benefit analysis)
   - Advertise our successes on projects
   - Become Media Savvy on ways to illustrate our value.
3. Example of success stories where CE supported patient outcomes

- MRI project – CHEO CE brought MR servicing in-house on a pilot program that turned out to very successful. No service contract at all on one magnet and only a partial service contract on the other magnet. Substantial savings with no uptime issues.

- 3D printing – using 3D printing to solve every day problems in healthcare (e.g. Ophthalmology and Audiology fixation devices, customized plastic aids for training the visually impaired, making custom accessories for equipment).

- Used 3-D printing of DICOM images to produce models of diseased organs for doctors to show their patients (Niagara Health)

- Patient Monitoring – (took advantage of rebates from a product consumable agreement to replace all of the bedside monitors in our Emergency department (30 new monitors with no capital outlay).

4. CE Education programs available

- See also https://www.cmbes.ca/academic/bme-education-in-canada

- University of Montreal/Ecole Polytechnique de Montreal, Institute of Biomedical Engineering – standalone CE program. Their CE program is offered as a MEng with option to specialize in clinical engineering with internships in hospital setting.

- University of Toronto, Institute of Biomaterials & Biomedical Engineering (IBBME) – standalone CE program. Their CE program is offered as a MHSc with internships in healthcare facilities, medical device industry or health care consulting firms. You can also pursue a PhD in Clinical Engineering.

- Durham College, Oshawa, Ontario, Honours Bachelor of Healthcare Technology Management Degree.

- University of British Columbia stream from Biomedical Engineering program. They do not have a CE program focus but rather have a MEng program in biomedical engineering where internships can be completed in broad areas across all disciplines that include hospital, industry or research.

- Carleton University & University of Ottawa, Ottawa-Carleton Institute for Biomedical Engineering (OCIBME) stream from Biomedical Engineering program. They have a CE program that is offered with their MEng with a concentration on Clinical Engineering. This program requires an internship.
5. CE Association/Society and Credentialing/Certification program if available

- See: https://www.cmbes.ca/membership/certification-promotion/clinical-engineering-certification-program
- Board of Examiners in Canada for Certification of Clinical Engineering. Separate from the US Board but both Boards report to the Healthcare Technology Foundation. Commission. The Commission is responsible for the overall management of the certification program. The Commission is a program of the American College of Clinical Engineering (ACCE)
- The ACCE provides administrative and financial support for certification activities.

6. CE Major challenges (3 subjects)

- Budget cuts lead to loss of added value functions such as HTM
- Competing with ISO vendors who can offer a cheaper service by doing less
- Some safety checks not done regularly because of staff shortages due to budget cuts.
- Recognition/definition of roles between CE and HTM and IT
- Be known for what we do (stories and examples for various publics as described in the note above)
- Importance of hiring clinical engineers and technologists in in-house or regional services
- Improve standards of the profession through relevant and quality certification programs

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

- A good communication plan
- Membership and active participation in professional Clinical Engineering Associations, both locally and globally.

Bill Gentles billgentles@sympatico.ca
Monique Frize mfrize@gmail.com
Kim Greenwood kgreenwood@cheo.on.ca