

What are we missing? Addressing critical elements of clinical engineering practice in Australia

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I. BACKGROUND

Australia has a hybrid model of healthcare with universal basic coverage provided by the commonwealth government with private insurance available for purchase. State-run public hospitals deliver most inpatient care and can be accessed for free by everyone in Australia with a Medicare number.

Clinical engineering (CE) services are provided in all public hospitals. Metropolitan hospitals have in-house CE departments, regional and rural hospitals are typically served from a larger hospital, and some public hospitals utilize contracted private companies.

Fortunately, Australia has no shortage of available skilled CE personnel, appropriate facilities including access to spare parts and consumables and quality service documentation.

Unfortunately, clinical engineering in Australia lacks several critical components to underpin quality and continuous improvement. Missing elements include: a nationwide peer review process, an up-to-date standard of practice (SoP), and specific competency measures for clinical engineers and biomedical engineering technicians (BMETs). A bottom-up approach to identifying and addressing these missing elements of CE practice is underway, driven by several senior clinical engineers eager to see the profession move forward before their retirement.

II. DEVELOPING QUALITY IMPROVEMENT TOOLS

Attempts to develop quality and continuous improvement tools have been initiated by different engineering entities (Fig. 1) over the past 20+ years.

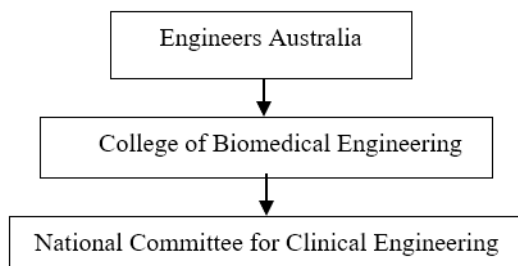


Figure 1 – Learned society structure in Australia

Peer review process: Engineers Australia (EA), the peak body for all engineering disciplines, endorsed a national peer review management model in 2008. Unfortunately, after the pilot phase, the program ended due to lack of funding. One local peer review initiative has been running in five Sydney, New South Wales public hospitals since 2004 but otherwise no statewide or nationwide peer review programs have been implemented to date.

Standards of Practice. In 2008, EA endorsed a CE SoP developed by the Victorian Hospitals Association in collaboration with The Canadian Medical and Biological Engineering Society (CMBES). This document provided the standards for the peer review process but otherwise was underutilized and is no longer contemporary.

The National Committee for Clinical Engineering (NCCE) is currently updating the CE SoPs with expected completion by mid-2023. Collaboration will again be sought with CMBES.

Competency measures. Although EA has well defined generic competencies for benchmarking engineers of all disciplines and all grades, there are no specific competencies for clinical engineering practitioners at either the professional or sub-professional levels.

The NCCE is developing competencies to be assigned for clinical engineers and technicians based on categories of practice (electronics BMET, mechanical BMET, etc.).

III. NEXT STEPS

While several prior attempts to move the profession forward through peer review, standards of practice and competency measures have stalled, momentum is building.

Once these quality improvement elements are fully developed, the next hurdle will be the adoption and implementation by CE services in all six states and two territories. This may be difficult as there is no governance framework for CE across Australia. The federal system allocates responsibility for health to the states and territories, who at present, see no gain in adopting an Australia wide system of peer review with associated standards of practice and competency measures.

A robust system of certification and registration of CE practitioners may be the solution as it would assist in the uptake of these quality improvement tools. Work towards certification and registration will be a project for the future.