

Editor's Corner

Often do I hear at meetings debates about how many clinical engineers and technicians are needed per some quantifying unit. Quantifying unit like the volume or quantity of assets managed, the replacement or acquisition value of the assets managed, or number of patients' beds, and even per volume of patients discharged. However, seldom the debate reaches the level of how many such qualified personnel a system such as city or country or even the world may need.

Recent surveys attempted to identify the volume of clinical engineering professionals practicing around the world. They resulted either in very low response rate (Calil 2017) reflecting therefore estimate of very small community of CEs practitioners, or as designed by another survey organizers included variety of other than CE engineering professionals such as biomedical engineering other engineering practitioners and technology managers (WHO 2018) that resulted in high volume count of about 800,000 practitioners but could not clearly identified the share of CEs in that count. Knowledge about the gap, if one exists, between the volume of practicing qualified CEs and the volume of the needed CEs can help guide national and global policies, priorities, and program support that are needed to narrow and even eliminate the gap (if one exists) over time.

Following the publication in 1999 of its landmark manuscript about reducing preventable medical errors committed during provisioning of health care (<http://www.nationalacademies.org/hmd/Reports/1999/To-Err-is-Human-Building-A-Safer-Health-System.aspx>), the National Academy of Medicine (formerly the Institute of Medicine), published in 2001 their report *Crossing the Quality Chasm; A new Health System for the 21st Century* (<http://www.nationalacademies.org/hmd/Reports/2001/Crossing-the-Quality-Chasm-A-New-Health-System-for-the-21st-Century.aspx>), and followed up in 2015 with another landmark book about the criticality of getting

the correct diagnosis in managing patient conditions and the underappreciated occurrence of diagnostic errors (<http://www.nationalacademies.org/hmd/Reports/2015/Improving-Diagnosis-in-Healthcare.aspx>). These reports call for urgent and fundamental change to healthcare system design, policies, processes, and the direction for the professionals who have stake in its outcomes. These reports state that patients should be able to count on receiving care that meets their needs and is based on the best scientific knowledge – however that is too frequently is not the case. It furthermore points that health care harms patients and routinely fails to deliver its potential benefits. The 2001 report specifically states that *“Faced with medical and technology rapid changes, the nation’s health care delivery system has fallen far short in its ability to translate knowledge into practice and to apply new technology safely and appropriately. And if the system cannot consistently deliver today’s science and technology, it is even less prepared to respond to the extraordinary advances that surely will emerge during the coming decades.”*

Clinical engineers, according to ACCE definition I participated in its creation in 1992, are *“professionals who supports and advances patient care by applying engineering and managerial skills to healthcare technology.”* (<https://accenet.org/about/Pages/ClinicalEngineer.aspx>). While there are differences in some of the Clinical Engineers scope of practice between countries their focus is the same – deliver competent technology life cycle skills that support improvement in patient outcomes and wellness.

This calls for clinical engineers to adopt professional guidance about the minimum requirements for education, training, and professional credentialing that will lead to building of competent practitioners' capacity. Capacity that can deliver on the recommendations for plans to correct the above noted deficiencies.

So, while we still debating how many CEs a technology life-cycle program should optimally has or how many CEs the world needs - I believe that it is unanimously clear that in order to deliver the value of our profession to improve global health systems outcomes these professionals must be well prepared, ethically committed, competent and professionally credentialed.

I look forward to your comments.

*Together we can lead the move from
Health to Wealth!*

Dr. Yadin David

A handwritten signature in blue ink, appearing to read "Yadin David", is positioned below the printed name.

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