GlobalCE

Editor's Corner

What Should Clinical Engineering Professionals Know?

As the year comes to an end (thank god), to say that 2020 was a devastating year would be an understatement. All over the world, the virus-causing pandemic kept the infection spreading, mutating, and pounding everything without relief and leading to the loss of precious lives, devastated economies, forced social isolation, and misery we never knew was possible. We are experiencing a changing world, and perhaps never did we need to support each other more than we do now. We each do it in our own way within groups of families and friends and by further backing colleagues as members of the clinical engineering community. Will, how, or what impact the pandemic will have on future clinical engineers (CEs) and technologists is not yet known. The question now is, how should future CEs be better prepared for what is to come?

One lesson learned from this abnormal pandemic era is the need for better technology lifecycle management methodology and tools. In healthcare past, the timeline separating discovery and innovation, from use to benefits, was measured in multiples of years. However, the success of Operation Warp Speed[1] has demonstrated how rapidly accelerated development and approval for the COVID-19 vaccine can be completed. We are ready to meet similar growing challenges such as the lack of mechanical ventilators, oxygen generators, personal protective gear, and isolated care spaces within similar accelerated timelines. These timelines have been shortened from years to months and, in some instances, even less. Through interdisciplinary collaboration (such as automotive and medical product manufacturing) and international research cooperation (such as the UK, Germany, and USA) we have seen multiple medical triumphs, technological advances, and engineering solutions (public-private alliances) that have forever altered previous conventional approaches.

The medical device industry has changed forever, and the forces that currently shape it will drive rethinking and expectations into the future. Product innovation and development will become processes that are much closer to a specific patient's needs, demographics, and experiences. Modifying hospitals to also act as medical technology laboratories. The number of people in the world age 60 years and over is expected to grow by 56%, reaching nearly 1.5 billion by 2030.[2] This suggests that care expectations will increase. In response, further demand will be placed on personalized care that is already being supported by extended reality (both virtual and augmented) tools and creative wearable products with embedded intelligence that can modify their function in response to the data collected.

As I touch on lessons learned from the past year and on the anticipation for the creative future that has already begun to impact the healthcare industry, it begs the question: what about clinical engineering practitioners and members of the front-line healthcare team heroes? What is in-store for them? The demand for better access to and future growth in provisioning of healthcare services will undoubtedly magnify the system's dependence on technological tools, their performance, and integration. This will translate into stronger demand for competent clinical engineering education and expertise. However, if everything around us is changing, and we chose to stay statically stationed, the opportunity will fade and perhaps be picked up by others. It is critically significant, therefore, that clinical engineering practitioners demonstrate the pursue of the following E.S.P. attributes that will deliver an advantage to their ability to successfully fulfill their future duties and to reach greater on-the-job satisfaction:

Education – Increase your knowledge and expand your expertise to include subjects like artificial intelligence, digital health (telehealth/telemedicine/eHealth), extended reality, robotics, cybersecurity, wireless communications, and big data that are all part of the coming fields in need of engineering champions at the point-of-care.

Stewardship – Understand your role expectations, learn to communicate clearly and rapidly, be reliant and provide update/follow-ups on projects assigned to you, do not avoid responsibility, and always be passionate about keeping equipment safe and patient-ready supporting the quality-of-care outcomes. Remember, patients cannot fend for themselves. They depend on you to carry out your responsibilities.

Professionalism – Members of healthcare teams are educated, credentialed in their field, engage with their society's activities, collaborate with peers, read, and publish in their field's literature. CEs need to embrace such attributes and do it now to ensure you gain a seat at the table.

Specific examples in our own field provide evidence supporting the need for more international collaboration and stronger professional knowledge exchange as they are going to be part of our future. The Call for Papers for the 4th International Clinical Engineering and Health Technology Management Congress, scheduled to be held in Orlando, Florida, USA coming September 2021, is still open; however, it already broke the record established last year in Rome for the number of abstracts submitted (reaching almost 350). Further, this past October's inauguration of the new Global Clinical Engineering Alliance[3] is yet more evidence that as healthcare and technology are changing so are the needs in our field. These changes magnify the increasing dependency between CEs, educators, practitioners and the persistent ensuring that goal for the intended care outcomes. As this is becoming more evident it mandates clinical engineering practitioners to declare their professional boundaries and become stewards for patient safety and care quality by updating their expertise and building opportunities for growing their professional competencies through training, reading, and networking. As CEs, your ability to use knowledge for solving system problems reliably, safely, and quickly should be the navigating lights leading all of us into a brighter, happier future.

The Global Clinical Engineering Journal and its Editorial Board experts will back you up and focus on sharing knowledge internationally, identifying best practices, communicating lessons learned, and highlighting innovations to make sure you are in the best position and are prepared to claim your seat at the table.

We send you our very best wishes for fewer air hugs and more bear hugs in the coming new year!

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Together we are making it better!

Dr. Yadin David

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